Transforming Economics:
Theodore W. Schultz, 1902–1998
In Memoriam

by
Marc Nerlove

WP 98-28

Department of Agricultural and Resource Economics
The University of Maryland, College Park

For *The Economic Journal* **REVISION 12/14/98** ©Marc Nerlove, mnerlove@arec.umd,edu.
Comments welcome.

Transforming Economics: Theodore W. Schultz, 1902 - 1998 In Memoriam[1]

Marc Nerlove

> "Well-reasoned doubts are good for economics. Neither theory, nor data, nor mathematics can fully resolve them. ...Economic behavior is more complex than our thoughts about it; our thoughts, however, are more comprehensive than standard theory; and standard theory is more comprehensive than mathematical economics. Each of these has its advantages. What is known from all of them is nevertheless subject to doubts. Economics would be better if we would substitute reasoned doubts for our parochial economic doctrines."
>
> T. W. Schultz, 1986[2]

An obituary should be a celebration of a life rather than a dirge to mourn its passing. Ted Schultz's life was lived in and through his ideas, and in his life he transformed economics. In this essay, I focus primarily on his ideas and the changes they wrought in our profession.

Ted was born on a farm near Arlington, South Dakota, on April 30, 1902; death overtook him two months short of his 96th birthday on February 26, 1998 in Evanston, Illinois. He was intellectually active and productive well past 90. His early experiences on the farm during World War I, on account of which he missed graduating from high school, and of the post-war agricultural depression which followed, his extended visit to the tumultuously emergent Soviet Union in the summer of 1929, to which he returned in 1960 as a guest of the Soviet Academy of Sciences, and his stint at Iowa State College (now University), from which he abruptly resigned in 1943 to move to the University of Chicago, shortly to become its chairman, were the events which shaped his ideas. Chicago deeply influenced him, but his ideas also changed the department and transformed economics. As he closes his very brief autobiography for the Nobel Foundation[3]: "In addition, and beyond this, there is the standard puffing vita." Well, not so standard but rather, I would say, not so central to who Ted Schultz was and what his life meant to economics.

1. Formative Influences

The first two decades of the 20th century were a prosperous time for U. S. farmers: Although agricultural output increased only about 8 percent between 1900 and 1910, and 9 percent between 1910 and 1920, prices were relatively high and stable. The expansion of agricultural output was limited by the availability of good arable land, which had provided the source for much of the growth of agriculture through the 19th century. But, following the First World War, a prolonged agricultural depression set in characterized by generally falling, but unstable, prices for agricultural commodities. Ted interrupted his education to work on the family farm. The extraordinary foreign demand for products of U. S. agriculture slacked off in 1920 and prices fell disastrously in 1920-21. Farm output, however, increased slowly but steadily throughout the decade, about 15 percent between 1920 and 1930, mainly as a result of a modest increase in inputs of mechanical power and machinery and in total factor productivity. Ted, sensing that the route to a better life for farmers and their families lay through increased education, enrolled in a short

---

[1] This essay has been prepared with the support of the Maryland Agricultural Experiment Station. I am indebted to Robert Chambers, Bruce Gardner, Zvi Griliches, Geoff Harcourt, Anke Meyer, and Clifton R. Wharton, Jr. for their helpful comments and suggestions. They are, of course, not responsible for remaining errors and omissions or for misplaced emphasis or other infelicities of style or substance. I have also had the benefit of the written notes of Griliches, Wharton and Anne O. Krueger, prepared for their presentations at the Schultz Memorial Service, May 5, 1998, .

[2] In Mark Blaug, *Who's Who in Economics: A Biographical Dictionary of Major Economists, 1700 - 1984,* 2nd. ed., Cambridge, MA: The MIT Press, 1986, p. 763.

