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REVIEW AND RECOLLECTION, RELATED TO RESOURCE ECONOMICS: SELECTED WORKS OF ORRIS C. HERFINDAHL

by DAVID BROOKS
(1974)

Herf and I knew each other well enough that I benefited from his huge talent for upgrading the work of colleagues. Earlier, he had educated me in mineral economics by contributing to a collection a complex and substantive essay which stretched my editor's mind with vigorous exercise. We never knew each other well enough to dare explore our differences. This collection reminds me how wide these were. An honest review requires that this difference not be submerged. Herf would be the last to wish anything but an objective effort to evaluate his work.

Resource Economics, the selected works of O. C. Herfindahl, is an unusual publishing event. Collected works of economists, even superstars, seldom sell, and one finds some of the reasons here: some selections are dated in their optimism about resource abundance; the author's philosophy is restated too often, and that which seems inspired in one selection becomes wordy by the nineteenth. These problems seem inherent in a collection of essays written over time without intention to integrate them into a single volume.

Yet the rarity of the publishing event makes it interesting. Although Herf evoked intense loyalties, he was not gregarious, and his works might seem to be of deep interest only in a narrow market. The interest is wider, however, if we view this also as the Hegira of a faithful and creative neoclassical economist applying his philosophy and tools en route through our times. His travelogue reveals the strengths and failings of a generation.

Editor David Brooks introduces the selections with devotion becoming a student, eulogy befitting a memorial, and detachment becoming a scholar, combined with finesse, grace, taste and self-effacing brevity.

Herf is an excellent neoclassical philosopher and creative craftsman. The Herfindahl Index of industrial concentration is still widely used, and appears here in "Changes in the Size of Copper Mining Companies." (Herf, no C. Northcote Parkinson or Lawrence J. Peter, calls it "C.") He was most creative in using capital theory to predict

how changing parameters affect conservation decisions. With all detachment I truly believe his virtuosity peaks in "Depletion and Economic Theory," his chapter adorning my *Extractive Resources and Taxation.* If Herf was a pioneer in viewing natural resources as economic goods he had company by 1967, for eleven other contributors to that book shared his view. But his essay sorts out a bewildering variety of assumed conditions, and very correctly, I think.

In several selections, Herf shows through as an apostle striking lights in the darkness. He puts the lamp of learning on diverse economic illiterates, and those ubiquitous nuisances who over-differentiate their professions, regions and hobbies in quest of fame and funding. His special mission is to take the mystique out of advance exploration, throwing cold water on costly, grandiose plans to expand knowledge without purpose or limit. Exploration is creating an inventory of advance reserves, and the inventory needs control like any other. He soothes alarmists by patiently re-explaining the equilibrating mechanisms of the market, how scarcity breeds substitution, the shock-absorbing capacity of a free economy, the folly of goals unrelated to costs, and so on. Good solid stuff, that bears frequent reaffirmation and reapplication.

Editor Brooks emphasizes Herf's belief in "the now widely accepted view that an ore deposit is better treated as a form of capital than as 'land,' " meaning evidently that the value of ores is all produced by investment in discovery and development, and there is no pure land rent. I question that this view is now widely accepted. It was gratuitous dogma riding on the neoclassical synthesis, and went out with cheap oil and unbridled growthmanship.

The efforts of Herf's neoclassic mentors have failed to undefine "land," to fuse it with "capital," and to dissociate it from "rent." These efforts sprang, I believe, from a wish to rationalize private property so perfectly there was no unearned income other than by chance; and this stuck the advocates with the lemma that natural resources are reproducible (in the relevant economic sense), which some of them embrace with more zeal than the facts warrant. With ten-cent oil bringing $11 a barrel the dogma has to yield, to be replaced by the present consciousness of the limits of the earth, and the resulting revenue potential of offshore leases.

We shouldn't hang all this on Herf, who does at one point say "Natural resources are not identical with man-made capital goods" (1970). His main theme is rather that conventional economic analysis is useful for comprehending resource economics, too (which figures, since it goes back to when Ricardo founded marginal analysis with his law of land rent). Nor would Herf say anything as epigrammatic as his editor's epitomes.

Yet David Brooks has surely captured much of the elusive essential Herf. He does reveal, again and again, his faith that technical advance will progressively overcome depletion; that land rents are small and growing smaller. Jevons' concern with *The Coal Question* in 1906 "was premature by a few hundred years, as it turned out" (1970). "[L]arge mineral commodities . . . will be available for exploitation near present costs. . . . This . . . applies to the energy commodities as well . . ." (1967). "Without atomic energy, costs of energy from present conventional sources (e.g. oil, coal) would probably start to rise within a period of time measured in a comparatively few hundred years or less" (1962).

