It took all of evolutionary time until 1806 for the earth to accumulate a billion people. In late 2011, world population topped 7 billion. We're on our way to 10 billion by 2100. Fossil fuels drove the exponential surge, forcing us to dig up still more, taxing our environment to breaking point. What to do? In the green corner, the Malthusian Left counsels the importance of limits and urges control of population through family planning. In the red corner, a free market Cornucopian right - augmented by religious fellow travellers - claims that human ingenuity or divine providence will ensure all's well. Three new books help define the debate.

'Ten billion,' a reference to the UN-sanctioned estimate for world population peak, is the hook which Stephen Emmott and Danny Dorling use to bring their contending worldviews to life. Emmott's brief but riveting *10 Billion* sounds the Malthusian alarm loud and clear. Using a graphic technique which intersperses large-font text with powerful photographs to deliver his message with maximum impact, he walks us through the demographic and economic ascent of man. The result: a relentless increase in CO₂, rising sea levels, mass extinction and now melting arctic ice releasing plumes of methane - the greenhouse equivalent of carbon on speed. He catalogues the litany of failed climate initiatives and technological false dawns. Based on his critically acclaimed 'Ten Billion show at the Royal Court theatre in London last year, he comes to a blunt conclusion: 'we're fucked.' Emmott doesn't duck the population question. In his estimation, 'the worst thing we can continue to do...is have children at the current rate.' Pointing to a host of countries stuck at high levels of fertility, such as Niger, he finds religious and political obstacles repeatedly blocking the 'inevitable' fertility decline optimists take for granted. This raises the possibility our numbers will push the planet over the edge. Malthus was not proven wrong by the Green Revolution, insists Emmott. That 'Revolution' simply purchased our survival for a few decades by offloading carbon-intensive costs onto the environment.

Where Emmott is urgent and minimal, Richard Weisman's *Countdown* is rich, subtle and elaborate. Weisman's magisterial work should be the first port of call for anyone interested in the population-environment nexus. I specialise in political and religious demography and Weisman, a journalist, fails to cite the work of most academics in my field. Ordinarily I'd scrawl a 'D' in response, but Weisman defies the odds, building an accurate edifice from the ground up. It's a tightly-argued, fast-paced adventure which traverses the planet in search of contrasts. One moment we sit stageside as a debate rages between Roger Martin of the Optimum Population Trust and Fred Pearce, a population optimist. Cut next to Rome to witness a Vatican spokesman tying himself in knots trying to square the Holy See's opposition to birth control with the reality of limits.

Weisman doesn't spare us the dark underside of population control, from the British National Party's support for reduced numbers to the victims of China's One Child Policy. But his powder is largely reserved for population optimists. The sheer irresponsibility of religious pronatalists like Rachel Ladani, a Hasidic Jew, is stunning: 'God made this problem, and He will solve it,' she asserts. Secular Cornucopians like free-marketeer Julian Simon are, for Weisman, equally misguided, their hubris shredded by today's environmental constraints. Niger is a society perched at the edge of the Sahara with a sky-high fertility rate. As locals deplete foliage for firewood and exhaust water supplies, the desert creeps steadily southward. On this Malthusian frontier, children and mothers die like
flies. Many local people acknowledge overpopulation to be a problem, but for leaders like Imam Raidoune Issaka, 'Allah wants...us to have bigger families, not to bend to any pressure to reduce their size.' Accustomed to the death of others, Issaka speaks from the comfort of his study, insulated from his suffering neighbours. Yet even the victims of population explosion seek more, either because of cultural conditioning from the likes of Issaka, or because they need to retain a high birthrate to keep their lineage ahead of the grim reaper. All of which neatly illustrates why having large families can be individually rational yet collectively suicidal.

The book toggles between ecological and human interest stories. One moment we're visiting hard-pressed mountain gorillas in the Ugandan rainforest, the next glimpsing starving Nigeriens or poring over old Persian rugs displaying now extinct creatures such as the Iranian Cheetah. Time and again, climate change and population pressure lie behind new species extinctions which threaten the viability of local and global ecosystems.