[3] He was awarded the 1979 Alfred Nobel Memorial Prize in Economic Sciences jointly with Arthur Lewis.

course in agriculture at South Dakota State in 1921 and was able to enter college there, despite his lack of proper credentials and over the objections of his family, in 1924, where he completed both a bachelor's and a master's degree in agricultural economics in 1927. He went on to obtain his Ph.D. in economics at what we now might consider the somewhat unorthodox department which then existed at the University of Wisconsin. His interest in and concern with the problems of unstable agricultural prices and the sources of productivity growth in agriculture stem from these personal experiences, and his intuition that the key to enhanced well-being lay through education from both his own interrupted education and his rapid catch-up in 1924-27. His understanding of the role of economic institutions and organization had its origins in the "institutionalism" of John R. Commons and his "Wisconsin School."

The 1920's were a period of considerable intellectual ferment and enthusiasm for social reform especially among young people. John Reed's *Ten Days that Shook the World* (1920) aroused much interest in and admiration of the Soviet social experiments associated with the so-called New Economic Policy.[4] All would shortly come to an end in the Stalinist era which began c.1929. One can imagine both the keen interest and skepticism of the young Ted Schultz; as was so characteristic of him, he had to go see for himself notwithstanding the considerable danger and hardship such a trip entailed at that time. "Walking around," seeing things for oneself, talking to people, were all things Ted repeated many times over much later in developing countries.[5]

In 1930, Ted, Ph.D. in hand, became assistant professor at Iowa State College.[6] His training at Wisconsin had been in the "institutionalist" tradition of Commons, Hibbard and Taylor, not out of the mainstream for the time, but not the direction in which economics was moving. Sensing the need for theory and quantitative methods, Ted began to educate himself, working through a good deal of statistical methodology with Snedecor and somehow considerable microeconomic theory as well. Although he never really mastered these subjects in a technical sense, he knew good theory and good econometrics when he saw it and was able to bridge the old and new styles of economics both at Iowa and later at Chicago. Moreover, his keen economic intuition and often profound insight proved more reliable in the end than any technical expertise.

Ted's first published paper, "Diminishing Returns in View of Progress in Agricultural Production" (1932), dealt with the widely prevalent belief in secular diminishing returns, especially in agriculture, which Schultz found inconsistent with the "facts." Ted's attempt to explain the discrepancy between received doctrine and observation in this respect occupied him for the next two decades and led him directly to embrace the concept of human capital (an old idea one can find in Adam Smith [7]and in J. S. Mill[8], see section 3 below) and to elaborate it greatly in the course of the remainder of his professional

---

[4]The naivité of many young people with respect to the Soviet experiment is depicted with historical accuracy in Warren Beatty's 1981 film *Reds*.

[5] In commenting on an early draft of this essay, Clif Wharton reminded me that Ted headed up a Ford Foundation funded National Planning Association study of U. S. technical assistance in Latin America from 1953 to 1957. During these four years Ted travel extensively in Latin America and immersed himself directly at the grass roots level in the study of human capital development in the developing world. From these experiences emerged many of the ideas on human capital and the nature of traditional agriculture, which Ted contributed to our discipline. Wharton was at that time a member of the multi-disciplinary team Ted put together for the study. Ted's approach to the NPA study was clearly colored by his experience in the Soviet Union of the 1920s.

[6] Schultz, himself said little about the Iowa State years. An account of these years and the famous "margarine" controversy which occasioned his departure for Chicago is contained in R. R. Beneke, "T. W. Schultz and Pamphlet No. 5: The Oleo Margarine War and Academic Freedom," *Choices,* 2nd. Quarter, 1998, pp. 4-8. See also, C. M. Hardin, *Freedom in Agricultural Education*, Chicago: University of Chicago Press, 1955.

[7] *An Inquiry into the Nature and Causes of the Wealth of Nations*, *ad variorum* edition, edited by R. H. Campbell, A. K. Skinner, and W. B. Todd, Oxford: Clarendon Press, 1976, pp.118-119.

[8] *Principles of Political Economy with Some of Their Applications to Social Philosophy*, London : J.W. Parker, 1848, Book I, Chapter V, § 7, pp. 74-75. Schultz himself takes a contrary view with respect to J. S.

career. At this time he must have read or reread carefully Frank Knight's *Risk, Uncertainty and Profit* (1921).[9] During the Iowa years, he was much concerned with the traditional fields of agricultural economics: Farm management and extension and agricultural research. His paper, "The Theory of the Firm and Farm Management Research" (1939), is an attempt to bridge the gap between microeconomic theory and the advice agricultural economists are often called upon to give farmers.

