Malthus, Utopians, and Economists[1]

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April 2013, edited December 2013

Introduction

T.R. Malthus is commonly understood to have predicted in his *Essay on the Principle of Population* (1st edition 1798, 6th edition 1826) that the world would become overpopulated because population grows geometrically and capacity to produce food grows arithmetically. The idea of a clash of the two growth rates is expressed in terms such as overpopulation and unsustainable economic growth. The widely held belief that T.R. Malthus was the source of this idea of resource depletion and overpopulation is seen in the common use of the adjective "Malthusian" for the idea and its corollaries across scholarly fields. For example, as recent titles of journal articles we find "Population, Technology, and Growth: From Malthusian Stagnation to Demographic Transition and Beyond," (*American Economic Review*, 2000); "A Model of the Escape from the Malthusian Trap," (*Journal of Population Economics*, 1998); "Rearranging the Deck Chairs on the Malthusian Ship*,"(Conservation Biology*, 2001); "Malthusian Overfishing and Efforts to Overcome it on the Kenyan Coral Reefs, (*Ecological Applications*, 2008).

A close and thorough reading of the first edition of Malthus's *Essay* casts doubt on the attribution of this idea to Malthus, i.e., in the first edition of the *Essay on Population* Malthus appears not to be a Malthusian. Rather, his general aim was to demonstrate the importance of social institutions. In particular he argued that William Godwin's and Nicholas de Condorcet's visions of ever more perfect humans living in communistic communities were utopian, and that the English Poor Laws trapped families in poverty. Furthermore, Malthus claimed that the central idea in his *Essay* was not new, that it had been developed by David Hume and Adam Smith. If this was the case, but if the central idea was as it has commonly been interpreted, then one might expect to find population prophets of doom labeled Smithians or Humeans. But they are not. They are known as Malthusians, which suggests that either Malthus failed to see the novelty of his central idea, or that his central idea is not what it has been presumed to be.

This paper is the first step in my attempt to understand how the context and thus much of the substance of the *Essay* were lost and replaced with other contexts and substances. In the first several sections of the paper I describe the context from which Malthus wrote and thus what he was writing

about. For some readers of this paper there will be little new here. For I am neither the first nor the only person to see the difference between the ideas of Malthus and what became Malthusianism. The mystery of Malthus is that there is misinterpretation, for Malthus told us clearly what he was writing about. Yet, few people know this, or at least those who know what Malthus was writing about are a small minority of those who invoke the name Malthus to convey an idea. Among the minority are Ross Emmett (2006), A.M.C. Waterman (1991) and Donald Winch (1987).[2]

In the final section of the paper I examine three interpretive commentaries on Malthus for a clue to the question of how the essay of Malthus was transformed into Malthusianism. One of the commentaries is that of Malthus's contemporary William Godwin, whose ideas prompted Malthus to write the essay. The second is by Kenneth Boulding, who wrote the forward for the University of Michigan edition of the *Essay.*[3] The third is that of A.M.C. Waterman (1991).

What did Malthus Mean? It's Almost All in Godwin and Condorcet

In the preface to his *Essay on the Principle of Population* Malthus tells us he was prompted to put his ideas down on paper by conversation with a friend (his father Daniel Malthus) on the prospects for the future improvement of mankind. Specifically, Malthus and his father were discussing William Godwin's essay on *Avarice and Profusion* (*The Inquirer*, 1797). This then is the immediate context for what was to become known as Malthus' population principle. As much is indicated in the full title of the essay, *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*.

Malthus leaves little doubt in the opening chapter of the *Essay* that his primary concern is with sanguine and naive speculations on the future improvement of mankind. This is the first and most important matter for Malthus.

> It has been said that the great question is now at issue, whether man shall henceforward start forwards with accelerated velocity towards illimitable, and hitherto unconceived improvement; or be condemned to a perpetual oscillation between happiness and misery, and after every effort remain still at an immeasurable distance from the wished-for goal (p. 7) [4]
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> …

> I have read some of the speculations on the perfectibility of man and of society with great pleasure. I have been warmed and delighted by the enchanting picture which they hold forth. I ardently wish for such happy improvements. But I see great, and, to my understanding, unconquerable difficulties in the way to them (p. 8)

After reviewing the population principle as Malthus explained it in chapter one, we will turn to Malthus's remarks on Godwin and Condorcet to see more clearly the use to which he put the principle.

Malthus tells us that his principle is not new, that it can be found in the writings of Adam Smith and David Hume, especially in the former. He identifies himself as an empiricist, in that his theory as well as that of the "speculative philosophers" stand or fall with the evidence. No theory, however beautiful, can be considered "just" unless confirmed by experiment. [5]

Malthus presented two postulates. He regarded these as fixed laws of nature, confirmed by all of human history: "first, that food is necessary to the existence of man. Secondly, that the passion between the sexes is necessary and will remain nearly in its present state" (p. 9).

It is telling that in the first postulate Malthus made no specific mention of the future -- no mention of a future in which there might not be sufficient food. Of course, if the two postulates are fixed laws of nature, this implies they are permanent. But his second postulate states explicitly, for emphasis, that sexual attraction between men and women is permanent. It will remain much as it is and has been. This, second postulate, was directed squarely at Godwin.

From the two postulates Malthus drew the inference that "the power of population is indefinitely greater than the power in the earth to produce subsistence for man" (p. 10). Actually, the two postulates as stated above do not imply this conclusion. They need to be supplemented with knowledge of potential food production and of human fertility. Malthus presumably regarded common knowledge of agricultural productivity and human fertility sufficient that his readers would accept the inference. He then restated the conclusion with more precision, and with an important qualifier:

"Population, when unchecked, increases in a geometrical ratio. Subsistence increases only in an arithmetical ratio" (p. 10).

The qualifier is "when unchecked." This and the statement that follows make clear that Malthus was making a counterfactual claim.

"By that law of our nature which makes food necessary to the life of man, the effects of these two unequal powers must be kept equal. [para] This implies a strong and constantly operating check on population from the difficulty of subsistence" (p. 10).

I hesitate to use the term model for risk of anachronism, but one may think of this as an equilibrium model such as demand and supply. My interpretation is that just as saying that markets always move to the equilibrium price and quantity tells us nothing about the conditions of equilibrium for any particular market at any particular time, Malthus' equilibrium model of population tells us nothing about the number or material condition of the population of any particular people at any particular time.

Malthus began his analysis by comparing how population is checked in the plant and animal kingdom with the checks on human populations. In the former, the effective check is "waste of seed, sickness, and premature death" (10). With humans it is "misery and vice" (10). Misery is inevitable. Vice is probable, though not inevitable, for "the ordeal of virtue is to resist all temptation to evil" (p. 10).

With regard to the perfectibility of man and society, Malthus identifies Godwin and Condorcet by name. After paying respect to their candor and ability, he poses the hypothetical case of a speculative philosopher suggesting that man will in the future become an ostrich. Without evidence of men with elongated necks, lips turning into beaks, and hair turning into feathers, notwithstanding that he cannot prove the prediction in error, it cannot be considered likely that man will become ostrich. Hence, it is not reasonable to spend time and effort speculating on how happy life would be in a society of ostriches, "where all narrow luxuries would be condemned; where he [man become ostrich] would be employed in collecting only the necessaries of life; and where, consequently, each man's share of labor would be light, and his portion of leisure ample" (p. 8) This is a direct jab at Godwin.