The Green Revolution relied on deep-well irrigation and carbon-intensive fertilisers which are denuding soil and depleting aquifers at a mind-boggling rate. Norman Borlaug, seed wizard and architect of the Green Revolution, who saved untold millions from starvation in the 70s, makes an appearance. Though a darling of population optimists, Borlaug is far more sanguine: 'There can be no permanent progress in the battle against hunger,' he warns, until the fight for population control is won. As if to prove his point, in Pakistan, dry wells and salinity march steadily upward from the sea every year, killing village after village. Fresh from a visit to Arizona, the author warns that like the local Kaibab deer, we may be on the brink of a population crash fuelled by resource collapse. Alternatively, we may be overcome by a pandemic stoked by population density, biodiversity loss and the overuse of antibiotics. Rather than wait for nature to self-correct, is it not better, he asks, for us to humanely take action. Population is falling but needs to fall faster: a half-child reduction would give us 6 billion instead of 10 billion by 2100, raising our odds of survival.

Danny Dorling serves up something else entirely: a left-wing defense of Cornucopianism. Population 'control', with its coercive, genocidal and eugenic overtones, makes many of us uneasy and violates our instinct and religious sense that new life is a sacred blessing. Little wonder that demographic laissez-faire combined with a critique of western capitalism has emerged as the politically-correct stance of western progressives. Dorling nicely captures these disparate sentiments in his new book. A rising star in British geography, Dorling made his name as the British Hans Rosling, a wizard in the presentation of geo-statistical data. Having drawn on his prodigious output in my own research, I anxiously looked forward to his Population Ten Billion.

The book cuts across existing partisan divisions, which is commendable. It usefully makes the case for the importance of demography and geographic expansion, two oft-neglected forces, as factors in world history. For Dorling, the discovery of the Americas in 1492 by Europeans was a geo-demographic shock that gave birth to modern capitalism. But Dorling never really evaluates his Geographic Shock thesis against competing explanations. Instead, we are treated to an unfocused radical polemic, without a hint of grey to disrupt the Manichaean tale. Where the Right portrays Big Government as the bogeyman, Dorling wields the white male West and its power elite. Non-western folk, youth and students are the protagonists in this tale - childlike dupes who only stray when whipped up and brainwashed by all-powerful Anglo-Saxon elites. Given this neo-Marxist backdrop, population is just a red herring used by the power elite to deflect attention from themselves. Marx and Engels castigated Malthus as a bourgeoise apologist for capitalism. The population story fit awkwardly with the voodoo arithmetic of the Falling Rate of Profit
thesis and Labour Theory of Value, so they smeared it - essentially the same strategy used by Dorling and progressve Cornucopian acolytes like Fred Pearce - whose terrain Dorling largely retreads.

It's important to bring demography into standard theories of history, but at many points Dorling bends the facts to suit his argument, leading to a series of factual errors. He informs us that inequality fuels higher fertility, as exemplified by the rich but demographically buoyant United States. We all decry American inequality, but let's not invent a relationship: egalitarian Scandinavia and France have high fertility as does free-market Ireland and America. Women in egalitarian Japan and unequal Hong Kong bear few children. Culture, not inequality, explains the patterns.

The book advances a materialist argument about birth rates in which falling infant mortality automatically produces falling fertility. Yet why would this lead the number of surviving offspring to fall? To wit, the book claims Europe's population explosion accounted for much of the world's surge to 6 billion people. In fact, Europe's explosion after 1750 took place in an era of less advanced public health than the post-1945 non-western boom. As Vegard Skirbekk writes, this means fertility, measured in terms of surviving offspring rather than crude births, was much lower during the West's explosion. Which is why a majority of the increase to 6 billion was non-western. Dorling claims Iran's fertility turnaround took place despite the exhortations of Mullahs for Iranian women to have more kids. In fact, as Weisman richly relates, fertility rose after the Revolution until Khomeini and his clerics issued fatwas in favour of birth control. All of which underscores Dorling's ignorance of cultural and political demography: a mountain of evidence demonstrates that elites and ideas, men and their institutions, matter when it comes to how many kids women have.