The 1920's had been depressed years for farmers. Farm prices hit a low in 1932 and began more or less steadily to recover, albeit slowly and punctuated by a sharp decline in 1938-39. Early on in the period there had been many foreclosures, but former owners frequently stayed on as tenants. Indeed, few resources left agriculture because there were almost no opportunities elsewhere in the economy. Although, agricultural technology was advancing apace, adoption was slowed by lack of the requisite financial resources and price incentives. Output grew but slowly. Some cushion was provided by the agricultural price support programs and other policies of subsidizing agriculture introduced as a result of the preceding prolonged depression in agriculture. These were later to prove quite destabilizing and destructive in the post World War II period, especially when coupled with an almost explosive adoption of "pent-up" technology. Certainly, Ted's thinking about the relationship between agriculture and the economy as a whole, in particular the effects of macroeconomic fluctuations on the well-being of farmers were much influenced by these events. But there were even more momentous consequences for Ted in the Iowa State microcosm. Iowa and the College were, like the world at large, in sorry financial state; when the chairman of the economics department departed in 1935 there was no money to appoint an illustrious successor; the 33-year old assistant professor Schultz was named to the post. As it turned out, he had a natural talent for administration and, more importantly, for generating financial support.

As chairman Ted not only attracted a group of distinguished young economists, both to the faculty and as graduate students (among them Oz Brownlee, Gale Johnson, as students, and George Stigler, Leo Hurwicz, Margaret Reid and Gerhard Tintner as faculty), but he encouraged and supported innovative research and extension activities. One of these was to prove "fatal," although from hindsight it was most propitious to his intellectual development. Dairy producers battled the manufacturers of oleomargarine at that time and in the Midwest had succeeded in persuading the state legislatures to enact very restrictive legislation. In 1943, Brownlee, then a graduate student had prepared an Experiment Station Report presenting evidence that margarine was comparable to butter nutritionally and much less wasteful of precious resources, scarce in time of war. The National Dairymen's Association mounted a massive campaign to have the report withdrawn or at least modified. The President of the College, Charles E. Friley, bent to the pressure and ordered that it be done. To Schultz this was a flagrant violation of the principles of academic freedom and of the obligation of the land-grant colleges and universities to serve the common weal rather than special interests. He warned Friley that he and others would resign if Friley persisted. Friley did and, in 1943-44, Schultz and 15 others in the department decamped, Ted and Gale Johnson for Chicago, permanently, others for temporary refugee status there or elsewhere.[10] Jacob Viner, who had himself suffered the slings and arrows of anti-Semitism and who knew well the value of academic freedom, is said to have made this possible.

Mill's contribution (in "Investment in Human Capital," 1961), and I must admit that Mill's statements are not entirely consistent with one another on this subject.

[9] As Griliches points out in his comments on an earlier draft of this essay, one of the key ideas Ted got from Knight was that knowledge creation was the mechanism that prevented the onset of diminishing returns. But Ted did not believe that this just happened; investments in knowledge and in education were required. And the role of government in all of this was central. These ideas were later elaborated in both Ted's work on human capital and on the disequilibrium nature of the transformation of traditional agriculture.

[10] Hugo Sonnenschein, now the President of the University of Chicago, placed particular emphasis on Ted's influence on academic freedom in his part in the Schultz memorial, May 5,1998.

2. Shaping and Being Shaped by "The Chicago School"[11]

In his introduction to *Chicago Essays in Economic Development* (Chicago: University of Chicago Press, 1972), David Wall writes: "...the marks of the distinctive features of the methodological approach universally recognized in the profession as that of the Chicago school [...are:] first, that theory is of fundamental importance; second, that theory is irrelevant unless set in a definite empirical context; and third, that in the absence of evidence to the contrary, the market works." Note that the last point is not that the market *always* works, but rather that we need to focus attention on possible failures of the market mechanism and on potential or realized conflicts between policies and market solutions --and such failures and conflicts need to be documented. Unfortunately, some doctrinaire adherents take the tenet literally and without the important qualification attached. Reder (*op. cit.*, p.11) calls this the "Tight Prior Equilibrium" theory, and spells it out in considerable detail; but I think his description is of the doctrinaire approach rather than of the more accommodating and empirically oriented spirit which Ted brought to the debate, and by which it was transformed.

