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Reproductive Liberty and Overpopulation

CAROL A. KATES

*Department of Philosophy and Religion
Ithaca College
Ithaca, NY 14850, USA
Email: kates@ithaca.edu*

ABSTRACT

Despite substantial evidence pointing to a looming Malthusian catastrophe, governmental measures to reduce population have been opposed both by religious conservatives and by many liberals, especially liberal feminists. Liberal critics have claimed that 'utilitarian' population policies violate a 'fundamental right of reproductive liberty'. This essay argues that reproductive liberty should not be considered a fundamental human right, or certainly not an infeasible right. It should, instead, be strictly regulated by a global agreement designed to reduce population to a sustainable level. Three major points are discussed: 1) the current state of the overpopulation problem; 2) the claim of a fundamental human right of reproductive liberty; 3) an outline of a global agreement to address overpopulation as a 'tragedy of the commons'.

KEY WORDS

Overpopulation, reproductive liberty, tragedy of the commons, Malthus, Kerala

1. THE HARM OF UNSUSTAINABLE POPULATION AND CONSUMPTION¹

In 1996, the Ecological Society of America hosted a major conference on population growth which concluded: 'There is general agreement throughout the scientific community that growth of the human population, and the resultant increase in consumption, is exerting an unsustainable amount of pressure on global [eco] systems' (Kearns 1997: 163). This warning echoed the concern raised by the U.S. National Academy of Sciences in 1994 that 'Humanity is approaching a crisis point with respect to the interlocking issues of population, natural resources, and sustainability' (NAS 1994). In 1992, the U.S. National

Academy of Sciences and the Royal Society of London issued a joint statement warning that science and technology could not be counted on to avoid *irreversible* environmental degradation and widespread poverty (NAS 1992). The same year, the Union of Concerned Scientists issued a 'World Scientists Warning to Humanity' signed by 1,600 of the world's top scientists, including 102 Nobel Prize winners, saying that destructive human activities 'may so alter the living world that it will be unable to sustain life in the manner that we know', and that human behaviour must change 'if vast human misery is to be avoided and our global home on this planet is not to be irretrievably mutilated' (UCS 1992).

The U.N.'s revised 2000 population projection estimated world population (about 6.3 billion in 2003), would swell to between 7.9 and 10.9 billion by 2050. The medium estimate² of 9.3 billion by 2050 was expected to stabilise at about 10 billion by the end of the century, or, on the high estimate, about 12 billion (UNPD 2001; Bongaarts 2002). Contrary to the common perception that the medium forecasts are 'more probable' than the low or high estimates, a recent National Research Council study concluded that a 95-percent prediction interval for world population in 2050 would extend from 7.9 to 10.9 billion (NRC 2000: 10,191).³

The U.N.'s 2002 population revision projects a world population of 7.4 to 10.6 billion by 2050, with a medium estimate of 8.9 billion (UNPD 2003). The estimate reflects the judgment of demographers assembled to advise the Population Division in March 2002,⁴ taking into account evidence of a worsening impact of HIV/AIDS and indications that the total fertility rate (TFR) in intermediate-fertility countries⁵ may fall below replacement level before 2050. However, at that meeting, Joseph Chamie, Director of the Population Division, stressed that 'world population growth is not over ... Population momentum⁶ will cause world population growth to continue for many decades even if the level of fertility in the intermediate-fertility countries falls below replacement by 2050' (UNPD 2002: 19). Griffith Feeney, conference rapporteur, presented an overview of conference themes and emphasised the point that: 'We have not seen the end of huge population growth ... We are in the middle of a century of rapid world population growth. The end is in sight, but it is still at least 50 years away. To dismiss world population growth as a fundamental issue for the future of humanity is absurdly short sighted and could incur a terrible human cost' (UNPD 2002: 21).

The demographer John Caldwell also expressed fear that complacency about a smooth demographic transition⁷ could jeopardise critical support for population programmes, which in turn could make the difference between a future population of 8 or 12 billion people (Caldwell 2002: 72, 73, 78). 'My point ... is that the rich nations should still be primarily concerned with world population growth ... The peak global populations could range between 9 and 12 billion ... With regard to the long-term stability of the world's ecosystems and our ability to feed everyone adequately and to give them a reasonably good life, that margin

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of 3 or 4 billion extra people may be critical' (Caldwell 2002: 75).

Population in the developed regions will remain virtually constant (or even fall), until 2050, but less developed countries are projected to grow from about 4.9 billion in 2000 to some level between 6.3 and 9.3 billion in 2050. Population in the 48 least developed countries will double or triple, from about 668 million in 2000 to somewhere between 1.4 to 2 billion in 2050. Africa will grow from about 13% of world population in 2000 to over 20% by 2050 (UNPD 2003: Table 1). John Bongaarts has underlined the point that 'the historically unprecedented population expansion in the poorest parts of the world continues largely unabated' (Bongaarts 2002: 68).

Development organisations such as the International Monetary Fund (IMF) typically prescribe 'sustained and rapid economic growth' through the creation of 'market-friendly institutions' as a cure for poverty (IMF 2000: 185). Problems associated with rapid population growth (resource scarcity, environmental damage), are thought to stem from poor economic and social policies, which can be resolved by better technology and further economic development.⁸ Developing nations are urged to improve their productive capacity and incomes through market reforms, free trade, and adoption of new technology (IMF 2000: ch. 5).

There are at least two major ecological objections to this growth prescription. William Rees, drawing upon the concept of an 'ecological footprint'⁹ as a measure of the environmental impact of human population and consumption, has concluded that aggregate human load (resource harvesting and waste generation), 'already exceeds, and is steadily eroding, the very carrying capacity upon which...continued humane existence depends' (Rees 1996: 199). Thus, even if every nation on the planet rapidly adopted 'efficient' free market and free trade policies, and even assuming such policies 'worked' to accelerate global economic growth, the result, given current and, certainly, projected population levels, would be an impossibly large ecological deficit.¹⁰ Edward Goldsmith warns that the Western life-style of mass-consumption is 'ecologically doomed', because 'the biosphere is incapable of sustaining all six billion of us at the consumption levels of the North' and, if human demands are not reduced, the planet may become 'incapable of sustaining complex forms of life' within fifty years (Goldsmith 1996: 81).

Humanity's ecological footprint has been estimated to exceed long-term global carrying capacity as much as 40% (Rees 2002: 40).¹¹ Humanity currently appropriates over 50% of the Sun's energy captured by the entire plant biomass on Earth each year (Pimentel et al. 1999: 30). William Rees estimated that if the world population of 5.8 billion (in 1996) lived at *unsustainable* North American consumption levels, two additional planet Earths would be required to accommodate the ecological load. With a population of 10 or 11 billion, 5 additional Earths would be needed simply to maintain the present rate of ecological *decline* (Rees 1996: 210).

The second objection is that technology cannot provide substitutes for all

scarce, and critical, resources (Pimentel et al. 1999), or reduce human load to a sustainable level without reductions in population or consumption. Some ecologists estimate that sustainability would require a reduction of up to 50% in the demand currently imposed on ecosystems (Rees 2002: 41). Technology to achieve this goal does not appear to be on the horizon. Therefore, prudence suggests a direct focus on eco-compatible population and consumption levels. If the optimists turn out to be right, reducing population and consumption will have made the planet healthier and less crowded. But if they are wrong, the planet, and our own species among others, will pay an unacceptable price for growth.