Worldwide, a woman's religiosity is as important as her education in determining fertility. Infant mortality plays no part in explaining the high fertility of Jews in Israel or Arabs in Gaza when compared to Jews and Arabs elsewhere; nor does it shed light on why the Amish double in population every thirty years. Pakistani fundamentalist Maulana Maududi fanned the myth that contraception was a western plot. His legacy - filtered through local fundamentalist imams - is a major reason why Pakistan will add tens if not hundreds of millions more to its population than more enlightened Bangladesh, with its moderate Islamic leaders.

'I don't think that I, or anyone else, was one human too many,' Dorling scolds, sounding the same dishonest 'anti-people' refrain as bible-thumping anti-abortionists and family planning foes like Weisman's Philippine boxer-turned-Catholic poster child Manny Pacquaio. Rather than combat fantasies about contraception as a western plot, Dorling inadvertently feeds this irresponsible nonsense that costs countless lives and spreads incalculable misery. Yes, fertility is falling, but nowhere near fast enough for its hapless victims or the planet. We need to do all we humanely can to bring numbers down.

When it comes to climate change, the analysis is similarly myopic: like Fred Pearce, Dorling claims numbers don't matter because western consumption is the key, not low-emitting populations in the developing world. Nowhere does he consider the possibility that development will turn these currently impoverished global citizens into better-off emitters like the mushrooming Chinese/Indian middle class. Population is moot only if the global South remains dirt-poor, which I hope it doesn't, or we conjure up a technological silver bullet, a weak reed to pin our hopes on. Dorling lauds immigration because immigrants' fertility converges to western norms, reducing population pressure in their homelands; yet he sidesteps the fact the carbon footprint of immigrants to the West vastly exceeds the meagre saving derived from their reduced fertility. A sure-fire way to increase carbon-
drenched suburban sprawl is to ramp up immigration. Westerners did nasty things in the past, but guilt-fed Cornucopianism can only hasten our planet's demise.

The pages of this book resound with intellectual immaturity. A key analytical concept for Dorling, repeated at regular intervals, is 'stupid'. If only we could reduce the 'stupidity' of elites, we might enter an arcadian, sustainable, classless world. Along the way, economists are dismissed *tout court*, while professors and universities are derided as 'pompous.' Luckily Dorling has humble ancestors, but Matt Ridley's northern industrialist forebears tar him with the mark of Cain while David Attenborough, as a 'Knight of the Realm' is damned from the word go.

How does Dorling move from anti-capitalist pessimist to population optimist? The shift hinges on his faith that humans will adapt because they have to. He speaks of this as the 'Possibilist' position, distinct from Emmott's alarmism or neo-liberal optimism. Unfortunately the Possibilist thesis is a textbook case of teleological reasoning: we must adapt so we will. But it's also possible we have adapted so far but won't. The fact Malthusian predictions were delayed in the twentieth century doesn't mean we're divinely ordained to survive. No doubt Dodos or ancient Babylon 'had to' adapt, but they didn't. Unlike we evolutionary winners, the losers are not around - which is why, as Daniel Kahneman reminds us, humans are overconfident and discount the future in favour of now. Indeed, the pessimism of the extinct would serve as a useful check on our hubris.

Dorling usefully argues for us to make do with less, buy fewer clothes, eat less meat, take fewer plane trips. He's correct reducing consumption and sharing gets us a long way toward a sustainable planet. Yet what if people aren't innocent children manipulated by greedy corporate interests and their media lackeys but active agents whose preferences help drive capitalism? What if they refuse to share? A Cumbaya theory of social change must be accompanied by policy proposals to ensure human behaviour doesn't spoil the commons. This is hard graft for someone with a totalising worldview, so practical solutions are conspicuously absent from these pages.

The population debate on the Left turns on whether progressives place the planet before their political correctness. Most, like Dorling, cannot. Emmott and Weisman are among the few brave enough to do so and we owe them a lot. I just hope they're not too late.