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2002/10/08

21L.448

Malthus and Smith: Two Views on Population Growth

Thomas Robert Malthus and Adam Smith both studied human population growth, yet they reached different conclusions. Malthus, in his *Essay on the Principle of Population*, claims that the population growth resulting from the human urge to reproduce, combined with unavoidable limits on food production, will eventually lead to famine and suffering. Like Malthus, Adam Smith claims in *The Wealth of Nations* that scarcity has a regulatory effect on population growth, such that "no species can ever multiply beyond [the means of their subsistence]" (182). However, he also introduces his famous economic theories about the power of division of labor and enlightened self-interest. These theories allow him to predict that an increase in population can also provide an increase in available labor, preventing the Malthusian famine and potentially leading to greater prosperity.

Malthus's *Essay on the Principle of Population* is a controversial work because it expresses such a pessimistic outlook for the future. Malthus asserts that there are limits to human progress because natural resources have a finite capacity. The foundations for his argument are two claims, both unobjectionable, that "food is necessary to the existence of man" and that "the passion between the sexes is necessary and will remain nearly in its present state" (19). That is, the population has a natural tendency to increase, but if the food supply does not grow correspondingly, it will impose a limit on population growth. Malthus believes that the population grows at a higher rate than the food supply can. Specifically, he writes that "population, when unchecked, increases in a geometrical ratio. Subsistence increases only in an arithmetical ratio. A slight acquaintance with numbers will shew the immensity of the first power in comparison of the

second" (20). Once the population grows to the maximum level that can supported by the food supply, any further increases will result in some part of the population suffering from inadequate subsistence: "The food therefore which before supported seven millions must now be divided among seven millions and a half or eight millions. The poor consequently must live much worse, and many of them be reduced to severe distress" (24). This distress will necessarily continue until it is offset by either an increase in agricultural output or a decrease in population.

Malthus claims that there is a "great check on population" that prevents societies from growing beyond their limits, and it results from a combination of three factors: "moral restraint, vice, and misery" (131). Some of these act as "positive checks," slowing or reversing a population growth that has already begun. The most direct example is famine: when there is not enough food available, starvation and malnutrition cause an increase in mortality, which acts against the population increase. Malthus observes throughout England an increase in "mortality among the children of the poor" and sickness among the lower classes "which can only be attributed to a want either of proper or of sufficient nourishment" (36). He notes that such cases of famine are more common than they appear, because they affect the poor disproportionately. When workers are plentiful and food is not, "the price of labor must tend toward a decrease, while the price of provisions must at the same time tend to rise" (24). As a result, the poor feel the effects of the shortage much more greatly than the rich. Since "the histories of mankind that we possess are histories only of the higher classes," this suffering is "less obvious and less decidedly confirmed by experience than might naturally be expected," but no less present (25). War is another "positive check" that can take place when the population outgrows its means of subsistence. Malthus demonstrates this using the example of a nation of shepherds that have exhausted all the pasture lands available to them. When "want pinched the less fortunate members of the society, and at length the impossibility of supporting such a number together became too evident to be resisted," some of the less fortunate members set out "to explore fresh regions and to gain happier seats for themselves by the sword" (29). The result is a war for natural resources, a "struggle for existence

… fought with a desperate courage" (29). By causing deaths, war, like famine, can act to reduce population when it reaches the subsistence limit. However, war and famine are hardly desirable states, to say the least. Both result in considerable suffering for the people they affect. Malthus claims that "the commission of war is vice, and the effect of it misery, and none can doubt the misery of want of food" (35). This accounts for his argument that "further population was checked, and the actual population kept equal to the mans of subsistence by misery and vice" (34).

Malthus also describes "preventative checks" that can act to slow population growth before it reaches the maximum level supported by the food supply. Specifically, he claims that economic concerns can provide a powerful incentive not to reproduce. Both marriage and raising children involve considerable expense, as a worker must provide not just for himself but for the rest of his family as well. As a result, he will not enjoy as much wealth or social status: "a man … with an income only just sufficient to enable him to associate in the rank of gentlemen, must feel absolutely certain that if he marries and has a family he shall be obliged … to rank himself with moderate farmers and the lower class of tradesmen" (34). An individual aware of this effect will be motivated by self-interest to resist his natural impulse to reproduce. While this preventative check affects "all the ranks of society in England," its effects on the lower classes are particularly dramatic (34). A laborer who earns low wages may realize that if he has multiple children, it is possible that "no degree of frugality, no possible exertion of his manual strength could preserve him from the heart rending sensation of seeing his children starve" (35). This provides an even stronger incentive not to have children. Malthus refers to these motivations as "vice" and claims that they explain how many nations can have a "slow progress in population" in spite of the ever-present "passion between the sexes" (33). Because people can be discouraged from multiplying, the population increase that actually takes place is slower than geometric doubling that Malthus proposes. He also refers to "moral restraint" as another type of preventative check that occurs when people are aware of the dangers of unchecked population increase. Just as overeating results in poor health, "if we multiply too fast, we die miserably of poverty and contagious diseases. The

laws of nature … indicate to us that we have followed these impulses too far" (131). Accordingly, he claims that it is a moral "duty of each individual not to marry till he has a prospect of supporting his children" (132). If this obligation is followed, it will reduce the rate of population increase. However, Malthus is not very optimistic about the power of these preventative checks. He does not even acknowledge the possibility of moral restraint in the first edition of his essay, and he claims that while "vice and misery" may slow the process, the population will nonetheless grow until it reaches the maximum sustainable level.