Optimistic economists argue that the neo-Malthusian perspective¹² in claims about 'carrying capacity' limits for human population reflects excessive pessimism (i.e. 'alarmism') (UNPD 2001a: 75–76; Sen 1996). The UN's *World Population Monitoring 2001* report asserts that environmental harm is caused by a number of factors, including population, consumption, technology, and social-institutional factors, and that it's not possible to assign exact measures of blame to each variable (UNPD 2001a: ch.4, 8, Annex II). Moreover, since estimates of carrying capacity have ranged from 1 to 1,000 billion people, the report questions the credibility of this approach (UNPD 2001a: 30–31). For example, a 1994 Food and Agriculture Organization (FAO) study concluded that with 'high inputs to agriculture such as full mechanisation and optimal application of fertilisers and chemical controls for pests, diseases and weeds' *developing countries* had a carrying capacity of 33 billion people (UNPD 2001a: 76). (Do such estimates undermine the FAO's credibility?) However, despite the constant appeal to 'mediating factors', the report acknowledges the reality of significant environmental damage from agricultural intensification, the unresolved problem of global warming, a pessimistic outlook for commercial fish stocks, water scarcity, and loss of forests and biodiversity, all of which have at least some relation to population pressures. 'Ecosystems of all kinds are under pressure worldwide' (UNPD 2001a: 20). The report concedes that 'whether mediated by technology or by markets and social institutions, there is no doubt that population growth ... affects the environment resource base' (UNPD 2001a: 78).

The debate between neoliberal economists and neo-Malthusians is especially sharp with respect to prospects for food security. Optimistic economists have claimed that 'there is, in fact, no significant crisis in world food production at this time [2000] ... there is little room for any great pessimism that food output will soon start falling behind population growth' (Sen 2000: 206–9). However, the production models underlying this optimism assume factor substitutions and market mechanisms can overcome ecological limits. Ecologists, in contrast, take into account biophysical constraints and the long-term sustainability of land intensification. As (agricultural ecologists) David Pimentel and Mario Giampietro put it,

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Some agronomists and many economists generally see no problem in feeding 10 billion people on our planet ... whereas ecologists argue that the current population level is already too numerous given ... environmental resources. Regarding these different outlooks ... economists and ecologists are simply saying different things. What is considered technologically feasible by agronomists and economists, that is maintaining or improving current yields per hectare ... by relying more on technology, fossil energy, soil degradation, and depletion of underground water reservoirs, is not sustainable in ecological terms ... these, so-called, technological fixes are not sustainable in the long run because they are (i) not ecologically compatible with the earth's resources; and (ii) are based on the depletion of fossil energy stocks, which are finite. (Pimentel and Giampietro 1994: 14–15)

Although Sub-Saharan Africa has the worst prognosis for environmental degradation, food shortages, disease, political instability and violence (FAO 2002; CIA 2001), there are studies warning that *developed* countries, including the U.S., will also face a Malthusian trap within several decades if populations are not reduced. The argument is that as global population increases and environmental constraints on arable land, water, and other resources erode world food surpluses, the U.S. will be one of only a few countries with enough arable land to have the possibility of self-sufficiency in food production (Pimentel and Giampietro 1994: 1, 14). Some ecologists estimate the maximum population size that could be fed a reasonably diverse and nutritious diet of plant and animal products is 350 million. However, an optimal population size for the U.S., which would allow an *ecologically sustainable* form of agriculture, is about 210 million (Pimentel and Giampietro 1994: 26, 28). However, U.S. population, (294 million in 2003), is expected to be between 355 and 470 million by 2050 (UNPD 2003).

Some ecologists have also calculated an optimal carrying capacity for the Earth, which would allow everyone on the planet to enjoy a European living standard without causing environmental harm: approximately 2 billion people (Pimentel et al. 1999: 32). But, if world population grows to 10 or 12 billion people, that will create a 'dire situation,' with 'catastrophic' health and environmental problems (Pimentel et al. 1999: 33).

Biodiversity loss may pose the greatest direct threat to human survival, if it destabilises the biosphere and interferes with recycling of such vital elements as carbon, nitrogen, and phosphorus (Pimentel and Giampietro 1994: 2). The end result of the accelerating, and *irreversible* extinction of plant and animal species could be 'wholesale ecosystem collapse' (Brown 2000: 8). A RAND report on population and environment which discussed FAO land-use projections noted, among other problems, if current rates of forest clearing continue, '*one-quarter of all species on Earth could be lost within the next 50 years*' (RAND 2000).

Rates of species extinction, which appear to be accelerating, (UNEP 2002: 298) have been described by leading scientists as 'appalling' (WS 1997). On one estimate, one species extinction occurs every 20 minutes (Levin and Levin 2002: 6). 'Estimates of present extinction rates range from 100 to 1,000 times normal, with most estimates at 1,000. The percent of bird (12), mammal (18), fish (5) and flowering plant (8) species threatened with extinction is consistent with that estimate. And the rates are certain to rise—and to do so exponentially—as natural habitats continue to dwindle' (Lovejoy 2002: 70). Ecologists estimate that half of all living bird and mammal species will be gone within 200 or 300 years (Levin and Levin 2002: 6). These exceptional losses qualify the present as an era of 'mass extinction' (Levin and Levin 2002: 6).

In sum, population *reduction* appears to be necessary first, to stave off a Malthusian catastrophe already unfolding in poor countries; second, to prevent a similar scenario in developed countries; third, to prevent a serious risk of wholesale environmental collapse which would threaten the survival of humanity; and fourth, to allow the possibility of roughly equal, desirable, and ecologically sustainable living standards throughout the world. The evidence of a large and accelerating ecological deficit does not suggest that simply reducing consumption will be sufficient to provide a desirable and environmentally sustainable life for everyone at current, much less projected, population levels.

While scientists debate the precise carrying capacity of the planet, the increasing risk of ecosystem collapse urgently requires our species to resolve a dilemma which Garrett Hardin called 'the tragedy of the commons' (Hardin 1968). The environment, with its ultimately limited resources of land, clean air and water, food, and so on, is treated as a 'commons' when it is viewed as an unpriced asset which may be freely used by all. The inevitable result of this *laissez-faire* approach is the eventual exhaustion of shared resources, as each individual acts to maximise his gain. Hardin applied this analysis to population ('freedom to [over] breed'), though it is easily generalised to include a system of production and consumption which in a similar way exploits the environment as a 'free good'. The solution is an enforceable rational agreement to regulate the commons, that is, 'mutual coercion mutually agreed upon' to limit reproduction and, by extension, the unsustainable use of environmental resources in production and consumption.

However, population programmes have been strongly opposed by many religious conservatives and by an influential bloc of left-liberal and feminist advocates of 'reproductive liberty'.

2. REPRODUCTIVE LIBERTY AS A FUNDAMENTAL RIGHT

The 1994 UN International Conference on Population and Development in Cairo proclaimed a human rights foundation for 'reproductive rights', recognising:

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the basic right of all couples and individuals to decide freely and responsibly the number, spacing and timing of their children and to have the information and means to do so, and the right to attain the highest standard of sexual and reproductive health. It also includes the right of all to make decisions concerning reproduction free of discrimination, coercion and violence as expressed in human rights documents. In the exercise of this right, they should take into account the needs of their living and future children and their responsibilities towards the community. (UNICPD1994: para.7.3)

However, the conference bowed to conservative religious opposition, especially from the Vatican, by endorsing the position that abortion should never be used as a family-planning method (Weigel 1995).¹³ The Cairo statement on abortion was incorporated into the European Union's 1997 statement of policy for aid to population programmes in developing countries (Council Resolution 1484/97), which asserts that abortion should never be used as a family-planning method (Schiele 1999: 163).

In 1998, so-called 'Christian' morality triumphed in the U.S. when Congress withdrew all funding for the U.N. Population Fund, the main source of international family planning aid (UNFPA 1998). This act reinstated the Reagan policy, announced at the 1984 UN International Conference on Population in Mexico City, barring aid to any family planning programmes which offered abortion services (Dixon-Mueller 1993: 72–6). The Mexico City policy was reaffirmed by President Bush shortly after he assumed office. In July 2002, the Bush administration withheld \$34 million in previously approved aid to the Population Fund, and at a December 2002 regional family planning conference in Bangkok, threatened to withdraw its support for the Cairo declaration because it endorsed the concept of 'reproductive rights' and support for 'reproductive health services', which could be construed as promoting abortion. The U.S. delegation also objected to 'consistent condom use' to fight AIDS and sexual diseases (Dao 2002; Kristof 2003).

