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EDITOR REVIEWED ARTICLE

Outside *The City of Grace*: appraising dystopia and global sustainability

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Abstract

The City of Grace: An Urban Manifesto (Wadley, 2020) models an eco-tech settlement, aiming to achieve economic and social sustainability over a substantial period. The City is intended to be anti-dystopian and non-exclusive, with the possibility of replication in receptive settings. In this rejoinder to the book, the potential for dystopia attending population and sustainability issues in the outside world is appraised. Foundations are established in general systems, complexity and chaos theories, and an interpretation of procedural and substantive rationality. Two possible global failure modes are examined, one contained within the human sphere involving the future of capital and labour, and an external one founded in the familiar problematics of the human-environment nexus. Dilatory responses in advanced societies to these dilemmas are outlined. The subsequent prognosis regarding population and sustainability co-opts a meta-theory from environmental management to assess the viability of possible counterstrategies to dystopia although, in conclusion, its existence is instantiated.

Keywords: dystopia; systems theory; labour dynamics; economic and demographic growth; planetary constraints; IPAT.

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Introduction

My 2020 book, *The City of Grace*, models the function and form which a settlement would require to achieve economic and social sustainability over a substantial period. The resulting eco-tech configuration, aiming to be gracious in function and graceful in form, distinguishes itself from paradigms in prior urban-utopian literature by assuming a surrounding environment of neoliberal globalisation. The characteristics of grace arguably surpass those of either goodness or greatness. They are identified through a situation audit of contemporary urbanism combined with a comprehensive literature review covering religious, ascetic, aesthetic and material expressions of grace. On this basis, graciousness is modelled in economic, political and social terms. Gracefulness of form is portrayed in architectural practice and, at a higher level, city planning and development. The book undertakes an empirical enquiry to see whether such a City already exists anywhere on Earth, but a definitive answer is lacking. Interested parties are invited to continue the search or appraise the thesis and attempt to create a real-life settlement for themselves.

While no future is anywhere assured, the City is designed as an island of relative stability in a turbulent milieu. It is not exclusive, being spatially replicable. Nor, in following a survival strategy, is it utopian but, instead, claims to be 'anti-dystopian' relative to its external milieu. The focal question therefore arises: 'how dystopian is the future beyond the urban boundary?' As a sequel to the book this paper aims to address and resolve the query with as much foresight as possible: it appraises the potential for dystopia attending population and sustainability issues in the outside world.

A properly constructed approach requires a normative foundation for the assembly of evidence apropos dystopia. It relies upon general systems, complexity and chaos theories to expose the context, while unconventional philosophical baselines are established around the precepts of human (ir)rationality. With these underpinnings outlined, I gather evidence to adjudge the supposed dystopia outside The City. As they bear on global population and sustainability, the drivers and constraints behind two possible failure modes in the external domain are examined. One involves the future of capital and labour contained within the human sphere, and a wider one is recognised in the familiar problematics of the human-environment nexus.

A résumé follows outlining dilatory responses to these dilemmas in advanced societies. It is argued that, as distinct from positive action to address these modes, western industrialised society appears in denial, preoccupied with communications media and the advocacy of sectional, systemically-constrained causes. The subsequent prognosis co-opts a meta-theory from environmental management to assess the viability of possible counterstrategies to dystopia. Suggested remedies are found wanting and thus, from the information assembled, the case for the existence of dystopia outside the City is endorsed. A set of conclusions rounds off the investigation and provides an answer to the focal question.

Foundations

Herman Daly (1977) has helpfully differentiated scholarly disciplines within a spectrum spanning the ultimate means (matter, physics) to the ultimate ends (ethics, religion) of human society. High level discussion of future utopian and dystopian outcomes lies on the boundary of empirical experience and belief (Rorty, 1991). It requires a solid foundation of deductive reasoning and applied philosophy which draws on relevant theories and a pragmatic interpretation of procedural and substantive rationality.

