

CHAPTER 3 INFERENCES FROM ANALOGY

If we turn from an examination of the facts brought forward in illustration of the Malthusian theory to consider the analogies by which it is supported, we shall find the same inconclusiveness.

The strength of the reproductive force in the animal and vegetable kingdoms—such facts as that a single pair of salmon might, if preserved from their natural enemies for a few years, fill the ocean; that a pair of rabbits would, under the same circumstances, soon overrun a continent; that many plants scatter their seeds by the hundred fold, and some insects deposit thousands of eggs; and that everywhere through these kingdoms each species constantly tends to press, and when not limited by the number of its enemies, evidently does press, against the limits of subsistence—is constantly cited, from Malthus down to the textbooks of the present day, as showing that population likewise tends to press against subsistence, and, when unrestrained by other means, its natural increase must necessarily result in such low wages and want, or, if that will not suffice, and the increase still goes on, in such actual starvation, as will keep it within the limits of subsistence.

But is this analogy valid? It is from the vegetable and animal kingdoms that man's food is drawn, and hence the greater strength of the reproductive force in the vegetable and animal kingdoms than in man simply proves the power of subsistence

Many species of plants and animals do tend to reproduce rapidly and press against the limits of subsistence. This is often cited to support Malthus' theory.

But is this analogy valid?

Since man's subsistence comes from plants and animals, doesn't their ability to reproduce quickly simply show that man's subsistence can always increase faster than his population can?

to increase faster than population. Does not the fact that all of the things which furnish man's subsistence have the power to multiply many fold—some of them many thousand fold, and some of them many million or even billion fold while he is only doubling his numbers, show that, let human beings increase to the full extent of their reproductive power, the increase of population can never exceed subsistence? This is clear when it is remembered that though in the vegetable and animal kingdoms each species, by virtue of its reproductive power, naturally and necessarily presses against the conditions which limit its further increase, yet these conditions are nowhere fixed and final. No species reaches the ultimate limit of soil, water, air, and sunshine; but the actual limit of each is in the existence of other species, its rivals, its enemies, or its food. Thus the conditions which limit the existence of such of these species as afford him subsistence man can extend (in some cases his mere appearance will extend them), and thus the reproductive forces of the species which supply his wants, instead of wasting themselves against their former limit, start forward in his service at a pace which his powers of increase cannot rival. If he but shoot hawks, food-birds will increase; if he but trap foxes the wild rabbits will multiply; the honey bee moves with the pioneer, and on the organic matter with which man's presence fills the rivers, fishes feed.

Even if any consideration of final causes be excluded; even if it be not permitted to suggest that the high and constant reproductive force in vegetables and animals has been ordered to enable them to subserve the uses of man, and that therefore the pressure of the lower forms of life against subsistence does not tend to show that it must likewise be so with man, "the roof and crown of things"; yet there still remains a distinction between man and all other forms of life that destroys the

analogy. Of all living things, man is the only one who can give play to the reproductive forces, more powerful than his own, which supply him with food. Beast, insect, bird, and fish take only what they find. Their increase is at the expense of their food, and when they have reached the existing limits of food, their food must increase before they can increase. But unlike that of any other living thing, the increase of man involves the increase of his food. If bears instead of men had been shipped from Europe to the North American continent, there would now be no more bears than in the time of Columbus, and possibly fewer, for bear food would not have been increased nor the conditions of bear life extended, by the bear immigration, but probably the reverse. But within the limits of the United States alone, there are now forty-five millions of men where then there were only a few hundred thousand, and yet there is now within that territory much more food per capita for the forty-five millions than there was then for the few hundred thousand. It is not the increase of food that has caused this increase of men; but the increase of men that has brought about the increase of food. There is more food, simply because there are more men.

Here is a difference between the animal and the man. Both the jayhawk and the man eat chickens, but the more jayhawks 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 the 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 more than to make up for all he may take, and thus, no matter how much men may increase, their increase need never outrun the supply of salmon.