Conservative Christian opposition to restricting procreation rests on the theory of natural law, especially as interpreted by Thomas Aquinas. In the thirteenth century, Aquinas asserted that (the Christian) God was the author of natural law, which is therefore morally binding on human beings. Aquinas believed the natural law had been expressed through revelation, but he also argued it could be discovered by reason. Reason must examine human nature, said to be universal and unchanging, to discover what is objectively good for us. If we discover a 'natural inclination', we can assume God intends (and has commanded) us to act on that inclination. Thus, since we have a natural inclination to preserve our life, we are morally obligated to do so, and suicide is a violation of natural law. And, since we have a natural inclination to engage in sexual intercourse, which naturally results in offspring, we are morally restricted to 'natural', i.e. procreative, sexual activities.

Natural law morality has been preserved in its present dogmatic form under the guidance of the Vatican, which supports the view that the (heterosexual) family, as a 'natural institution' serving the divinely sanctioned purpose of procreation, has rights which must be respected by the state. Birth control or abortion are unnatural, hence immoral, acts of interference with the reproductive function. Abortion also violates a natural 'right to life' attributed to a foetus.

Based on these assumptions, the Vatican has been waging a vigorous global campaign to resist both voluntary contraception or abortion and state population measures. The Church has addressed 'demographic [i.e. overpopulation] problems' as moral issues which are to be resolved (somehow) through 'the rights of man: respect, justice, peace, solidarity, love'.¹⁴

Among many liberals, the Cairo conference created a consensus that population policies must be based on the 'cornerstone' of human rights, that is, a right to reproductive self-determination (Abrams 1996: 1). Population programmes, which 'treated women instrumentally, as tools through which to implement population programs', are to be replaced by a health and rights approach which sees women as 'intrinsically valuable' (Shalev 2000: 39–40). The claim is that respect for reproductive liberty requires governments and international agencies to provide a full range of reproductive health services (including infertility treatment), and work to 'empower women' rather than attempting to reach demographic targets (Freedman 1995: 334–337; Rahman and Pine 1995: 407; Abrams 1996: 1,32).

A 'human rights' approach to reproduction would not permit a state to 'compromise' reproductive rights in any way by, for example, resorting to any form of coercion (Tuermen 2000: 32). 'Coercion' has been defined to include incentives or disincentives that compromise 'voluntary choice' (e.g. offering or denying money or significant social benefits to a poor woman), the imposition of 'psychological pressure' including group pressure and 'heavy propaganda' as well as forced sterilisation, abortion, or contraceptive use (Boland *et al* 1994: 100; Fathalla 1995: 1183; Abrams 1996: 7–8; Broomfield 1996). However, some liberals have argued that, 'because population policy assumes state regulation, direct or indirect, of reproduction, the very concept of a population program may be inconsistent with reproductive self-determination' (Abrams 1996: 22–3), and that a violation of human rights is 'inherent' in narrow efforts at fertility control (Boland *et al.* 1994: 99, 100). Thus, 'In terms of state population policy, the recognition of reproductive self-determination means that population programs must become [voluntary] family planning programs' (Abrams 1996: 31–2).

Some feminists have (objectively) lent support to religious conservatives by attacking family planning programmes. These feminists claim that *all* population policies, including subsidies for children and access to contraception and family planning, interfere with women's reproductive rights and ignore the 'true causes' of poverty and environmental degradation: militarism and consumerism

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(Schiele 1999: 164).¹⁵ Indeed, some feminists have ‘demonised’ population programmes,¹⁶ accusing ‘the population establishment’ of, at worst, promoting race- and class-based eugenics, and, at best, following an agenda which ignores their concern with empowering women (Petchesky 1990: ch.1, 2, 3: 116–125; Dixon-Mueller 1993: 77–8; ch.2).¹⁷ The ‘population movement’ has been faulted for focusing on lower population growth, rather than ensuring the right of women to control their bodies and lives: ‘... the ‘freedom’ of the individual to decide was, in the view of the population movement, readily limited by the ‘responsibility’ to make the fertility-limiting decision imposed by government population policies purportedly in furtherance of the public good [i.e. to control world population growth]’ (Freedman 1995: 336).

The assertion of reproductive self-determination as a fundamental right has been based on four key UN documents: the UN Charter (1945), the UN Universal Declaration of Human Rights (UDHR) (1948), The International Covenant of Civil and Political Rights (1966), and the International Covenant on Economic, Social and Cultural Rights (1966). These agreements constitute what has been called an International Bill of Rights, laying out a ‘modern’ conception of human rights (Boland et al. 1994: 90; Dixon-Mueller 1993: Ch.1; Hannum 1998). This rights doctrine has two distinct moral foundations. The first is the classic (seventeenth- and eighteenth-century) liberal theory of ‘natural’ or ‘inalienable’ individual rights, which is embodied in the English Bill of Rights (1689), the American Bill of Rights (1789) and the Declaration of the Rights of Man and of the Citizen passed by the French National Assembly in 1789 (Dixon-Mueller 1993: 5; Tuermen 2000: 33). The focus of classical liberal theory is protecting individual liberty, especially against government tyranny. The second foundation is a concept of ‘social entitlement, that is, the responsibility of society and the state to guarantee not only freedom of *opportunity* ... but also achievement of results’ (Dixon-Mueller 1993: 6). The second concept, which has been attributed to nineteenth- and twentieth-century socialist thought, (Dixon-Mueller 1993: 6) proposes a set of economic and social rights such as education (Article 26, UDHR), and the right to work, with just and favourable conditions of work and with just remuneration sufficient to ensure an existence ‘worthy of human dignity’ (Article 23). The fact that, for example, the United States has ratified the Political but not the Economic covenant underscores ongoing tension between liberal conceptions of individual political and civil rights and socialist ideals of economic and social entitlements.¹⁸

Although reproductive liberty is not specifically listed as an individual right in the UDHR, a variety of UN declarations, resolutions, covenants and conventions have been taken to justify the claim that reproduction within the family is a fundamental human right. Article 16 of the UDHR asserts that men and women have the right to marry and to found a family, and that the family is the ‘natural and fundamental group unit of society’, entitled to protection by society and the State. However, Article 29 states that everyone has duties to the community, and

that rights and freedoms are subject to limitations to protect the rights and freedoms of others and to ensure 'the general welfare'. Thus, the possibility of legitimate coercive limits on reproduction is not inconceivable although, in practice, the UN has chosen to rule this out.¹⁹ The 1968 UN International Conference on Human Rights (Teheran) passed resolution 18: 'Parents have a basic human right to determine freely and responsibly the number and spacing of their children and a right to adequate education and information in this respect.' The word 'responsibly' was inserted because of concerns about rapid population growth (Boland et al. 1994: 91, n.1; Shalev 2000: 60, n.4), suggesting a latent conflict about the precise boundaries of reproductive 'freedom'.

The UN specifically addressed women's reproductive rights within the family in 1981, when the General Assembly adopted the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW, or Women's Convention). Article 16.1.e requires State Parties to 'ensure, on a basis of equality of men and women: ... the same rights to decide freely and responsibly on the number and spacing of their children ...' The focus on the human rights of women, especially rights to personal reproductive autonomy and gender equality, was turned into a 'primary principle in the development of reproductive health and population programs' at the 1994 Cairo conference (Shalev 2000: 40). Cairo represented a paradigm shift in development efforts, away from a focus on population control, toward a model of 'empowering women' and support for a full range of reproductive health services.²⁰

Both leftists and feminists have emphasised the entitlement aspect of 'reproductive liberty', arguing that an abstract (classical liberal) right to choose 'means little when women are powerless' (Petchesky 1990: 11). The critical issue is 'the social and material conditions under which choices are made' (Petchesky 1990: 11). Thus, the state has an affirmative responsibility to create 'equality of conditions for reproductive choice', including a full range of social supports for bearing and raising children, equal pay and status for women in the work force, an end to racism, elimination of reproductively hazardous environments, and a cultural revolution which will transform gender roles and re-define the meaning of sex (Petchesky 1990: 395-7; Petchesky 2000).

