ARE THERE TOO MANY OF US?
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The scientific treatment of questions touching population began with Thomas Robert Malthus. The first edition of his great work, “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, appeared in 1798, as a polemic pamphlet. It was in part aimed at the vicious, pauperizing poor-law of England at that time; in part it was a criticism upon the superficial optimism of those writers who had been carried away by the vaporings of Rousseau and other French Revolutionary philosophers. Malthus s own father was one of these. Godwin, to whom the title of the Essay refers, was another. Political equality and commercial freedom, they argued, would in a little while produce a perfectly happy society. Vice and misery were at once to disappear and the millennium to dawn, if only the fine doctrines of tho Revolution, of the Physiocrats, of Adam Smith, could get themselves realized.

Malthus opposed this pleasing view on the ground that such ideal social weal is and necessarily must be hindered by the very conditions of life, population inevitably tending to increase more rapidly than subsistence and the possibility of general welfare. In it3 later editions, of which no less than seven appeared during the author’s lifetime, the Essay casts off its polemic form and becomes a mere dissertation. But tho essential thought is unchanged : human beings tend to multiply faster than food can be provided for them. Malthus represented the difference as that between arithmetical and geometrical ratio, population multiplying as the series 1, 3, 4, 8, 16, 32, and so on, production swelling meantime only as the series 1, 2, 3, 4, 5, 6, 7, and so on. He, however, laid no stress on the exactness or the mathematical expressibility of his law, but only on the validity of it as a general truth.
Malthus does not allege that population in fact increases thus rapidly, but that it tends to do so, and would, were it not for certain checks. They are of two classes: the moral or preventive, and the positive or repressive. The preventive checks include everything that helps keep human life from originating when it would otherwise do so. The positive consist in whatever kills oft our species, as wars, famines, vices, pestilences and ordinary disease. Had Malthus lived later he would doubtless have noticed more fully than he did the agency of social custom in nullifying for men the law of the survival of the physically fittest, propagating bodily disorders probably to a far greater extent than hygiene and medicine avail in the contrary direction. But the checks which he names are numerous and powerful, so much so, he thinks, that, without their incessant working through all past time, the world would long ago have been overrun.

Nearly all the countless attempts to refute Malthus, instead of doing this, practically fall in with his theory, merely emphasizing more or less the activity of his checks. Thus, Herbert Spencer, in urging that the physical nature grows less imperious as culture advances, * is simply pointing out how the preventive check applies itself. Bastiat showed that the same advance of culture, making parents unwilling that their children should be worse off than they, works a voluntary, or truly moral application of the preventive check. Neither of these tendencies, however, is operative upon the vast masses of mankind, in reference to whom the great problem is to get them under the influence of culture. Of the very poor, only the positive checks keep down the numbers. Malthus’s second edition significantly differs from the first in admitting a far larger hope from moral self-restraint as one of the preventive checks. In this change Malthus does not, as Bagehot argues, “cut away the ground of his whole argument.” The peculiar check in question may exist and act, widely and beneficently, yet over vast multitudes of human kind totally fail of effect.

* Biology, pt. vi.

In spite of all these checks, Malthus maintains, population tends to outrun subsistence. Some men must always be needy. As a matter of fact, he says, checks of the one kind or the other are in every nation, past or present, what has kept population
down to food. Darwin declares that in reading “Malthus On Population” he became impressed “that natural selection was the inevitable result of the rapid increase of all organic beings”; and he admits his now famous theory to be but “the doctrine of Malthus applied with manifold force to the whole animal and vegetable kingdoms.” With men as with brutes, it is a fight for life. Tho social bliss for which we sigh is not to be had so cheaply as Rousseau and Godwin said. Great continence is a human duty. No man has a right to bring children into the world unless he has a fair prospect of ability to support them.

As Malthus laid no stress on the exactness of his alleged progressions we do not refute him by showing those progressions inexact. Tho question is, have they a truth, or truths, at bottom?

The assumption of a geometrical ratio as the law of humanity’s numerical increase is a good way from the fact. We will not quarrel over the question whether it is not absurd to speak at all of a “natural” rate of increase for human beings. In his assumption of a “natural rate” Malthus seemed to be thinking How swiftly life would replenish the earth if all checks were away.* But disease and death are natural, and just what pressure of them shall we call a check? We must not confound the “natural tendency” of men to increase with the abstract physiological possibility of numerous births; nor is it the same to allege a tendency to too great increase, and to say that, all things considered, there is a danger, since a certain increase, if well distributed, might be for centuries no curse, but a blessing.