Likewise, the claim in the second postulate that the passion between the sexes will remain largely as it is and has been, is in contradistinction to Godwin's conjecture that in time the sexual attraction between men and women will be extinguished. [6]

"I do not know that any writer has supposed that on this earth man will ultimately be able to live without food. But Mr. Godwin has conjectured that the passion between the sexes may in time be extinguished" (p. 9).

Malthus concluded that the best case for the perfectibility of mankind would be based on the record of progress through history, but he believed that the natural inequality between the power of population and that of food production demonstrably sets limits on this improvement.

> The natural inequality of the two powers of population, and of production in the earth, and that great law of our nature which must constantly keep their effects equal, form the great difficulty that appears to me insurmountable in the way to the perfectibility of society. All other arguments are of slight and subordinate consideration in comparison of this. I see no way by which man can escape from the weight of this law which pervades all animated nature. No fancied equality, no agrarian regulations in their utmost extent, could remove the pressure of it even for a single century. And it appears, therefore, to be decisive against the possible existence of a society, all the members of which, should live in ease, happiness, and comparative leisure; and feel no anxiety about providing the means of subsistence for themselves and their families. [para] Consequently, if the premises are just, the argument is conclusive against the perfectibility of the mass of mankind (pp. 10-11).

Malthus was Not Darwin

It is widely known that both Charles Darwin and Alfred Russell Wallace read Malthus's *Essay* as they developed their theories of natural selection in the plant and animal worlds. However, we see clearly in chapter two of the *Essay* that Malthus did not conceive of humans as animals who breed up to the limit of the food supply. He wrote that population, <u>when unchecked</u>, increases in a geometrical ratio, and food supply in an arithmetical ratio.[7] But,

> I think it will be allowed, that no state has hitherto existed (at least that we have any account of) where the manners were so pure and simple, the means of subsistence so abundant, that no check whatever has existed to early marriages; among the lower classes, from a fear of not providing well for their families; or among the higher classes, from a fear of lowering their condition in life. Consequently in no state that we have yet known has the power of population been left to exert itself with perfect freedom (p. 12).

Let's consider this statement. First, we notice that for both the poor and the rich, Malthus presumes there is an active check in place, short of malnutrition and starvation. Among the poor, this is fear of not

providing well for their families. Among the rich, the check is fear of loss of social status. Thus no state is known to exist in the present or past where the operative check is that which constrains populations of animals and plants. There is no known evidence of population butting up against the absolute capacity to produce food. If population was effectively unchecked, by the two fears mentioned, the growth rate would be more rapid than it actually has been for any people.

Malthus suggests that population growth would be rapid in a society with abundant resources, little inequality of status, and pure and simple manners. Why does he imagine such a "pure and simple" society? Because this is what Godwin envisioned in post-revolutionary Europe. Malthus suggests that the United States may be the best proxy for this type of society. The best evidence suggested that population of the U.S. was doubling roughly every twenty-five years (a 2.8 % annual growth rate). So Malthus took this growth rate as his benchmark for consideration of the likely course of events in Godwin's ideal (utopian) society.

This is an important interpretive point. In Malthus's numerical example of population and food production, he uses an estimate of population growth in the United States. Yet his object is not to explain population dynamics in the U.S., but to say something counterfactually about population dynamics in Godwin's ideal society.

Thus Malthus invites us to assume that population will double every twenty-five years. For food, he supposes that under reasonably favorable conditions, production might double in twenty five years. To be generous (to Godwin) he assumes that food production will not only double over the first twenty-five years of the experiment, but that it will double every twenty-five years thereafter.[8]

Malthus proceeds to show that with these assumptions and with an initial population of seven million (thought to be the population of Britain) after a century the population would be 112 million and the means of subsistence 35 million. If 35 million people had the same income per person as their ancestors four generations back, 77 million in the current generation would have no income. If the available income were distributed equally across the population of 112 million, income per person would be 2/3 below that of the great-great-grandparents.

Malthus invites us to assume that production can be doubled every twenty-five years in perpetuity to show that even with this highly unrealistic assumed capacity to produce, unchecked population would outgrow the food supply and population growth would necessarily cease, owing to the requirement of food for life. Far from envisioning this particular check taking effect presently or the future, he

concludes that in the real world, population is subject to the "constant operation" of other effective checks. For plants, and for animals, acting out of instinct rather than reason, the check is relatively simple, and it is captured well by the hypothetical experiment in geometrical and arithmetic growth. As Darwin and Wallace were to envision, plants and animals breed up to the natural limits. Malthus claimed that for humans the checks are not simple, but complicated. This is because humans have reason in addition to instinct. The more sophisticated a society is, the more complicated are the checks.

> In the present state of society, other considerations occur. Will he not lower his rank in life? Will he not subject himself to greater difficulties than he at present feels? Will he not be obliged to labour harder? and if he has a large family, will his utmost exertions enable him to support them? May he not see his offspring in rags and misery, and clamoring for bread that he cannot give them? And may he not be reduced to the grating necessity of forfeiting his independence, and of being obliged to the sparing hand of charity for support (p. 14)?

Malthus thought the effects of these cultural checks worked through adjustments in the age of marriage. On the one hand men were subject to a natural urge to marry ("the dictate of nature in an early attachment to one woman"). On the other hand, concerns of the sort expressed in the above passage caused them to resist the urge. Vice (sexual activity outside marriage) is a byproduct of these competing forces, "yet in all societies, even the most vicious, the tendency to a virtuous attachment is so strong that there is a constant effort towards an increase of population. This constant effort as constantly tends to subject the lower classes of the society to distress and to prevent any great permanent amelioration of their condition" (p. 14).

The "tendency to a virtuous attachment" has consequences especially for the poor, living as they do on the margin. Malthus inferred that there are oscillations of "progressive" and "regressive" movements in the standard of living of the poor. Abundant food (high real wages) encourages early marriages, which with time produce population growth and excess supply of labor. Consequently, wages decline and the price of provisions increases. This in turn leads to an increase in employment and production, renewed comfort in the standard of living for the poor, and the cycle repeats.[9]

Malthus contended that one of the numerous reasons it is difficult to observe this pattern of oscillations is that the rich collude to keep the price of labor down when market forces are otherwise pushing it up. When wages do rise, employers depict the higher wages as charity rather than as their response to

scarcity of labor. Yet, even if the rich did not combine against the poor "no possible form of society could prevent the almost constant action of misery upon a great part of mankind, if in a state of inequality, and upon all, if all were equal" (p. 16). Why the distinction between the state of equality and states of inequality? Because of Godwin's utopian vision of plenty and perpetual happiness in a state of equality.