A systems view of human society

At any scale of enquiry, general systems theory examines 'a set of objects and the relationships between the objects and between their characteristics' (Hall and Fagan, 1956 p.18). Human society can be interpreted in this framework, as a system processing environmental inputs such as matter, energy or information into physical and conceptual outputs. In transforming the throughput, linkages among system components can provide stability, with negative feedback acting to restore settings (as is common in mechanical servo-systems). Positive impulses can be energising and, on occasion, dis-equilibrating. Thresholds represent a critical mass of perturbation which exceeds system capacities to contain change, one example being the emergence of the 2008 global financial crisis. Passing through a trigger point could cause a phase shift to a new state of the system. As internal configurations change, the disruption can be experienced acutely as a shock or, over a longer period, as stress (Leach et al., 2010).

'Complexity' means that there can be numerous independent variables involved in the operation of a system (Sardar and Abrams, 2013). Their interactions create

entropy, the 'degree of dissipation...of the energy or force that enables the system to undertake its work, whether this be internal differentiation or export to the environment' (Walmsley, 1972 p.28). Entropy encompasses energy and matter but, absent negative feedback and subject to the second law of thermodynamics, it can only increase over time. The inherent depreciation reduces orderliness (e.g. as observed in the failure to work of a 'worn-out' appliance).

Complex systems employ negentropy to counter the chaos which can infuse and amplify states of high entropy. Before it eventuates, there is a tipping point known as the 'edge of chaos' which leaves the system in a state of suspension and indeterminacy (as arguably occurred during the pre-war month of August 1939). As opposed to regular laws in the physical environment, disorder and unpredictability can introduce dystopian elements into the affairs of people and societies.

Philosophical baselines

Pursuing a contrarian thesis, *The City of Grace* questions the precepts of neoliberal globalisation and devises a model to avoid its most unsustainable expressions. This positioning has the analytical advantage of mandating the highest level of systemic resolution (viz. a binary choice, whether or not to 'believe' in the contemporary social trajectory). Questioning conventional assumptions encourages the doubt necessary in any comprehensive appraisal of dystopia.

In this connection, a state of 'rationality' is thought to underpin agency, interpretation and theorising in the physical and social sciences. It is influenced by the rational choice model in economics and sociology which, broadly, defines 'rational' as applying to actions of which the benefits (gains) exceed the costs (losses). Though this model is foundational, it suffers from the lack of a unitary definition of 'utility' (and hence value), and incommensurability among non-economic ends (d'Agostino, 2011). Paradoxically, its difficulty lies in specifying a substantive definition of rationality.

In *The City of Grace*, rationality is approached both procedurally and substantively. First, following Paul O'Grady (2002), it requires procedural coherence, consistency, and the full and honest use of all available evidence (as in legal work). Substantively, to avoid the 'evaluative pluralism' besetting utility, it is afforded only one objective, taken to be of universal (non-relativist) application. This aim, individual and

collective survival based on free-will, is empirically and theoretically defensible. The intermediation of rationality and survival occurs through strategies of sustainability which could, in conditions of exigency, recursively engage the rational choice model.

With the purview of rationality established, the next step is to acknowledge irrationality, as it relates to system dynamics and entropic dystopia. With no fixed timescale or reference points, irrationality might spread from individuals to groups bottom up, as in a moral panic, stock market flight, or popular rampage created by a shock; or, more gradually and stressfully, top down from the wayward actions of political and economic élites. The condition is recognised in two forms: motivated and unmotivated.

Motivated irrationality can produce definitive social outcomes but they are, on balance, detrimental. Economic and political end-uses could involve any of the following cognitive biases:

- Refuting contrary observations for ulterior motives or ideological adherence
- Changing definitions, so obfuscating a case and replacing logical precepts with an allegedly 'better' definition
- Unrequited obligations applied through the use of moral suasion to impel people to act against their better judgment
- Framing errors including value attribution to persons or situations
- Diagnosis blindness, ignoring important evidence
- Belittling by experience, as in calling people or cases 'childish' or claiming to 'have seen all these problems before'.

Unmotivated irrationality could apply if an agent were ignorant of the 'logic' of the rational choice model. Such a person could regularly lose monetary or psychic wealth, status or social reputation but fail to realise as much. According to the philosopher, David Pears (1984), unmotivated irrationality has two modes, each constructed around the question, 'how can these things happen, which are so obvious to the rest of us?' Unless incompetence (mental illness) is established, attention gravitates to self-deception and acting flagrantly against one's own better judgment or best interests.

