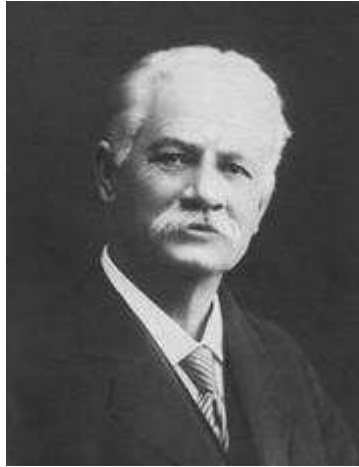


# THE TREND OF DESTINY

## GEORGE HANDLEY KNIBBS AND THE POPULATION PROBLEM



George Knibbs  
ABS collection

COMMONWEALTH OF AUSTRALIA.  
**CENSUS, 3rd APRIL, 1911.**  
**PERSONAL CARD**

**For Every Person present in the Night from 2nd to 3rd April, 1911,  
or returning on 3rd April (if not included elsewhere).**

Personal Card No.3; of Householder's Schedule No. 27 j  
of Mesh No.3; of Collector's District ' 1 ~ ; of Census District No. S.  
State of Victoria

***The planet's seven-thousand-millionth person arrived this year, perhaps in a village in Upper Volta, or maybe an apartment in Lower Manhattan.***

***The global population reached one billion in about 1800, two billion by 1927, three billion in 1960, four billion in 1974, five billion in 1987, and six billion in 1999. How many billion more?***

***By 2050, Australia will have between 29 and 43 million people, but we will still be a very small fish in a global pond with at least nine billion other folk.***

This year is the centennial of the first [Census of the Commonwealth of Australia](#). Taken for the night between the 2<sup>nd</sup> and 3<sup>rd</sup> April 1911, it was part of what Sir George Handley Knibbs (1858-1929), our inaugural Commonwealth Statistician, described as the "great Imperial stock-taking", the first attempt at "numbering the inhabitants of all parts of the British Empire".

The Empire was at the peak of power, with 400 million subjects. One-eighth, or 53 million people, was classified as white: United Kingdom and home dependencies (41.6m),

Australasia (4.6m), British North America (5.5m), Africa (Dutch and British) (1.0m), India (0.17m) and West India and Bermuda (0.1m).

The 1911 Empire census included foreign military bases and Royal Navy ships overseas. Military personnel were stationed throughout the Empire - from Cyprus, Hong Kong, Malta and India to South Africa; as well as in other locations, such as Alexandria in Egypt and Tientsin in China.

Winston Churchill was appointed First Lord of The Admiralty during the year. The Turkish-Italian war began; the Italian fleet bombarded Tripoli; pigtailed were abolished in China; Leonardo da Vinci's *Mona Lisa* was stolen (again) from the Louvre (found in Italy in 1913) and Roald Amundsen reached the South Pole. The temperature in London reached an unprecedented 100 degrees Fahrenheit (38 degrees Celsius) on August 9<sup>th</sup>.

In Australia, 350 census enumerators and 6,000 collectors spread out across the continent. They often went on foot in population centres. In more remote districts, they used bicycles, horses, motors, boats and camels. Here and there, the tyranny of distance conspired with that of the weather. There was a shortage of feed for horses in South Australia, due to a drought. In Queensland, some were stranded by floods and bogs.

Compilation was mostly by hand, with assistance from a few adding machines. About 250 temporary staff sorted the collected cards. However, due to World War I and a 1915 War census, the results were not published until 21<sup>st</sup> May, 1917. The nation's population in 1911 was counted as 4,455,005, "exclusive of full-blooded aborigines".

By early October, 2011, the continent's population was four times larger, at 22,726,139. There was one birth every 1 minute and 46 seconds, one death every 3 minutes and 40 seconds, a net gain of one international migration every 2 minutes and 44 seconds, producing a total national increase of one person every 1 minute and 31 seconds

While concerned about inadequate information on the Aboriginal population and wanting to improve estimates, Knibbs was unable to find a practical way to do it. The Constitution also had a clause specifying that 'aboriginal natives' were not to be included in official population counts.

According to ANU researcher Beth Wright, Knibbs met with some of the State Aboriginal Protectors responsible for estimating numbers prior to the Census. The Commonwealth Attorney-General advised that 'half-caste' Aboriginal people should be included, but 'no attempt need be made to contact aboriginals in your district who are living in a purely wild state' (Note 1).