Malthus took as his norm to go by a young country, the United States, where all was in the highest degree favorable to great prolificacy. He derived his figures from Benjamin Franklin’s “Observations Concerning the Increase of Mankind and the Peopling of Colonies,” 1751, one of his earliest works. As he stated, our population was, when Malthus wrote, doubling at the rate of once in 25 years. We have never had a uniform registration of births and deaths, and our national census is taken once only in ten years; so that we cannot tell for any period tho exact annual increment of population, or say how much is due to excess of
births over deaths, and how much to immigration. The increase in the last decade of last century was 35.10 per cent., and for the first decade of this 30.38 per cent., probably the most rapid gains in population from natural causes—for the immigration during these 20 years was but slight—of which we have any record. In those two decades there may easily have been, right along, 48 births per thousand inhabitants, and not over 28 deaths, giving a natural increase of more than three per cent. As the struggle for existence increases in severity, families diminish in size, marriages are I33 frequent, or entered into at a later age, and population does not grow so rapidly. Our progress as a nation is greatly due to the natural wealth of our country. Even now we have of persons over 70 only 14 in 1,000, where France has 37, while females within the 22 years of possible maternity, number 18 or 19 per cent., instead of 10, which is the average.

During the fifty years from 1790 to 1840 our population doubled twice. Between 1790 and 1885 Rhode Island doubled in population nearly two and a half times, or, exactly, increased 341.1 per cent. From 1880 to 1885 the gain was 10 per cent. The average per cent, of our entire national increase has been 32.7 per decade ever since 1790. Excluding the war decade it has been 33.95 per cent. Aside from the people who have come to us with territorial acquisition, we seem to have gained about 2.0 per cent, yearly ever since this century began. Between 1850 2.0 per cent, yearly ever since this century began. Between 1850 and 1880, we went from 523,191,876, to 50,155,783. That is, we more than doubled during those thirty years in spite of the war.

As a clergyman, Malthus may have been influenced in part by the Old Testament figures relating to the multiplication of the Israelites in Egypt. These captives occupied a fruitful land, with no hindrances to rapid growth, and were probably augmented by immigration from related tribes. They were in Egypt 430 years. The original colony had in Jacob with his sons and grandsons 70 male persons. After the exodus, according to Moses's census, there were 003,550 males 20 years old and upwards. By Euler’s method they must have doubled once in about 30 years, involving a yearly increase of over 2 per cent.

But although Malthus could find a few instances of such swift growth, he had no right
to generalize from them. A hundred years before his time, Europe was thought to double its population only once in two centuries.* Henry George, in his “Progress and Poverty,” urges against Malthus the small number of the descendants from Confucius. These, 2,150 years from their great ancestor’s death, amounted to only about 22,000 souls, instead of 609,559,193,100,709,670,198,710,528, as they should have mustered had they doubled once in 25 years. With this may be coupled a consideration touching China at large. The Chinese as a people date back five thousand years at least. The country is five times as large as Germany, warmer and more fruitful than Europe. A great part, of its soil produces two harvests yearly. The people raise few cattle, living mostly on vegetable food. Yet, owing to checks of some sort, of which probably infanticide, which is favored by law, may be regarded as the chief, the population there is less dense on the average than in Belgium, Saxony or England.

* Sir Wm. Petty, "Political Arithmetic,” ch [illegible]

Europe has probably doubled its population in the last 100 years. Between 1820 and 1880 its population arose from 200 millions to 330 millions, a yearly increase of 8/10 of one percent. Our oldest statistics are for Sweden and reach back to 1750. Sweden’s population was in 1752 1,785,727; 1111884,4,044,448, a total increase of 100 per cent, over the figure at the first date named. Passing to the first third of this century we find Baden doubling its population only in 34 years, Hungary only in 38, Belgium in 42, Tuscany and Galicia in 43, Sardinia in 44. In none of the older nations has a yearly increase of 2 per cent, ever been reached, nor is there any likelihood of such a gain, at least for any length of time. France, at its present rate of gain, will need nearly, or quite, 300 years to double its population.

Never, in Europe, were the conditions for great increase better than from 1820 to 1870; yet the numbers only went in these years from about 200 millions to about 300 millions, or of one per cent, annual gain, and the nations which advanced the most rapidly have at no time doubled this rate. A doubling of population in 25 years, as was going on in the United States when Malthus was alive, is therefore no normal but a very abnormal phenomenon.

