Chapter 15

Agriculture

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Agriculture was an important component of economic geography through the 1950s. Until that time, research on agriculture and industry within economic geography shared an empirical and descriptive approach strongly influenced by notions of environmental determinism (see Barnes, this volume). But with the rise of model-building and quantitative methods in the 1960s (see Plummer, this volume), the focus of economic geography shifted to studies of industry while studies of farming were shunted into the subfield of agricultural geography. Ironically, this was true even though agriculture provided an early foundation for the new methods of industrial analysis: indeed, two important sources of location theory in the mid-twentieth century – von Thünen's land-use model and Christaller's central place theory – were strongly based upon the study of German farming landscapes.

In the ensuing decades, as agricultural topics became less important within economic geography, research in agricultural geography branched into two separate and distinct areas. The first continued the long-standing tradition of descriptive research by pursuing the study of regional classification and farm characterization. The other branch, meanwhile, began to adapt the techniques of location modeling to a wide range of farm-related research questions. The result was that studies of agriculture within geography were cast either as old fashioned and backward looking, in the case of the former, or derivative of industrial geography, in the case of the latter. In any event, the secondary status of agriculture within economic geography was cemented into place.

Today, the study of agriculture is being brought back into economic geography, though this arguably has less to do with work coming from the tradition of agricultural geography than it does with agriculture-related research conducted in other parts of the discipline, and in other disciplines altogether. In particular, this reincorporation is rooted in political–economic analyses of agriculture which emerged over the past 15 or 20 years and which resonate with new approaches that have been adopted in economic geography more generally (see Swyngedouw, this volume). Such reincorporation, however, is not based on a simple mapping of new industrial theory directly onto the terrain of agriculture. Rather, it is based on a renewed

appreciation for the complementarities between farming and manufacturing, and on a recognition that insights gained from the study of agriculture can inform theories of the development of industrial capitalism in some very important ways.

This chapter briefly looks at the shifting position of agriculture within economic geography. Given space constraints, the chapter does not attempt to chart the complete course of this relationship, nor does it attempt to provide a review of research in traditional agricultural geography (but see Grigg, 1995). Instead, the chapter concentrates primarily on the political economy of agriculture in developed capitalist economies, particularly the USA and the UK. That said, the line separating agricultural research in the more developed world and the less developed world has become increasingly blurred. This is because of the interconnection of production and consumption within an increasingly globalized economy, and a convergence in guiding theoretical approaches to the study of farming in industrial and peasant societies.

The chapter begins with a discussion of the evolution of a political economy of agriculture in the social sciences. Next, it turns to a selective review of several current research themes to be found in that literature, paying particular attention to the contributions made by geographers. Finally, it discusses the implications of this new research on agriculture for the wider field of economic geography.

The Development of a Political Economy of Agriculture

The political economy of agriculture first took shape in response to the inability of traditional approaches to provide sufficient explanations of the dramatic changes occurring in agriculture in the more developed world. Because of the dominance of the neoclassical paradigm, research in agricultural economics focused exclusively on issues of farm business efficiency and performance and had little to say about the social consequences of technological change, the rise of large agribusiness firms, the shifting class structure of American farming, or the role of state intervention. Nor could rural sociology comment meaningfully on these trends: the discipline had virtually abandoned the study of agricultural production in favor of descriptive research on rural communities (cf. Friedland, 1982; Newby, 1982). Researchers turned to the classical political economy of Marx – with its characteristic focus on class relations in production as the motor force in the development of industrial capitalism – in order to gain a better understanding of broad, structural change in agriculture.

Marx's writings on the development of capitalism in agriculture comprise a broad comparison of the similarities and differences between farming and manufacturing (Goodman and Redclift, 1985; FitzSimmons, 1986; Mann, 1990). The most cited aspect of Marx's view on the subject, however, was the assertion that wage labor would eventually sweep away all non-capitalist, household-based production in agriculture – a social group that he termed "petty commodity producers" and more commonly known in the US and European context today as family-labor farms. At the turn of the twentieth century, Lenin (1899) extended this aspect of Marx's argument to the Russian context, making the case for the class differentiation of the peasantry into either capitalist farmers or wage laborers. At the same time, Kautsky's (1899) writing on German agriculture made a similar argument, but he also emphasized the factors that had slowed the penetration of capital into

agriculture, and raised the possibility that household production was in fact a permanent feature in agriculture – an argument later developed in more detail by Chayanov (1925).

This issue of the whether non-capitalist forms of production are permanent or transitional – the "agrarian question" – was the central concern of those working to re-introduce a political–economic framework into agricultural studies in the 1970s. Some writers adopted the classical Leninist position that the forces of concentration and centralization of capital in agriculture lead to an immutable tendency toward class differentiation in farming, arguing further that post-World War II developments greatly accelerated this tendency and foretold the imminent demise of family labor farms (de Janvry, 1980). Others argued for the continued viability of household producers within the agricultural sector (Mann and Dickinson, 1978). But as the 1980s progressed, key limitations to this literature became apparent. In particular, critics noted that a preoccupation with the agrarian question tilted research toward the study of on-farm social relations and, in corresponding fashion, toward the farm unit as the primary point of analysis. What was missing, they argued, was an appreciation of the ways in which farm production was bound up with wider processes of economic development and capital accumulation (e.g. Buttel, 1982; Goodman and Redclift, 1985; Marsden et al., 1986).