There were other problems too - public indifference, even resentment. "Unfortunately," Knibbs noted, "it not infrequently occurs that the accompanying notes are not even read, while the whole business is often regarded as an irksome imposition and a piece of

inquisitorial official impertinence. The intelligence, co-operation, and goodwill of the people enumerated on the one hand, and of the actual collectors of the returns on the other, are the links in the chain upon which the success of the Census largely depends." (page 10)

Penalties were introduced to encourage participation. Failure to answer any of the questions was punishable by a fine not exceeding Stg10; and Stg50 for "knowingly making any statement which is untrue in any material particular". As questions relating to the number of aliens, especially Chinese and Japanese, "excited considerable interest", it was important any information gathered on this subject was accurate (page 14).

But what was the nature of this interest? According to Henry Ergas, Knibbs was "an ardent eugenicist. He shared the widespread view that "we are guarding the last part of the world in which the higher races can live and increase freely". That refuge was threatened by pressure from "lower races" and by the combination of a falling birth rate and degeneration "first, in bodily strength, then, in moral strength" due to urbanisation." "

Knibbs began his career as a government licensed surveyor. By 1905, he was acting Professor of Physics at the University of Sydney and Superintendent of Technical Education for New South Wales. With passage of the *Census and Statistics Act 1905 (Cwlth)* the Commonwealth Bureau of Census and Statistics was created in 1906, with Knibbs as first Commonwealth Statistician.

Why was there a census in 1911 and 2011, and not (say) 1910 and 2010? It was an accident of history. The United Kingdom's first modern census was taken in 1801 under William Pitt's administration. It was a policy response driven by Thomas Robert Malthus's (1766-1834) controversial first book: *An Essay on the Principle of Population, as it affects The Future Improvement of Society, with Remarks on the Speculations of Mr Godwin, M Condorcet and other Writers*. A census has been conducted every decade since that date, except during World War II.

In his 1798 *Essay*, Malthus argued the rate of human population growth would inevitably reduce progress towards a utopian society: "The power of population," he wrote, "is indefinitely greater than the power in the Earth to produce subsistence for man. Population, if unchecked, increases in a geometrical ratio. Subsistence increases only in an arithmetic ratio. A slight acquaintance with numbers will show the immensity of the first power in comparison of the second" (Note 3). For him, this Principle was a law of Nature, one divinely imposed to ensure virtuous behaviour.

### **Trend of Destiny**

Hidden deep within Volume I of the *Statistician's Report* on the 1911 Census is Knibbs's forgotten Appendix A: *The Mathematical Theory of Population, of its character and fluctuations, and of the factors which influence them*. Here was the issue that would

preoccupy him for the rest of his life: humankind's "trend of destiny" - the impossibility of population continuing to increase at its present growth rate for a "long-continued" period.

***The trend of destiny*** – *Anyone who has seriously reflected on the facts of the last ten decades, must realise that, within the next ten, tremendous problems will arise for solution and these will touch fundamentally the following matters: (i) the multiplying power of the human race; (ii) the organic constitution of Nature and the means at human disposal for avoiding the incidence of its unfavourable aspects; ie eugenics in its wider sense; (iii) the enhancing of the productivity of Nature, and the limits of its exploitation; (iv) the mechanism of the social organism, and the scheme of its control; and (v) internationalism and the solidarity of humanity. (Knibbs, 1917)*

"The limits of human expansion are much nearer than popular opinion imagines," he declared. "The difficulty of future food supplies will soon be of the gravest character; the exhaustion of sources of energy necessary for any notable increase of population or advance in the standards of living, or both combined, is perilously near."

Knibbs's estimate of the total global population in 1900 was 1,700 million, with an annual rate of increase of about 1.16 percent. If this rate continued for another 100 years, he calculated there would be 3.16 times as many people by 2011, or 5,380 million. (It reached 7,000 million this year, a four-fold increase in 111 years.)

His fears were based on a crude estimate of the Earth's potential carrying capacity. He assumed a global arable area of 33,000 million acres and an average yield of 22.8 bushels of food-corn per acre each year, producing a total annual yield of 752,400 million bushels.

How many people could be supported assuming this highly optimistic rate of food production in perpetuity? In Australia, for example, annual food-corn consumption per person was about 5.7 bushels. The total global population which could be supported at this rate would be only a mere 132,000 million. "At a rate of increase of population of one percent per annum, " Knibbs continued, "it would require only 450 years to exhaust the food requirement mentioned (more exactly 449.96 years)."

For Knibbs, the mathematics was undeniable: "The fundamental element in Malthus's contention is thus seen to be completely established. It is quite clear, therefore, that statistical analyses of the world's progress in various ways will soon become of the highest order of importance."

