

Food Crises and the Ghost of Malthus

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ABSTRACT: The ongoing international food crisis has provoked a number of social scientists, politicians and pundits to predict that the ideas of Malthus may yet be vindicated. Corresponding to this expectation is a tendency to confuse the principle of population with truisms relating to continuous population growth in a finite environment. The precise assumptions upon which Malthus's principle of population actually rests are seldom emphasised or set against real relations and conditions of human societies. To remedy this the present article supplies a brief historical survey of the development, expression and practical employment of such ideas. It thereafter highlights the inability of the Malthus doctrine to account for food insecurity past and present. The doctrine is not analytically useful because populations must be pressed against the limits of capitalism ever before actual numbers and absolute limits of the social organisation of production can become a factor.

KEYWORDS: Malthus, population, food-insecurity, capital

Ever since the publication of Thomas Robert Malthus's *Essay on the Principle of Population*, food insecurity has been routinely explained in terms of a "calculation applied to the known properties of land and the proportion of births and deaths" (Malthus 1973a:5). This simple idea, that there is a natural and inexorable tendency for population growth to outstrip food production, has been a standard explanation for the varying extremes of poverty and hunger faced by people in different parts of the world for the past two centuries. The doctrine has been promoted with particular enthusiasm where famine and epidemic have followed rapid population growth.

Malthus's original essay on population appeared in 1798. It was part of a wider polemic on the old poor law system, which involved the provision of relief to the poor according to number of children. The theory appeared to rest on two undisputable facts: the fact that all living creatures, including human beings,

need subsistence to survive, and the fact that the capacity to subtract the means of subsistence from nature is finite. It also depended on the suggestion that the production of food increases arithmetically (i.e. 1,2,3,4) at best, while population increases geometrically (i.e. 1,2,4,8). The persuasive power of the doctrine was due, as Wells (1986:383) observed, to the "apparent precision of his geometric ratio for population increase, contrasted to the arithmetic ratio for the growth of agricultural production."

The population principle has been embraced with the greatest enthusiasm in the midst of severe human calamities, such as in India and in Ireland during the 19th century. It appeared most convincing to those in privileged social positions. In India it was far more popular among the white rajahs than the long-suffering poor of Calcutta. In Ireland it was very popular among large land holders that wished to turn Ireland into a sheep-walk, but far less so among the rural poor and those forced to emigrate. It was

certainly very popular among British policy makers that needed to legitimize Irish famine policy, and Indian famine policy, at home in England. As Mike Davis has explained, in attributing conditions to overpopulation “those with the power to relieve famine convinced themselves that overly heroic exertions against implacable natural laws, whether of market prices or population growth, were worse than no effort at all” (Davis 2001: 32).

The Malthus doctrine has usually been promoted concurrently with policies designed to facilitate the processes of capital accumulation. It has been most regularly evoked by those in favour of free market economic policies. This has been the case from its earliest expression up to the 21st century. Variations of the doctrine have continuously surfaced wherever populations have found it difficult to access enough nutritious food and lead decent lives. Overpopulation has been routinely evoked even though almost all instances of severe hardship have been a matter of economic constraints on access rather than actual decline in capacity to produce abundant sustenance. The doctrine itself has little explanatory power with regard to the conditions generated under modern capitalism, but is continuously embraced and promoted. However, as the following pages show, enthusiasm for the doctrine depends less on its capacity to illuminate than its capacity to disassociate the conditions of deprivation and want from the socio-economic structure of capitalist production.

To understand the consistent popularity and staying power of the principle of population requires a closer examination of the doctrine itself and the conditions which it has been used to explain. To this end it is helpful to deal with Malthus, the originator of the doctrine. Malthus subscribed to Hobbes' view of human nature, which depicted human individuals as selfish and aggressive. In addition to this Malthus was inclined to stress mankind's supposed natural laziness and imprudence (Malthus 1973a:59). For Malthus, human behaviour was to be explained in terms of people acting according to this mixture of natural qualities in the face of social and environmental checks. Given the option the average person was expected to choose idleness over industry and act in an irresponsible manner. As such, the common

people had to have responsibility forced upon them through the pressure of necessity. Malthus thought that if government schemes rewarded people for having large families they would have large families. He thought that if poor relief was widely available, commitment to hard work, thrift and responsibility would decline. Malthus was sure that persistent and widespread poverty could only be made worse by government attempts to alleviate it. For this reason all proposals designed to free people from want were expected to undermine long-term prosperity, which required hard work. People were only expected to work hard where they felt the goad of necessity (Malthus 1973a:269-273). As such, non-intervention was considered the best policy.