This critique was spurred by the recognition that forces emanating from beyond the farm gate had come to dominate agriculture and food production – a broader perspective that also had roots in classical political economy. Indeed, Kautsky (1899) first observed that capitalist development proceeded not only through the displacement of peasant households by capitalist farm enterprises but also through the articulation of household producers with industry (Watts, 1996). While evident in Kautsky's time, this articulation intensified dramatically in the post-World War II era as farmers became enmeshed in a multiplying web of external linkages tying them to agro-industries (firms supplying farm inputs and marketing or processing farm products) and banks.

One result of this increasing articulation was the rapid expansion of "off-farm" sectors (e.g. farm machinery, food processing) which came to dwarf farming in terms of value-added and employment within the overall food producing system (or "agro-food" system). Another result was a gradual loss of family farm independence. As farmers adopted input-intensive practices, they became dependent upon manufactured products (machinery, seeds, fertilizer, herbicides, etc.), scientific advice and technical assistance, and financial institutions for credit to support continuing operations and business expansion (particularly for purchases of technology). Farmers also became dependent upon downstream agro-industries (commodity shippers, food processors, food retailers) as these firms came to wield increasing influence over farm output levels, farm commodity prices, and farm production standards. In the USA the growth of off-farm sectors was intertwined with federal policy toward agriculture, which: (1) promoted new farm technologies through government-sponsored research and extension; (2) encouraged the deepening of farm–industry linkages through a system of farm price supports which allowed (in fact, compelled) farmers to purchase new technologies and boost productivity; and (3) absorbed and disposed of resulting surpluses in farm products through commodity programs, domestic food programs, and international food aid.

Thus, while the direct displacement of family farms by capitalist farms occurred only to a limited extent, capitalist development in the overall agro-food system nevertheless advanced rapidly as non-farm capital (industry and banks) established an indirect but powerful grip on agricultural production.

This was a seminal insight provided by the political economy approach. It led researchers to shift their analytic focus from the farm to the entire range of activities and relationships surrounding agricultural production. In geography, the political economy approach to agriculture arrived relatively late, but geographers were nevertheless key participants in moving the literature beyond a focus on a narrow agrarian question, and re-positioning it within broader industrial and political contexts (e.g. Marsden et al., 1986; FitzSimmons, 1986; Le Heron, 1988). Through subsequent efforts, geographers have continued to make important contributions to this field of study, one that remains solidly multi-disciplinary in character. For this reason, the following review of current research themes within the political economy of agriculture concentrates not only on the work of geographers, but also on research carried out in other social science disciplines.

Research Themes in the Political Economy of Agriculture

Nature and the industrialization of agriculture

The basic fact that farming is a critical intersection between nature and society has been a central theme in the political economy of agriculture. This was the starting point for Marx, who linked the slow development of capitalism in agriculture (compared to manufacturing) to the physical and biological conditions of farm production. In recent years, scholars have built upon Marx's fragmentary observations to identify the many ways in which natural conditions shape the course of development in agriculture and food production.

Agriculture is a unique branch of industry in that it is constrained by natural processes which act to limit the productivity of labor and restrict capital investment. Here, the role of biology in plant and animal growth is key. There are no industrial substitutes for soil or sunlight, and the biological conversion of energy in plant development and animal gestation cannot easily be accelerated or standardized (Goodman et al., 1987). So, too, on a farm – unlike a factory – it is the biological time necessary for plant and animal growth that dictates the work schedule. As a result, the amount of time in which labor is actively applied to production is just a small fraction of the total time required to produce a farm commodity (Mann and Dickinson, 1978). In addition, the land-based character of farm production poses several constraints to industrialization. In crop farming – again in contrast to a factory – capital cannot be applied to the labor process at a single site where production is expanded or intensified. Instead, increased production requires a spatial extension (and, conversely, decreased production requires a spatial contraction). But because land is a fixed and limited resource, and because land markets are deeply colored by localized social conditions, farmers cannot easily or quickly adjust their investment in land (Marsden et al., 1986).

The natural circumstances of plant and animal growth, however, do not so much stop the industrialization of agriculture as direct it along a distinctive path. Indeed, the historical development of capitalism in agriculture has pivoted around attempts

by industrial firms to reduce the importance of nature in all phases of food production. This includes not only constraints associated with the biological properties of agricultural production, but also constraints associated with the biological requirements of food consumption in terms of diet, nutrition, and health. According to a seminal study by Goodman et al. (1987), this process has advanced through two discontinuous but enduring processes, termed *appropriationism* and *substitutionism*.

