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EDITORIAL INTRODUCTION:

Public understanding, conflict and power in the population and sustainability nexus

David Samways

As I write this editorial, COP28 has just concluded. Hosted by the UAE and presided over by the CEO of the Abu Dhabi National Oil Company, this COP has rightly been regarded with greater scepticism by environmentalists than many previous to it, yet, astonishingly, it is the first to officially recognise the burning of fossil fuels as the (proximate) cause of the climate crisis. Amongst other items in the final communique was the pledge of an extra $400 million to assist vulnerable countries with the effects of climate change. Whilst bringing the total in the 'loss and damage' fund to $700 million, this represents only a tiny fraction of the estimated $400 billion needed (Richards et al. 2023) and somewhat shamefully amounts to only ten per cent of the cost of building the COP28 venue in Dubai.

While the level of consumption, especially of the most affluent, is cited as the most significant factor in the generation of the environmental crisis (Steffen et al. 2015), population growth is universally acknowledged in the scientific literature as a significant indirect driver of present and future trends[1] (Brondízio et al., 2019; Almond et al. 2022; IPCC, 2022). Importantly, the majority of future population growth will take place in the least affluent countries, many of which have the lowest carbon footprints but are also the most vulnerable to the effects of climate change. Lowering the rate of population growth in these emerging

1 Somewhat understandably, reducing population growth has not been considered as a policy instrument at the COP meetings since, although addressing population growth will lower emissions in the longer-term (Bongaarts and O'Neill, 2018), population momentum means that the change in population size will take too long to address the imminent crisis (Bradshaw and Brook, 2014).

economies will have multiple benefits for human welfare and for the environment (including longer-term carbon emissions) (see *JP&S* **7** (2)). Decreasing fertility rates are closely correlated with economic and social development, including the education and empowerment of girls and women (Bongaarts and Hodgson, 2022) and a number of models have shown that lower than projected global population sizes accompanied by reduced environmental impacts and greater sustainability are possible (Raihi et al. 2017; Vollset et al. 2020; Callegari and Stoknes, 2023). Tackling global inequality via the transfer of wealth and technology to less developed countries is acknowledged as central to achieving the most favourable welfare and environmental outcomes (Callegari and Stoknes, 2023).

The COP loss and damage fund is potentially an important contributor to the overall welfare of the least developed countries most vulnerable to climate change, yet clearly much more needs to be done. According to Callegari and Stoknes (2023), if their 'Giant Leap' scenario were to be followed, institutions of collective long-term economic decision making could eliminate poverty and substantially reduce the risks from Earth system shocks. Moreover, following this scenario would mean population peaking at 8.5 billion in 2040 and falling to 6 billion by 2100 with average global temperatures kept under 2°C above preindustrial levels. Yet, while they conclude that increasing taxation of the wealthiest ten per cent of the global population by between four and eight per cent will raise sufficient funds to execute the Giant Leap, it is important to recognise that the richest ten per cent of the population consists of all those earning above €37,500 PPP (Chancel et al., 2022). With the appearance of what has been dubbed the 'green backlash' or 'greenlash' (Marsh et al. 2023), it is more important than ever to communicate to the public the extent and risks of the environmental crisis but also the global connectedness and complexity of the crisis and its possible consequences. To a greater or lesser extent, the diverse articles collected in this issue of the *JP&S* all speak to these issues.

Although no consensus exists about their relative significance, the multiple determinants of falling fertility in developing countries are well known to demographers. However, if fertility transitions are to continue and accelerate the public understanding of the determinants, argue Götmark and Wetzler in their article published in this issue of the *JP&S*, may be critical. This is the case for citizens in both developing and developed countries. Notwithstanding

the question of what policy instruments are the most effective, in democratic countries public understanding and support for population and development policies can influence government's propensity to fund them. Similarly, personal reproductive choices may be influenced by public understanding of the causes of fertility decline. Yet little is known about public perceptions of the causes of fertility decline and Götmark and Wetzler's article sets out to investigate what educated people in a developed country (Sweden) and a developing country (Nigeria) understand about the causes of falling fertility in developing countries.

The results of their research showed that the vast majority (72 per cent) of Swedish respondents believed that economic and social development including improved education and reductions in infant mortality were responsible for declining fertility in developing countries. While Swedish responses were largely as expected, the responses of the Nigerian participants were somewhat perplexing since they believed almost the opposite to be true: that declining birth rates were the result of poverty, bad socioeconomic conditions and poor health. Götmark and Wetzler suggest that these results reflect the well-publicised Swedish international aid programme and the expressed preference for large families in Nigeria. Interestingly, family planning (FP) and contraceptive use were not cited as particularly significant factors by either Swedes or Nigerians (FP 1.9% and 5.9% respectively; contraception 10.3% and 3.7% respectively). Given the importance of international aid in the fertility transition, Götmark and Wetzler recommend more research is required to further explore the disparity in beliefs about fertility decline between citizens in developed and developing countries.