Man is the only living thing who can harness reproductive forces to increase his food.

Man cannot press against the limits of his subsistence until the limits of the globe are reached.

And the limit of subsistence in any particular place is not the physical limit of that place, but of the entire globe.

In short, while all through the vegetable and animal kingdoms the limit of subsistence is independent of the thing subsisted, with man the limit of subsistence is, within the final limits of earth, air, water, and sunshine, dependent upon man himself. And this being the case, the analogy which it is sought to draw between the lower forms of life and man manifestly fails. While vegetables and animals do press against the limits of subsistence, man cannot press against the limits of his subsistence until the limits of the globe are reached. Observe, this is not merely true of the whole, but of all the parts. As we cannot reduce the level of the smallest bay or harbor without reducing the level not merely of the ocean with which it communicates, but of all the seas and oceans of the world, so the limit of subsistence in any particular place is not the physical limit of that place, but the physical limit of the globe. Fifty square miles of soil will in the present state of the productive arts yield subsistence for only some thousands of people, but on the fifty square miles which comprise the city of London some three and a half millions of people are maintained, and subsistence increases as population increases. So far as the limit of subsistence is concerned, London may grow to a population of a hundred millions, or five hundred millions, or a thousand millions, for she draws for subsistence upon the whole globe, and the limit which subsistence sets to her growth in population is the limit of the globe to furnish food for its inhabitants.

But here will arise another idea from which the Malthusian theory derives great support—that of the diminishing productiveness of land. As conclusively proving the law of diminishing productiveness it is said in the current treatises that were it not true that beyond a certain point land yields less and less to additional applications of labor and capital, in-

creasing population would not cause any extension of cultivation, but that all the increased supplies needed could and would be raised without taking into cultivation any fresh ground. Assent to this seems to involve assent to the doctrine that the difficulty of obtaining subsistence must increase with increasing population.

But I think the necessity is only in seeming. If the proposition be analyzed it will be seen to belong to a class that depend for validity upon an implied or suggested qualification—a truth relatively, which taken absolutely becomes a non-truth. For that man cannot exhaust or lessen the powers of nature follows from the indestructibility of matter and the persistence of force. Production and consumption are only relative terms. Speaking absolutely, man neither produces nor consumes. The whole human race, were they to labor to infinity, could not make this rolling sphere one atom heavier or one atom lighter, could not add to or diminish by one iota the sum of the forces whose everlasting circling produces all motion and sustains all life. As the water that we take from the ocean must again return to the ocean, so the food we take from the reservoirs of nature is, from the moment we take it, on its way back to those reservoirs. What we draw from a limited extent of land may temporarily reduce the productiveness of that land, because the return may be to other land, or may be divided between that land and other land, or, perhaps, all land; but this possibility lessens with increasing area, and ceases when the whole globe is considered. That the earth could maintain a thousand billions of people as easily as a thousand millions is a necessary deduction from the manifest truths that, at least so far as our agency is concerned, matter is eternal and force must forever continue to act. Life does not use up the forces that maintain life. We come into the material universe bringing nothing; we

take nothing away when we depart. The human being, physically considered, is but a transient form of matter, a changing mode of motion. The matter remains and the force persists. Nothing is lessened, nothing is weakened. And from this it follows that the limit to the population of the globe can be only the limit of space.

Now this limitation of space—this danger that the human race may increase beyond the possibility of finding elbow room—is so far off as to have for us no more practical interest than the recurrence of the glacial period or the final extinguishment of the sun. Yet remote and shadowy as it is, it is this possibility which gives to the Malthusian theory its apparently self-evident character. But if we follow it, even this shadow will disappear. It, also, springs from a false analogy. That vegetable and animal life tend to press against the limits of space does not prove the same tendency in human life.