With his particular view of human nature Malthus felt justified in dismissing Marquis de Condorcet's proposal to set up a fund for the elderly “produced in part by their own former savings, and in part by the saving of individuals who in making the same sacrifice die before they reap the benefit of it” (Malthus 1973b:3). Any such fund, even for those in their old age, was expected to lead to improvidence and laziness. This sentiment was well expressed by Arthur Young who insisted “every one but an idiot knows that the lower classes must be kept poor, or they will never be industrious” (Tawney 1948:270). The setting aside of provisions for the poor and/or idle was also considered harmful as it meant that less remained for the rest, thereby spreading poverty among a greater number of people than would otherwise have experienced it (Malthus 1973b:38-48).

For Malthus, any government scheme that prevented the poor from experiencing the full effects of their poverty only encouraged the behaviour that brought poverty. The threat of food insecurity in a society was thought to perform a positive disciplinary function. It taught people that too many offspring invited poverty to their communities, that overpopulation produces social ills. In this connection Malthus thought it necessary to counter claims made by writers such as William Godwin, who suggested that “myriads of centuries of still increasing population may pass away, and the earth be yet found sufficient for the support of its inhabitants” (Godwin 1985:769). Malthus was determined to show that the

productive power of labour could not keep pace with population growth. Humanity could not, as Godwin had suggested, rely on the continued introduction of “complicated machines of human contrivance” (Godwin 1985:759). Malthus was keen to show that there were obstacles to the creation of a more humane system. In the face of such enthusiasm for the betterment of human conditions Malthus explained that poverty was natural, inevitable and unavoidable, and that human nature doomed mankind to perpetual scarcity (Dugger 2003:6). Godwin’s claims had to be countered. As such, the first edition of his essay was subtitled “With Remarks on the Speculations of Mr. Godwin and Other Writers” (Peterson 1986:367).

For Malthus, what was true of absolute poverty was also true of unemployment. Godwin had suggested that this and related problems occur because portions of the community “have usurped the power of buying and selling the labour of the great mass of the community [and] are sufficiently disposed to take care that they should never do more than subsist” (Godwin 1985:713). Malthus wished to show that unemployment was due to a lack of demand for labourers relative to population growth. As such, the idleness and poverty of the industrial revolution was depicted as an excess in supply of “hands.” The idea that population caused shortages of work and poor conditions seemed to be confirmed thereafter as periodic downturns in economic activity occurred. At one time it appeared as though “hands” were scarce and at other times they appeared to be too plentiful. Adam Smith had already explained how the oversupply of any commodity cheapens it, which led Malthus to think it possible to maintain decent wages by limiting the supply of labourers. Malthus thought that it was in the interest of all labourers to control their numbers, providing only as many hands as were needed in industry at any given time. Population increase and decline would have to correspond to the fluctuating demand for workers. Such notions were developed from those of Smith, who had already explained that

the demand for men, like that for any other commodity, necessarily regulates the production of men; quickens when it goes too slowly, and stops when it advances too fast. It is this demand, which

regulates and determines the state of propagation in all the different countries of the world. [Smith 1976:89]

If the followers of Malthus expected the population to adjust itself to upturns and downturns in the economy they faced a fundamental problem. By the time an increase or decrease in the population could be realised, the rise and fall of the economic cycle would have passed at least once (Marx 1953:94). Unless the plan was to put newborn infants to work population could not possibly respond to the increase or decrease in demand for labourers.

Theoretical problems with the principle of population did little to prevent followers of Malthus from using the doctrine to justify unpopular government policies in the years since. The doctrine was readily converted into policy during the Irish potato famine of the mid 1840s. This was not a difficult task. Malthus had explained that insofar as abundance of food made possible the support of large families, the crops that were grown in different countries, such as rice, corn or potatoes, determined population size (Malthus 1973a:314). The cultivation of a particular crop was thought to permit a population to grow so far, but famine must occur when the absolute limit is reached. Followers of Malthus saw that the population had increased quickly in the years prior to the famine in Ireland. They saw that the cultivation of the potato, which is a very prolific crop, created the means of subsistence necessary to sustain such a population. The famine was thought to have occurred because the population had reached its natural limit. The British authorities, who were very taken by this idea, came to believe that if they alleviated suffering in Ireland it would only encourage population growth, thereby making the problem worse.