In summary, Malthus took three propositions as fundamental (yet contested by those to whom his essay is addressed). They are that population cannot grow without means of subsistence; that where means of subsistence are abundant population grows; and that among the checks to population growth throughout history are misery and vice. From this point, at the conclusion of his second chapter, Malthus turned to the historical record for support for the propositions. In the subsequent two chapters he made inferences about population growth and levels in various societies: from North American Indians, to China, and Europe at the present in comparison to the time of the Roman Empire. In doing so Malthus used the historical record to test his theory, and used his theory to draw inferences about what the data would show if there were census data for the various societies over the periods in question. It is at this point, in chapter four, that he introduced the terms "preventive check" and "positive check." However, though the new terms are introduced, there is nothing new in their meaning beyond what he had already written in chapters one through three. The preventive check is using the powers of reason to foresee the likely consequences of early marriage, and the positive checks are vice and misery.[10]

Applying the Principle of Population to Sketches of the Perfectibility of Man and Society

In chapters eight and nine Malthus criticizes the visions of Condorcet,[11] and to a lesser extent of Robert Wallace. Both foresaw the kind of oscillations in the welfare of the poor that Malthus envisioned, but expected checks to population occurring in the distant future, rather than perpetually. Wallace's *Various Prospects of Mankind* (1761)[12] was similar in spirit to Malthus's essay in suggesting that population pressures would be the downfall of systems of equality. Concorcet, on the other hand, saw such pressures off in a future that would never arrive because humans were on a course toward perfection.

Robert Wallace (1697-1771) was a Scottish Presbyterian minister. His aim in *Various Prospects* was to

> Illustrate the principles of morality and natural religion; in particular, to discover whether the present life of man has a relation to any other, and thus to trace the designs of providence with respect to a state after death. At the same time, he hopes

> that his observations will not only answer his principal purpose, but serve likewise to throw some additional light upon human nature, and human society, considered only with relation to the present life (1761, iii).

Wallace agreed with "free-thinkers" to whom his work was addressed, that private property was a source of evils in human society, and that in a perfect egalitarian society there would not be ownership of property. It was in working out the effects of such a perfect government that Wallace engaged the question of population.

In the "tenth epoch" of his *Outlines of an Historical View of the Progress of the Human Mind* (1795) Condorcet asked whether inequalities between and within nations were part of the natural order, or the results of imperfections in the social order. He thought some inequality was natural in that it "favor[s] civilization, instruction, and industry, without drawing after it either dependence, humiliation or poverty" (1795, p. 119). But the greater part of inequality was not natural. Condorcet suggested that in examining the record of history:

> We shall find the strongest reasons to believe, from past experience, from observations of the progress which the sciences and civilization have hitherto made, and from the analysis of the march of the human understanding, and the development of its faculties, that nature has fixed no limits on our hopes (1795, p. 120).

France and the United States were leading the way in humanity's escape from the shackles of superstition, tyranny, and monopoly. Peoples around the world who were not yet enlightened, would become enlightened through the missionary efforts of those who were, or these unenlightened people would disappear. Progress would be slower in some areas than in others, but the barriers to truth would ultimately be overcome.

> Then will arrive the moment in which the sun will observe in its course free nations only, acknowledging no other master than their reason; in which tyrants and slaves, priests and their stupid or hypocritical instruments, will no longer exist but in history and upon the stage; in which our only concern will be to lament their past victims and dupes, and, by the recollection of their horrid enormities, to exercise a vigilant circumspection, that we may be able instantly to recognize and effectually to stifle by the force of reason, the seeds of superstition and tyranny, should they ever presume again to make their appearance upon the earth (1795, p. 122).

Condorcet thought that elimination of unnatural inequality would lead to progress in science, the arts, language, and morality. How far might humans progress?

> The advantages that must result from the state of improvement, of which I have proved we may almost entertain the certain hope, can have no limit but the absolute perfection of the human species (1795, p. 126).

This even extended to something approaching immortality, an indefinitely long and healthy period between birth and death. Death, when it came, would be from decay of the natural powers rather than from sickness and violence.

Condorcet foresaw increases in the productivity of land through advances in the technical arts that would allow support of ever larger populations. As for limits, he anticipated critics:

> It may, however, be demanded, whether, amidst this improvement in industry and happiness, where the wants and faculties of men will continually become better proportioned, each successive generation possess more various stores, and of consequence in each generation the number of individuals be greatly increased; it may, I say be demanded, whether these principles of improvement and increase may not, by their continual operation, ultimately lead to degeneracy and destruction? Whether the number of inhabitants in the universe at length exceeding the means of existence, there will not result a continual decay of happiness and population, and a progress toward barbarism, or at least a sort of oscillation between good and evil? (1795, p. 128)

Condorcet maintained that no one could answer the question of whether there would be such a limit, but if there was, it would be very far off in the future. It would be pushed into the distant future not only by the improvements in science and the arts, but by moral development of humans. Because of the latter, the limit itself would lose its sting.

> Men will then know, that the duties they may be under relative to propagation will consist not in the question of giving existence to a greater number of beings, but happiness; will have for their object, the general welfare of the human species; of the society in which they live; of the family to which they are attached; and not the puerile idea of encumbering the earth with useless and wretched mortals (1795, p. 129).

Malthus suggested that Concorcet, in a Cartesian manner, had a system uninformed and unconstrained by facts. Condorcet also implicitly denied that there were fixed laws of nature. In a Newtonian manner Malthus's own vision of the prospects for mankind were constrained by facts, and these facts suggested there were fixed laws of nature. Without a commitment to fixed laws of nature then all human knowledge is reduced to the level of pure fancy and speculation. The optimists' mistake, according to Malthus, was to project improvements that had occurred in education, technology, morals, and government indefinitely into the future.

Malthus used two examples of progress as analogies to show the unreasonableness of Condorcet's vision of organic perfection. These were the breeding of Leicestershire sheep and of flowers. Leicestershire sheep had been bred for large trunks and small heads and legs. One might propose on the basis of breeders' progress thus far that this process might "go on till the heads and legs were evanescent quantities; but this is so palpable an absurdity, that we may be quite sure that the premises are unjust" (p. 48). Likewise for projections of unlimited size of the heads of flowers, based on breeders' progress attained in making them larger than they had been. These examples were to show the important difference between an undefined limit to progress and unlimited progress.

In chapter ten Malthus turned to William Godwin's system of equality.[13] The point that Malthus drives home here is not that population would tend to outgrow food supply in Godwin's utopian society, although this is part of his analysis, but that a system of complete equality is unsustainable.

The reference for the discussion is book VIII of Godwin's *An Inquiry Concerning Political Justice, and Its Influence on General Virtue and Happiness* (1793). Godwin said that the system of property is the "keystone" of political justice. Man is the measure of justice, in the sense that justice requires each man to do all that he can for mankind. "If justice have any meaning, it is that I should contribute every thing in my power to the benefit of the whole" (Vol. I, p. 50). Mankind is composed of individual men, so one benefits mankind by benefiting individual men. But which men? The men who are of most worth. As illustration, Godwin mentions François Fénelon, Archbishop of Cambrai, author of *Telemaque*[14], and critic of the divine right of absolute monarchy. "In the same manner the illustrious archbishop of Cambray was of more worth than his chambermaid, and there are few of us who would hesitate to pronounce, if his palace were in flames, and the life of only one of them could be preserved, which of the two ought to be preferred" (Vol. I, pp. 50-1) What gave Fenelon more worth than his chambermaid? First, "being possessed of higher faculties" he was more removed from a beast than she. Second, as author of *Telemaque*, he contributed more to the general good than his chambermaid.