Self-deception is said to involve a perversion of reason, in so far as mentally sound people are assumed to have an unchangeable desire for truth in their own beliefs. It should therefore be impossible to deceive oneself simply for the sake of it. An ulterior motive or goal is always required. Acting against one's better judgment indicates that an individual is no longer controlling speech or behaviour to his or her utmost advantage, hinting at the Greek concept of *akrasia* or weakness of the will. It might arise from incorrect processing of information towards some end. It does not apply if information is just forgotten or misperceived. It has more to do with the dilution of reason by emotions such as desire and appetite.

At this point, the issue of divergent world views must also be raised. Can a single definition of 'rationality' serve everyone (Rorty, 1991: 26-27)? Heinrich (2020) contrasts the thinking behind long-standing, holistic approaches of societies (such as the 60,000 years of continuous adaptation by Australia's indigenous inhabitants) with that of WEIRD people. The acronym refers to the post-Enlightenment analytical reasoning of **W**estern, **E**ducated, **I**ndustrialised, **R**ich and **D**emocratic societies. WEIRD populations have embraced technological innovation and, in the last 100 years, have locked their welfare into an encompassing *belief* in 'growth' and 'change' (Samways, 2021). Conversely, in linking rationality, sustainability and species survival, the call in this rejoinder has been to *suspend* belief. WEIRDness affords every reason to do so, since systemically it involves contradictions which could activate two critical failure modes leading to dystopia outside *The City of Grace*. The first could occur in the production régime of advanced and developing nations. The second, the unbridled pursuit of economic and demographic expansion against a finite resource base, could, as an external threat, prompt an environmental crisis.

Dystopian failure modes

First mode: changing labour dynamics

The first ('internal') potential failure mode is contained within human social systems. It concerns workforce dynamics in WEIRD and other developed nations. While the sustainability of work is a fundamental issue in *The City of Grace*, it has been afforded little emphasis in many world views and geopolitical expositions.

At issue is the substitution of capital and management for labour in the factor mix. Advanced agriculture, mining and construction are trimming their labour

inputs, and manufacturing has been 'hollowed out' since the mid-1970s. In raising productivity and particularly in the virtual sphere, many business-to-business (B2B) and selected consumer services are becoming more capital-intensive (e.g., telecommunications, data handling, libraries, transport systems). Rapid economic and technological transformation influences company investment and could reduce labour demand by way of:

- increasing access to scale economies in production and corporate organisation
- the 'zero marginal cost' society (affecting industries in which the marginal costs of (electronic) production are approaching zero)
- ongoing product and service development (new offerings, inevitably involving smarter applications, diminished resource use, and greater efficiency in delivery)
- casualisation and contracting (freelancing and the 'gig' economy in which regular employment cedes to project-based engagements)
- shadow work (consumers overtly undertaking work for producers as in online booking, and in uploading personal data for analysis, and in providing private workspace and facilities when working from home)
- automation, robotisation and augmented/artificial intelligence (viz. information technologies, the onset of quantum computing)

These trends are underwritten by élites and social classes who own, or support the interests of, capital. Within the literature, technological optimists, business and population boosters argue that, as in the past, technology will create rather than destroy jobs. A whole new range of occupations will emerge, many yet unimagined. At worst, employment could level out. The alternative view is that the above six movements could suppress the demand for labour in developed countries. The resultant falling wage rates could meet rising ones in developing countries which continue to prosper from offshoring and endogenous growth. The global equilibrium price for labour would be well below that in the advanced world today.

This scenario might be welcomed by those who argue that much of the developing world remains locked into subsistence activity which will not benefit from population growing continuously against a constant resource base. Vast

numbers of people cannot access full employment in the formal sector. Nor, for two reasons, are their work prospects likely to be sustainable. As the burgeoning young of underdeveloped countries come of working age, the first cause will lie in the net annual addition (averaging 35 million people between 2010 and 2019) to the global labour supply (3.387 billion) (World Bank, 2021). Second is the matter of emerging economies capturing contract, production and marketing opportunities. The People's Republic of China has had estimable success in this regard. Yet as a middle-income nation, it is now, in its push for higher technology lines, engaging in exactly the factor substitutions outlined above (Powley, 2014; Aepfel and Magnier, 2015). Without pressing the point, the limited logic of this strategy is also pursued in *The City of Grace* as one of the few ways possibly to realise financial stability and prosperity.