"Very soon," he warned, "the world-politic will have to face the question whether it is better that there should be larger numbers and more modest living, or fewer numbers and lavish living; where world-morality should aim at the enjoyment of life by a great multitude; or aim at the restriction of life-experience to a few, that they may live in relative opulence."

The statistician's role was to enlighten future governments about the "trend of destiny" and its implications for humankind in "a world of limitations." Only knowledge of demographic trends would enable them to see the seriousness of the situation.

His perspective, however, was not shared (yet) by his contemporaries. A decline in European birth-rates since Malthus had reversed fears of over-population. As Lujo Brentano (1844-1931), a German economist, noted: "There has arisen in many places the very opposite fear – an anxiety for the future of civilised nations, due to the low rate of increase of population during recent decades."

Italy was one of them. "To count for something in the world," Benito Mussolini (1883-1945) declared in his 1927 Ascension Day speech, "Italy must have a population of at least 60 millions" by 1950 (1920, 37 million; 2011, 60.6 million). "It is a fact that the fate of nations is bound up with their demographic power."

In France, too, depopulation fears swept the nation. Its birth-rate had declined 70 percent during the past century, to 19 births per 1,000 people in 1913. Its precise cause was unclear. One journalist bravely blamed "the expensive habits which have taken hold of French women in all ranks."

In 1920, the French National Assembly passed a law prohibiting dissemination of contraceptive knowledge and anti-natalist – mainly neo-Malthusian – publications. (Condoms, classified as protective devices, were excluded from the ban.) Generous family allowance schemes were introduced, one offering prolific couples a Medal of the French Family.

Knibbs, ironically, alluded to this phenomenon in his Census notes. It was "commonly regarded as the most urgent problem of the day. The declining birth-rate, the postponement of marriage to a later period than formerly, the average number of children per family, are among the matters concerning which the Census returns will supply a trustworthy basis for argument and possibly for useful action." (page 7).

### **Shadow of the World's Future**

Knibbs's *magnum opus*, *The Shadow of the World's Future – Or the Earth's Population Possibilities and the Consequences of the Present Rate of Increase of the Earth's Inhabitants*, appeared in 1927, just twelve months before he passed away. At a time of increasing debate over Australia's – and the world's – sustainable population, it is worth taking a closer look at this book; arguably one of our most intriguing and ignored historical texts.

"Founded upon a survey of its areas, of the distribution of its present inhabitants, and of their productions, it shows that the menace of the present rate of growth of those inhabitants is most serious," wrote Knibbs in the preface. "This rate is of the order of about one percent per annum. Starting in 1928 with a total of say 1,950 millions of human beings,

the existence of such a rate is of the gravest significance, for, in the course of the present century, mankind will be involved in very great difficulties, for which unquestionably it is quite unprepared.”

A century ago, the shadow of the world’s future was - not ‘dangerous’ anthropogenic climate change - but the global Population Problem. “The population question” was, he went on, “of the first order of importance for any person who has any interest in his country’s future, or in his children and children’s children.” (Sounds eerily familiar, doesn’t it?)

The difficulties Knibbs felt would arise eventually were related not only to food supply, but also with economic growth. Like Keynes, he felt it fanciful to assume there would be some mysterious adjustment process that would ensure synchronisation of population growth and economic development, without societal population controls or Malthusian “checks” of some kind.

Possibly inspired by Sigmund Freud (1856-1939) or Carl Jung (1875-1961), he speculated whether “the sense of unrest existing among all intelligent peoples today” was “perhaps a precognition by the “unconscious mind” of coming troubles.” (If it was, perhaps the intuited troubles would have had more to do the Great Depression or rise of European fascism.)

Knibbs once again acknowledged his debt to Malthus. The latter’s propositions on population had been, he insisted, “wholly misunderstood and utterly misrepresented.” Malthus rightly had emphasised the accumulative power of deceptively small growth rates over time. He drew our attention to the fact that population growth behaved exponentially, like compound interest; with the “interest” of new births being added to the “principal” of growing numbers.

Consider the case of a 3 percent annual growth rate. What did it mean for an individual family? Suppose that in a population of 1,000 people 126 are married women of reproductive age, between ages 15 and 44. If there were 12 deaths annually, there would have to be an annual increase of 42 for its growth rate to be equal to an annual 3 per cent. Assuming it came solely from births, each of the 126 women would have to bear a child about every three years.