So far as property was concerned, justice required that each man have access to goods in accordance with the benefit he and others would derive from his use of the goods. If one man has a loaf of bread and another is hungry the loaf properly belongs not to him who has the loaf but to him who has the hunger. For the man with the loaf to give it to the man who is hungry would not be an act of kindness, for by rights the loaf is not his. It properly belongs to the man who has greater need. What does a man deserve to keep from that which he produces? He deserves only enough to provide his necessities of food, clothing, and shelter. "If justice have any meaning, nothing can be more iniquitous, than for one man to possess superfluities, while there is a human being in existence that is not adequately supplied with these" (Vol. II, p. 200).

Godwin believed that accumulation of luxuries was not only unjust, but a source of corruption. He thought the only reason luxuries were desired was for the adulation they brought from others. Thus if the status that comes with wealth was taken away, wealth itself would lose its appeal. Godwin was not religious, considering himself a free-thinking rationalist, but he thought religions rightly taught that it is unjust for one man to have luxuries when another hasn't enough to eat. However, he also thought that by teaching charity toward the poor, religion added to corruption of the human spirit brought about by wealth. Charity allows those who give to the poor to take pride in what they wrongly see as their good works. There is no deserved esteem in doing what is simply one's duty. A just distribution of property is an equal distribution of property.

As Godwin thought that most of the evils in the world arise from an unequal distribution of property, he foresaw immense benefits from an equal distribution. Virtually everyone is oppressed in one manner or another by the current system of property – servants by their masters, tradesmen by their customers, voters by their representatives. The oppression due to inequality breeds vice. To remove the inequality is to remove the source of vice, and thereby to allow virtuous human nature to flower. "The true object that should be kept in view, is to extirpate all ideas of condescension and superiority, to oblige every man to feel, that the kindness he exerts is what he is bound to perform, and the assistance he asks what he has a right to claim" (Vol. II, p. 205). This would have beneficial economic effects.

> If superfluity were banished, the necessity for the greater part of the manual industry of mankind would be superseded; and the rest, being amicably shared among all the active a[nd] vigorous members of the community, would be burthensome to none. Every man would have a frugal, yet wholesome diet; every man would go forth to that moderate

> exercise of his corporal functions that would give hilarity to the spirits; none would be made torpid with fatigue, but all would have the leisure to let loose his faculties in search of intellectual improvement (Vol. II, p. 206).

Social ills would also be ameliorated. There would be no cause for crime, war, or other use of force, which invariably have monopoly as their source. "Were this stumbling block [property] removed, each man would be united to his neighbor in love and mutual kindness a thousand times more than now: but each man would think and judge for himself" (Vol. II, p. 209).

Godwin emphasized the moral and intellectual improvements that would come about from replacing the current unequal distribution of property with an equal distribution, but at the conclusion of Book VIII, Ch. II he adds an additional beneficial effect – removing the artificial constraints on human population. He suggested that among the "wandering tribes of America and Asia" the natural principle that keeps population within the limits of the means of subsistence does so without any need for the cultivation of land. In "civilized" Europe cultivation has been necessary. William Ogilvie, whom Godwin cited, estimated that with current agricultural methods the population of Europe could be five times its current level.[15] Godwin concluded that whereas the nomadic tribes populate the land to its capacity (without cultivation) Europeans forego the benefits to be had from four-fifths of their potential numbers.

> Thus the established system of property may be considered as strangling a considerable portion of our children in their cradle. Whatever may be the value of the life of a man, or rather whatever would be his capability of happiness in a free and equal state of society, the system we are here opposing, may be considered as arresting upon the threshold of existence four fifths of that value and that happiness (Vol. II,p. 210).

The population argument arises in the next chapter, which is Godwin's rebuttal of the beneficial effects of luxury. Monopoly on land holdings was the reason that vast tracts of land remained uncultivated at the same time that there were people hungry. By contrast, "if land were perpetually open to him who was willing to cultivate it, it is not to be believed but that it would be cultivated in proportion to the wants of the community, nor by the same reason would there be any effectual check to the increase of population (Vol II, 212)."

Godwin addressed the question of how men can be brought to produce when property is held in common and they have no assurance that they will enjoy the fruits of their labor. He found the answer

in education to further cultivate the mind. Enlightenment of the mind must precede dismantling the prevailing system of property. Part of the beneficial effect of enlightenment will be a realization that very little labor is required to produce the simple necessities that Godwin expected to become the norm – perhaps as little as half an hour a day.

> Who is there that would shrink from this degree of industry? Who is there that sees the incessant industry exerted in this city and this island, and would believe that, with half an hour's industry *per diem*, we should be every way happier and better than we are at present? Is it possible to contemplate this fair and generous picture of independence and virtue, where every man would have ample leisure for the noble energies of mind, without feeling our very souls refreshed with admiration and hope? (Vol II, p. 215)

With enlightenment eliminating the desire for distinction among ones fellows, so enlightenment would eliminate the pursuit of wealth.

In the community envisioned by Godwin there is no market exchange, for each man knows his true needs and recognizes the needs of others as of equal merit as his own.

> Here the first and simplest motive to personal accumulation is instantly cut off. I need not accumulate to protect myself against accidents, sickness or infirmity, for these are claims the validity of which is not regarded as the subject of doubt, and with which every man is accustomed to comply. I can accumulate in a considerable degree nothing but what is perishable, for exchange being unknown, that which I cannot personally consume adds nothing to the sum of my wealth (Vol II, p. 221).

Godwin thought that moral independence was bad, that every man should, and in a state of equality would, be happy to be censured by others. However, natural independence, "a freedom from all constraint except that of reason and argument presented to the understanding ," (Vol II,p. 223) was good, and this would be enlarged by equality. The regimentation required by the use of physical labor and capital in English society would be rendered obsolete.

> Hereafter it is by no means clear that the most extensive operations will not be brought within the reach of one man; or, to make use of a familiar instance, that a plough may not be turned into a field, and perform its office without superintendence. It was in this

> sense that the celebrated Franklin conjectured, that "mind would one day become omnipotent over matter" (Vol II,p. 225).

The independence that Godwin expected to be fostered by equality would extend beyond economic relationships to personal relationships. These ought to be, and Godwin expected they *would* be formed or maintained, only on grounds of expediency toward the goal of advancing knowledge.

> All attachments to individuals, except in proportion to their merits, are plainly unjust. It is therefore desirable, that we should be the friends of man rather than of particular men, and that we should pursue the chain of our own reflexions, with no other interruption than information or philanthropy requires (Vol II, p. 227).

Among the "evil" attachments of one person to another was marriage.