The substitution/displacement thesis outlined here is unacknowledged in advanced nations which, to support their business interests, eschew effective labour market policies. This stance could represent motivated irrationality as the view from the edge of chaos heralds declining real wages and spatial equilibration over the next 30 or more years. Business is no longer constrained by the demand/supply relativities of a national market, since there exists in the worldwide workplace ('www') a mobile, ready and price-competitive workforce. Domestic wage pressure can be relegated when skilled and unskilled employees can be simply imported. The capital/labour failure mode is one subset of an unstable future world system. It links with a second one now to be examined.

Second mode: unlimited growth and planetary constraints

In the 1920s and 1930s, interest in fledgling neoclassical economics turned to measuring market activity in an attempt to define 'progress' in standards of living and, *in extenso*, quality of life. Today, 'economic growth', though the bane of ecological economists (Jackson and Victor, 2016), is an article of faith in neoliberal nations. In that setting, it has fostered among believers what Clive Hamilton (2003) calls a 'growth fetish' and Douglas Booth (2004) an 'addiction.' Hay (1978 p.8) has correspondingly written that 'growth, as a central dynamic of capitalism... serves an integrative and unifying purpose in rationalising or making sense of our social system.' Guided by Peterson (2017), we move now to have a closer look at this concept.

The poster child is the statistical quantity of gross domestic product (GDP), scrutinised and compared in international league tables. It is calculated over an accounting period in three ways, each respectively the sum of:

- the creation of goods and services produced at each stage of production less the costs of production (i.e. value added) (GDP – P)
- incomes generated by production (GDP – I)
- final expenditure on goods and services produced, including a statistical entity's exports but minus imports (GDP – E).

GDP (A) is the average of these three measures and, when read at constant prices, is regarded as the most satisfactory trend indicator of the size of an economy (McLellan, 1996). The word, 'gross' indicates that no deduction has been made for the consumption (or depreciation) of fixed capital, thereby producing a flow, not a stock, estimate. Nor does GDP record non-market (untraded) activity, so that much in the interpersonal realm and that of civil society goes uncharted, irrespective of its contribution to welfare or the quality of life.

Being dollar-denominated, the nominal level of GDP over successive accounting periods is influenced by inflation or deflation (temporal price movements in a standard basket of goods). Hence, national statistical bureaux advocate the use of 'real' (i.e. 'constant') GDP indexed to a base year. GDP *per capita* relates more directly to ordinary people's income level but is seldom referred to in the media. It can be modified as real GDP per capita which, *omnibus paribus*, reflects economic advance or decline over time. Though rarely cited, it is a strong, practical measure of pecuniary wealth, that being a rational and worthy aim of society. Yet, this per capita averaging can mask great inequalities between the rich and the poor in the flow of income and, hence, the accumulated stock of wealth and standard of living (Piketty, 2014). Such disparities can persist even as absolute GDP ('the pie') grows (cf. Jackson and Victor, 2016). The effect is that society in aggregate could be getting wealthier but that initially-poor people are becoming poorer. This is one of several possibilities which might erode the legitimacy of a growth fetish around the single metric of GDP.

More expansively, the ultimate constraint on unbridled economic performance is the physical resource base (Das, 2015 pp.120-47). The ecological economist, Herman Daly (1977) pointed out that advanced (WEIRD) societies, with their

culturally specific outlook producing certain kinds of material effects, have long tried to turn the ecosphere into a technosphere. To use vernacular terminology, so much could be achieved by 'growing' economies and populations. Ehrlich and Holdren (1971) nailed the dilemma in their IPAT equation. Against the finite bounds of Earth, it asserts that environmental impact (I) is a multiplicative function of population (P), times affluence (A), times a level of technology (T). In system terms, (P), (A) and (T) are inputs to the human-environment system and the economy is the processing mechanism which produces the output (I), impact. Each of Ehrlich and Holdren's interlinked, independent variables relates to the size of an economy measured in GDP.