The cultivation of the potato in Ireland was largely a response to the industrial revolution in Britain. Many people had been forced off the land. Others had no option but to maintain themselves on tiny plots after great tracts were freed up in order to produce crops for export to the industrial heartland (Britain) and to the colonies (Ross 1998:35-55). A great population was maintained, but the bulk of food, save about 50% of the potato crop, was produced for export. The buying power of the people

was weak. There was little capitalistic enterprise in Ireland and so little in the way of rewarding employment. For the followers of Malthus this undersupply of rewarding work, experienced as a lack of opportunity to work, produce and prosper, represented an over-supply of labourers. But since people could not purchase alternative foods any lack of potatoes would be catastrophic. The famine would have been likely to occur in Ireland even if the population was half the size (Ross 1998:35-55).

The notion that potato blight caused the Irish potato famine, which prevails to this day, is insufficient. Though blight did destroy the potato crop in the mid 1840s, it did not cause any shortage of food in the country. At the height of the famine there was enough food being produced in Ireland to feed all of Great Britain and Ireland twice over (Ross 1998:32). Up until the famine the peasants of Ireland were nourished sufficiently that they would continue to exist. However, no matter how hard they laboured on the land their purchasing power would never enable them to enjoy any of the comforts and luxuries as existed elsewhere. Insofar as they were wholly dependent on what was growing on their tiny plots of land, one bad harvest would be enough to finish them. Ireland was a disaster waiting to happen.

When famine eventually took hold it was one of Malthus's own students, Charles Trevelyan, who was in charge of famine relief. Trevelyan took the same negative view toward poor relief as Malthus did. He thought that the provision of relief exacerbated the problem and, at the height of the famine, insisted that the only way to end the suffering was to bring all operations to a close. In Trevelyan's view the famine was "a direct stroke of an all wise and all-merciful providence" (Ross 1998:46). Others, such as the land agent John Thornley declared that "there will come some good out of the present misery, you may be sure. It is good for the country that the surplus population is driven away, even by stress of famine, to seek more prosperous homes elsewhere, leaving the land to be made the best of" (Keary 1979:123).

Many of the poor law guardians responsible for administering local relief at the time were landlords (Ross 1998:48). Many considered poverty as nature's way of punishing imprudence. Malthus had explained

that "nature shows us the wrongness of an act by bringing from it a train of painful consequences" (Wells 1986:383). This view was shared by the ascendancy in Ireland. In an earlier period of social distress Bishop Berkeley was dismayed to find "sturdy beggars" in receipt of poor relief and thought it fitting that they be "seized and made slaves to the public for a certain term of years" (Tawney 1948:270).

Malthusians assumed that if government interference was minimal, deprivation would act as a check on the number of births. They held to this idea throughout the 19th century even though it had been dealt a fairly serious blow by Charles Darwin's *Origin of Species*, which demonstrated that throughout the animal and vegetable kingdoms (in which he included humans) hardship acted as a spur to the process of procreation. Considering all that he observed in nature, Darwin concluded that "if an animal can in any way protect its own eggs or young, a small number may be produced, and yet the average stock be fully kept up; but if many eggs or young are destroyed, many must be produced" (Darwin 1964:66). Nature spared no expense when reproducing a species. The harshest conditions resulted in more young being produced. This posed a problem for advocates of the principle of population, which depended on references to such laws of nature. Darwin's studies implied that in order to check the increasing birth rate and reduce pauperism, which Malthusians treated in cause and effect terms, it would be necessary to ease hardship not maintain it.