Granted that man is only a more highly developed animal; that the ring-tailed monkey is a distant relative who has gradually developed acrobatic tendencies, and the hump-backed whale a far-off connection who in early life took to the sea—granted that back of these he is kin to the vegetable, and is still subject to the same laws as plants, fishes, birds, and beasts. Yet there is still this difference between man and all other animals—he is the only animal whose desires increase as they are fed; the only animal that is never satisfied. The wants of every other living thing are uniform and fixed. The ox of to-day aspires to no more than did the ox when man first yoked him. The sea gull of the English Channel, who poises himself above the swift steamer, wants no better food or lodging than the gulls who circled round as the keels of Caesar's galleys first grated on a British beach. Of all that nature offers them, be it ever so

The only basis for the validity of Malthus' theory is that at some remote future time population may so increase that there is no elbow room. But even this springs from a false analogy.

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abundant, all living things save man can take, and care for, only enough to supply wants which are definite and fixed. - The only use they can make of additional supplies or additional opportunities is to multiply.

But not so with man. No sooner are his animal wants satisfied than new wants arise. Food he wants first, as does the beast; shelter next, as does the beast; and these given, his reproductive instincts assert their sway, as do those of the beast. But here man and beast part company. The beast never goes further; the man has but set his feet on the first step of an infinite progression—a progression upon which the beast never enters; a progression away from and above the beast.

The demand for quantity once satisfied, he seeks quality. The very desires that he has in common with the beast become extended, refined, exalted. It is not merely hunger, but taste, that seeks gratification in food; in clothes, he seeks not merely comfort, but adornment; the rude shelter becomes a house; the indiscriminating sexual attraction begins to transmute itself into subtle influences, and the hard and common stock of animal life to blossom and to bloom into shapes of delicate beauty. As power to gratify his wants increases, so does aspiration grow. Held down to lower levels of desire, Lucullus will sup with Lucullus; twelve boars turn on spits that Antony's mouthful of meat may be done to a turn; every kingdom of Nature be ransacked to add to Cleopatra's charms, and marble colonnades and hanging gardens and pyramids that rival the hills arise. Passing into higher forms of desire, that which slumbered in the plant and fitfully stirred in the beast, awakes in the man. The eyes of the mind are opened, and he longs to know. He braves the scorching heat of the desert and the icy blasts of the polar sea, but not

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for food; he watches all night, but it is to trace the circling of the eternal stars. He adds toil to toil, to gratify a hunger no animal has felt; to assuage a thirst no beast can know.

Out upon nature, in upon himself, back through the mists that shroud the past, forward into the darkness that overhangs the future, turns the restless desire that arises when the animal wants slumber in satisfaction. Beneath things, he seeks the law; he would know how the globe was forged and the stars were hung, and trace to their origins the springs of life. And, then, as the man develops his nobler nature, there arises the desire higher yet—the passion of passions, the hope of hopes—the desire that he, even he, may somehow aid in making life better and brighter, in destroying want and sin, sorrow and shame. He masters and curbs the animal; he turns his back upon the feast and renounces the place of power; he leaves it to others to accumulate wealth, to gratify pleasant tastes, to bask themselves in the warm sunshine of the brief day. He works for those he never saw and never can see; for a fame, or maybe but for a scant Justice, that can only come long after the clods have rattled upon his coffin lid. He toils in the advance, where it is cold, and there is little cheer from men, and the stones are sharp and the brambles thick. Amid the scoffs of the present and the sneers that stab like knives, he builds for the future; he cuts the trail that progressive humanity may hereafter broaden into a high-road. Into higher, grander spheres desire mounts and beckons, and a star that rises in the east leads him on. Lo! the pulses of the man throb with the yearnings of the god—he would aid in the process of the suns!

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Is not the gulf too wide for the analogy to span? Give more food, open fuller conditions of life, and the vegetable or animal can but multiply; the man will develop. In the one the ex-

pansive force can but extend existence in new numbers; in the other, it will inevitably tend to extend existence in higher forms and wider powers. Man is an animal; but he is an animal plus something else. He is the mythic earth tree, whose roots are in the ground, but whose topmost branches may blossom in the heavens!