Back in the production arena, the pitch of the political class to increase GDP relies on the 3Ps of population, participation, and productivity. In a brief commentary, less nuanced than Peterson's (2017) analysis, it can be said that gains in population (P) always imply increased consumption (GDP-E) which will impact physical sustainability through resource usage, whether of renewables or non-renewables. Labour force participation (commonly, the proportion of working-age people who are actually employed or able to look for work) will do likewise through the production function (GDP-P and GDP-I). Productivity (a ratio of outputs to inputs in the creation of goods and services) relates to the (T) in the IPAT equation. Technology attracts hope among the more intellectual growth leaders as a way of attenuating the irrationality of endless economic expansion given the fixity of resources and sinks. Evolution of the IPAT relationship is relatively slow-moving (i.e. over decades), presently more a stress than a shock. Its trajectory can thus be predicted by systems theory. Without mitigation (negative feedback), complex human-environment interaction should advance towards one or more tipping points followed by a phase shift towards a higher state of entropy and possible chaos (decline of societies). The underlying disjunction concerns both decentralised and command régimes since each is characteristically focussed on GDP (Dale 2012, pp.17-20). The impasse defies any reasonable reckoning of human sustainability: that is, it beggars belief.

Distraction, diversion, inaction...

The élite convergence around, and support for, economic and demographic growth contrasts with increasing fractiousness in the Western polis, perhaps reflective of self-deceptive denial toward emerging problems. Neoliberalism has

urged the primacy of the individual, encouraging self-determination and free will within a cosmopolitan world view. In certain societies, divergence breeds incapacity to acknowledge even the fundamentals of a case as per the claims of procedural rationality. Recent years have seen an upsurge of fake or disputed facts, spin and 'post-truths', all of which erode social consensus. At a more elevated level of epistemology, 'truth' is challenged by relativism and the rise of 'polyvocality' within postmodern social science (cf. Rorty, 1991 p.23). These schools have disputed comprehensive macro-theory as, for example, in Freud's psychoanalysis or various 'laws' in microeconomics: such thinking is allegedly 'totalising' and too nomothetic to be relevant to a many-sided society. Relativism drifts toward solipsism as people appropriate 'rights' to assert strongly-held values. Whether secular or religious, they are usually more ideological than original. They concern gender, sexuality, class, race, skin colour, educational level, politics, energy sources, attitudes to the environment, culture, outlooks on social justice and many other intersecting categories. Critical thought about human futures is less common.

In atomised, neoliberal democracies, individuals are encouraged by enablers of identity politics to disseminate their thoughts, claims and censures. The rise of social media has allowed for extemporaneous comment upon, and disparaging of, views challenging progressive expression of headline categories. An efficient way to deal with contrary standpoints is to eliminate them from the outset, via a 'cancel culture' or 'de-platforming.' These initiatives act to banish not only an idea but also, *ad hominem*, the person putting it forward. Such is the mood that a *Journal of Controversial Ideas* has recently been launched in which at-risk authors can publish under pseudonyms or anonymously. Paradoxically, the censure continues despite calls for participative diversity to ensure a range of thought and opinion. This free-ranging and reproachful movement might engage any of the irrational cognitive biases rehearsed previously.

Unless acting as an outstanding 'influencer', the neoliberal individual can rarely match the clout of a collective. Nonetheless, corporations are being forced by coalitions of stockholders, customers and employees to acknowledge the spreading politicisation and respond to social media challenges by 'taking sides' on contentious issues, some sectarian in nature and others, regarding energy uptake and climate change, of wider impact. Against this mixed backdrop of

developments, Furedi (2021) argues that engaged ('woke') business is usurping social space and advocacy roles normally associated with politics, religion, and civil society, with the ability to turn workplaces 'into a university seminar room.' McGuinness (2021) then asks, 'why not give large companies the power to take policy decisions on behalf of the country?' As neoliberal enterprise free-rides on progressive thought, plutocracy and oligarchy would supplant democracy.

Overall, these trends appear removed from the early conviviality and promise afforded by social media. In a marketplace for ideas which can admit irrationality, it is a moot point how the forces of distraction and inaction might handle higher entropy, as economic and population growth pressures the natural environment in line with the IPAT equation. On that note, some prognostication regarding the world outside *The City of Grace* is indicated.