"And in the long run the value of a mineral deposit does tend to reflect real expenditures on discovery and development" (1957). "[I]ncomes generated by labor and man-made capital engaged in these industries . . . greatly outweigh the income generated by the natural resources themselves" (1970). "[E]ven very sizable increases in the effective quantity of natural resources are not going to have a tremendous effect on the level of a nation's income. . . . It simply is not quantitatively possible" (1970). All that rings strangely in this age of affluent Abu Dhabians and pecunious Persians piling up petrodollars per an opulent OPEC.

As to cartels, he finds the copper industry less concentrated than others "whose behavior is widely regarded as strongly competitive." These others include (as of 1957) autos, gypsum, cans, tires, sugar, pig iron, and still-picture equipment. One can agree about copper but wonder how strict a standard is being applied. Accordingly, it is not surprising that he expresses no concern about the danger elsewhere, save to endorse national security as a legitimate reason for government intervention in the market–i.e. mercantilism. If living today, I surmise Herf might still echo Milton Friedman that OPEC is a flash-in-the-pan and the seven sisters never skinned us much anyway. Herf's faith in the market tends to leap from "it can work" to "it does," and his distrust of the state to stop at the water's edge.

By hindsight, then, while Herf's neoclassical methods served him well, some of his fellow-traveling dogmas did not. They may account for his not looking harder at the elements leading to the energy crisis, for example. He fell into the prevailing mood at RFF that the ultimate critical scarce resource was the environment, to which he devoted his later efforts, neglecting OPEC, tax loopholes, mergers and concentration in the energy industry, vertical integration, the mercantilist resource position of the U.S. and its imperialistic overtones, extension of sovereignty into the oceans, government subsidy of

energy waste via the Highway Trust Fund, and a host of exciting vital issues in his field swirling around him. Nor does unemployment arouse his interest. To him the passive investment in conserving ore in the ground is just the same as the active investment that creates payrolls.

Yet he is not an apologist for the mineral industries, any more than Friedman is a friend of the ABA schedule of minimum fees. He is rather ever the philosopher, of strong spiritual cast, who is more concerned that we perceive things correctly and think straight than with supporting any interest group or party. He consistently supports the market process against exaggerated industry claims. Thus "exploration . . . in and of itself, cannot be an objective of policy" but "should depend on the demand . . . and the present stock . . . in relation to the supply. . . . To stimulate a larger volume of activity involves a loss of social product" (1969). Again, "[i]f the firms are restricted to [tax] deduction of actual costs incurred, as they should be, deduction will not be sufficient to provide for replacement of each property when the cost of exploration is rising. This is, of course, a desirable result" (1955). Eat your heart out Henry Reuss—that was said twenty years ago!

David Brooks divides Herf's work into five parts: (1) Nature and Scope of Resource Economics; (2) Natural Resource Supply and Conservation; (3) Applications of Economics to the Minerals Industry; (4) The Supply of Natural Resource Information; (5) Quality of the Natural Environment. The third of these is of most general interest, where the philosopher reveals his intimacy with the numbers, picks, and shovels of his field. He shows here that the size and stability of copper mining companies have been too low to permit cartel behavior "over any substantial period"; that copper prices fluctuate in the short run but are stable in the long, because new discoveries respond to price signals; and that early U.S. Census data are not reliable enough to support a conclusion that capital/output ratios rose from 1870-1919. The major piece is on metal mining in the U.S., 1839-1909. His penchant for disaggregating data results in a beautifully detailed and qualified picture of declining labor-intensity. It leads to a Herfian model: search and development respond to economic incentive.

Parts Four and Five are not of the same quality as Part Three. Writing on the supply of information he repeats earlier wisdom but adds little. These are works of quiet desperation, with preachments like "Sampling is not the answer to all data needs but it should be evaluated as a possibility for all types of data." In "The Value of

Mineral Surveys to Economic Development" he appears in a new role, asking how government can increase its revenues from resources, but he shows no zest for it.

His heart, it seems, was now in the wilderness, but "Depletion, Growth, and the Quality of Life" turns environmentalism into a kind of authoritarian backlash. Human nature comes from our hunting ancestors. He lashes out against ungrateful students, New York, defiance to superiors, mass man, popular government, people corrupted by money, fundamental defects in human nature, and the overcrowding of nothern Minnesota. Drugs, crime, and student protest are the fruits of prosperity. The "optimistic" solution is to avoid too much prosperity.

I prefer another outlet for these feelings which he expresses in "Natural Areas" (1965 with Allen Kneese). The worth of natural areas is not what people would pay for them, but what they would have to be paid to lose them. I.e., they—we—already own them, and it matters. Here he recognizes a kind of democratic equity in the land and he stresses that the initial distribution of property rights affects resource allocation in important ways. Properly nurtured and applied in a sedentary culture and a money economy, as by taxation, this insight could improve our resource institutions considerably. Herf's many admirers are left to continue what he did not live to complete.

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