Feminists underline a third element in the concept of reproductive liberty, namely, women's 'right' and need for bodily self-determination. Since it is in women's bodies that pregnancies occur, it follows that even in the most utopian, egalitarian society, women should retain the exclusive right to control their own bodies. Women have a 'pre-emptive claim' to reproductive autonomy with respect to abortion and childbearing (Petchesky 1990: 13, 400).

Rosalind Petchesky, a noted Marxist-feminist, has asserted categorically that 'reproductive freedom means the freedom to have as well as not to have children' (Petchesky 1990: 16). Pronatalist and antinatalist policies are unacceptable in a race- and class-divided society (Petchesky 1990: 16, 392). Petchesky argues that since there is no 'natural right' to procreate, collective social regulation of

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reproduction could be legitimate, but *only* given a context of ‘revolutionary social relations of reproduction’ (i.e. an egalitarian utopia), and even then the ‘right’ of women to control their bodies would rule out coercive sterilisation, abortion, or surgical, chemical or other bodily interventions for contraceptive purposes (Petchesky 1990: 400). The point is amplified by Correa and Petchesky (1994: 108, 114):

We are suggesting not that reproductive ... rights are absolute or that women have the right to reproduce under any circumstances ... [but we do not subscribe to] ‘the claim that women have a duty to society (or the planet!) to abstain from reproducing. Such a duty could begin to exist only when all women are provided sufficient resources for their well-being, viable work alternatives, and a cultural climate of affirmation outside of childbearing so that they no longer depend on children for survival and dignity ... And even then, antinatalist policies that depend on coercion ... would be unacceptable.

In the meantime, Petchesky defends the rhetoric of indefeasible ‘reproductive rights’ as a useful ‘discursive strategy’ (‘hortatory’ rather than descriptive or analytic), to create a narrative which empowers marginalised groups (women, blacks, gays and lesbians) in the political arena (Petchesky 1990: 395). It seems some Marxists have decided to pin their hopes for ‘revolution’ on moral rhetoric rather than on ‘the dialectic’.

Although the socialist and feminist defence of reproductive liberty appears to defend it as an *absolute*, or indefeasible right (or, as a right which should be treated as absolute under present conditions of unequal social power), the claims for ‘human dignity’ and for a woman’s right to control her body do not rationally justify an unconditional right to reproduce.

The socialist concept of entitlement is perhaps the most controversial of the claims about rights. Socialism calls for coercive re-distribution of wealth in violation of liberal property rights. Liberals generally defend such rights as necessary to ensure individual liberty, to prevent government tyranny, and as a necessary condition for efficient markets and thus welfare-enhancing economic growth. This debate leads well beyond the bounds of this paper. However, even if one accepted the entitlement view, it does not follow that reproductive liberty should be absolute. ‘Human dignity’ is not an entitlement for species cleansing of the planet. Presumably socialists have no desire to destroy the Earth’s ecosystem. At the very least, that would have dire consequences for human welfare. Thus, if there were a grave threat to the environment requiring a significant reduction in human load, including reductions in population, coercive limits on reproduction would be entirely rational. Petchesky’s notion that a ‘duty’ to save the planet would only come into play *after* the world has been transformed into a utopia is so absurd one must assume the environmental threat has not been fully assimilated.

The right of a woman to control her body is obviously central to a debate about coercive pronatalism. Feminists have emphasised that fertility regulation and the right to refuse to marry are essential conditions for the autonomy of women (Dixon-Mueller 1993: 115–16). Coercive pronatalism represents such a serious assault on individual liberty, privacy, and bodily integrity that it could only be justified by the strongest evidence of a conflict of rights (in the abortion debate, justification for the claim that a foetus should be viewed as a ‘person’ endowed with a ‘right to life’), or of some unimaginably grave and, at this point, quite implausible social harm. However, there is an important asymmetry between a right not to procreate and a right to do so: the right to control one’s body by *refusing* to reproduce does not pose a threat to the environment or to the welfare, even the survival, of humanity. If the only way to avoid environmental catastrophe were to impose coercive limits on procreation (by men and women), even, if necessary, using methods which violated bodily integrity, a decision to do so would be entirely rational.

Widespread liberal opposition to population programmes is surprising, given the weight of the evidence of a looming environmental catastrophe. On the face of it, a liberal justification for reproductive liberty would treat it as an exercise of individual liberty which would, in principle, be subject to a limit if it came into conflict with other rights or, from a utilitarian perspective, if it caused significant social harm. The environmental risk discussed in section one is, at the very least, a strong *prima facie* reason for placing coercive limits on a decision to beget and bear children. However, many liberals have simply dismissed environmental problems (as well as issues of economic development) as ‘cynical’ and ‘weak’ (Boland et al. 1994: 96–7). Some liberals have argued that if ‘reproductive rights’ are universal moral principles, they should not be ‘qualified’ by the language of ‘responsibility to the community’ with respect to population objectives (Abrams 1996: 36–7, 39–40). Liberal opposition to population programmes raises a basic question about the rational foundation for asserting a fundamental and infeasible right of reproductive liberty.

Modern political liberalism has been heavily influenced by the social contract theory of government proposed by John Locke in the seventeenth century. Locke’s assertion of natural and unalienable rights has become a kind of bedrock assumption for many secular liberals, even though the theory ultimately rests on a foundation of natural law which Locke assumed but did not demonstrate. If the ‘cornerstone’ of human reproductive rights is founded on natural law, it may be possible to claim that these rights are infeasible. However, if the natural law view of the family is stripped away from the ‘rational contract,’ such rights, if they exist, should be limited by other rights.

In the *Second Treatise of Government*, Locke justifies human rights by an appeal to natural law, which is the moral law established by God and revealed to humanity both through scripture and through reason, as self-evident truths. The ‘fundamental law of nature’ is that ‘man [is a life form] ... to be preserved

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as much as possible' (16). That is, we are morally obligated to carry out God's will that human life, as God's property, be preserved as much as possible. And, since we have a duty to preserve life, we have a natural right to life. From the obligation to preserve life it follows that we have a natural right to the property which is needed for this purpose, both property in the narrow sense of money, lands and goods, and in the broader sense of 'lives, liberties and estates' (123). In effect, Locke treats natural rights as something we 'own': ourselves, the property we acquire by the right of our labour, and the liberty we need to do what is morally permissible to preserve our lives (legitimately 'confined' by laws of society only for the purpose of improving the preservation of life, liberty and property) (129, 131).

Locke accepted the natural law view of marriage. Its basic purpose (in addition to mutual support), is procreation and the continuation of the species, a duty to God which requires that the marriage bond last at least until the offspring are 'able to shift and provide for themselves' (78). As a natural institution, 'the civil magistrate doth not abridge the right or power of either naturally necessary to those ends, *viz.* procreation and mutual support and assistance while they [man and wife] are together ...' (83).

Locke did not consider the possibility that overpopulation might create a conflict between the natural purpose of the family (hence, liberty to procreate) and the preservation of human life.

If one emphasises the natural purpose of the family and a duty to God to propagate the species, one might conclude that interfering with procreation, even in order to improve the preservation of life, would be immoral. On this account, there would be no right to limit reproduction within marriage either coercively or through voluntary contraception or abortion. However, modern secular liberals who defend 'reproductive liberty' as a fundamental human right have tended to ignore the theological, natural law foundation for, and (with respect to contraception and abortion), limits on, that claim.