Population and sustainability: prognostications

Precepts

My 2020 urban manifesto critiques its own modelling, but there remain broader issues. From medieval times a literature has existed, often radical and sometimes apocalyptic, about the passage and future of humanity (cf. modern 'collapse' contributions by Ahmad et al., 1997; Diamond, 2007 and Goodrich, 2014). Rather than starting with this broad assemblage, *The Journal of Population and Sustainability* affords an enlightened platform from which to mount a prognosis about dystopia. Readers would remember the incisive ideas of Garrett Hardin (1968, 1974) about the tragedy of the commons and living on a lifeboat, along with the eminent works of Herman Daly (1977, 2005) on steady state and ecological economics. They might also recall the multilateral Brundtland Report (which defined sustainable development as a call to one generation to do nothing which could impact the welfare of future ones) (World Commission on Environment and Development, 1987). It was made at a time when the global population was 5.02 compared with today's 7.79 billion (Worldometers). These various references have been routinely ignored as humanity burdens its surrounding environment.

The first pivot to any viable prognosis has already been advised: suspend belief in the rational choice model and in 'progress'. Similarly, much received ideology could be set aside as dysfunctional and too static in a turbulent environment. Since the internal (labour) and external (environmental) constraints upon

humanity apply worldwide, also suspect are sources which fail to take a high-level systemic view (i.e. involving global geo-economics or geopolitics) or which (like city planning) offer micro-level solutions to macro-level problems. Social media posting facilitative ideas might be able to advance welfare but, so far, it has suffered generous servings of self-infatuation, punctuated by trolling, grievance, and unauthorised data gathering by sponsoring platforms or hackers.

The second prop is to acknowledge the conceptual power of systems thinking, especially at high levels of resolution. As it clarifies the status and roles of entities relevant to sustainability, this technically-oriented analysis has little time for relativism, obscurantism or flaccidity. Once the foundations of rationality in individual human behaviour are established, its collective application should be recognised to enquire whether whole groups and populations are acting accordingly (Ball, 2005: 372-73). Writ large, and as a keynote of this rejoinder, the dimensions of rationality and irrationality introduce a new level of systemic enquiry into social agency and potential failure modes.

Any forward view must acknowledge humanity's constantly turning treadmills. The most important is global population growth of around 81 million, or 1.05 per cent per annum. Another is technological advance (total factor productivity) which Shackleton (2013), over the first decade of the new millennium, estimated at circa 1.5 per cent each year. Some might hope, from the IPAT equation, that the rate of technological change should compensate for the pace of population growth, but the former is subject to much risk, including loss of intellectual property and difficulties in engineering further breakthroughs. Human reproduction, multiplied over, is much easier and capable of delivering proximate results. Further, some applications of technology can have little effect in offsetting demographic impacts.

Mitigation according to IPAT

The IPAT equation should be strongly defended against relativist, idiographic and irrational challenges. It offers the best base upon which to interpret the human trajectory. Let us consider it, P-A-T, element by element. Although these independent variables are strongly interrelated, population (P) is a key to long-term sustainability (Bradshaw and Brooks, 2014). Complacency could ensue, in that the rate of global demographic increase is falling. Even so, it is unlikely to stop absolute human numbers reaching 10.9 billion by 2100, nearly 40 per cent greater

than the present count (Worldometers). Only writers as ebullient as the (late) expansionary economic demographer, Julian Simon, might hold that, even if jobs were abundant, such a gain would lower human stress and ease environmental loads. The thesis is apparently that more minds produce more solutions – but, in real life, the stock of brainpower might be less than fully utilised.

The immediate appeal of affluence (A) is most probably even greater than that of technology. Most people are risk and loss averse, few opt for an ascetic poverty, and even fewer for a return to hunter gathering or feudal serfdom. The wage freezes after the global financial crisis have seen numerous populations despair and search for reasons. Putative causes in the realm of capital have been assembled in this article. Popular silence ('keep calm and carry on') does not preclude a call for scapegoats and doubtless engenders some of the divisiveness observed in WEIRD societies.

