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## UNDERSTANDING THE CHANGING STRUCTURE OF AMERICAN AGRICULTURE

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My assignment to address the issue of the structure of American agriculture is something of a reprise. As long ago as 1962, in a *Journal of Farm Economics* article, I reflected on the differing degrees of industrialization in what I called the three economies of agriculture. Two years later, at the annual meeting of what was then called the American Farm Economic Association, I discussed structural issues and advanced the apostasy that the driving force in structural change is not technology but finance-capital requirements and, more importantly, “the pressure to integrate farm production into the product differentiation struggle” (Future Organization and Control..., pp. 938-939).

After 31 years, I still regard that interpretation of 1964 as valid. I will say several times in this paper that I view the restructuring now underway as essentially the drawing of agriculture into a product differentiation contest among ever fewer giant corporations, many of them conglomerates. It’s a power struggle that is reshaping the food economy on the one hand, and rural society on the other. To view it in any lesser terms would be a mistake.

During the 1970s, I joined extension economists, particularly of the North Central region, in putting out a series of reports on various aspects of the structural question (e.g., *Who Will Control U.S. Agriculture? — Policies Affecting the Organizational Structure of U.S. Agriculture*). I still write on the subject occasionally. I even get into the debate on hog factories.

Much of the argument about structural change in agriculture, to be sure, turns on how the topic is characterized. The late Kenneth Boulding, a seminal thinker if ever there was one, chastised economists for their bent toward trivialization. We get bleary-eyed aiming our microscope at small matters, he said, while overlooking the big ones. Boulding would almost certainly view agriculture’s structural change issues in terms of what we once called comparative economic systems or, in different phrasing, forms of social organization. They concern the institutions of the land, and of the market, and of the consumption function too, insofar as the consumer is an exogenous actor, as in our neoclassical theory we postulate him or her to be.

In order to emulate Boulding I prepared for this session by climbing Mt. Olympus, hoping to observe from that elevation some of the all-encompassing considerations against which to judge the restructuring that is now in

process. I will confine myself to two panoramic philosophies that I believe to bear. The first is common, even liturgical. The second is different; the temptation will be to reject it, because it is so disturbing.

The easy one is the familiar proposition that the differentiating factor among forms of social organization is not technical but moral. It involves the values that we as a people hold.

My observations about values are conventional. Surely in our culture the crucial values are not material. They are not the maximization of output or minimization of cost. Heavens! The United States of America is not on the brink of privation, in agriculture or generally. Relative to agriculture and the food system, it is true that we want to make a nutritionally adequate diet available to all people, but our ability to do that is not at risk. Any undernourishment today must be attributed to ignorance or poverty.

Furthermore, insofar as the doctrine of minimization of cost and maximization of consumer satisfaction is taken seriously, the responsible economist must follow the lead of the Nobel Laureate Douglass North in looking into the big wastage of transaction costs. If we were truly concerned to treat our consumers as well as our resources permit, we would find a way to deliver products to them without all the hoopla and ballyhoo that are the mark of today's merchandising. Also, we would manage somehow to cut back on huge payoffs in the financial world that often arise in chicanery and legerdemain. North alleges that transaction costs absorb 45 percent of national income (Wallis and North). That's a lot!

In a similar vein I reject the often-heard line that current structural changes in agriculture and the food system are consumer driven. I turn that line bottom side up. The system is driving consumers, or trying to, about as much as consumers drive it.

If our rich country does not put material productivity at the pinnacle of our national aspirations, what do we value most? I suggest that our most treasured goals are highly personal. They begin with the individual, and have to do with status and satisfaction value in daily living, and in opportunity and security and a sense of community. I wonder how many extension economists still draw on the works and ideas of the late philosopher-economist John Brewster. Brewster insisted that once the minimum needs for food, clothing and shelter are met, "men the world over strive for an ever finer image of themselves in their own eyes and in the eyes of others.... It is the most spiritual of all treasures. You can get no photograph of it...[and so on]" (p. 9). Brewster might add today that in no way can these values be put into mathematical equations.

I add one word more on our non-material goals. In our culture they are, and must be, pluralistic, universal. They are not class-preferential. In agriculture and the food system, they apply equally to all participants, from the man on the land to the consumer, and from the lowliest employee in food processing to the million-dollar-salary nabobs of food firms.

I move now toward my second observation from Olympus. As I said above, it is likely to surprise and may shock. It has to do with the buzz word of our day, which I have already used a couple of times, namely, industrialization.