If one takes out the natural law component of Locke's theory, one is left with the following claim: preservation of 'life, liberty, and property' are fundamental rights in the sense that rational agents agree to a social contract for the purpose of protecting those rights, and so would only agree to governmental restrictions if these were necessary to preserve and improve them, i.e. if there were a conflict of rights. Apart from the natural law view of the family, there does not appear to be a basis for carving out reproductive liberty as a specific 'fundamental right,' rather than simply treating it as one aspect of a general right to liberty. On this (secular) account, individuals would have a right to choose contraception and (leaving aside the question of any 'right to life' attributed to a foetus), a right to abortion; and the state could not legitimately limit procreative liberty unless there were a conflict of rights.

If there is now good evidence for a serious conflict between procreative liberty and a right to life (preserving human life against an environmental

catastrophe, leaving aside a further utilitarian goal of preserving and maximising a desirable *quality* of life), a restriction on reproductive liberty, within a secular 'rational contract,' would be legitimate. There is no reason for a secular humanist to accept the risk of an ecological catastrophe to preserve an unrestricted right to reproduce. Indeed, it is not unreasonable to believe that the rhetoric of 'fundamental human rights' attached to reproduction has become harmful. On the face of it, human welfare would be best served by abandoning the vestiges of a natural law view of the procreative rights of the family, and regulating reproduction to achieve and maintain an ecologically sustainable population level.

To the extent that Locke's theory of rights rests on natural law, it is probably not the most cogent basis for justifying a rational social contract which can protect rights and also deal effectively with the tragedy of the commons. One alternative to a Lockean model might be to justify restrictions on reproductive liberty along Hobbesian lines. Hobbes's theory, in sharp contrast to Locke's, was widely disliked by his contemporaries because he rejected natural law teleology and because his 'scientific' model of human nature is distinctly unflattering. On Hobbes's account, a 'state of nature' is a state of war in which we seek power over one another to satisfy our desires. Since humans have approximately equal power, such a life is intolerable – 'solitary, poore, nasty, brutish, and short' (*Leviathan*, ch.13). Hobbes concluded that a rational agent, acting only on self-interest, would agree to an exchange of 'natural liberty' for security within a sovereign state, by creating a social contract establishing a sovereign ruler with sufficient power to protect life and property. Since he saw the natural condition as one of radical individualism, in which there was no class cohesion to offset the war 'of every man against every man', Hobbes argued for an absolute, self-perpetuating sovereign. However, a neo-Hobbesian could justify an elected sovereign if there were a sufficient number of citizens with common interests (above all, an interest in preventing tyranny) who could reach a consensus about the terms of a social contract: the political rights to be protected and the obligations to be met by the sovereign (Macpherson 1962: ch.2). The key point in this version of social contract theory is that some limits on 'natural liberty' (or, egoistic, uncooperative choices) are justified by rational self-interest.

The development of decision theory provides a useful model of Hobbesian reasoning. In the game known as 'the prisoner's dilemma' (Kuhn 2001), two individuals, isolated from one another, must choose whether to 'co-operate' or 'defect', given a set of outcomes in which cooperation would bring the best result for both *only* if both co-operated, but the worst result to each if the other did not co-operate. Under those conditions, rational self-interest will produce a suboptimal outcome for both. Obviously, the welfare of each would be improved if they were able to make an enforceable agreement to co-operate. In Hobbesian terms, the absence of a 'sovereign' power to enforce a co-operative agreement

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leaves them with 'natural liberty', but at the price of a sub-optimal welfare outcome.

The 'tragedy of the commons' described by Hardin illustrates the same dilemma with respect to the use of 'free' but scarce common resources. If one grants the premise that overpopulation is destructive to the environment (and ultimately to humanity), then co-operative agreements to restrict reproduction are rational measures needed to protect basic individual and social interests.

This approach obviously runs counter to the pervasive feminist view that coercive antinatalism poses the same threat to women's autonomy as coercive pronatalism. For example, advocates for women in patriarchal countries with very strong pronatalist cultures often cite poverty, with lack of legal protection, pensions, and economic opportunities, as a reason women *must* produce children, especially sons, in the hope that at least one will provide support in old age. Feminists then argue that antinatalist population programmes would be harmful to these women (Dixon-Mueller 1993: 134–5). To take one example, a researcher in Kenya reported the following: 'Mothers have large numbers of children in the hopes that enough will survive disease, poverty, and desperate overcrowding to live to support their parents in old age by scavenging in dump heaps or begging for food' (Hardaway 1997: 1234). This is an entirely rational, self-interested decision given a *laissez-faire* approach to reproduction. It is also clearly suboptimal. It seems clear that everyone would benefit if reproduction were regulated, since the demand for scarce resources would decrease. Even more obviously, individual and system-wide welfare would increase if there were a cash incentive – ideally, entitlement to a pension – to, effectively, 'buy out' reproduction privileges. However, in coercively pronatalist cultures, even coercive population reduction measures could actually support women's autonomy, by allowing many women to do what they would *prefer* to do.²¹ The suffering of people, especially women, in countries with high fertility will almost certainly continue to escalate to a horrifying level if fertility and population are not quickly reduced.

A neo-Hobbesian approach to reproductive liberty would ask whether, under present conditions, a rational, self-interested agent should give up natural (unlimited) reproductive liberty in exchange for a limited social 'right' (or, a license) to reproduce, up to some limit compatible with the preservation of life at an acceptable consumption level? If the evidence suggests people are, or will be, far worse off with unrestricted population growth, the conclusion is obvious.

3. A GLOBAL AGREEMENT FOR THE COMMONS

Probably the most common argument made by liberals who acknowledge 'demographic problems' is the claim that a crisis is not yet imminent, and

therefore the overpopulation threat can be effectively addressed through economic development and especially through better educational and economic opportunities for women, rather than by resorting to methods that violate 'human rights'.

For those who believe there *is* an imminent crisis, the question is whether the voluntary decisions of rational and 'empowered' individuals can be relied upon to resolve the problem in time, or whether governments should establish population programmes, even coercive ones, to achieve ecological sustainability.

Confidence in economic development as a solution to demographic problems was originally based on the so-called demographic transition model, which has been influential since the 1940s. This theory explains reductions in fertility rates as a function of economic development, prosperity, education, and reduced infant mortality. However, this model has failed to explain recent declines in fertility rates in developing countries, forcing demographers to search for more complex theories.²²

There is evidence that improvements in women's status significantly enhance the transition to lower fertility rates. Women who have access to birth control, and are able to make decisions about reproduction, are likely to have fewer children (Sen 2000; Brown et al. 1999: 131). So, it might appear that a left/liberal defence of 'reproductive liberty' and a feminist perspective on the need to 'empower' women through access to education and paid employment coincide with the most efficient means to resolve the population problem. This is exactly the position which has been argued by such influential political economists as Amartya Sen (Sen 2000; Dreze and Sen 1995; Sen 1996).²³

Sen has acknowledged a need to slow down population growth (for environmental reasons), or 'the world certainly would be tremendously overcrowded before the end of the twenty-first century' (Sen 2000: 210). But he rejects coercive methods as incompatible with human rights and as unnecessary, because empowering women is the most efficient way to achieve demographic transition. Sen has repeatedly cited a comparison between fertility reductions in the Indian state of Kerala and in China as evidence for the efficiency claim. Kerala reduced its fertility rate from 3.0 in 1979 to 1.8 in 1991 with no coercive policies, while China, which introduced the one-child policy in 1979, only reduced its rate in that period from 2.8 to 2.0. Sen argues that the key variables which explain fertility reduction in Kerala are high levels of basic education, especially for women, along with access to health care and an important role for women in the economic and political life of Kerala (Sen 2000: ch.8, 9; Sen 1996: 1056; Dreze and Sen 1995: 77–83). If this example can be generalised, it follows that coercive population programmes are unnecessary. In effect, women's reproductive rights are the best contraceptive.