The Malthusians of the 19th century had many opponents. However, it took Karl Marx and Frederic Engels to explain the deprivation and idleness that existed during the Industrial Revolution in terms of the operations of the capitalist market system. With regard to industrialised countries Marx saw that a pool of redundant labour-power was maintained even in boom times. He thought that this had to be explained in the context of the labour market in which labour-power is bought and sold as a commodity. According to Marx those in employment helped maintain the idle section through their over-work, and conversely, the unemployed through its competition, forced the employed to submit to over-work (Marx 1953: 92). Marx considered the maintenance of this reserve

of unemployed as necessary for the maintenance of capitalist relations. Its competition ensured that those in employment agreed to work long hours for a reward that would barely maintain them. No matter the intensity of production, huge numbers would remain in conditions of poverty. If those out of work were to be considered superfluous then it followed that every capitalist society was overpopulated, regardless of the actual numbers. This explanation cut right across the principle of population. It suggested that the supposed “surplus population” would still exist whether millions more or millions less inhabited a country. As far as Marx and Engels were concerned population theory had been invented and popularised by economists in order to obscure the roots of idleness in the competitive system (Engels 1843).

Marx appears to have had particular difficulty in viewing Malthus’s work as honest scholarship. The Parson’s initial *Essay on the Principle of Population*, for instance, was derided as “nothing more than a school-boyish, superficial plagiary” (mainly of Adam Smith’s works) and the sensation it caused due to nothing other than “party interest” (Marx 1953:121). For Marx the problem of idleness and poverty could not be understood without an appreciation of the process of capital accumulation, the centralisation of industry, the trend toward urbanisation and the socialisation of labour under industrial capitalism. For Marx insecurity continued to grow as more people lost control over any means of production.

Food insecurity was a fact of life even before Malthus or Marx put pen to paper. It has continued to be a feature of the human experience. In two hundred years no day has passed without millions experiencing chronic hunger. At present the number facing this problem is around 800 million. In each decade there is the threat of mass starvation visiting some country or other. On occasion the problem results in the deaths of millions at particular geographical locations in a very short space of time. The famine that occurred in Bengal in 1943–44 is just one example. As with the famine in Ireland, little was done to alleviate the suffering. And as with the major famines before and since, there was a rush to explain the Bengal disaster in terms of food availability relative to population. In 1944 the Famine Inquiry Commission was appointed

by the government of India to investigate the causes. It found a “serious shortage” in the total supply of rice available as compared to the normal supply (Islam 2007:423). However, economist Amartya Sen has since questioned this explanation. He explained that though “1943 was not a very good year in terms of crop availability, it was not by any means a disastrous year either... [it] was, in fact, 13 per cent higher than in 1941, and there was, of course, no famine in 1941” (Sen 1983:58). According to Sen the crisis was triggered when rumours of shortage encouraged people to regard rice as an excellent investment opportunity. This resulted in price hikes. Though incomes stood close to where they had been in 1941 a wild upswing in the price of rice produced a humanitarian disaster (Sen 1983:65). As in Ireland, there was more than enough food to feed everyone, but millions faced starvation because they had become too poor to buy it.

Regardless of the facts that cut across Malthusian explanations they have surfaced again and again. The simplicity of the argument succeeds in drawing that “party interest” referred to by Marx. Wherever there is mass unemployment, food shortages or evidence of unsustainable pressures on the environment, economists, politicians and pundits of various kinds see fit to utilise it. In the 1960s, biologist Paul Ehrlich attempted to explain poverty, the nuclear arms race, ecological threats, and many other problems in Malthusian terms. His book *The Population Bomb* warned that humanity was rapidly running out of food, declaring that the “battle to feed humanity is already lost.” Once more it was claimed that food production could not keep pace with population growth and that technological innovation could do no more than provide a stay of execution. Ehrlich’s book went so far as to predict worldwide shortages and the death by starvation of hundreds of millions of people in the 1970s and 1980s (Ehrlich 1971:19). He explained that people faced this prospect in consequence of their growing numbers. “Too many people—that is why we are on the verge of the ‘death rate solution’” (Ehrlich 1971:48). As with Malthus’s initial essay, Ehrlich’s book caused a sensation and quickly became a bestseller. The claim that existing social ills could be explained in terms of population pressure (and apart

from the normal operations of the market) was again widely welcomed.

The relationship between population increase and food production actually does very little to support the claims of Malthus or Ehrlich. In a recent article in *Nature*, Antony Trewavas has shown that in Malthus's day, when there were around one billion people in the world, agricultural technology enabled one person to be fed from the food grown on around 20,000 square meters. Though population has increased six fold since then agricultural technology now enables one person to be fed from the food grown on no more than 2,000 square meters (Trewavas 2008). This means that even if humanity were limited to the land used for food production in Malthus's time the capacity to produce subsistence has increased at a greater rate than has the increase in population. This did not stop Malthusians such as Norman Meyers from explaining the deteriorating conditions in Latin America in the 1980s and 1990s in terms of population growth. In Meyers' case the conditions in Latin America were framed in terms of a race between the results of the green revolution in agriculture and population growth. Conditions deteriorated as population growth continued to offset improvements in agricultural production (Myers 1994). As such, the exodus from Mexico's rural areas to the cities and across the border into the United States was considered a consequence of a supposed "agricultural squeeze" resulting from population growth (Myers 1994).