To illustrate humankind’s procreative power, Knibbs compiled a table of hypothetical future populations produced by various constant growth rates. It showed how rapidly doubling times declined, even with only small increments of annual increase. At 0.5 percent, for example, it would take 139 years for a population to double its size. At one percent, this would be 70 years; at two percent 35 years, and at three percent only 23 years and so on.

Although the world had been growing at a much smaller rate in past centuries, its aggregate growth rate had increased beyond one percent for perhaps the first time in history. Statistics from 26 countries from 1906 to 1911 suggested a growth rate of 1.159 percent,

which was sufficient to double the global population in 60.22 years. Assuming humankind began from a single pair, if such a rate continued for 10,000 years the theoretical outcome was staggering; it would require over 248 million million Earths to provide the necessary space and sustenance for them.

Knibbs also estimated the Earth's "population-carrying power" under four scenarios, based on population densities in various countries at the time and other variables. "The numbers of human beings which the world-surface can carry," he concluded, "is limited to a relatively small multiple of the existing population."

Assuming the estimated annual Western world growth rate of 1.16 percent prevailed over the globe, his hypothetical maximum populations of 5,200 million, 7,020 million, 9,000 million and 11,000 million would be reached, respectively, in 85 years (2013), 111.1 years (2039), 132.6 years (2061) and 150 years (2078). (It actually will reach 7,000 million in late 2011).

On Asia, he made this prescient comment: "If, as appears to be beginning already, the multitudes of the East should westernise their conceptions as to what constitutes a reasonable standard of living, the population-problem is at once raised to a plane of greater difficulty. On the other hand, if western races ever abandon their present love of what may seem to some inordinate luxury, and all useless complication of the paraphernalia of social life, it is certain that the population difficulty, for a time at least, will diminish."

In late 1927, the first World Population Conference was held at the Salle Centrale, Geneva, but without official support from the League of Nations. "Is it possible", asked Albert Thomas, director of the International Labour Organisation, "to imagine a world organisation in which an international authority arbitrates on population questions? Lands are underpopulated in countries of determined sovereignty. Can one conceive in the name of general interest that new populations can be admitted on these lands and under what conditions?"

Very few could then, and very few can today. Migration between nations as a practical solution to easing demographic pressures, and as a way of increasing the world's "population-carrying power", is not on agency or national agendas. It has become instead a domestic political problem, especially for wealthier governments, not a mechanism for solving other global problems.

The world has become a more crowded place during the past eighty years. Yet "climate change" refugees possibly have a better chance of acceptance today, than those seeking more living space or fleeing a war zone.

While the Conference did not endorse Thomas's concept of a Higher Migration Council, it did lead to the creation of the International Union for Scientific Investigation of Population Problems, and the International Medical Group for investigation of Contraception.

Nevertheless, Knibbs remained unconvinced humankind had grasped the challenges ahead. There was as yet, he remarked, “no adequate world-reaction” to the Population Problem. What was required was “the attention of every country that can influence the issue.”

He wanted to see a radical change of perspective, of consciousness. Parochial and national sentiment somehow had to be transformed into global concern. For a world-citizen would emerge only when “it is regarded as normal, and indeed essential, that each people should have goodwill to all others, and should recognise its obligations to mankind as a totality.” Was there, after all, “an ethical foundation in the heart of this world?”

Knibbs’s unique contribution was to place Malthus’s Population Problem firmly back in a global, environmental and ethical context during a period of entrenched pro-natalist consensus. For him, humankind’s greatest challenge was to develop new ideals based on concern for future generations. To do so would require two great transformations – reducing greed and extravagance, and overcoming what he saw as the evils of economic nationalism. Echoes of the Age of Gaia, then, arose in Australia almost a century before the Ages of Flannery and Climate Alarmism.

“The rate at which Man has increased for more than a century,” he concluded, “informs us that we have unquestionably entered upon a new era. That rate will probably not diminish except through the arrival of troublous times. Of itself, the rate will create enormous difficulties, for mankind has not yet become an economic unity, nor has it learnt to regard issues from the standpoint of the good of the whole. The time available for all necessary adjustments is so short that Man’s immediate task is indeed a very heavy one, and it is inescapable.”

### **How many billion more?**

The UK Royal Society made a surprise announcement in July last year, 83 years after Knibbs published his last book. It launched a major study into a “hugely controversial area”; not anthropogenic global warming, but anthropogenic population growth. It would be a comprehensive review to determine how population trends would affect global social and economic development this century.

Sir John Sulston, a Nobel laureate through his work on the Human Genome Project, is leading the project. “This topic has gone to and fro in the last few decades,” he said, but “it appears to be moving back up the political agenda now.” It was timely, then, to examine the scientific basis for changes in population and its effect on sustainable development.