The first counter-point to Sen is that, although women *are* likely to have smaller families if given the choice, the strength of anti-feminist forces in some parts of the world almost certainly rules out rapid improvements in female status.

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Sen's discussion of Kerala fails to point out that the 'empowerment' of women in Kerala did *not* occur within a short time period. What the Kerala example shows is, not what was done in 12 years, but rather the depth of the social revolution which took place over 200 years through an 'activist democracy': the organised power and sacrifice of the poor, aided by some remarkable allies from the upper castes. Kerala is in many ways a region with a uniquely progressive culture and politics, and should certainly not be taken as a model for a realistic near-term global solution to the environmental crisis posed by overpopulation.

The conditions that made Kerala's rapid decline in fertility possible include some remarkable and beneficial elements in the culture and history of the region. Among other factors, the matrilineal Nair caste (about 16% of the population) had a long tradition of female control over sexuality and property which empowered these women long before modern reforms (Douglas 1970: 171–2; Franke and Chasin 1989: 90–94; McKibben 1995: 142–3). A successful grass-roots social revolution which began with a rebellion against the caste system starting in the early nineteenth century radicalised the population and laid the foundation for a broad coalition between the lower castes and the trade union and Communist movement which emerged in the 1930s (Franke and Chasin 1989: 75–81; McKibben 1995: ch.3). Kerala has benefited from redistributive policies carried out since 1957, when the first democratically elected Marxist government in the world assumed office. Starting with a radical land reform passed in 1969, a series of governments have implemented progressive policies, including state pensions for agricultural workers, subsidies for health care, food and other essential items, and a highly effective campaign to achieve 'total literacy' (Ramachandran 1995; Franke and Chasin 1995; McKibben 1995).²⁴

The government decided to make population an issue in the 1960s, appealing to the state's 'rationalist' tradition to make the case that smaller families were a condition for creating a well-educated, prosperous society. Contraceptives were widely distributed, IUDs inserted for free at local clinics, and women activists spear-headed a grass roots campaign to promote a small family norm (McKibben 1995; Marquand 1999; Banerjee et al. 2002). Today, both men and women in Kerala are given a small cash incentive if they choose sterilisation, and most women elect for sterilisation after the second or third child (Marquand 1999). One Kerala birth rate expert attributes the success of the programme to the radical social changes which preceded it: 'In Kerala, the determinants came in the right order – a reduction in infant and child mortality, followed by or along with an increase in female education, followed by redistributive policies, and finally the official family-planning programme' (Franke and Chasin 1989: 44).

The precondition for these social changes was, again, 200 years of social revolution. Kerala emancipated itself from an especially rigid caste system, religious hatred, gender discrimination, and illiteracy, and the people of the region have made government accountable, demanding massive redistribution and an array of social welfare benefits which are now being tested by the

pressures of the global economy (Ramanathaiyer and Macpherson 2000; Parayil 2000; Franke and Chasin 1995; Ramachandran 1995; McKibben 1995: 145, 162).

In the world outside Kerala, it is unlikely that empowering women is the most efficient *general* solution to overpopulation. The point is *not* that empowering women has no effect on fertility, but rather that, contrary to Sen, the time frame for reducing population is probably too short for the cultural evolution, perhaps revolution, needed to accomplish this in some parts of the world. A 1994 UN review found that improvement in women's status since the 1980 Women's Convention was 'much slower than expected' and in fact had deteriorated in many developing countries, and attributed pervasive and continuing gender discrimination to the traditions and practices controlling social relationships.²⁵ Patriarchal gender norms are often rationalised by religious beliefs and traditions that support high fertility as well as subjugation of women, especially in agrarian societies. 'The wife's subordination to the husband may be expressed by worship of him and his lineal ancestors' (Davis 1998: 148). At a 2001 UN conference discussing high fertility countries, a Nigerian demographer noted that according to traditional African beliefs, 'ancestors are reincarnated through additional births' so that preventing a birth means 'consigning an ancestor to oblivion', (Makinwa-Adebusoye 2001: 12-5, 12-6). Further, the general form of African households (mostly rural, patriarchal and hierarchical, frequently polygynous, and highly motivated to perpetuate a male lineage), 'perpetuate women's subordinate position and make them rather voiceless and powerless in matters affecting their reproduction ... In fact, the bottom line is that women and their children are legal property of the husband' (Makinwa-Adebusoye 2001: 12-6, 12-7).

A second response to Sen is that the shift from a focus on population to women's empowerment and reproductive health services may actually be one of several factors which may slow the pace of fertility decline in developing countries. One theme highlighted in the UN's 2002 Expert Group Meeting was noticeably reduced support for population programmes since Cairo. Jason Finkle questioned the 'problematic' result of the Cairo paradigm shift from macro social concerns to individual welfare, suggesting that the exclusive focus on 'empowerment of women' had a negative result:

Lost in the shuffle and acclaim for the Cairo agenda was the concern over population size and growth, issues which demographers and other population specialists still considered to be of great importance ... We do know that donor nations have not met the financial targets set at Cairo; developing countries have not embraced Cairo thoroughly; more rhetorical obeisance than programmatic support has been given to Cairo. (Finkle 2002: 83, 84).

John Caldwell believes the Cairo action programme 'has almost certainly... confused donors' (Caldwell 2002: 74). Steven Sindling noted that 'assistance for

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population programs has fallen well short of the goals set at [Cairo] ... the absence of a sense of urgency about high fertility at senior policy levels, either in donor capitals or in most developing countries, suggests to me that the "population movement" as it has existed since the 1960s, may be close to having run its course' (Sindling 2002: 88–9). Reduced funding for population programmes is cause for concern, not only because fertility decline has not begun in many countries and is slowing in others, but because 'we are in the era of the largest cohort of reproductive aged people in history' and even if all of these people only wanted two children, 'the consequences of even small differences in unwanted fertility will ... be very large' (Sindling 2002: 89).

Diminished international support for population programmes, including funding for the distribution of subsidised modern contraceptives, cannot be blamed entirely on the Cairo agenda. Conservative religious opposition to contraception and abortion, coupled with a neo-liberal belief that the remedy for poverty is market reform and free trade rather than family planning, account for significantly reduced funding from the U.S. (In 2003, the U.S. was donating only 300 million condoms annually, down from about 800 million in 1992 (Kristof 2003).) Further, unexpectedly rapid fertility declines in many developing countries, along with below-replacement level fertility in many developed countries, has created the impression in some quarters that population is 'no longer a problem', and indeed, that in rich countries, the 'problem' may even be low fertility (UNPD 2002: 20). In any case, the strange alliance of religious conservatives, feminists, 'progressive' liberals, and free market ideologists now poses a threat to the environment and human welfare.

In the case of Sub-Saharan Africa, a study of proximate (direct) determinants of fertility concluded that a transition to low fertility will require a significant increase in the use of modern contraceptives, and that the 'full reproductive health agenda' poses 'problems' for the region by undermining a focus on much needed core family planning services (Guengant and May 2001:3-14, 3-17, 3-18). The 2002 UN report on demographic transition notes that most societies with low fertility have very high levels (65–85%) of use of effective contraceptives, implying that a large increase in contraception will be necessary for fertility reduction in the developing world (UNPD 2002a: 53, 55). John Bongaarts finds some empirical support for human development (especially health and education) as (intermediate) determinants of fertility transition (citing the examples of Sri Lanka and Kerala), but also stresses that replacement-level fertility cannot be achieved without 'a high level of birth control ... Ready access to family planning methods and abortion services is needed to achieve low levels of unwanted childbearing' (Bongaarts 2002a: 295).