Typified in the writings of Herman Kahn and co-authors (1972) is the view that the future will be infused with greater technological (T) advance, an apotheosis of progress to date. Though comforting, the idea has some problems. One is technology's ongoing substitution of capital for labour since, as remarked by Finn Bowring (2002), the aim of the most efficient enterprises is the elimination of work. Technology could also run into physical asymptotes, as in there being no further process or product improvements possible (for instance, in household cutlery?). Nor might there be room to imagine new goods or services (which would at least check the affluence (A) element of the IPAT equation by limiting consumption). Another daunting thought is that, if technology were to solve current impact (I) challenges of greenhouse gas emission, there would be little to stop growth-obsessed nations arguing that the threat of climate change had passed and thereafter they could continue to increase and densify their populations. This prospect would disconcert the Australian environmentalist, Ian Lowe (2005, p.84), who writes that, 'there is no prospect, even in principle, of a sustainable society if population continues to grow.'

Close-up on population

As distinct from a prevailing growth fetish, precautionary views on demography and economics might be held contrarian but, in future, their inherent realism could emerge. In one failure mode, chaos could involve millions – why not billions – of

people unemployed. In another, it could consist of global warming of more than two – well, say four – degrees Celsius. Hardin (1974) paints a sad picture of those unable to sustain their most basic Maslovian needs of shelter and nourishment. Such prospects are squarely at odds with the intergenerational proclamations of the World Commission on Environment and Development (1987). Very likely, given the shortfalls of technology and affluence, a slowdown or reversal in human numbers is the most efficacious, perhaps the only, way to ensure future welfare. In any country, that move would be hindered by labour immigration, irrationally engaged as if capital substitution were no longer in operation.

Confronting the obstinacy of various religious and political organisations, the case for population control has been raised over some 50 years by ecologically aware authors (e.g. Ehrlich and Harriman, 1971; Lowe, 2005). It would desirably involve ‘carrot’ incentives until a high-entropic phase necessitated ‘stick’ solutions. The latter might be hard to imagine in WEIRD societies but famines before the reforms of the later 20th century influenced demographic controls in the People’s Republic of China and they proved effective.

In this journal and her foregoing book, Sarah Conly (2016) has thoughtfully debated some of the relevant instruments. Various leads also appear in *The City of Grace*. A least-worst and still partly ‘carrot’ approach would raise the opportunity (and probably the actual) costs of successive births to privatise rather than socialise procreation (cf. Landsburg, 2007 pp.153-55). Daly and Cobb (1989 pp.243-44) propose a quota (‘far less harsh than the Chinese plan’) with transferable reproduction rights. Jeremy Rifkin (n.d.) has sensibly suggested that extension of electricity supply would improve vocational opportunities for women and so constrain reproduction. The same goals have been pursued per media of education and employment by Cohen (2008), Barakat and Durham (2014), Lutz et al. (2019) and Vollset et al. (2020). Alexander and Gleeson (2019 p.192) call for a global fund to minimise unplanned pregnancies and, simultaneously, the abolition of all incentives toward population growth.

Following these authors, more ideas could be added, though a whole book of proposals would be more apposite. Given that world GDP presently approximates \$US80 trillion per annum – actual *turnover* much greater – it could be worth imagining how far a budget of around one per cent (e.g. \$US 1 trillion) might

extend as a yearly insurance premium to check global demographic increase and thus have an impact on human-environmental sustainability. If a rationale for large family size in traditional societies is surety for parents in old age, could other safety nets be devised? How many elderly people in underdeveloped countries with high population growth rates could be supported by subventions of say, \$US 2,000 per annum? This amount approximates annual per capita GDP in some of the poorest nations where life expectancy is anyway constrained. Fifty million people would claim \$US100 billion: 500 million (around half the world's population aged over 60) would require \$US 1 trillion. Moral hazard might emerge, and the financial sum is estimable, but the subvention could be a small price to pay to avoid systemic phase shifts and possible demographic chaos. It pales into insignificance compared with the \$US16 trillion outlay on the COVID virus to October 2020 in the United States alone (Cutler and Summers, 2020).