> It is absurd to expect that the inclinations and wishes of two human beings should coincide through any long period of time. To oblige them to act and live together, is to subject them to some inevitable portion of thwarting, bickering and unhappiness. … The supposition that I must have a companion for life, is the result of a complication of vices. It is the dictate of cowardice, and not of fortitude. It flows from the desire of being loved and esteemed for something that is not desert (Vol II, p. 227).

Godwin thought marriage was the worst form of law and the worst form of property, an example of unjustifiable monopoly. No doubt he would have favored no-fault divorce as a second best policy, with the first best being the abolition of marriage and its presumption of permanent relationships altogether.

> So long as I seek to engross one woman to myself, and to prohibit my neighbour from proving his superior desert and reaping the fruits of it, I am guilty of the most odious of all monopolies. … As long as this state of society continues, philanthropy will be crossed and checked in a thousand ways, and the still augmenting stream of abuse will continue to flow (Vol II, p. 228).

Godwin expected that with no marriage, and in the state of equality, the higher pleasures such as conversation with a woman would wax and the lower carnal pleasures would wane. There was no reason that two men could not simultaneously enjoy the pleasure of conversation with the same woman, and they would do so in a state of equality without the social convention of marriage.

How then would the species be propagated? It would be propagated out of men's reasonable understanding of the necessity that the species continue and out of their sense of duty, not out of an unreasonable desire for "sensible pleasure." In Godwin's ideal society the parentage of a child might not be known, but this would be of no consequence. Only the corrupt institution of the aristocracy and the moral failing of self-love and pride of family supported the desire for knowledge of who one's children or one's parents are.

> I ought to prefer no human being to another, because that being is my father, my wife or my son, but because, for reasons which equally appeal to all understandings, that being is entitled to preference. One among the measures which will successively be dictated by the spirit of democracy, and that probably at no great distance, is the abolition of surnames (Vol II, p. 229).

At the end of chapter VI Godwin seeks to reconcile the extreme individualism of his vision with the social good. This comes about through each person's overriding sense of justice and the complete absence of self-centeredness. The benefits of specialization will not be lost, even though there are no markets and exchange, for each man will realize the appropriate specializations for himself and his neighbors. No man will have a trade, for specialization will be only up to the point of the individual's and his neighbors' needs. So Adam Smith's invisible hand, propelled as it is by avarice, will be unnecessary.

In chapter VII Godwin addresses concerns about the viability of a system of common property on the basis of the principle of population. The author of these concerns to which Godwin replied, Robert Wallace[16], was in agreement with Godwin that with a perfect system of government there would be no private property, and that every person would work for the public and be supported by the public. Wallace asked what would follow such a perfect government, laying aside the feasibility of its being established.

> As long as mankind live in peace and a good correspondence, and have an abundance of room and provisions, they will increase and multiply. Under a government framed according to the preceding model, they must multiply much faster than under the happiest government that ever was actually established. Let us therefore suppose them increasing until the tract of earth which they had at first laid out for a habitation, though cultivated in the best manner, could no longer support them (1761, pp. 46-47).

Population pressures on the land would lead to emigration to unsettled lands until eventually, "the earth would at last be overstocked , and become unable to support its numerous inhabitants" (1761, p. 114). How soon this would happen Wallace did not claim to know.

> How long the earth, with the best culture of which it is capable from human genius and industry , might be able to nourish its perpetually increasing inhabitants, it is as impossible as it is unnecessary to be determined. … Nay, though some extraordinary method of supporting them might possibly be found out, yet if there was no bound to the increase of mankind, which would be the case under a perfect government, there would not even be sufficient room for containing their bodies upon the surface of the earth, or upon any limited surface whatsoever. It would be necessary, therefore, in order to find room for such multitudes of men, that the earth should be continually enlarging in bulk, as an animal or vegetable body (1761, pp. 115-16).

Godwin's answer to Wallace's concern was that whatever problems overpopulation posed to the ideal government of perfect equality would be in the far-distant future, and no one could know what pleasant developments or disasters the future held. "It would be truly absurd for us to shrink from a scheme of essential benefit to mankind, lest they should be too happy, and by necessary consequence as some distant period too populous" (Vol II, p. 233).

The possibility of the system crashing at some distant date from overpopulation led Godwin to speculate (and speculation is what he said this was) on how human progress might check population without the vices brought forth by private property. From his reading of history Godwin thought mental development had led to material and moral improvements, transforming savages into gentlemen. Projecting this development forward, Godwin speculated that mind might overcome matter. This had happened to an extent that people failed to notice because it was so routine. We tell our hand to open and it opens, our legs to walk and they walk. By extension, the command of the human mind over the body might someday open the way to immortality. Basically Godwin diagnosed human mortality as an effect of the system of private property. Eliminate the system of property and the three requisites of progress toward the conquest of aging and death would flourish -- cheerfulness, perspicacity, and benevolence.

One might suspect that Godwin's speculation was backing him into a corner on the population question. If the future holds human immortality, must not over-population be hastened? Not necessarily, he

suggests, for with progress of the human intellect and morals the “gratifications of sense” (i.e., sexual passions) will lose their force. Procreation will cease.

With the caveat that this is speculation, and with reassurance to his readers that his being wrong on this count would do no damage to his overall thesis, Godwin painted a picture of the world to come.

> The men therefore who exist when the earth shall refuse itself to a more extended population, will cease to propagate, for they will no longer have any motive, either of error or duty, to induce them. In addition to this they will perhaps be immortal. The whole will be a people of men, and not of children. Generation will not succeed generation, nor truth have in a certain degree to recommence her career at the end of every thirty years. There will be no war, no crimes, no administration of justice as it is called, and no government. These latter articles are at no great distance; and it is not impossible that some of the present race of men may live to see them in part accomplished. But besides this, there will be no disease, no anguish, no melancholy and no resentment. Every man will seek with ineffable ardour the good of all. Mind will be active and eager, yet never disappointed. Men will see the progressive advancement of virtue and good, and feel that, if things occasionally happen contrary to their hopes, the miscarriage itself was a necessary part of that progress (Vol ll p. 238).

In chapter VIII of Book VIII Godwin addresses the fear that eliminating institutions of property will lead to anarchy and massacre, as barbarian forces are unleashed. His answer is first, that if this were to happen the cause would be found in the institutions that were being dismantled. One might think of the analogy of a boil being lanced. The boil is the problem, not its lancing. Second, hardships and evil would pass, to be replaced with a society governed by truth, justice, and benevolence.

> To refuse the remedy, were this picture of its operation ever so true, would be as if a man who had dislocated a limb, should refuse to undergo the pain of having it replaced. If mankind have hitherto lost the road of virtue and happiness, that can be no just reason why they should be suffered to go wrong forever (Vol II, pp. 240-41).

Be this as it may, Godwin did not believe that the transition from unequal to equal property would necessarily involve these horrors. Much depended on those who were enlightened communicating the ideas of justice to those of wealth and privilege and to the laboring class. All men should be able to see the beauty of the system of equality.