Given the fact that about 80% of all contraceptive users receive their supplies from public sector programmes, and that it is estimated about 100 million women in all nations (excluding China) have an unmet need for contraception (Rahman and Pine 1995: 403), even as a billion young people between 15 and 24 enter their

reproductive years, reduced support for family planning programmes is certain to have a major impact on fertility. Thus, the efficiency of the Cairo paradigm as a replacement for population programmes is a matter of critical concern.

Fertility reduction has been achieved under a wide, even 'bewildering' range of social conditions: when economic conditions have been improving or deteriorating, in societies with both high and low living standards, and in countries with both increasing and decreasing gender inequity (UNPD 2002: 10; UNPD 2002a: 49). However, it is clear that, whatever the underlying causes may be, strong government support for efficient population programmes has produced striking results in many developing countries. Bangladesh, for example, is often cited for the effectiveness of its family planning programme (Amin and Hossain 1995). Government population programmes in Iran and Egypt have been supported by religious leaders who reassured people that the Koran does not forbid contraception (UNPD 2002: 17–18, 26–7). Since 1989, Iran has imposed a National Birth Control policy to reduce population and increase contraceptive use (Obermeyer 1994: 66).²⁶ Contraceptive pills and free condoms are widely available, men and women are required to attend classes about contraception before obtaining a marriage license, and, in 1993, the government dropped certain maternity benefits for couples with more than 3 children (Muir 2002). Population and family planning is also a compulsory unit for university students. As a result of these measures, contraceptive use was estimated to be about 72% in 2000, and the TFR has fallen from about 6 during the 1980s to 2.26 by the end of the 1990s (UNPD 2002: 26–7). The Iranian government has designated 2000–2010 'the decade of population crisis' (because of an expected 'echo' of the post-revolutionary baby boom), and the slogan 'Two is enough' is, literally, everywhere, even on children's toy and chocolate boxes (UNPD 2002: 17–18, 27). Islam, unlike Roman Catholicism, is a pragmatic religion (UNPD 2002: 18).

Under the white (apartheid) government of South African, fertility declined at an unprecedented rate in the Sub-Saharan region, from a TFR of about 6.6 for black Africans in 1960 to 3.1 in 1998. Although the well-funded National Family Planning Programme launched in 1974 was explicitly motivated by demographic and racist fears, and did nothing to improve black African economic welfare or empower women, it was nonetheless embraced by many African women for their own reasons, probably without the knowledge of their spouses (Swartz 2002). This phenomenon suggests that in patriarchal societies creating incentives for men to reduce fertility would be effective.

Women deserve exactly the same rights as men. However, neither men nor women have an absolute 'right' to procreate. If population reduction is critical, and if narrowly-focused population programmes are in some cases the most efficient means to that goal, then *substituting* a women's rights agenda for effective population measures is misguided and harmful.

A final objection to the 'empowerment' solution to high fertility is that, if the carrying capacity estimates made by Rees, Pimentel, and other ecologists are

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correct, sustainability will require population *reduction*, not merely a transition to replacement level at somewhere between 8 and 12 billion. And, since human load is a function of both consumption (and technology) and population size, countries with high consumption levels have the largest ecological deficits, despite generally low birth rates. From this perspective, the U.S. has been described as the most 'overpopulated' country in the world (Ehrlich and Ehrlich 1997: 1191, 1203). Yet, it is fair to say that there is currently no broad support in the U.S. for the view that U.S. fertility rates are too high.²⁷ Nor is there any sign of the widespread turn away from materialism in affluent nations which the UN Environmental Program held out in its 2002 report as a basis for achieving environmental sustainability (UNEP 2002: ch.4). The notion that environmental sustainability and global 'equity' could depend on a sudden and widespread shift from 'individualistic' to altruistic values (UNEP 2002: 332) is a sufficient reason to despair of the possibility of saving the ecosystem. Prudence demands further options. Yet, although the UN report cites 'continued population growth' as a significant, negative environmental factor under every future scenario (e.g. UNEP 2002: 333, 337, 338, 358, 360, 361), there is no suggestion of specific, effective measures to *reduce* population

Although altruism is unlikely to save the environment, there might be some hope based on enlightened self-interest. If, as many predict, environmental problems begin to accelerate, with corresponding damage to human interests, it should become obvious that everyone is harmed by damage to the ecosystem. The U.S. and other rich countries do not have the option of living in 'gated communities' on planet Earth. Indeed, we face a bleak future in a Hobbesian state of nature unless each nation agrees to terms which will resolve the tragedy of the global commons. On the face of it, the best, perhaps only, way out of the dilemma is an agreement requiring each nation to eliminate its ecological deficit,²⁸ making its own trade-off between consumption and population size. No country would be permitted to 'live beyond its means' by emigration or by exporting pollution. It is likely that, faced with a choice between population reduction or dramatic reductions in consumption (or other constraints), most people would choose the former. Each nation could choose its method of achieving sustainability. Perhaps in some countries education, the example set by enlightened leaders, and fear of environmental collapse would be sufficient to reach population targets. However, it seems unlikely populations could be reduced rapidly without some coercive measures.²⁹

Is there likely to be a rational resolution of the commons tragedy? It may be that success in dealing with unsustainable reproduction and consumption will actually decide, far more 'objectively' than any cultural test, the nature of our species. A species which risks destroying the preconditions for its own survival (while wishing to survive) is hardly rational.

NOTES

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¹ See www.ithaca.edu/hs/philrel/kates01.htm for a more extensive version of this section.

² The UN estimates give a range of projections (low, medium, and high), based primarily on their assumptions about fertility and mortality.

³ The report noted, 'no specific probability is attached to the [UN's low–medium–high] range, and what it means is therefore unclear' (NRC 2000: 10). To address this problem, the panel analysed the distribution of errors in past UN forecasts over two decades.

⁴ UN population projections are revised every two years, following meetings with experts.

⁵ Intermediate fertility is a TFR above replacement level (usually 2.1 children per woman), but below 5; low fertility is fertility at or below replacement level; and high fertility is a TFR of 5 or more.

⁶ Momentum is a function of the current young age structure of the world's population. In 2000, the world total median age was 26.5 years, 18.2 years in the least developed countries (UNPD 2001: Table 7). The National Research Council study concluded that over half of the projected population growth to 2050 would be due to population momentum (NRC 2000: 27–8).

⁷ See note 22 for a discussion of demographic transition theory.

⁸ See Rees, 2002 for a discussion of Julian Simon and neoliberal optimism.

⁹ 'Ecological footprint: the ...area of productive land and aquatic ecosystems required to produce the resources used, and to assimilate the wastes produced, by a defined population at a specified material standard of living, wherever on Earth that land may be located' (Rees 1996: Box 3).

¹⁰ 'Ecological deficit: the level of resource consumption and waste discharge by a defined economy or population in excess of locally/regionally sustainable natural production and assimilative capacity (also, in spatial terms, the difference between that economy/population's ecological footprint and the geographical area it actually occupies' (Rees 1996: Box 3).

¹¹ An 'overshoot' is possible for a limited period by depleting essential ecosystems and using up non-renewable resource stocks (Rees, 2002: 40).

¹² Malthus argued that human population expands geometrically, (i.e. exponentially), while the means of subsistence increase arithmetically. Since that imbalance is unsustainable, it must be corrected, either by a 'positive check' (famine, disease, war) or, theoretically, by a 'preventive check' – sexual abstinence. (Malthus considered contraception to be immoral.) Malthus was pessimistic about the prospect of widespread voluntary sexual abstinence, and so he predicted a positive check would almost certainly be needed to correct imbalances. Neo-Malthusians (who support contraception as a moral practice, acknowledge that prosperity *may* reduce fertility rates, and concede the positive check is not *inevitable*), have argued that Malthus' basic point is indisputable, namely,

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'there is a limit on the capacity of the earth to support an expanding population' (Hardaway 1997: 1216).