Chukwudi Njoku, Joel Efiong and Stefano Moncada's contribution to this issue examines the well documented conflicts between pastoralists and settled farmers in the Mid-Benue Trough in central Nigeria, illustrating the complexity of the interactions of demographic factors, environmental change, socio-economic conditions and cultural factors. Many scholars have attempted to identify the primary causal factors involved in the conflict which has caused destruction of property and led to the deaths of thousands of people and the displacement of many thousands more. Yet Njoku et al. observe that no conclusive evidence exists to show the relative significance of environmental, socio-economic, political, cultural, ethnic and religious factors on the lethality of the conflicts.

Using data from secondary sources, their multinomial regression analysis included covariates of climate change, economic development, population density, political violence, terrorism and ethnicity. From this nexus of factors, ethnic diversity and polarisation was found to have had the greatest effect on the lethality of conflicts. They note that the effects of climate change and low levels of economic development correlate well with incidents of lethal pastoralist-farmer conflict. However, where others have claimed high population density as a cause they find the opposite, with low population density forming part of the context for a greater number of lethal conflicts. They suggest that this supports the hypothesis that rural population growth is exceeding the capacity of the available land to support pastoralists, leading to increased conflict as pastoralists move into less densely populated areas and compete with established farmers for land. Importantly, while Njoku et al. find ethnic polarisation to be the most significant factor in the lethality of pastoralist-farmer conflict, they are clear that climate change, demographic, economic and political factors should not be disregarded. Indeed, they note that ethnic diversity itself is not a cause of conflict but 'can emerge as a major fault line for violent conflicts when it gets linked to other social, economic and ecological processes in a problematic way'.

Our third article by João Aldeia considers Michel Foucault's work on biopolitics in the context of mass species extinction. The structure and operation of power was a theme visible throughout Foucault's work. He contended that, from the seventeenth century, the nature of power shifted from disciplinary power to 'biopower' directed towards humans as living beings. Biopower, Foucault argued, was concerned with the administration life and operated at both an individual level (what he called the 'anatamo-politics of the human body') and social institutional level (Gutting, 2005). The latter is biopolitical, since social institutions operationalise biopower at the population level with areas of concern such as the birth rate, life expectancy, migration, public health, housing and so on. Foucault's notion of biopolitics encompasses attempts of state institutions to control population size both through pro-natalist and anti-natalist policies which aim to strategically manipulate reproductive choices (Coole, 2018). In addition, the control of national borders and the movement of people is also within the purview of biopolitics.

Aldeia argues that rather than being concerned with life, modern biopolitics is intrinsically 'thanatopolitical' – in his words: 'it is a politics of life based on a politics

of death'. For Foucault, disciplinary power is based upon the use or threat of death, but biopolitics is concerned with the promotion of life with death subordinated to a secondary role in the exercise of power. Observing that Foucault's ontology is Cartesian and anthropocentric, Aldeia argues that his concept of biopolitics treats the non-human environment as simply a *milieu* and fails to fully recognise humankind's entanglement with and dependency upon other species. Moreover, Foucault's Cartesianism passively accepts the notion of the human mastery of nature. Aldeia therefore contends that biopolitical state practices concerned with promoting ways of life for particular populations (mainly those of the affluent Global North) have necessarily led to mass deaths of non-human (both wild and domesticated) species – hence modern biopolitics is actually thanatopolitical. The recognition of the thanatopolitical nature of modern biopolitics is the first step towards creating a truly multi-species biopolitics that nurtures all of life. However Aldeia notes:

> for life as a whole to be nurtured in the long term, healthy multispecies entanglements are essential, and these are not compatible with the unchecked growth of any single species – no more than they are compatible with mass consumption, unchecked industrial production or the current scale of global movement of humans, non-human species and things. Hence, an emancipatory biopolitics cannot be premised on unrestrained pronatalism or unlimited economic growth since this sooner or later disrupts local multispecies homeostasis.

Aldeia's sentiments are echoed in our final 'Perspective' article from Lynn Lamoreux and Dorothy Bennett who observe that, despite the warnings about the its scale and extent, public opinion has failed to grasp urgency of the ecological crisis. They argue that this is due to five factors: an outdated, misleading view of evolution; a belief that technology will solve the problem; ignorance about human population size as a major cause; an underestimation of the consequences of environmental change and a belief in our ability to adapt; and the role of social media in fostering the expectation of simple answers to complex problems.

Lamoreux and Bennett outline modern evolutionary theory and, through the concepts of the biosystem and corposystem, systemically interrogate the unsustainability of present human relationships with the environment. They define

the biosystem as countless interacting and overlapping ecosystems evolved over billions of years which together, via their emergent properties, function to sustain life. The corposystem refers to the global market-orientated social and economic system which has become the dominant human social system. While the biosystem's function is to sustain life, Lemoreux and Bennet argue that the corposystem functions to produce growth and profit through competition and domination. Perpetual growth is intrinsic to the corposystem and the idea that growth is necessary has become normalised over time. However, the growth of corposystem is now in conflict with the ability of the biosystem to evolve, adapt and continue to function sustainably. Lemoreux and Bennet show how the aforementioned five beliefs are mistaken. In particular, they argue that technical fixes will not avert catastrophe since the underlying cause of the environmental crisis is human overpopulation. While acknowledging that tackling per capita consumption in the rich world is crucial, they argue that if the size of the human population is not humanely addressed then environmental change will impose enormous suffering and involuntary population reductions.

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