We know full well what Malthus would reply to this exhibit. He would hail it as a proof of his position, alleging as the rea-
son for the slower gains enumerated, that the checks had been more active in Europe than in America. And, for substance of fact, he would be right I only demur at his doctrinaire assumption of the American figures as the more “normal.” Checks are “normal,” too; and, as already remarked, it is purely arbitrary to set down this or that exact pressure of them as preeminently the natural one. Only at extreme pressure does it seem to me reasonable to pronounce them pathological.

Malthus erred, not only as to the rate of human increase, but also as to its philosophy. He did not allow enough for barrenness, and he made the age of possible maternity too long. Also, he did not allow for the numerous pairs like Napoleon and Josephine, the parties unfruitful together, though able to be fruitful with others. Statistics show that the maternity period does not average over twenty-two years, and that about one-seventh of the married women are without children.* In every thousand human beings in any community there will average to be about 165 women of the maternity age 15 of them childless, leaving at most but 150 who will be mothers. To find the yearly increase of population per thousand, suppose each of the 150 to have three children in the 22 years. The average per year is then \((150 \times 3)/22\), which equals 20 + , and the result is larger the more children there are to the family. If we assume 4, it is 27+ ; if 5, 34+ ; if 6, 41—; if 7, 48+ ; if 8, 54 + , etc.

* Rumelin. "Reden und Aufsätze," I.. 312 ff. I am indebted to this learned author for most of my figures relating to Europe.

Over against such figure, whatever it is, we have to set the rate of mortality. This, under the most favorable conditions, is about 20 per thousand, annually, increasing somewhat according as the number of births swells.

In 1,000 persons, if the average number of children to a mother is three, just as many persons will die as are born. If mothers have four each, 27 will be born while 22 die. And so on. Malthus supposed that an average of four children per family would double the population every 25 years. On the contrary, seven per family would double it only in 35 years. The people of Rhode Island, where, in 1885, on an average, 4.27 children were
born to each mother, would at that rate need a century and a quarter to double. This, of course, takes no account of immigration.

It was obvious that Malthus was far astray at least regarding the form of his law. From our better statistics we can correct him. The natural rate of multiplication, if we admit such a notion, could not even by Malthus’s own principles have been greater in his time than in the years covered by our best recent statistics, because material prosperity has been improving meanwhile. If the rate assigned by him is now too great, it certainly was then.

Yet Malthus is correct in urging that men tend to multiply with decided rapidity. It is universally recognized that a stationary population is abnormal, a sign of disease. The rule is advance.

We saw that the rate per cent, of increase in the United States, including immigration, has been 32.70 per decade ever since 1790. Unless immigration is checked, it is hardly likely to fall or at present or for 100 years. But even supposing the rate to be 30 per cent, per decade, the population by 1090 will be 898,207,250, which, without new territory, would give us 299.3 inhabitants to the square mile. We should then have a denser population than the British Isles today; and while we could not even so be said to have reached a limit of population fully taxing the supporting power of our territory, our people could not look forward to still further expansion without apprehension.

Europe’s population, doubling in the last 100 years, has gained about of one per cent, yearly. For the last 60 years of relatively accurate records, the gain in several of the European states, England, Prussia, and the Scandinavian lands, has been 1 per cent, or more yearly, in spite of emigration, and the average has not been under of one per cent, in any normal year. We may then take this of one per cent, as the normal minimum.

At 1 per cent, annual increase Germany in the year 2000 would have 160 million inhabitants. In two centuries from now it would have 300 millions, and in three centuries 650 millions.
Europe would have at the same rate in two centuries from now 2,300 million inhabitants, and in three centuries 4,800 millions. The last figure would require not much short of 2,000 people to live on a square mile—an impossibility under anything like present economic arrangements.

But take the actual minimum normal rate of one-half of one per cent, annual increase. At this, in 280 years, Europe will have 1,300,000,000 inhabitants. By the real present rate the increase would be much faster, giving 600 millions in about 80 years, 25, 30 or 40 millions in excess of the present. Even with one-third of one percent. Germany would in 1,000 years from now have 1,200 millions, and in 2,000 years, 30 billions. Even France, at its rate of progress in the last 00 years, 2.3 per thousand, yearly, which is the smallest in Europe, would in 500 years have 300 million souls; just about 2,000 to every square mile.

It is instructive to apply backward the present rate of increase in Europe’s population. Taking the minimum normal of of one per cent, a year and reckoning it back to about the beginning of the 5th century A. D., we should make the population of Europe then to have been only half a million. But Wietersheim carefully estimates the population of the European parts of the Roman Empire in the 2d century A. 1) as 45 millions. Now, after seventeen hundred years, there are only 156 millions, a yearly increase of only of one per cent., or 7/10 of one in a thousand, and a doubling-period of 950 years.