Whichever way it be turned, the reasoning by which this theory of the constant tendency of population to press against the limits of subsistence is supported shows an unwarranted assumption, an undistributed middle, as the logicians would say. Facts do not warrant it, analogy does not countenance it. It is a pure chimera of the imagination, such as those that for a long time prevented men from recognizing the rotundity and motion of the earth. It is just such a theory as that underneath us everything not fastened to the earth must fall off; as that a ball dropped from the mast of a ship in motion must fall behind the mast; as that a live fish placed in a vessel full of water will displace no water. It is as unfounded, if not as grotesque, as an assumption we can imagine Adam might have made had he been of an arithmetical turn of mind and figured on the growth of his first baby from the rate of its early months. From the fact that at birth it weighed ten pounds and in eight months thereafter twenty pounds, he might, with the arithmetical knowledge which some sages have supposed him to possess, have ciphered out a result quite as striking as that of Mr. Malthus; namely, that by the time it got to be ten years old it would be as heavy as an ox, at twelve as heavy as an elephant, and at thirty would weigh no less than 175,716,339,548 tons.

The fact is, there is no more reason for us to trouble ourselves about the pressure of population upon subsistence than there was for Adam to worry himself about the rapid growth

There is no reason for us to worry about the pressure of population upon subsistence.

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of his baby. So far as an inference is really warranted by facts and suggested by analogy, it is that the law of population includes such beautiful adaptations as investigation has already shown in other natural laws, and that we are no more warranted in assuming that the instinct of reproduction, in the natural development of society, tends to produce misery and vice, than we should be in assuming that the force of gravitation must hurl the moon to the earth and the earth to the sun, or than in assuming from the contraction of water with reductions of temperature down to thirty-two degrees that rivers and lakes must freeze to the bottom with every frost, and the temperate regions of earth be thus rendered uninhabitable by even moderate winters. That, besides the positive and prudential checks of Malthus, there is a third check which comes into play with the elevation of the standard of comfort and the development of the intellect, is pointed to by many well-known facts. The proportion of births is notoriously greater in new settlements, where the struggle with nature leaves little opportunity for intellectual life, and among the povertybound classes of older countries, who in the midst of wealth are deprived of all its advantages and reduced to all but an animal existence, than it is among the classes to whom the increase of wealth has brought independence, leisure, comfort, and a fuller and more varied life. This fact, long ago recognized in the homely adage, "a rich man for luck, and a poor man for children," was noted by Adam Smith, who says it is not uncommon to find a poor half-starved Highland woman has been the mother of twenty-three or twenty-four children, and is everywhere so clearly perceptible that it is only necessary to allude to it.

If the real law of population is thus indicated, as I think it must be, then the tendency to increase, instead of being always uniform, is strong where a greater population would

give increased comfort, and where the perpetuity of the race is threatened by the mortality induced by adverse conditions; but weakens just as the higher development of the individual becomes possible and the perpetuity of the race is assured. In other words, the law of population accords with and is subordinate to the law of intellectual development, and any danger that human beings may be brought into a world where they cannot be provided for arises not from the ordinances of nature, but from social maladjustments that in the midst of wealth condemn men to want. The truth of this will, I think, be conclusively demonstrated when, after having cleared the ground, we trace out the true laws of social growth. But it would disturb the natural order of the argument to anticipate them now. If I have succeeded in maintaining a negative—in showing that the Malthusian theory is not proved by the reasoning by which it is supported—it is enough for the present. In the next chapter I propose to take the affirmative and show that it is disproved by facts.

It is strong where more population is needed, and weakens as the higher development of the individual becomes possible.

If I have succeeded in showing that the Malthusian theory is not proved, it is enough for the present.