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Jacob Eichengreen

The Promise of Perfectibility: Can Education Save us from a Malthusian Trap?

The end of the 18th century was a time of great social progress. Revolutions in France and the United States brought democracy to the forefront of political discussion. New technologies emerged that, upon their perfection, would provide a means to unprecedented economic and population growth. In addition, the end of the 18th century ushered in a heightened awareness of potential limitations to human prosperity. British scholar Thomas Malthus was one of the first to raise the issue of natural limitations to human population growth or, in modern terminology, the possibility of a potential “carrying capacity,” in his 1798 work *An Essay on the Principle of Population*. Many of Malthus’s contemporaries, such as French philosopher Marquis de Condorcet, were of the opposite opinion: human reason and ingenuity will provide means to sustain essentially infinite growth. The debate between these two sides was never resolved, and, with the increasing awareness of the strain current population levels are placing on the earth, the debate has once again become lively. The two arguments seem irreconcilable, however between them there is some common ground. Subscribers to both arguments agree: without a concerted effort towards global education, we will not be able to maintain any semblance of our current standard of living.

Condorcet, one of the more notable dissenters to the Malthusian argument, demonstrates education to be key to social progress. In his 1794 work, *Historical View of the Progress of the Human Mind*, Condorcet argues that human reason will allow us boundless growth. Condorcet maintains that our knowledge base is constantly expanding, which will allow us to not only sustain larger populations, but also to have a higher quality of life while doing so.

“The real advantages that should result from this progress, of which we can entertain a hope that is almost a certainty, can have no other term than that of the absolute perfection of the human race...not only will the same amount of ground support more people, but everyone will have less work to do, will produce more, and satisfy his wants more fully,” (Condorcet, par. 33-44)

Condorcet literally suggests immortality as a possible outcome of the “indefinite perfectability” of mankind (Condorcet, par. 76-77). However, in order to reach the ultimate societal pinnacle our reason may allow us, efforts must be made to ensure everyone has access to the knowledge necessary for advancement. Condorcet emphasizes that education must be universal, as non-universal education will give rise to elitism, which hinders social progress. In order to negate the natural intellectual inequalities that exists between individuals, Condorcet advocates, among other things, developing a “universal language” to ensure universal access to knowledge (Condorcet, par. 65). Without education, the “perfection” of mankind becomes impossible.

Education is also fundamental to the Malthusian point of view. Malthus aimed to “[draw] the attention of more able men to what [I] conceive to be the principal difficulty in the way to the improvement of society” (Malthus, 4). Malthus saw himself as an educator, presenting factual depictions of limitations to human existence to an audience that could hopefully use the understanding of those facts granted through the work to better provide for the advancement of society. He demonstrated that conflict between two of the most basic human truths – that “food is necessary to the existence of man,” and that “the passion between the sexes is necessary” and therefore reproduction “will remain nearly in its present state” – leads to “a perpetual oscillation between happiness and misery” (Malthus, 9, 12). Malthus is frequently depicted as a pessimist for demonstrating that our very nature is a source of our misery, but his work can be construed in a more favorable light. Although Malthus proposes no viable solution to the problems he observes, by giving insight into the fundamental source of human misery, Malthus can be seen as providing a foundation upon which a solution can be built.

Writing in 1798, Malthus's arguments were based on seemingly astute observations of the world at the time. However, within 50 years of his publication, many of the arguments Malthus made were ostensibly disproven by world events. Specifically, Malthus's demonstration that population growth was limited by economic output, and that growth could be, at best, linear, was disproven by the sustained exponential increases in both output and population brought about by the industrial revolution. "One of the features that distinguishes the modern industrial (or industrializing economy) from its predecessors in the chain of economic development is that it involves sustained long-term growth in *both* population *and* output" (Deane, 20). In effect, the restraints to population and economic growth, such as limited agricultural yield per acre, removed by the technological advancements of the industrial revolution seem to raise Condorcet's argument over Malthus's. The industrial revolution did not resolve the Malthusian conflict between our need to eat and our tendency to reproduce. Instead, the ensuing technological advancement demonstrated the ability of human reason to provide for the advancement of society, through expanding our ability to eat and providing means to limit reproduction without limiting sexual satisfaction.