Years ago Roger Gray wrote about economists' tactic in casting ideas in either "purr" or "snarl" terms. We choose purr words for what we approve of, and snarl for what we don't. In current agricultural economic literature, industrialization is a rarely challenged purr word. I suggest to you that it has snarl characteristics too.

Almost 30 years ago, I wrote a paper on the topic of industrialization of agriculture that was delivered at an international symposium in Paris. I quote my opening lines of March, 1966:

To agriculture, industrialization has been benefactor and villain, an agent of progress and a cause of discontent, a source of release from ancient bondage, but also a threat of decline into a new subservience.

Industrialization is an essential companion to modern agriculture, but it could transform agriculture to the point of [institutional] oblivion (p. 1).

I still stand by those words. But I am about to report on my second view from Olympus, and it is not confined to agriculture. It relates to all humanity. I philosophize briefly on what industrialization means and what it portends.

What is the essence of industrialization? I call it the designing and imposing of systematic order; that is to say, management, on all economic processes. Intricate, sophisticated, precisely controlled management. To be sure, industrialization in both manufacturing and agriculture depends heavily on mineral resources, usually depletable ones. It employs sophisticated tools. Industrialization is often tagged in those terms, but they are secondary and not definitive. The crucial feature is controlled order, not the materials used. And man does the controlling.

An industrial system is implicitly regimented, privately and publicly. Its internal interdependence is so intricate as to straightjacket both processes

and persons. Precision in manufacturing processes. Worldwide assembly of raw materials and distribution of products. Computerization of almost everything, it seems. And overlying it all, a legal structure, a litigiousness, private and public, that defies comprehension.

My paragraph of Paris 1966 is apropos:

Industrialization is a creation of man. It puts human welfare more under the control of, and more dependent upon, the individual and collective human wisdom.... Appropriately, German scholars applied to the entire evolution the term, rationalization (p. 2).

### **Replacement of Open Trading Markets**

The salient feature of industrialization of agriculture and the food system is that it replaces the time honored system of markets. It substitutes centralized management for open exchange markets as the principal, though not exclusive, coordinating instrument. In the Boulding sense of putting first things first, that is the heart of what the argument is about. As might be surmised by now, I am a defender of the market system and warn that it should not be abandoned without cause.

In my first draft of this paper I turned allegorical. I wrote that at the beginning there were the farmer and the consumer. The farmer delivered food to his consumer client. In our era, dating from a century or two ago, the middleman was introduced, only to be reviled from both ends, farmer and consumer alike. But that was anthropomorphic. What was established and depended on was a system of markets—open markets.

Economists of my generation were reared on the attributes and functional requirements of markets. We took the system for granted and did not give much thought to its merits. Now that it is threatened with extinction, it is time to give such thought.

Functionally, in a market system successive transfers of title to product provide linkage and coordination to the entire sequence from raw material supplier to the consumer. The system ranks as one of mankind's most ingenious institutional creations. Ideologically, it incorporates the precious quality of being democratic. That attribute is often overlooked. Let me explain. I visualize an open market system as a tier of platforms, each at a stage in marketing: local and central assembly; processing; wholesaling and retailing. At each platform, proprietary buyers and sellers interact as political equals; by definition, (and, in our day, by the law too) there can be no discrimination or preemption. The system, in its pure form, has nothing of the hierarchical structure that so characterizes the corporate integration that is now enveloping our economy.

Economists were quick to set forth the necessary conditions for such a system. We all can recite them. The first is numerological—many buyers and sellers. Also prerequisite are uniformity of product and saturation with market information. I earned my living for many years helping to provide these aids.

In the idealized version of the system, a functioning market yields an equilibrium price, and the value so arrived at is the marginal value product.

Why did the system come under challenge, and why is it vulnerable to replacement? Economists' knee-jerk explanation is that it failed to exploit economy of scale. I disagree. I put it in different terms. I find whimsy in the idea that the market equilibrium price that economists eulogize pleases only them. Rarely are participants in a market transaction happy with the outcome. The buyer wants a lower price, the seller a higher one. To put it differently, entrepreneurs don't care for a normal profit; they want more than that. Anne Kreuger, building on Tullock, insists that what enterprisers work so hard to get is rent. "Present-day society," she writes, "[is] 'rent-seeking,' everyone out for incomes in excess of what can be earned in a competitive market" (Breimyer, 1991, p. 101).

Rent was first sought by means of naked monopoly power in a standard product, the Andrew Carnegie syndrome. Our century proved more clever. It went the route of product differentiation and monopolistic competition. I surely do not have to labor the point that differentiated oligopoly dominates our economy today. A large part of it is in the hands of conglomerate firms, many of them transnational. The new structure, which I sometimes call industrial feudalism (does anyone have a better coinage?), is enveloping farm products and agriculture at a rapid pace and the race is on as to whether it can encompass most of that sector by century's end.