Adam Smith, in his Wealth of Nations, also mentions the population problem. His arguments resemble Malthus's theory of preventative checks. Smith also claims that "every species of animals naturally multiplies in proportion to the means of their subsistence, and no species can ever multiply beyond it" (182). He takes an economic approach to analyzing this limit, viewing the population as labor and considering its supply and demand. When the population is low, the supply of labor is limited and its value increases, encouraging "the marriage and multiplication of labourers;" when the population is high, the market is "over-stocked with labor," lowering wages and increasing poverty (183). Thus "the demand for men, like that for any other commodity, necessarily regulates the production of men; quickens it when it goes on too slowly, and stops it when it advances too fast" (183). This theory is very similar to Malthus's notion of preventative checks, though Smith makes the simplification of treating men as an economic quantity and neglecting the human instinct to reproduce. As a result, Smith is more optimistic about the capability of these preventative checks to regulate population growth and prevent famine.

Malthus's and Smith's arguments about population differ most significantly in their predictions about the food supply. Malthus's assertion that the food supply can only increase arithmetically is one of the weaker points of his essay. He claims that it would be "contrary to all our knowledge of the qualities of land" that agricultural production could double in twenty-five years and then double again in the next twenty-five. "The most enthusiastic speculator cannot

suppose a greater increase" than an arithmetical progression (22). However, Malthus does not provide any explanation for why this is the case; he merely assumes it to be true. Similarly, he claims that, even though "we do not exactly know where it is," there must exist a "limit to improvement" for plants and animals: "No man can say that he has seen the largest ear of wheat or the largest oak that could ever grow; but he might easily, and with perfect certainty, name a point of magnitude at which they would not arrive" (63). Again, this reasoning is circular; he merely claims that the existence of a limit to progress is obvious. In reality, the situation is not so simple, because there are many complex factors that contribute to the amount of food available to support a population. It is thus unreasonable to suggest, based on this argument, that the food supply necessarily grows arithmetically.

Several of the principles Smith presents in *The Wealth of Nations* explain why the food supply can grow more rapidly than Malthus assumes. Smith describes "the division of labour" as "the greatest improvement in the productive powers of labor" (109). By specializing in one particular area, a worker can improve his or her productivity and efficiency. Smith uses the example of pin-making: a worker who does not regularly make pins will lack the skill to make more than one pin per day. However, a team of workers will be able to manufacture many thousands of pins if they are skilled in the trade of pin-making, have access to the appropriate machinery. and spend all of their time making pins. This division of labor is naturally encouraged because it allows the society to be collectively more productive, and is therefore in every individual's self-interest. The same reasoning can be applied to agriculture. Smith does note that "the nature of agriculture does not admit of so many subdivisions of labour, nor of so complete a separation of one business from another … the improvement of the productive powers of labour in this art does not always keep pace with their improvement in manufacturers" (111). Nevertheless, the division of labor can still serve to increase food production: "the most opulent nations, indeed, generally excel all their neighbors in agriculture as well as in manufactures … Their lands are in general better cultivated, and having more labour and expense bestowed upon them, produce more

in proportion to the extent and natural fertility of the ground" (111). Division of labor also makes it possible for a society to support scientists and engineers, who do not directly produce goods but invent technologies that can make production many times more efficient. Malthus does not account for advances in agricultural technology. For example, improved farming machinery allows land to be harvested more efficiently; fertilizers and pesticides make it possible to grow crops in harsher environments. Modern biotechnology promises higher-yield crops with better disease resistance. These factors can cause the food supply to increase faster than the Malthusian arithmetical progression.

Both Malthus and Smith consider the effects of population growth, and both conclude that famine and suffering will result if the population grows so large that it cannot be sustained by the food supply. Malthus claims that this suffering is inevitable because the population grows geometrically, and will therefore always exceed the food supply, which only grows arithmetically. However, the reality is far more complex, because the preventative and positive checks that Malthus describes act to slow population growth, and the growth of the food supply is not necessarily arithmetic. Adam Smith is able to avoid such a pessimistic conclusion because he recognizes that the population has a tendency to be self-regulating and slow its growth as it approaches the limits of sustainability, and that the division of labor and technological advances allow increases in agricultural production.