Malthus countered Godwin's vision of the natural and good with a mental experiment. This began with Godwin's ideal society with no administration of property, no marriage, communal provision for children's needs, and total equality. Then, making use of the "population principle," presuming that population doubled every twenty-five years, and with allusions to the condition of land in England, he showed that in the course of a short time the per capita supply of food would decline. The resulting misery would lead inhabitants of the island to reestablish the very institutions that had been eliminated. Thus, Malthus intended to show, vice and misery are the products not of the institutions, but "laws inherent to the nature of man" (p. 55).

But Also in the Poor Law

Malthus's second theme in the first edition of the *Essay* is a critique of the English Poor Law. The Poor Law was first instituted in the reign of Elizabeth in 1597 and 1601.[17] Further legislation in 1597-98 and 1601 established a compulsory system of relief for the poor that was administered and financed at the parish level. Administration was by a group of overseers and financing via a property tax (the poor rate). The Settlement Act of 1662 established a legal parish of settlement for each person, tying ones relief to ones parish of settlement. Expenditures on poor relief more than doubled in real terms over the second half of the eighteenth century, with no apparent decline in the number of poor. In 1798, as Malthus composed his *Essay*, a reform bill was before Parliament. The bill, sponsored by Prime Minister William Pitt, would provide a shilling a week to each child a laborer had above three.

Judging from the proportion of the *Essay* devoted to the Poor Law relative to the utopian visions of Godwin and Condorcet, this public policy issue was of secondary importance to Malthus. This conclusion is supported by the analytical connection between his critique of the Poor Law and his critique of Godwin and Condorcet. They believed that there could be a state of perfect equality with equal abundance rather than equal poverty. Malthus argued that perfect equality along the lines they envisioned could only lead to equality in poverty. The aim of eliminating the poor as a social class, noble though it may be, was not possible. This line of argument led naturally to consideration of the prospect for eliminating English poverty and the primary legal and social response to poverty since the sixteenth century, the Poor Law.

The first mention of the Poor Law is in chapter II, where Malthus presents a list of factors that impinge on the oscillations in the per capita means of subsidence ("retrograde and progressive movements with respect to happiness"). This list includes:

> the introduction or failure of certain manufactures: a greater or less prevalent spirit of agricultural enterprize: years of plenty or years of scarcity: wars and pestilence: poor laws: the invention of processes for shortening labour without the proportional extension of the market for the commodity: and, particularly, the difference between the nominal and real price of labour (pp. 15-16).

He argued that the immobility of labor from the Poor Law, along with monopolistic combinations among the rich, impeded the increase in the real wage that would otherwise occur when demand for labor is strong. They kept the poor worse off than they need be. Nevertheless, if the impediments to rising real wages and well-being of the poor were removed, there would still be the poor: "no possible form of society could prevent the almost constant action of misery upon a great part of mankind, if in a state of inequality [such as with England], and upon all, if all were equal [the speculative philosophers' ideal society]" (p. 16).

The bulk of Malthus's discussion of the Poor Law is in chapter V, which deals with the positive check to population. The setting was natural, for Malthus believed that positive checks to population, misery and vice, fell most severely on the poor. Malthus used the population principle to explain why the large sums collected for poor relief were not of greater benefit to the poor. Malthus began the chapter by trying to establish, with limited data, that the poor were not making progress. His explanation for the ineffectiveness of the Poor Laws was an alternative to suggestions that funds are being embezzled or spent on dinners for church wardens and overseerers.

The analysis is that with inelastic supply of food a nominal increase in relief payments to the poor will push up prices rather than quantities. Available supplies would go to those with the greatest ability to pay. So, "it is of little consequence whether the lowest members of society possess eighteen pense or five shillings. They must at all events be reduced to live upon the hardest fare, and in the smallest quantity" (p. 27). To actually help the poor the rich could reduce their consumption of food or turn new land into cultivation. However in a long-settled land such as England, increases in agricultural output could not occur quickly.

Given what Malthus thought were the conditions of food supply, an increase in population must reduce the per capita quantity of food.

> An increase in the price of provisions would arise, either from an increase in population faster than the means of subsistence; or from a different distribution of the money of

> the society. The food of a country that has been long occupied, if it be increasing, increases slowly and regularly, and cannot be made to answer any sudden demands; but variations in the distribution of money of a society are not infrequently occurring, and are undoubtedly among the causes that occasion the continual variations which we observe in the price of provisions. (p. 28).

The Poor Laws also made the poor worse off than they would otherwise be by encouraging men to marry before they were able to support their family, thus increasing population beyond what it would otherwise be, thereby reducing the per capita shares of food for the poor. Also, to the extent that the available food supply was diverted to those receiving assistance, it would be reduced to those not receiving assistance, driving some of them to ask for support. Moreover, reallocation of food to those in workhouses from those who were not was reallocation from the more to the less industrious, frugal, and independent of the English peasantry. The Poor Law was having the effect of diminishing the industriousness, frugality, and spirit of independence.

Malthus valued the spirit of independence not only for the productivity that it engendered, but also for its direct value to the people who were poor.

> The whole business of settlements, even in its present amended state, is utterly contradictory to all ideas of freedom. The parish persecution of men whose families are likely to become chargeable, and of poor women who are near lying-in, is a most disgraceful and disgusting tyranny. And the obstructions continually occasioned in the market of labour by these laws, have a constant tendency to add to the difficulties of those who are struggling to support themselves without assistance (pp. 30-31).

Given his conclusion that on balance the Poor Law made the poor worse off, it is no surprise that Malthus advocated its repeal. He suggested coupling repeal with encouragements to the supply of food, and, for cases of extreme distress, workhouses financed by a national tax with no restrictions on access by county or even country of origin. This he conjectured, coupled with individual charity, would increase the sum of happiness of the poor. But, addressing the utopians, "to prevent the recurrence of misery, is, alas! beyond the power of man" (p. 32).

From Malthus to Malthusianism – Godwin, Boulding, and Waterman Read the *Essay*

Modern economists, being modelers, tend to distill Malthus's *Essay* down to a model. The geometrical and arithmetical growth series are retained and most everything else discarded. An essay of over one hundred pages is reduced to three pages. But more importantly, the two issues that were Malthus's concern in writing the *Essay*, the speculative philosophers' confidence in the perfectibility of man and society and the Poor Law, are left behind. Somewhat surprisingly, this "rewriting" of Malthus by his readers began early in the *Essay's* life. We find it in William Godwin's 1801 *Thoughts Occasioned by the Perusal of Dr. Parr's Spital Sermon, Preached at Christ Church, April 15, 1800: Being a Reply to the Attacks of Dr. Parr, Mr. Mackintosh, The Author of an Essay on Population, and Others*.[18]

Godwin's rhetorical strategy was, in effect, to portray Malthus as a Malthusian, i.e., with a thoroughly dismal view of human potential in that any attempt to improves men's lives would be frustrated by the iron law of geometrical population growth and arithmetical food growth. Godwin expressed "unfeigned approbation and respect" for the (anonymous) author of the *Essay*. He took pride in the fact that his own writings played a role in producing "so valuable a treatise."

> The foundations of the discovery contained in this treatise are exceedingly simple. Every one, whose attention is for a moment called to the subject, will immediately perceive, that the principle of multiplication in the human species is without limits, and that, if it tends to any increase in the numbers of mankind, it must have that tendency, independently of extrinsic causes checking the growth of population, for ever (1993, p. 195).