¹³ Before the Cairo conference, the Vatican formed a political alliance with fundamentalist Islamic clerics and representatives of Muslim countries such as Iran who opposed the UN's concept of women's rights and women's autonomy (Mayer 1995: 127ff.). However, Islamic governments are not necessarily opposed to population policies, as, for example, the programs of Iran, Egypt, Bangladesh, and Indonesia demonstrate. See Afkhami 1995 for discussion of the concept of women's rights under patriarchal and non-patriarchal interpretations of Islam.

¹⁴ 'Reflections on Demography and the Ethics of Family Planning' at www.simbahayan.org, website of the Roman Catholic Archdiocese of Manila's Commission on Marriage and Family Life. Simbahayan also sponsors a 'Friends of Life' document defending natural law and attacking population programs as revivals of Nazi ideology (<http://choice4life.tripod.com>).

¹⁵ The www.simbahayan.org (Catholic Archdiocese) website recommends a book by Lynette Dumble in which she attacks RU486, describing it as 'persuasive' because of Dumble's credentials as a 'feminist scientist.' The Women's Global Network for Reproductive Rights, a feminist group with headquarters in Amsterdam, has actively opposed research on contraceptive vaccines (Moreno and Claro 1994: 52). See <http://mai.flora.org> for links to essays by feminists who argue claims about overpopulation are 'alarmist', and attack population programs.

¹⁶ At the 2002 UN Expert Group Meeting, one demographer referred to 'the demonisation of family planners that pervaded the corridors of the Cairo conference and [which] has become part of the gestalt of many women's rights groups' (Finkle 2002: 84).

¹⁷ Ruth Dixon-Mueller is a feminist who does acknowledge the 'overwhelming problem of sustained population growth at the global level' (Dixon-Mueller 1993: 216).

¹⁸ The conflict between the two notions of rights surfaced when a U.N.-sponsored World Food Summit (13–17 Nov. 1996) affirmed 'the right of everyone to have access to safe and nutritious food consistent with the right to adequate food and the fundamental right of everyone to be free from hunger' (Rome *Declaration on World Food Security*, FAO 1996). The U.S. government entered a reservation stating that the right to adequate food was 'a goal or aspiration' but not an international obligation on governments ('Interpretative Statements for the Record by the Government of the United States of America', FAO 1996: Annex II). The Vatican supported the right to adequate food, but objected to references to population and family planning policies ('Holy See: Reservations and Statement of Interpretation', FAO 1996: Annex II).

¹⁹ In 1990, the UN declared that: 'The right to found a family implies, in principle, the possibility to procreate and live together. When State parties adopt family planning policies, they should ... not be discriminatory or compulsory' (General Comment 19; Article 23 of the International Covenant on Civil and Political Rights, Thirty-ninth session, 1990).

²⁰ Reproductive health is defined in the ICPD Programme of Action as 'a state of complete physical, mental and social well-being ... in all matters related to the reproductive system' (7.2).

²¹ Mahmud and Johnston (1994) cite a 'true story' of forced marriage in a South African community where many 14-year-old girls are forced to leave school and marry. In this

case, the young girl was continually beaten and forced to have four children, despite a heart attack. 'Generally married women are not allowed to make any decisions or say anything which contradicts their husbands. They cannot use contraception of any kind because they should 'give birth until the babies are finished inside the stomach.' It does not matter whether you give birth ten or fourteen times' (p.155). 'Reproductive health services' for women forced to serve as sexual servants and breeding stock by brutal patriarchy would not appear to support any 'choices' made by such women. Until there is a successful women's rebellion, many women's needs (and desires) might be best served by coercive antinatalist interventions. Rather than attacking population programs, feminists should focus on economic and legal issues raised by African women. See www.widowsrights.org.

²² The theory was developed to explain a broad fertility decline in Europe following the Industrial Revolution. At stage one, both fertility and mortality rates are high. Then, with modernisation, mortality falls, creating a period of rapid population growth. Finally, fertility rates fall and population stabilises. The report of the UN's 2002 Expert Group Meeting concluded 'we are still far from knowing what factors were responsible for triggering and sustaining the marked fertility reductions that have taken place ...' (UNPD 2002a: 49). A 'blended theory' suggests fertility will fall when couples are 'ready' (when reduced fertility is advantageous), 'willing' (when fertility reduction is considered legitimate), and 'able' (when effective contraceptives are accessible) (UNPD 2002a: 49–53). The willingness criterion suggests the importance of 'elite opinion' in supporting population programs. See Robey et al. (1993) for a discussion of demographic transition theory and John Bongaarts' model of proximate determinants of fertility.

²³ John Rawls accepted Sen's assertion that coercive measures to reduce population were unnecessary if a society protected 'human rights' and especially 'equal justice for women' (Rawls 1999: 109–10).

²⁴ Communist or communist-led governments held office from 1957–9, 1967–70, 1980–82, 1987–91, and 1996–2000. Even when the communists were not in power, public pressure forced the centrist coalition which ruled from 1970–80 to carry out a number of leftist policies.

²⁵ *Fourth Review and Appraisal of the World Population Plan of Action*, United Nations Document A/CONF.171/4 (1994), paras. 49–50 (Abrams 1996: 18–19).

²⁶ Iran has also promoted women's education and the social and economic role of women, justifying all these policies with reference to Islamic tradition. However, there is no clear evidence of significant improvement in women's status, suggesting that it is still an open question 'whether changes in gender roles are the pathway through which political values are translated into reproductive outcomes' (Obermeyer 1994: 66–8).

²⁷ Carrying Capacity Network is one of the few U.S. organisations to focus on both population and consumption aspects of unsustainability (www.carryingcapacity.org).

²⁸ Mario Petrucci argues for a Red–Green alliance, combining a Green critique of industrial growth with a neo-Marxist ideology (rejecting determinism but, presumably, retaining a labour theory of value) (Petrucci 2002: 325–52). He rejects the 'carrying capacity' model and concerns about overpopulation as a form of 'eco-fascism' (329) which stabilises a capitalist system of global privilege (332, 346); and argues that ecological concerns about population reflect a Malthusian viewpoint which now, as in the nineteenth century, justifies the wealth of a global elite (328, 330, 332, 346). This critique

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of neo-Malthusian concerns flies in the face of the growing scientific consensus about the threat of unsustainable levels of consumption *and* population. Neo-Marxists who take this line appear to be stuck in a nineteenth-century debate, unable or unwilling to see that the commons tragedy poses a survival threat to everyone, and is thus an objective basis for unified political action to change the global production system. Hobbesian and neo-Malthusian survival concerns are far more likely to spur welfare-enhancing political action than the (by now discredited) call for 'class warfare.' Eliminating humanity's environmental deficit would fundamentally transform global capitalism. And if *national* economies became sustainable, the disparity between rich and poor nations should gradually diminish. Among other factors, southern nations should become more prosperous and economically self-reliant as a result of population reductions, the end of unsustainable global trade, much more favourable terms of trade (with environmental costs factored into commodity prices), and the dispersion of manufacturing which would be needed to reduce human load in developed countries. (Although China is rapidly transforming itself into a global manufacturing centre, about four-fifths of all manufacturing is located in North America, western Europe and Japan – 60% of that in the U.S., Japan, and Germany (Dicken 1998: 27).) In a sustainable world, it might be that the difference between a 'regulated market' and 'market socialism' would become moot, and the utility of private capital would be judged pragmatically. (See Daly and Goodland (1994) for a detailed discussion of the ecological implications of global trade and TNC-dominated growth. Daly (2002) proposes a new 'ecological tax' structure.)

²⁹ An agreement could include a burden of proof on governments to justify the need to use coercive methods which violate bodily integrity (e.g. forced sterilisation), rather than, e.g. economic penalties, to help ensure coercion would be minimised.

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