At present the most notable of economists, such as Jeffrey Sachs, believe that if the fertility rates remain at present levels they will "almost surely trigger Malthus's 'positive checks' (war, disease, famine)" (Sachs 2005:166). According to Sachs, population growth means big families, which puts "enormous stresses on farm sizes and environmental resources, thereby exacerbating the poverty" (Sachs 2008:65). To his credit Sachs has pointed out that all of the places in the world where fertility rates remain very high are poor and largely rural (Sachs 2008:323). He acknowledges the "strong tendency of societies with a high child mortality rate to have a high total fertility rate as well" (Sachs 2008:324). But though high fertility is considered a product of poverty the

resulting growth in population is considered one of the most central sources of poverty. The problem as Sachs understands it is that fertility rates come down as poverty is reduced, but poverty reduction requires an end to population increase.

Though Sachs partly cuts across the Malthus doctrine, population is still considered a central factor underpinning food insecurity. The same is true of Nobel Prize winning economist Paul Krugman, who firmly believes Malthus "was right about the whole of human history up until his own era." Krugman, who expects the ideas of Malthus to be finally vindicated, has suggested that apart from the industrial revolution onwards, "population growth had always managed to cancel out any sustained gains in the standard of living, just as Malthus said" (Krugman 2008).

There are however at least as many scholars who think that the principle of population cannot adequately explain food insecurity. For such scholars references to population are thought to obscure other more important factors. It is for this reason that Raj Patel does not include population as a significant factor in his account. Rather than growing numbers, the reasons for the recent exacerbation of food insecurity are thought to include rising energy prices, bad harvests (partly due to climate change), growing demands for meat and milk in developing economies such as China, the use of food to produce bio-fuels, speculation and hoarding for the purposes of financial gain (Patel 2008).

Food crises are rarely the result of population growth *relative* to food availability. One of the most direct causes of the 2007/2008 food crisis was the rising cost of grain internationally. This cost was not a consequence of food availability. At the height of the crisis *The Economist* reported enormous stockpiles of rice sitting in warehouses in Japan. These were so large that if released onto the market they would have caused the price of rice to drop drastically. Such stockpiles were created as a result of World Trade Organization (WTO) rules. The Japanese government could not prevent US produce from entering the market and so bought up a great deal in order to protect its domestic producers. According to WTO rules this rice cannot be released onto the world mar-

ket without permission from the country of origin (Makino 2008).

This is only one consequence of the removal of trade barriers to agricultural produce. The North American Free Trade Agreement (NAFTA) enabled the great grain companies to export corn to Mexico, chiefly to the benefit of agribusiness. Though the profits of the big producers increased, the agreement destroyed the livelihoods of well over a million peasant farmers in Mexico who could not compete on price with imported (and subsidised) corn. In a few short years NAFTA turned Mexico from a net food exporter into a net food importer (Reid 2008). The cheap imported corn did not even benefit consumers since few people can eat raw corn. The price of the processed product, which is the chief ingredient of tortillas, increased rather than decreased with the introduction of NAFTA. This was partly because the giant food processors (two control 97 percent of the industrial corn flour market) realised the benefit. Thereafter any increase in the price of corn was reflected in the price of the Mexican staple. The recent tortilla crisis (a 60% increase in the price of tortilla) has to do with the dependence on imported ingredients and giant food processors (Patel 2007:53). It has little to do with the capacity to produce food.

That food insecurity has visited many different countries at the same time does not reflect any global shortages. The internationalisation of food crises has to do with the internationalisation of production and markets, which is a consequence of the ceaseless concentration and centralisation of capital. Agricultural producers are subject to the same processes as other industrial enterprises. Competition demands economy of scale, leading to continuous centralisation and concentration and the need for ever-larger markets. When populations are forced to open their markets to foreign produce they experience the repetition of a fairly standard pattern. First local production is undermined, and then people go hungry when the price of imported food becomes prohibitive.