However, there is increasing evidence that the externalities of our growth over the last several centuries will prove a finite population carrying capacity for humanity, albeit one much greater than that suggested by Malthus. For example, ecologist Paul Ehrlich gained notoriety with his 1968 book *The Population Bomb*, which predicted that, within a decade of its publication, mass starvation and resource wars would be the norm, as consumption of finite natural resources was well above sustainable levels. The apocalypse Ehrlich predicted did not come to pass, but he maintains human consumption of finite natural resources is on a collision course for disaster. "The current population...is being maintained only through the exhaustion and dispersion of a one-time inheritance of natural capital...the rapid depletion of these essential

resources...indicate that the human enterprise has not only exceeded its current social carrying capacity, but actually reducing future potential biophysical carrying capacities” (Daily & Ehrlich, 1992). Some, however, maintain essentially a cornucopian view. According to economist Julian Simon, “Population growth constitutes not a crisis but, in the long run, a boon that will ultimately mean a cleaner environment, a healthier humanity and more abundant supplies of food and raw materials for everyone” (Tierney, 1990). Simon does not dispute that there are challenges looming for humanity as abundant supplies of the finite natural resources we rely upon most heavily begin to dwindle. However, Simon does not see scarcity as a threat to our existence – human ingenuity has historically allowed us to find substitutes and alternatives to scarce resources. As the price of one resource increases, it becomes more profitable to find a cheaper alternative. Frequently, the alternatives developed to alleviate scarcity can be superior to the originals they were designed to replace.

At this point in history, there does not seem to be enough data to reconcile the two points. Simon and Ehrlich have been known to exchange insults and mock each other in public. They once made a \$1000 bet to try and reconcile their differences, and, upon the conclusion of the bet, they agree no more than they did previously. Historically, there has yet to be an obstacle to human growth that human reason has not overcome. However, every advance yet made by human society has been at the expense of the finite capacity of the Earth. There is only so much available drinking water, only so much arable land, only so much CO₂ absorption capacity – each one of these poses a natural limit to human growth on a much larger scale than previous limits reason has overcome. However, both sides still seem to agree that education is paramount to avoiding disaster. In order for human ingenuity to prevail and grant us technologies to overcome current and future hurdles to growth, every individual must be given the capacity to become an innovator. Simon views population growth as a great boon to society – every

additional individual is an additional innovator, developing new solutions to pressing issues. As the problems facing society become larger and more complex, it becomes even more essential that people are educated. Without education, people cannot comprehend the problems we are facing and therefore cannot develop solutions. Education is also essential to Ehrlich: without a populace aware of the dangers of continued overconsumption, no global paradigm shift will be possible. Without awareness and education, humanity is doomed to the resource wars and starvation Ehrlich originally predicted would break out in the mid-1970s.

Education does not, at first, seem to be an appropriate topic for an economics paper. However, it constitutes a resolution to a 200-year-old debate in the field: is human growth ultimately infinitely sustainable? As demonstrated by Condorcet in the 18th century, education is necessary to sustain the scientific and technological advancement that will allow us to overcome potential obstacles to continued growth. Some contemporary writers maintain this position. Malthus argued the opposite to Condorcet –the conflict between human nature and a finite world will eventually bound growth – but demonstrates education to be a means to avoid significant misery once we hit that limit. Again, many contemporaries maintain this position. With this apparent accord struck between these two diametrically opposed arguments, and the increasing evidence that our unchecked consumption of finite natural resources is posing a threat to our existence the likes of which have never been seen before, it becomes apparent that our ultimate priority should be education. Cutting education out of national, state, and/or local priorities will seemingly doom us to limited growth and prosperity. Unfortunately, a significant portion of the elected representatives in the United States seem to view education as dispensable; as an entity that can easily be cut to balance the budget deficit – another potential limit to sustained growth. But without education, it does not seem possible to avoid future budgetary and resource crises.

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