Chicago from its very inception in 1893 has always been a very innovative place and put considerable emphasis on research potential and performance as the most important single criterion for faculty recruitment, retention and promotion. This has been true throughout the University and most especially in the social sciences. The leading figures in the 1930's were Jacob Viner (1892-1970) and Frank Knight (1885-1972). Viner, born in Montreal of immigrant parents, had studied with Frank W. Taussig (1859-1940) at Harvard. He taught at Chicago in 1916-17 and 1919-46 when he departed for Princeton. Knight studied at Cornell with Allyn A. Young (1876-1929) and Alvin S. Johnson (1874-1971), taught at Chicago 1917-1919, at the University of Iowa (not Iowa State) 1920-1926 and then at Chicago 1927-1958, where he remained in emeritus status until his death in 1972. Viner and Knight set the tone for the Department in the 1930's (strongly anti Keynesian and anti imperfect/monopolistic competition and not very quantitatively oriented) but it was a diverse group which included Paul Douglas (1892-1976), at Chicago 1920-1948, later U. S. Senator from Illinois (1948-1966), and Henry Schultz (1893-1938), at Chicago from 1926 until his untimely death in an automobile accident, and the author of the pioneering *Theory and Measurement of Demand* (Chicago: University of Chicago Press, 1938). Later Oskar Lange (1904-1965) was recruited in 1938 to make sense of continuing developments in macroeconomics and theories of imperfect and monopolistic competition. He left in 1945 to become the Polish ambassador to the U. S. Significantly for Chicago's subsequent evolution and for Ted's role in the department, Alfred Cowles, a wealthy business man who had founded the Cowles Commission in Colorado Springs with Irving Fisher and Ragnar Frisch and had also been instrumental in the founding of the Econometric Society, prevailed upon the University and the department to permit a move to Chicago where Henry Schultz was to become its Director. The move occurred just prior to Henry Schultz's death; Theodore O. Yntema (1900-1985), at Chicago 1923-1948 when he left to become vice president for finance of the Ford Motor Company, took the reins until a successor to Schultz could be found. Jacob Marschak (1898-1977) was recruited for the job in 1943; he, in turn, recruited Tjalling Koopmans in 1944; both left for Yale in 1955 when the Cowles Commission moved there to become the Cowles Foundation with considerably greater financial resources than heretofore. This was the milieu in which Ted, something of a protege of Viner and a great admirer of Knight, found himself. Conflict was building, exacerbated by the arrival of Milton Friedman (1912-) in 1946. George Stigler (1911- 1991), whom Ted had known at Iowa in 1936-1938, did not arrive until 1958, although he was also offered an appointment by the department in 1946.

---

[11] There are a number of accounts of the nature and development of "The Chicago School", among them, M. W. Reder, "Chicago Economics: Permanence and Change," *Journal of Economic Literature, 20:* 1-38, 1982. Daniel Sumner's essay, "Agricultural Economics at Chicago," pp. 14-29 in J. M. Antle and D. A. Sumner, *The Economics of Agriculture,* Vol. 2, Chicago: University of Chicago Press, 1996, because of its focus gives more detail on the roles of Schultz and Johnson. But none of the accounts give Schultz the credit I believe he is due for having pulled disparate factions together and in many ways shaped the "School." My father, S. H. Nerlove, taught at the University of Chicago from 1920 to 1963 in the precursor of both the economics department and the Graduate School of Business and in the latter when the two split. He had been a student of J. M. Clark, Paul Douglas, and Jacob Viner, was a close friend of Henry Schultz and Oscar Lange, and knew Frank Knight well. Indeed, he knew everybody. I rely in part on conversations with him in the 1950's and 1960's with regard to Schultz's role from 1944 on.