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Paradigms in Political Economy

A paradigm, according to Thomas Kuhn, is an entire pattern of thought. Discontinuous revolutionary changes in these patterns of thought that occasionally occur are called paradigm shifts. When such shifts occur they involve a gestalt, an element of faith, personal commitment, and values. Because it changes the entire intellectual framework among scientists within a discipline, a new paradigm must initially rely on its own criteria for justification, because the relevant questions and answers may be absent from the previous paradigm. Proponents of different paradigms may not even agree on what the fundamental problems and solutions are.

The field of economics can point to several periods of paradigm shift. During the mercantilist period, wealth was seen as based on precious metals that were converted into armies and thus national power. This wealth was obtained by mining, international trade, and conquest. A good balance of trade required low prices, so it was necessary to keep wages low. Later, the Physiocrats shifted the primary focus to agriculture and land as the basis of the economy. The classical economists brought about another shift, as they saw labor as the primary source of wealth and were concerned with how the product of labor was distributed among the social classes that cooperated to produce it. The classical economists thought that "over the long run, population growth and diminishing returns would unavoidably channel the entire economic surplus into rent, thus reducing profit to zero and terminating economic growth."(3) Marx's approach was quite similar to that of the classical economists, but he focused more on the relationship between the owners of the means of production and the non-owners. Marx saw this class distinction as the central economic factor, and believed that it would lead to revolution.

Neoclassical economists shifted the paradigm back to the concept of individual competition. Their central focus was on maximizing the amount of wants satisfaction from scarce resources, given a certain wealth and income distribution. The means for this maximization was pure competition. John Maynard Keynes, writing during the economic problems of the 1930s, emphasized unused resources. While classical and neoclassical economists had seen unemployment as an aberration, Keynes recognized it as the general rule. In the present day Keynesian-neoclassical synthesis, economics has become focused on full employment and optimal microeconomic allocation of resources as measured by GNP. Growth in GNP is seen as necessary to maintain full employment. The issue of distribution has receded into the background; the goal of the economy is to make the total pie bigger so that everyone can get more without changing the relative size of the parts. Continuous growth in stocks and income is

central to this paradigm, which assumes that aggregate wants are infinite and should be served by making aggregate production infinite.

Ends, Means, and Economics

Political economics has tried to avoid social conflicts by abolishing the idea of scarcity by "promising more things for more people, with less for no one, for ever and ever."(7) Robert Solow has said that "the world can, in effect, get along without natural resources."[1] Barnett and Morse have added to this by stating that there are certain scarcities in nature, but not a general scarcity of resources altogether. These statements have, however, ignored the law of entropy, which tells us that nature does in fact present us with a general scarcity. Nicholas Georgescu-Roegen has pointed out that "any use of natural resources for the satisfaction of nonvital needs means a smaller quantity of life in the future."[2]

Standard economic textbooks have defined economics as the study of the allocation of scarce means among competing ends. We may begin with a reconsideration of these ends and means as the starting point of a paradigm shift in economics toward a steady-state economy.

Humanity's ultimate economic concern is to use ultimate means in the service of ultimate ends. The ultimate end is that which is intrinsically good, while the ultimate means is all of the "useful stuff" in the world, i.e., low-entropy matter-energy. All intermediate categories are ends with respect to lower categories, and means with respect to higher categories. The intermediate ends that can serve as means to the ultimate end include health, education, etc., while intermediate means are the physical stocks, "which can be viewed as ends directly served by the use of ultimate means (the entropic flow of matter-energy, the throughput)."(9) The discipline of political economy corresponds to the progression from intermediate means to intermediate ends, while ethics and religion are concerned with achieving ultimate ends. Thus far economics has not dealt sufficiently with either ultimate means or ultimate ends.

Economic growth implies the creation of "ever more intermediate means (stocks) for the purpose of satisfying ever more intermediate ends."(10) The unlimited availability of ultimate means to satisfy the ever-growing demand for intermediate means is never questioned because it is believed that technology can continuously substitute new resources for old ones. It is likewise believed that intermediate means are only scarce because the human capacity to transform ultimate means to intermediate means has not yet reached its full potential. Orthodox economists also view people's intermediate ends as increasing continuously, unconstrained by ultimate ends. From this perspective, then, economic growth is justified and expected to go on for ever.

However, economics needs to consider intermediate ends and means in the context of ultimate ends and means. The finiteness of the ultimate means must limit the possibility of growth, while competition among ends will limit the desirability of growth, and these factors together provide an economic limit to growth. A new economics should ask how to use ultimate means to best serve the ultimate end, while viewing the ultimate means in the context of the entropy law and ecology, and the ultimate ends with a "concern for future generations and subhuman life and inequities in current wealth distribution."(11)

The Steady-State Economy

To put our discussion of a steady-state economy in the proper context, it is necessary to consider the quantitative and qualitative differences between rich and poor countries. The ratio of gross national product (GNP) to total population (P) is the measure used most often to distinguish between rich and poor.

Quantitatively, the rate of growth in population is much higher in poorer countries than in rich ones, and the fertility in poor nations is roughly twice that of the rich. Fertility rate is the most consistent index for dividing rich from poor countries. Qualitatively, the incremental population in poor countries tends to be among hungry illiterates. Moreover, each incremental person contributes negligibly to production, but also makes only minimal demands on world resources. In rich countries the incremental population consists mostly of well fed members of the middle class; each incremental person contributes substantially to GNP, and at the same time puts a more severe strain on world resources.