The welfare of a great portion of humanity is now threatened by recurrent food crises. Food riots have occurred in more than 35 countries since 2008. Though the population argument provides no explanation for these events it still gets an echo, even

among relatively progressive scholars and academics. This is partly because there are valid claims presented in conjunction with Malthusian assumptions. Those that are sympathetic to Malthusian ideas are certainly justified in ruling out the possibility that there can be unlimited population growth. A world of over 6 billion people (projected to be 9 billion by 2050) cannot possibly adopt the same consumption patterns as the United States, which represents 5% of the world's population, but uses over 25% of the world's resources. That would require at least five times the resources presently exploited on the planet (Costello 2008). Likewise, it goes without saying that global population growth across the world must at some time fall to 0% or enter decline. This is a mathematical certainty. In order to prove this it is only necessary to project the outcome of a rate of 1.6% increase per year (roughly the current rate). Since every year population must increase by 1.6% of a larger number, population grows exponentially, doubling every forty-four years. Population would double within the average lifespan even if the percentage were reduced to 1% per year (Bartlett 2004). Both friend and foe of the Malthus doctrine can accept that a continuous rate of population growth in a finite world would inevitably outstrip all human potential to produce subsistence.

However, the Malthus doctrine should not be confused with the above truism. To accept the principle of population is to assume that the rate of increase of plants and animals is naturally different to that of the human species. Moreover, the doctrine explicitly claims that it is this supposed difference between arithmetic increase in food production and unrestrained geometric population growth that produces observable "positive checks" (social ills such as poverty, war, famine and epidemics). Malthusianism is an attempt to explain existing and future human conditions in terms of the pressures placed on production of subsistence by growing populations. And it is this attempt that has characterised Malthusian accounts of poverty and food insecurity up to the present time. The claim that there are limits to population growth in a finite environment is not Malthusian. The idea that deteriorating human conditions can be explained in terms of a population reaching the limits of social

potential to produce subsistence is. If the former is confused with the latter it is because Malthusians have so skilfully mixed scientific and unscientific claims together to create an aura of legitimacy.

On each occasion when convincing explanations for social ills are in greatest demand, the ghost of Malthus returns. However, the population principle is not continuously resurrected on account of its explanatory power. The doctrine can in no way account for poverty in any given society, or famines and epidemics that periodically occur in different parts of the world. Under prevailing socio-economic arrangements populations cannot be pressed against their potential to produce subsistence. The limits of the profit system are always reached before the absolute or potential availability of food can become a factor. If the poor face famine or epidemic it is because they have reached the limit of their ability to purchase food or medicine, not because of any absolute scarcity. Any serious explanation of food insecurity requires attention to how the production of subsistence is organised, by whom, to what ends, and how it is distributed. It is necessary to acknowledge the fact that food, shelter, clothing and medicine are generally produced and distributed according to the profit motive. If want exists under this system of production it is primarily because there is insufficient private gain to be had from organising production and distribution to satisfy that want. The capacity to produce and distribute is not the issue. If there were sufficient profit to be made from a wider distribution of nutritious foods then such a distribution would be the outcome.

To explain the conditions experienced in human societies requires attention to the contradiction between basic human needs and the limits of the profit motive. Modern populations can never reach the natural limits of their productive power before their purchasing power reaches the limits of the profit motive. Though it is necessary to accept the fact that we live on a finite planet and that infinite growth is impossible, it is nonetheless necessary to recognise the complete inadequacy of the Malthusian principle of population to account for human conditions. The doctrine of Malthus was not wrong simply on account of his exaggeration of the rate of population

growth and underestimation of the future increase in food production. The doctrine cannot possibly explain crises (and related hardships, poverty and deprivation) as they occur in human societies since it involves an attempt to do so apart from the set of social relations that underpins them. Its continued re-emergence is to be understood in terms of its social function rather than its capacity to illuminate. As during the movement to abolish the old poor law, or the apologetics relating to the Irish potato famine, contemporary references to the doctrine of Malthus in relation to food insecurity serve only to obscure the role of the profit motive in the destruction of sustainable living and in the generation of food crises across the globe.