To put it more bluntly, the industrialization of agriculture and the food system that we are now seeing is not a nibbling at the edge or something superimposed on an otherwise solid base. It is total reconstitution of a system. Individual landholding might survive but proprietary control would not, with the single exception of a fringe of niche operations such as pick-your-own strawberries or ostrich farming. As I have already said, market exchange would be replaced by administrative directive within differentiated oligopolies that are typically extending their power through a vertical reach into the sources of their raw material supply. That is to say, into agriculture.

Disappearing in total reconstitution of our food system would be the successive platforms where market negotiation gives direction to the

system. Open markets for farmers' bulk products will have become an icon of history.

I repeat: the structural issue we are facing is a choice between two essentially opposite systems. I find it interesting to apply an idiom from geometry. A market exchange system is horizontal and democratic. The oligopolistic integration that has become the hallmark of industrialization is vertical and hierarchical.

Why does all this matter? Should we care? How do we judge? Picking up again my first view from Olympus, I suggest that the system toward which we are moving pell mell—and any other system for that matter, including the one being abandoned—is to be evaluated first of all in terms of the aspirations of the men and women who comprise it. I give fully as much attention to those on the producing side as to consumers. Industrialization alters dramatically the status of farm-level participants. Except for the niche people and maybe a few cowboys, all farm proprietors would disappear. Of the current 400,000 or so commercial farmers perhaps a few thousand would find managerial posts. Otherwise, if they stay in agriculture their status will be similar to that of the Georgia broiler grower who complained to me, “All I need to do is make sure the automatic feeders and waterers are working, and pick up the dead.” No challenge there, or satisfaction value. And no reason to get a B.S. in agriculture.

Let me say once more that the final judgment on what is happening rests on one's value system. It is standard classroom instruction to declare that values are a given, not to be challenged. By no means are the various consequences of industrialization of agriculture to be disregarded, but I leave a final judgment to each person's value system, which by definition is inviolable.

I still have not revealed my second observation from Olympus, which I warned would be a blockbuster. It is an observation on what is happening to all society. Put in fewest words, it is that the discontent and distrust that is so obvious in our nation today can be viewed as a revulsion against the disciplines that industrialization imposes, both directly and via the instrument of government.

Human beings can be too clever for their own good. They can victimize themselves. They can build systems of organization so sensitively intricate as to contain their own seeds of collapse. It's the Midas allegory. Or maybe I regard the trade-off between promised riches and the tight regime imposed in order to get them as something of the Faustian bargain.

On the surface, many of the protests today are against the role of government. Overlooked is the fact that industrial processes invite and even

mandate a matching regime of social protections and counterbalances. We make those protections necessary, then rebel when they are imposed. Agriculture, as we all know, is a case in point. Farmers are overjoyed to use chemicals to control weeds and bugs, but the chemicals that kill bugs will kill people, too. So we have an elaborate and clumsy set of publicly enforced precautions against their misuse, and a matching protest against enforcement.

What we are seeing in national politics today involves a lot more than the Democrats and Republicans playing tic-tac-toe with each other. It is much more ominous than that. It seems to me that Americans are resisting the collective ethic that industrialization requires. We are a raw-boned people that still hold to a frontier individualism.

That is my second view from Olympus, and it carries more than a little foreboding.

The political turmoil that I foresee as continuing unabated through the rest of this century and into the next will forestall any significant effort to guide or restrain the restructuring of our agriculture. Industrialization will proceed apace.

But not indefinitely. Early in the next century the picture will be scrambled. A new restructuring will begin, as trends of our day are reversed.

The key to the longer future is energy. Scarcely advertised in all the press agency about what is now going on is that most industrial processes in agriculture depend on energy as almost a free good. As soon as Middle East oil begins to show signs of depletion, energy prices will double, quadruple.... Our agriculture will move quickly into biomass. Four-fifths of today's animal agriculture will disappear. I give mega hog farms 10 years, or maybe 15. No harm will be done. After all, it's the silliest of processes to put good human food, such as corn, through the gullets of hogs or steers, losing perhaps 80 percent of nutrient value, just to get a food that can be duplicated by Worthington fabricators.

I think it highly likely that a biomass agriculture will revert to small landholdings. Such an agriculture will be much more labor intensive than today's. It will, of necessity, be nearly sustainable. Young people of today could witness, within their lifetime, a recycling of agriculture and the countryside into what we now regard as traditional structure and culture. Cyclicity is, indeed, characteristic of mankind's history.



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