After going through the numerical example, such as Malthus had, with population doubling every twenty-five years and food doubling in the first twenty[19] years, and by a declining percentage every twenty years thereafter, Godwin identifies this as "the main doctrine of the *Essay on Population*" (1993, p. 196). How is it that the actual population of any country is kept down to the means of subsistence, and in England to a virtual stand-still? "He [the author of the *Essay*] states it to be 'the grinding law of necessity; misery, and the fear of misery' And elsewhere he appears willing to assign two causes, which undoubtedly can never exist separately from each other, vice and misery" (1993, p.197).[20]

Then we have what may be the first of many portrayals of Malthus as misanthrope.

> The inference from these positions is, that the political superintendents of a community are bound to exercise a paternal vigilance and care over these two great means of advantage and safety to mankind; and that no evil is more to be dreaded, than that we

> should have too little vice and misery in the world to confine the principle of population within its proper sphere (1993, p. 197).

If a scheme such as that envisioned by Godwin succeeded in wholly eliminating vice and misery, this would "prove to be one of the most intolerable calamities with which the human species can be afflicted" (1993, p. 197). From this point on, Malthus is portrayed by Godwin as a champion of vice and misery, opposed to any attempts to improve the conditions of mankind. Malthus is placed among the "advocates of old establishments and old abuses."

From Godwin, we skip forward a century and a half to Kenneth Boulding's forward to the University of Michigan Press edition of the 1798 *Essay* (1959). Boulding opened his remarks by noting the irony that the name of "a kindly, gentle, sensitive, and sincere Christian minister … stands for a cruel, mechanical doctrine of despair" (1959, v). He suggests that the *Essay* was a not a work of economics, but of moral philosophy and theory of history. He gives due regard to Godwin and Daniel Malthus, a friend of Rousseau, for stimulating Malthus to write the *Essay*, and Adam Smith for the crucial concept of equilibrium that Malthus used.

But Boulding nonetheless immediately moves away from the concept of equilibrium as Smith and Malthus used it, interpreting the *Essay* in terms of the mid-twentieth century fear of an impending world crisis from overpopulation. In Boulding's representation, the "whole purport of the argument" is to show that "the geometric increase of population will soon outrun any conceivable increase in the food supply … The crucial principle is that there must be *some* limit to the number of mankind, and that growth of population, at no matter how slow a rate, must eventually bring the number to this limit" (1959, vi, italics in original). Thus Malthus becomes the prophet of The Population Bomb.[21]

The modern "Malthusian" tragedy with it policy implication of population control then plays out through the remainder of Boulding's forward, with Malthus's "passion between the sexes" interpreted in a 1960s manner as sex without virtue. Boulding distills two theorems from the essay, the "Dismal Theorem" and the "Utterly Dismal Theorem." The former is that if misery is the check on population, then population will grow until the misery check sets in. In other words, population growth leads to misery. The latter is that any technological improvement that relieves misery eventually leads only to more people living in misery, and thus more misery. Life is bleak!

I will conclude this selective sample of interpreters of the *Essay* with A.M.C. Waterman (1991,1998).[22] Of all of those who have commented on Malthus or made use of "the Malthusian population principle,"

why consider Waterman? The primary reason is that my objective beyond this paper is to say something about why over the past two centuries Malthus has suffered so much misinterpretation by his "friends" as well as his "foes." What most people think of as the Malthusian population principle is a distortion of Malthus's actual ideas. We could call this the Malthusian myth.[23] "Malthusians" who see the earth being overrun with humans breeding like insects and "anti-Malthusians" who counter that humans are not only consumers of resources but resources themselves, both harken back to a mythical Malthus stripped of historical context.[24] The reason for considering Waterman's interpretation of Malthus is precisely because he has done more than just about any other historian to recover the historical context of Malthus's *Essay*.

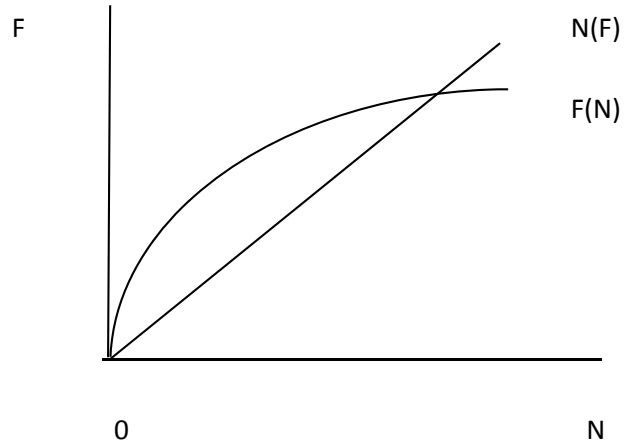
In *Revolution, Economics and Religion* (1991) Waterman gives us the political and religious contexts from which Malthus wrote and revised the *Essay*. Little of what is recounted in the preceding sections of this paper on the political context of the *Essay* is not to be found in Waterman's book, with a fuller and richer development. Besides that, Waterman develops what historians of economics have almost totally overlooked or dismissed, the religious context from which Malthus considered questions of population and the Poor Law. But despite all this, it seems to me that Waterman contributes to the Malthusian myth, which in most of his book he is at pains to dispel.

This happens by way of his use of what George Stigler termed "scientific exegesis" rather than "personal exegesis."[25] Waterman devotes 261 pages of *Revolution, Economics and Religion* to development of the intellectual, religious, and political climate of late 18th century Britain, to details of Malthus's life, and to commentaries on the *Essay* from its anonymous publication in 1798 through the subsequent editions into the 1820s. After this, and conveniently for economists trained as modelers rather than textual exegetes, the inferred analytical substance of Malthus's economics is provided in nine and one-half pages of appendices. Here Malthus's *Essay* is boiled down to two models: the "ecological model" and the "sophisticated model," both expressed in mathematical and geometrical forms familiar to economists. For this scientific exegesis Waterman uses the *Essay* supplemented by Malthus's other writings such as *An Inquiry into the Nature and Progress of Rent, and the Principles by which it is Regulated* (1815) and *Principles of Political Economy, Considered with a View to their Practical Application* (1836).

The ecological model and sophisticated model differ in details but not in their basic structure. In the former food is a function of population ($F = L \cdot \log N$): where F = food, N = labor inputs, and L is a constant that depends on land, use of capital in agriculture, and technology. Population is a function of

food (N = F/s . F), where s is the subsistence food requirement. The ecological model is illustrated in Waterman's figure 6, reproduced here.