References

- Bartlett, Albert
 2004 Arithmetic, Population, and Energy. Global Public Media. Electronic document, <http://globalpublicmedia.com/lectures/461>, accessed December 5, 2008.
- Costello, Joe
 2008 US Power Failure a 'Dismal' Turning Point. Asia Times. Electronic document, http://www.atimes.com/atimes/Global_Economy/JD17Dj05.html, accessed December 6, 2008.
- Dietz, F.C.
 1927 The Industrial Revolution. New York: Henry Holt and Company.
- Dugger, William
 2003 Evolutionary Theory in the Social Sciences, Vol. I. London: Routledge.
- Godwin, William
 1985 Enquiry Concerning Political Justice. Harmondsworth: Penguin.
- Darwin, Charles
 1964 On the Origin of Species. Cambridge: Harvard University Press.

- Davis, Mike
2001 *Late Victorian Holocausts: El Nino Famines and the Making of the Third World*. London: Verso.
- Ehrlich, Paul
1971 *The Population Bomb*. London: Pan/Ballantine.
- Engels, Friedrich
1843 *Outlines of a Critique of Political Economy*. Electronic document, <http://www.marxists.org/archive/marx/works/1844/df-jahrbucher/outlines.htm>, accessed July 30 2009.
- Islam, M. Mufakharul
2007 *The Great Bengal Famine and the Question of FAD Yet Again*. *Modern Asian Studies*. 41(2): 421-440.
- Keary, Annie
1979 *Castle Daly: The Story of An Irish Home Thirty Years Ago*. New York: Garland.
- Krugman, Paul
2008 *The New York Times*. Electronic document, <http://krugman.blogs.nytimes.com/2008/03/25/malthus-was-right/>, accessed December 4, 2008.
- Makino, Catherine
2008 *Huge Rice Stockpiles Could Ease Food Crisis*. Inter Press Service. Electronic document, <http://ipsnews.net/news.asp?idnews=42892>, accessed December 7, 2008.
- Malthus, T.R.
1973a *An Essay on the Principle of Population*. London: J.M. Dent & Sons Ltd.
1973b *An Essay on the Principle of Population, Book III*. London: J.M. Dent & Sons Ltd.
- Marx, Karl
1953 *Marx and Engels on Malthus: Selections from the Writings of Marx and Engels Dealing with the Theories of Thomas Robert Malthus*. R.L. Meek ed. London: Lawrence and Wishart.
- Myers, Norman
1994 *The Big Squeeze*. *The Earth Times*. Electronic document, <http://www.sdearthtimes.com/et0294/et0294s2.html>, accessed December 8, 2008.
- Patel, Raj
2007 *Stuffed and Starved: Markets, Power and the Hidden Battle for the World Food System*. London: Portobello Books Ltd.
- 2008 *Tortilla Riots, Mud Cakes and Why Your Food is So Expensive*. *Daily Mail Online*. Electronic document, <http://www.dailymail.co.uk/news/worldnews/article-1043125>, accessed December 10, 2008.
- Peterson, W.
1986 *Malthus and the Intellectuals*. In Thomas Robert Malthus: *Critical Assessments*. J. Cunningham Wood, ed. London: Croom Helm.
- Reid, Derekw
2008 *The Food-Fuel Crisis*. Variant (33). Electronic document, http://www.variant.randomstate.org/33texts/8_V33reid.html, accessed December 8, 2008.
- Ross, E.B.
1998 *The Malthus Factor: Population, Poverty and Politics in Capitalist Development*. London: Zed Books.
- Sachs, Jeffrey
2008 *Common Wealth: Economics for a Crowded Planet*. London: Penguin Books.
2005 *The End of Poverty*. London: Penguin Books.
- Sen, Amartya
1983 *Poverty and Famines: An Essay on Entitlement and Deprivation*. Oxford: Oxford University Press.
- Smith, Adam
1976 *The Wealth of Nations*. Chicago: The University of Chicago Press.
- Tawney, R.H.
1948 *Religion and the Rise of Capitalism*. London: John Murray.
- Trewavas, Antony
2008 *Malthus Foiled Again and Again*. *Nature* (418) 668-670. Electronic document, <http://www.nature.com/nature/journal/v418/n6898/full/nature01013.html>, accessed December 10, 2008.
- Wells, David
1986 *Resurrecting the Dismal Parson: Malthus, Ecology, and Political Thought*. In Thomas Robert Malthus: *Critical Assessments*. J. Cunningham Wood ed. London: Croom Helm.