Malthus’s assumption as to the relatively slow and difficult manner in which men’s food supply has to be increased was a good deal nearer the truth than what he wrote about the growth of population, but he did not see with any clearness tho real nature of the law which he was approaching.

The law, according to which production in general advances, is: The more capital and labor applied to nature, the more product. In agriculture, however, and with certain modifications, in mining, another law evidently prevails, which has been designated the law of diminishing return, to the effect that in the long run, increased application of labor and capital fails to command a proportionate increase of return. It is this law of
diminishing return in agriculture which forms the stern signif-
cance of the Malthusian doctrine. Its operation may be postponed,
and the reverse law of increasing return be set in action for a
time. Addition to population will have this tendency up to a
certain limit, by making possible a fuller division of labor. Im-
proved agricultural machines and methods will work in the same
way; as it will also to bring, in a new country, more fertile land
under cultivation. To have demonstrated this point is the great
merit of the late Henry C. Carey. But the operation of these
causes cannot continue forever; the general law under which soil
is tilled is the one named, the law of diminishing return.

So that while Malthus did not hit the truth with any exact-
ness, the principle for which he was so vaguely feeling is, when
found, a true one, over which it were far more seemly to look
sober than to laugh.

It is a fact that population would, in a thousand localities,
soon outstrip the means of feeding it, if it were not kept down by
vice, misery, or self-restraint. In a state of society where self-
restraint does not act at all, or only so little that we need not think
of it, population will augment till the poorest class have only
just enough to support life. In a community where self-restraint
acts effectually, each class of the community will augment till it
reaches the point when it begins to exercise that restraint.* Do
not infer from this that the self-restraining communities are as
likely to occur as the others. That would indeed be a negation
of Malthusianism, but it is contrary to fact, so hard is it to bring
restraint to act on the masses of the people.

*Ragehot, "Economic Studies,” 139.
“So long as unlimited multiplication goes on, no social organ-
ization which has ever been devised, or is likely to be devised, no
fiddle-faddling with the distribution of wealth, will deliver society
from the tendency to be destroyed by the reproduction within it-
self, in its intensest form, of that struggle for existence, the limit-
ation of which is the object of society. And however shocking
to the moral sense this eternal competition of man against man
or of nation against nation may be; however revolting: may be
the accumulation of misery at the negative pole of society, in
contrast with that of monstrous wealth at the positive pole, this
state of things must abide, and grow continually worse, so long as Istar holds her way unchecked. It is the true riddle of the Sphinx; and every nation which does not solve it will sooner or later be devoured by the monster itself has generated." *

* Huxley, “Nineteenth Century,” February, 1888, p. 169. Malthus’s recommendations are in substance still needed. Though, perhaps, no country can yet be said to be saturated with population, many localities, great cities especially, are so. It boot nothing to know that none die from the niggardliness of nature in the strict sense, which is true if you take large areas, so as not to light on famine spots; because the maladjustments of society are, even in Malthus’s own discussion, conceived as practically part of nature. The exhortation should, however, be modified, to the effect that the able, intelligent, well to do, especially such as can instruct and lead, may even have a duty to propagate. There is nothing in Malthusianism, or in the fact of life, to render appropriate a crusade in favor of universal celibacy.*

A Malthusian law there is, which cannot be set aside; though it may offer, except in limited localities, nowise the present threat which many have seemed to see in it. Sometime it must take effect, the result being, not of course that humanity will starve, or even any part of it, but that either additional restraint must be applied, or a lessening per capita plenty will induce vices and diseases to which enough will succumb to let the others continue. The picture of a world starved to death is no legitimate suggestion of Malthusianism.

We may, of course, sip more or less comfort from such observations as these:
1. Only about one-sixth the cultivable land of the world is as yet occupied.
2. Infinitely greater saving is possible than has ever been exercised thus far, no one enjoying less in consequence.
3. Though food-getting will become harder and harder, the getting of other things, and especially such as minister to our higher life, is to be easier and easier as the aeons pass. Bread-
winning may become 100 times as difficult as now; if manufac-
turing becomes the same degree easier, humanity will get its
whole living with no greater difficulty than now.

But no other course of thought so approaches a refutation of
Malthus as that most recently made familiar by Henry George
and Prince Kropotkin. Food, says George, springs not from
agriculture alone, and non-vegetable food may be multiplied
almost without limit by the free agency of man.