Waterman's figure 6



This model has become a standard in natural resource economics since H. Scott Gordon's (1954) article on the economics of common-property fisheries.[26] For many economists, biologists, and ecologists the contribution of T.R. Malthus to learning is pared to the bones of the intersection of two series "F" and "N", one of which increases arithmetically and the other geometrically. Perhaps the epitome of "scientific exegesis" (or mathematical reconstruction) is Paul Samuelson's "The Canonical Classical Model of Political Economy" (1978) which is Samuelson's interpretation of the dynamic model of equilibrium, growth, and distribution "shared in common essentially" by Adam Smith, David Ricardo, Robert Malthus, and John Stuart Mill.[27]

To avoid overstatement, I am not suggesting that mathematical reconstruction is of no value. Economics depends on abstractions and abstracting the mathematical model implicit in the writings of Malthus, Smith or any other economist who wrote mostly prose may aid in understanding and evaluating what they wrote, and as many distinguished historians of economics have desired, in determining the degree to which there has been scientific progress in economics. But we are left with two dangers. The first is one that Waterman (1998) has written about, which is giving the ideas of an economist a particular type of coherence that they do not actually have, which amounts to a distortion of the reality of the ideas.[28] The second, which is my primary concern with regard to Malthus, is contributing to the tendency of economists to give "the model" such primacy in all discussions, whether the topic is business cycles, industrial organization and antitrust, or history of economics, that the model becomes their de facto "real world." This has been a recurring theme of critics of mathematical economics (e.g., Friedman,

1946, 1947)[29] and of macroeconomics (e.g., Röpke, 1960 (1998), ch. 5).[30] No doubt Malthus laid himself open to such interpretation by inserting the numerical series toward the beginning of the *Essay.* As Malthus himself claimed, and as Anthony Waterman (1991, pp. 37-38) has noted and before him Joseph Schumpeter (1954, ch. 5)[31] has shown, this "model" did not originate with Malthus. But the curious fact is that with Malthus it gained a particular identity that has had as much sticking power as Adam Smith's "invisible hand."

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[1] The author thanks Anthony Waterman, Sergio Cremaschi, John Wood, and participants of ESHET 2013 and the Summer Institute for the History of Economics 2013 for comments.

[2] Ross B. Emmett (2006). *Malthus Reconsidered: Population, Natural Resources, and Markets*. PERC PS-38, Bozeman, MT; A.M.C. Waterman (1991) *Revolution, Economics and Religion*. Cambridge and New York: Cambridge University Press; Donald Winch (1987) *Malthus*. Oxford: Oxford University Press.

[3] Kenneth E. Boulding (1959) "Forward" to Thomas Robert Malthus, *Population: The First Essay*. Ann Arbor: University of Michigan Press.

[4] Unless otherwise indicated, all quotations are from the first edition of *An Essay on the Principle of Population* (1798), Liberty Fund, Online Library of Liberty.

[5] In this case the experiment is in the historical record.

[6] The passion between the sexes should not be interpreted as simply a desire for sex. What Malthus means is laid out more fully in chapter XI, in a discussion directed a Godwin. "Perhaps there is scarcely a man who has once experienced the genuine delight of virtuous love, however great his intellectual pleasure may have been, that does not look back to this period, as the sunny spot in his whole life, where his imagination loves to bask, which he recollects and contemplates with the fondest regrets, and which he would most wish to live over again. The superiority of the intellectual, to sensual pleasures, consists rather in their filling up more time, in their having a larger range, and in their being less liable to satiety, than in their being more real and essential" (p. 60).

[7] My emphasis.

[8] He implicitly recognizes that this assumption violates the Law of Diminishing Returns.

[9] See A.M.C. Waterman (1987) "On the Malthusian Theory of Long Swings," *Canadian Journal of Economics* 20: 2, pp. 257-70.

[10] In subsequent chapters Malthus dropped the term preventive check and included delay of marriage in misery. "The unwholesomeness of towns, to which some persons are necessarily driven, from the nature of their trades, must be considered as a species of misery; and every the slightest check to marriage, from the prospect of the difficulty of maintaining a family, may be fairly classed under the same head."

[11] (1795) *Outlines of a Historical View of the Progress of the Human Mind.* Liberty Fund: Online Library of Liberty.

[12] (1761) *Various Prospects of Mankind, Nature, and Providence*. Gale Centage 18th Century Collections Online.

[13] (1793) *An Inquiry Concerning Political Justice*. Liberty Fund: Online Library of Liberty.

[14] (1699) *The Adventures of Telemachus*.

[15] (1781) *An Essay on the Right of Property in Land, With Respect to Its Foundation in the Law of Nature*. Gale Centage 18th Century Collections Online.

[16] (1761) *Various Prospects of Mankind, Nature, and Providence*. Gale Centage 18th Century Collections Online.

[17] Act for Relief of the Poor (1597) and Poor Relief Act (1601).

[18] In Mark Philp, ed. (1993) *Political and Philosophical Writings of William Godwin*. London: William Pickering.

[19] Malthus had food doubling in twenty-five years.

[20] The context for Malthus's statement quoted by Godwin was the question he had raised in *Political Justice* of how population is checked for "the wandering tribes of America and Asia [where] we never find through the lapse of

ages that population has so increased as to render necessary the cultivation of the earth." (Godwin quoted by Malthus (51).

[21] Paul Ehrlich's 1968 book was *The Population Bomb*. New York: Ballantine Books.

[22] (1991) *Revolution, Economics and Religion*. Cambridge and New York: Cambridge University Press, and (1998) "Malthus, Mathematics, and the Mythology of Coherence," *History of Political Economy* 30: 4, pp. 571-99.

[23] I have in mind a myth such as Axel Leijonhufvud exposed in *On Keynesian Economics and the Economics of Keynes: A Study in Monetary Theory* (1968) New York: Oxford University Press.

[24] And so do those who locate the origins of the term "dismal science" in Malthus's economics. See David M. Levy (2001) *How the Dismal Science Got Its Name.* Ann Arbor: University of Michigan Press.

[25] Stigler's term, "scientific exegesis," corresponds to the more common "rational (or mathematical) reconstruction," which Waterman uses in (1998). See George J. Stigler (1965) "Textual Exegesis as a Scientific Problem." *Economica* 32: November, 447-50.

[26] H. Scott Gordon, (1954) "The Economic Theory of a Common-Property Resource: The Fishery." *Journal of Political Economy* 62: April, 124-42.

[27] Paul A. Samuelson (1978) "The Canonical Classical Model of Political Economy." *Journal of Economic Literature*. 16: December, 1415-34.

[28] Critics of Milton Friedman's and Anna Schwartz's work on money and business cycles persisted in calls for him or them to put their work in an explicit theoretical model. Friedman did so in "A Theoretical Framework for Monetary Analysis" (1970). The result was not satisfactory to the critics or to Fridman. See chapter eight of J. Daniel Hammond (1996), *Theory and Measurement: Causality Issues in Milton Friedman's Monetary Economics*. Cambridge and New York: Cambridge University Press.

[29] Milton Friedman (1946) "Lange on Price Flexibility and Employment: A Methodological Critique," *American Economic Review*. 36: September, 613-31, and (1947) "Lerner on the Economics of Control," *Journal of Political Economy* 55: October, 405-16. Both are reprinted in *Essays in Positive Economics*, Chicago: University of Chicago Press.

[30] Wilhelm Röpke (1960 (1998)) *A Humane Economy: The Social Framework of the Free Market*. Wilmington, DE: ISI Books.

[31] Joseph A. Schumpeter (1954) *History of Economic Analysis.* New York: Oxford University Press.