

The Canary Has Fallen Silent

By HERMAN E. DALY

In 1857 John Stuart Mill argued that a "stationary state" (by which he meant constant population size and a constant stock of physical wealth) was both necessary and desirable. During the century since Mill wrote most economists have argued that the stationary state was either unnecessary, undesirable, or both.

There are many reasons for believing that the times have caught up to Mill, and that today the big question for the social and physical sciences is to invent institutions and technologies which will allow us to reach and maintain a stationary-state economy.

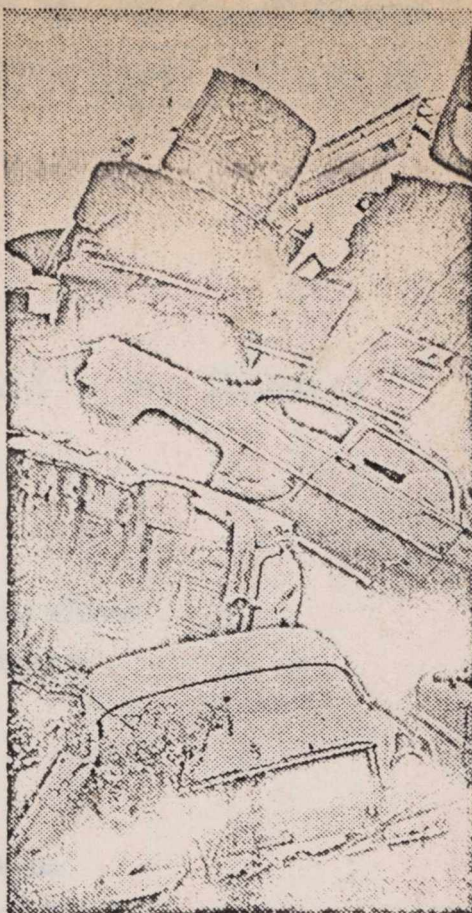
Since our world is finite nothing physical can grow forever—neither the population of human beings, nor the "population" of physical commodities. However, growth in nonphysical things, well-being, satisfaction, leisure time, can continue. In the stationary state technological progress must be aimed at nonphysical growth, or at improving the quality of life.

One may theoretically agree that eventually the stationary state is necessary, but yet argue that it is only relevant to the remote future. How do we know that the time is now? Coal miners used to take a canary into the mines with them. When the dust and gases had so fouled the subterranean environment that the canary had trouble staying alive, then the miners knew it was time to stop. With entire species of birds and animals unable to survive in our environment today (and with human life expectancy falling in some areas) it would seem that mankind is very much in the position of the miner whose canary has just died.

Depletion and pollution of the environment are inevitable by-products of production and consumption. Matter and energy can be neither created nor destroyed. Production must deplete the environment. Consumption must pollute it.

Populations of organisms and commodities have much in common: both are born (produced) and both die (are consumed); both draw primary inputs from the environment for production and maintenance, and both return to the environment the waste products resulting from maintenance and finally death. The flows of depletion and pollution are necessary to maintain the stocks of wealth and people, but they interfere with ecological processes and limit the carrying capacity of the environment.

The limiting factor which determines carrying capacity is not space, but the least abundant necessary material. The most fragile link in the chain of ecological interdependence. Nor is this limit necessarily approached gradually and continuously.



Dick Saunders/Scope

Constant stocks should therefore be maintained with the lowest possible rates of input and output (which, of course, are equal when the stock is constant and may be jointly referred to as the rate of throughput). The lower the rate of throughput the lower the rates of depletion and pollution, and the higher the carrying capacity of the environment.

Low rates of throughput imply increased life expectancy. The slower the water flows through a tank the more time an average drop spends in the tank. The lower the birth and death rates of a constant population, the longer an average person lives. The lower the production and consumption rates of a constant stock of commodities, the longer an average commodity lasts. If it is good for people to live longer and for commodities to last longer, then it is good to minimize the rate of throughput by which the stock is maintained.

Minimizing the rate of throughput which maintains a stock is equivalent to maximizing the life expectancy or durability of the stock. This can be done in two ways: increasing the durability of the individual commodities (instead of planning for obsolescence and self-destruction), and designing commodities and distribution channels so that the "corpse" of commodities can be recycled and "reincarnated" in

The rate of throughput, which is the same as the annual physical flow of production, which in turn is the same as real gross national product, is thus seen to be the cost of maintaining the stock of wealth. Since production is a cost it would logically be minimized in the stationary state, not illogically maximized as today. The same largely holds true for the growing economy. As Kenneth Boulding has argued for many years, it is the services of the stock of wealth which satisfy human wants. Production is a deplorable activity made necessary by the fact that wealth wears out or is used up, and must be replaced. It is not the increase of production, but the increase of capital stock which makes us rich. The social and economic implications of minimizing rather than maximizing production are decidedly radical. Ecological conservatism breeds economic radicalism.

In the past growth has been a solvent for sticky income problems. As long as everyone gets absolutely more the fight over relative shares will be less intense. But in the stationary state relative and absolute shares move together and the focus will shift to distribution of the stock of wealth, which is a far more radical issue than the distribution of income.

The main justification for inequality in income and wealth, namely that it facilitates saving and provides incentives, both of which are necessary for growth, would not be relevant in the stationary state. Also full-employment policies, which allow us to maintain the income-through-jobs principle of income distribution, require investment to stimulate aggregate demand. Investment means growth. The result of zero growth would be mass unemployment. Since production is minimized, the demand for factors, including labor, will be less. In fact the tendency will be to use ever less labor. Some form of supplementary non-wage income must be the rule, not the exception. Again this is all quite logical—labor is a cost, why not minimize it, even if it requires a different system for distributing income and wealth?

By keeping the "pie" constant we make fewer demands on our environmental resources. But in sharing the constant "pie" we make much greater demands on our moral resources.

Economists have generally assumed that moral resources are the scarcest of all and should never be relied on very heavily. But in today's world of doomsday machines, cybernetics, mass media brainwashing, genetic control, etc., there is no alternative. Indeed, the physically stationary economy must be a morally growing economy.

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