‘Both the jay-hawk and the man eat chickens, but the more jay-hawks
the fewer chickens, while the more men the more chickens. Both the seal
and the man eat salmon, but when a seal takes a salmon there is a salmon
less, and were seals to increase past a certain point salmon must diminish;
while by placing the spawn of the salmon under favorable conditions man
can so increase the number of salmon as to more than make up for all he may
take, and thus, no matter how much men may increase, their increase
never need outrun the supply of salmon.*'

* Or to what is worse, recommended by an author whom Schaeffle cites, 'Bau und
Leben,' LI., 266 seqq.

The late Spencer F. Baird used to regard one acre of water equal to seven of land, in
the production of food. Pressed with
the consideration that chickens and salmon too must live upon
food, of which the supply recedes, George rejoins that it cannot
ininitely recede; that the universe of materials capable of sus-
taining life remains ever the same, however many times these ma-
terials may have aided in the sustenance of life up to any given
date, and that the bounds of this universe have never yet been dis-
covered. Kropotkin carries the thought into particulars, showing
from examples and by the principles of chemistry the indefinite
improvableness in the fertility of land.

Nothing could be more interesting than facts like these.
They render it happily clear that, so far from approaching the
limit of the earth’s productivity, we have hardly broached it yet.
There is to this planet an ability to bear life incalculably beyond
what Malthus dreamed. But this, again, does not turn his con-
tention into unreason. The anti-Malthusian line of argument
just sketched is as illusory as it is interesting. It is very old as
well—older, in fact, than Malthus. President James Madison in his younger days brilliantly explored it,* anticipating all the anti-Malthusians, and preceded Malthus and his aides in demonstrating its vanity.

* Rives’s "Life of Madison," vol. ii., 91, 94.

Three hard facts confront us. One is that the earth’s stock of substances capable of sustaining human life is, after all, limited. Another, that many of these are passing hopelessly beyond man’s reach. The third is that such utilizing of plant nutrition as is intrinsically possible must forever increase in cost. Less and less fruitful soils must be brought into use, loam reclaimed from beneath the ocean, rocks pulverized, to make place for new land and the mechanical ingredients for artificial soil. And, at best, such soil cannot but be limited in amount, so expensive will be its manufacture. Kropotkin’s cases can never be generalized, involving as they do the limitless carting of heavy stuffs from farms to towns and from towns to farms. This particular cause of decrease in agricultural returns will indeed weaken as population condenses, but cannot disappear, since people can never be scattered evenly over the land.

Meantime, the sons of men wax ever a greater host. Europe, with its 156 millions, increases by 7/10 of one per cent, each year, threatening to have 600 millions by 1970, and 1,300 millions by 2150. Our own country, adding to its numbers by nearly 3 per cent, a year, bids fair to approach 90 millions by 1900.

Could such growth possibly continue, the failure of standing room would be but a matter of time. The entire globe measures about 600,000,000,000,000 square yards, or, allowing a yard as standing room for four persons, there is place for 2,400,000,000,-000,000 persons. Now the population of England and Wales, which may be regarded as about normal for civilized lands, doubled between 1801 and 1851. At this rate population would in 100 years multiply itself by 4; in 200 by 16; in 1,000 by 1,000,000; and in 3,000 years by 1,000,000,000,000,000,000,000. So that, even if we begin with a single pair, the increase would in 3,000 years have become two quintillion human beings: viz., to every square yard 3,333 1/3 persons instead of four. Or, the earth would be cov-
ered with men in columns of 833 1/3 each, standing on each other’s heads—. If they averaged five feet tall, each column would be 4,166 2/3 feet high.∗


One cannot look forward to the far future of civilized society without solicitude. Reflect that the present population of Europe could, through an increase no greater than that now prevailing, have sprung from a half million souls living at 400 A. D., and that there were then in Europe at least 100 times this number, and probably more; then sweep mentally over the intervening history, noting in wars and pestilences some of the causes why the figures for Europe today read 156 millions instead of 15 billions 600 millions, and you will no longer laugh at Malthus.

Are the checks which must be applied in future, likely to be positive or preventive? If the latter, shall they be morally preventive or immorally preventive? A more momentous this-world question could hardly be asked. Let the masses remain ignorant and brutish, and human life will forever continue in threatening disproportion to food, progress and poverty side by side, the comfort of a few shadowed by wars and want and sicknesses on the part of multitudes. Only as character shall prevail can coming generations fill the ideal of an earthly society: human beings numerous enough to work the great cosmic field to the best advantage, yet voluntarily few enough to admit of a reasonable and decent subsistence for all. For man’s body as for his soul, for time as for eternity, his only hope lies in spiritual elevation.