The Society’s announcement was made on World Population Day, July 11<sup>th</sup>, 2010. This annual event began in 1989, when the United Nations decided to commemorate the world’s first Five Billion Day, reached in 1987. Almost two and a half decades later, humankind’s population had surged by 39 per cent, to an estimated 6,966,795,188 on October 7<sup>th</sup> this year. (Despite this dramatic increase, the UN’s policy focus shifted away from agency



concern over global growth rates to other population issues, and especially to climate change.)

***The human population is far higher than any other primate at any time in history.***  
**The Royal Society**

To summarise, the world's human population reached one billion in 1804, three years after the first UK census. It reached two billion in 1927, three billion in 1960, four billion in 1974, five billion in 1987, and six billion in 1999. According to the United States Census Bureau, the seven billionth living person will arrive in July 2012, while the UN Population Division's estimate is late 2011.

Today, the world is adding the largest numbers to its population than at any time in history. Despite the global population growth rate declining to an annual 1.2 percent, demographic momentum is driving the addition of 83 million a year,

By 2025, the global population is projected to reach eight billion. However, the hope it would peak around nine billion between 2045 and 2050 now seems problematic. Recent UN projections suggest it could be as high as 10.6 billion by mid-century. The actual outcome depends on several key variables; with total fertility rates per woman (TFRs) over the next four decades especially critical.

The UN Population Division recently produced six projections. In its "medium" scenario, world population would peak at 9.4 billion in 2070 and then start to decline, but only if fertility declines significantly in most developing countries. The high scenario, where fertility remains mostly between 2.2 and 2.3 children per woman, would lead to a world population of nearly 30 billion in 2300 (Note 4).

However, there is no guarantee the UN's "median" scenario will become a reality. Developing countries are adding over 80 million to the population every year. The poorest of them are adding 20 million, exacerbating poverty and threatening the environment.

Hania Zlotnik, the Division's Director, has warned that "high-fertility countries may not reduce their fertility fast enough. Even countries with intermediate fertility need to reduce it to replacement level or below to avert continuous population increases to unsustainable levels."

Ominously, the current global TFR seems stuck at 2.5 (Africa 4.7), significantly higher than the desired replacement rate of 2.1. Half a TFR unit is the difference between the UN's medium and high projections, and represents about 5 billion extra people by 2010. Can the global population stabilise humanely before the end of the century, or will it be reduced by famine, conflict and so on? (Note 6)

How and why was the cause celebre of the 1960s and 1970s – anthropogenic population growth - displaced by “dangerous” anthropogenic climate change as the “greatest moral challenge of our time”? That, as they say, is another story.

©Michael Kile

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## NOTES

1. Beth Wright's 2011 article is preceded by this note: *Users are warned that this article contains quotations from historical sources which contain language or views which, reflecting the authors' attitudes or that of the period in which the item was written, may be considered to be inappropriate or offensive today.*

2. Census collectors were instructed that 'all aboriginals and half-caste aboriginals who are either civilised or semi-civilised, and who are either in employment or living in proximity to settlements, are to be enumerated' but 'no attempt need be made to contact aboriginals in your district who are living in a purely wild state' (Endnote 3). The constitutional requirements meant official national population tables excluded 'full-blood' Aboriginal people, even though some had been included in the Census count. From the mid-1920s, the

Bureau published annual information on the Aboriginal and Torres Strait Islander population, based partly on estimates and partly on counts.

3. Malthus T.R. 1798, (1970), *An Essay on the Principle of Population*; Chapter 1, p71, *Penguin Classics* reprint.

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5. Population Reference Bureau 2010 World Data Sheet:

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6. Australia will remain a very small fish – and a tempting morsel - in a shrinking global pond. Modelling by the University of Queensland Centre for Population Research suggests a national population by 2050 of somewhere between 29 and 43 million. Kevin Rudd's "big Australia" of 36 million is in the middle of this range. There is a 50 per cent chance that it will be greater than this figure. Most of the growth will occur in the larger capital cities.

7. Not everyone was happy with Australia's 2011 Census. Some were surprised there were no questions on national pet ownership. Others, like blogger Census Farce, wondered why "reading the Census questions forces one to ask how any of it is relevant to being able to "plan" for Australia's future. I implore anyone with a modicum of intelligence to read through and ask how any of them relate to developing a better Australia. It is more an Australia Card in Census clothing - totally irrelevant. The Census has been going for decades, yet it seems not to have added one iota to developing Australia. Is it because of the pure irrelevancy of the questions being asked of us?"