Quantitatively, GNP has grown 4-5% per year in both rich and poor countries, but because poor countries have more population, their per capita growth is much slower. The incremental GNP of rich and poor countries finds qualitative significance in two economic laws: 1) the law of diminishing marginal utility; and 2) the law of increasing marginal cost. The first law states that people act to satisfy their most pressing needs first, and units of income spent afterwards satisfy less pressing needs. The second refers to the actions of producers, who use the best quality and combinations of factors of production first, and only substitute with lesser ones when they run out of the best. When applied to GNP, the first law suggests that the marginal benefits of increasing output are decreasing, while the second indicates that the marginal costs are increasing.

These laws imply that at some point an extra unit of GNP will cost more than it is worth. This may already be the case in richer countries such as the United States, where growth now means more electric toothbrushes and other luxury items. In poorer countries, however, growth still means more food, clothing, shelter, etc. Thus economic growth should still be advocated in poor countries, but not in the rich ones. Population growth should, however, be discouraged for both.

The Nature and Necessity of the Stationary State

The concept of a stationary (steady) state can be traced to the great classical economist John Stuart Mill, who said that "at the end of what they term the progressive state lies the stationary state, that all progress in wealth is but a postponement of this, and that each step in advance is an approach to it."[3] A steady state means a constant stock of physical wealth (capital) and a constant population. Low throughout rates are also necessary. This means lowering both production and consumption for stocks of wealth, and lowering both the birth rate and the death rate for population stocks. High throughput rates are impracticable because they take more production inputs from the earth and deposit more harmful wastes to it. To maintain low throughput rates it is necessary to focus on both the size and the durability of stocks. Durability

of stocks raises not only the question of how long something will last, but also how well it can be recycled (keeping in mind that the entropy law prohibits 100% recycling).

The classical economists expected depletion limits to make the steady state necessary, but in fact the pollution limits seem to be more important. Limits on the pollution side have so far received little attention, however, because while depletion costs are private, pollution costs are social. Air and water are assumed to be free to all and, as Garrett Hardin has pointed out, they are therefore exploited. Of all of the paradigms discussed above, only the physiocrats emphasized human dependence on the earth. Economics should return to that basic notion.

Economic and Social Implications of the Steady State

The economic and social implications of a steady state are fundamentally different from the neoclassical model, and thus require revolutionary change. "The physical flows of production and consumption must be minimized, not maximized subject to some desirable population and standard of living."(21) In addition, the central concept should be the stock of wealth, which must be kept constant, rather than the flow of income and consumption. If production flows are kept low, then the focus of economics will be on the distribution of the stock of wealth, rather than on the distribution of the flows of income.

An interesting analogy can be drawn from the concept of ecological succession to illustrate this point. Young ecosystems have a high production efficiency, while mature ones have a high maintenance efficiency. For a given stock, young ecosystems maximize production flow, while mature ones minimize it. Similarly, if physical stocks are held constant, then in economics "growth must be in nonphysical goods: service and leisure."(22) The price of material-intensive goods and activities should increase relative to that for time-intensive ones. The benefits of technological progress should therefore be in the form of increased leisure as opposed to increased production of goods. Bertrand Russell was a proponent of this approach, and expressed it through the hypothetical example of pins. If it takes a certain number of workers eight hours a day to manufacture enough pins for the entire world, and someone then invents a method for making twice as many pins in the same time, then in today's world we would go on working the same amount of time and produce too many pins. In a steady state, however, the world would continue to produce the same amount of pins, but in half the time.

Economic growth continues to be justified on the grounds that it is necessary to maintain full employment to facilitate the "income-through-jobs-ethic of distribution," and because it "takes the edge off of distributional conflicts."(23) If everyone's income is increasing, then there is less tendency to fight over relative shares. However, if we maintain constant physical stocks and utilize technology to create leisure, then "full employment and income-through-jobs are no longer workable mechanisms for distribution."(24) We should therefore try to identify and create institutions that will be able to facilitate keeping stocks of wealth and people constant, while infringing as little as possible on individual freedom.

An Emerging Political Economy of Finite Wants and Nongrowth

The requirement for economic growth has also been linked to the assumption of infinite wants. This is manifest in the definition of GNP, where growth is the "satisfaction of ever more trivial wants while simultaneously creating ever more powerful externalities which destroy ever more important environmental amenities."(25-26) Keynes stated, however, that wants should be separated into two classes: absolute needs and needs that make us feel superior to other humans. Keynes thought that the latter category of wants may be insatiable, but with respect to absolute needs, "a point may soon be reached, much sooner perhaps than we are all of us aware of, when those needs are satisfied in the sense that we prefer to devote our further energies to noneconomic purposes."[4] A steady-state economy focuses on the satisfaction of these absolute needs. Regarding those needs reflecting a desire for superiority over our fellows, we should ask, as the prophet Isaiah did, "Is there not a lie in my right hand?"(Isaiah 44: 14-20)

Notes

1. Robert Solow, "The Economics of Resources or the Resources of Economics," American Economic Review (May 1974): 11; cited by Daly, 7.
2. Nicholas Georgescu-Roegen, The Entropy Law and the Economic Process (Cambridge, Mass.: Harvard University Press, 1971), 21; cited by Daly, 7.
3. J.S. Mill, Principles of Political Economy, Vol. II (London: John W. Parker, 1857), 320-321; cited by Daly, 14.
4. J.M. Keynes, "Economic Possibilities for Our Grandchildren," in Essays in Persuasion (New York: Norton, 1963); cited by Daly, 27.