At the other end of life, the aim is to restrain some of the world's 80 million net population gain per year – logically, the 'target market'. Indirectly, it could be made widely known that women disproportionately bear the costs of childrearing, much in the lost compounding of foregone wages (and pension contributions should they exist) (Gittens, 2007). More directly, \$US 1 trillion would energise effective family planning, often significantly hampered by a lack of contraceptive aids. Sadness can engulf couples unable to have children but can likewise accompany unplanned or excess pregnancies. Checking them would be a primary objective, despite the aspirations of pro-natalist administrations. Such practical measures are put in the 'too hard' or 'complicated' basket by conservative or obfuscating politicians in countries which could be either donors or recipients of financial assistance. Today, rapidly growing nations appear as unable to manage population problems within their borders as they are to stop emigration (cf. Peterson, 2017). Pareto inferior, large-scale movements offer no real solutions and might only scupper the rationale of other countries to manage their own fertility. Better to tackle the issue at source.

Conclusion

This rejoinder to *The City of Grace* has enabled speculation on potentially dystopian outcomes in the neoliberal world. Just as the treatise on the City set prior precepts aside, this article has urged suspension of belief in comfortable social axioms. The most widespread and seductive is the assumption of a

prevailing rationality (and improvement) in human affairs. The current foray into irrationality uncovers some of the shortcomings of such orthodoxy.

Outside *The City of Grace*, two failure modes in contemporary human development were identified. The one inherent in the socioeconomic system, which concerns labour dynamics, is scarcely touched upon in the literature. It imbricates into the external threat involving human-environmental relations, which is well understood but incompletely addressed. The focus on carbon emissions attempts to reduce the (I) of the IPAT equation through (T) technology, but leaves the key variable, (P) population unconstrained. Greater understanding is available through a systems approach which exposes essential elements, sidesteps relativism and eschews overbearing ideologies such as Margaret Thatcher's imperative regarding neoliberal globalisation – TINA, 'there is no alternative'.

The foundations of dystopia are not impenetrable once conventional shibboleths are set aside. To this end, the building blocks of the growth fetish were investigated. It was observed that pronatalist and pro-immigration calls overlook major changes in the means of production in advanced societies, via which technological substitution of other factor inputs for labour is likely only to expand. Abetting popular polarisation in WEIRD nations and a lack of strategic focus in social media, contemporary economic and demographic advocacy appears substantively irrational as the respective trajectories push further into resource constraints.

Invoking the IPAT equation, the analysis found that technology (T), though applauded by sections of society, can be an ambiguous influence, since its ultimate end in production is the diminution of work. Leaders who support reduction in affluence (A) are misreading human aspiration and will be disregarded. The societal objective is neither to retreat into poverty nor create unimaginable riches, but instead equitable and sustainable real per capita wealth. The environmental failure mode could be avoided by reducing population (P) pressure on the planet, though falling numbers are not going to address emerging imbalances from capital substitution in production. In this way, the two failure modes studied here are linked.

The article has tested certain means to deal with entropic tendencies in neoliberal human development. Unless technological advance and dynamics in the factor

mix falter, it is hard in a globalised and highly-integrated market to see how the labour disjunction outlined here can be readily avoided. The specific remedy relying upon cutting-edge technology proposed in *The City of Grace* would be hard to scale up in what could be a zero-sum game. Individual countries which, in a protectionist vein, withdrew from unrestricted engagement with the world would probably experience politically unpalatable declines in affluence. This is a research frontier inadequately contemplated, except in management reports which often exhibit unsubstantiated foresight into, or optimism about, the future of the workforce. The issue requires critical consideration and a new generation of pragmatic scholars, just as contrarians switched on to the natural resource dilemma in the late 20th century.

With herculean effort, the environmental crisis might be solvable if societies were less focused on internal division and state and non-state conflict, and more on fundamental labour and population (P) issues. There will always be free-riders sponsoring expansive and ill-advised policies and arguing that the maxim, 'demography is destiny', still applies positively rather than negatively. No country can overcome the environmental impasse alone, the more so when situated at the edge of chaos. At that point, world governance might be the only panacea, maybe under more authoritarian auspices to enforce necessary 'stick' measures.

In conclusion, foibles and folly seem hard-wired into human endeavour. On the drive through life, reason is assigned the back seat. Many uncertainties attend the high-level systemic quandaries reviewed in this article. Hence, the imputation of dystopia outside *The City* should stand.

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