Appropriationism has occurred as capitalist firms, unable to effect the industrial transformation of agricultural production in its entirety, have instead assimilated discrete aspects of the farm labor process into factory-based industry where they have been rationalized, mechanized, and intensified beyond anything possible on the farm. Here, traditional elements of agricultural production are appropriated by manufacturers, transformed into branches of industry, and then re-incorporated back into agriculture as purchased inputs. Examples include agricultural implements, hybrid seeds, chemical herbicides, and livestock confinement buildings. The piecemeal adoption of technological inputs has allowed the modification of certain biological processes on the farm and has led to a gradual (though only partial) reduction in the importance of nature in production.

Substitutionism has occurred as the outputs from farming have been either replaced or reshaped by industrial work. Here, manufacturers and merchants act to reduce farm products to uniform industrial inputs and, where possible, replace these farm products entirely with fabricated or synthetic non-agricultural inputs to food manufacturing. By substituting industrial for agricultural inputs (for example, the use of high fructose corn syrups instead of sugar), firms avoid problems associated with the variable cost and availability of farm products. Another aspect of this process involves efforts to transform basic foodstuffs into a wide array of processed and packaged food products. In this case, firms have sought to modify the often limiting original form and character of agricultural products through industrial work, thereby increasing the market size and value of food commodities. Examples include the transformation of plain grain into breakfast cereal, or of raw animal flesh into a less perishable product such as luncheon meat.

Capitalist production has thus encroached on agriculture via the expansion of industrial activities surrounding the farm. This process of "agro-industrialization" has moved forward slowly, but over time, natural constraints have been successfully (albeit incrementally) eroded as technological and organizational innovations have been introduced by suppliers of farm inputs and processors and marketers of farm output. Recent advancements in the application of biotechnologies to agriculture and food production highlight the fact that the ongoing "refashioning" of nature comprises the heart of agricultural industrialization. These new technologies represent an enormous and generalized leap forward in the capacity to manipulate natural processes for commercial gain in agriculture, and thus herald a potentially fundamental re-ordering of the social, economic, and spatial organization of the agro-food system (Kloppenburg, 1988; Goodman, 1991).

Agro-food commodity chains

A second theme concerns a finer-grain approach to agriculture carried out through the study of the industrialization process surrounding individual farm commodities.

Commodity-specific analysis of this sort was introduced into the political economy of agriculture through the work of Friedland (1984) on California fruit and vegetable production. This research focused on important differences from crop to crop in terms of the farm labor process, the direction of technological change, the structure of the farm business enterprise, the marketing of farm products, and so on. This type of approach has since been extended to other crops and regions, and has been broadened to focus on entire production systems, or agro-food commodity chains. Agro-food commodity chains are networks of articulated labor and production processes ending with finished food products. In broad outline, such commodity chains consist of five stages: scientific and technical inputs to farming; farm production; processing of farm products; food distribution; and food consumption (Bowler, 1992). The broiler commodity chain, for example, begins with various inputs to chicken production, including manufactured feed and breeding stock, and then progresses through farming and slaughtering/processing before entering a distribution system that delivers chicken meat at retail to consumers. In the big picture, individual commodity chains often intersect and overlap, providing the basic "warp and weft" of the agro-food system if you will.

This approach offers several key insights into the capitalist transformation of agriculture. First, it provides a framework for tracing the multiple paths of industrial development evident within the agro-food system. While in general terms the industrialization of agriculture has progressed through the increased articulation of farming with capitalist industry (as described above), the pace and form of this process varies widely from one commodity to another. Indeed, research in this vein has shown that individual commodity chains (grapes versus beef, for instance) differ markedly with respect to: (a) technological dynamics – that is, the specific types of innovations and strategies pursued by agro-industry as well as the character of technical relations linking stages of the chain to one another; and (b) organizational dynamics – that is, the social character of work and business organization within each stage, as well as the overall pattern of how the various stages are separated or integrated within the division of labor (Page, 1996; Boyd and Watts, 1997).

This variation is rooted in the particular social and institutional histories within (and between) each of these linked stages. Such variation is also strongly associated with the extension of "natural" distinctiveness through the commodity chain. Each commodity differs with respect to the biological qualities of the particular plant or animal in question, the extent of land dependence in production, and the biological properties of the resultant farm product. These differences act to shape the character of industrial transformation not only in farming, but also in input manufacturing, food processing, and food distribution – and thus to channel the commodity chain's overall course of development along a particular path.

Second, the commodity chains approach provides a framework for understanding the connections between producers and consumers of food. Until quite recently, perhaps the key limitation of research on agro-food commodity chains was a concentration on the production end of the chain, particularly the relationships linking farmers to the industries that supply their inputs or process their outputs, and to related questions of the transformation of the farm labor process, the spread of wage labor versus family labor, and the rise of contract farming. Now more attention is being given to the consumption end of commodity chains. Some of this work focuses

on corporate concentration in the food retailing sector and the increasingly powerful role that giant retailers play in agro-food commodity chains, particularly with respect to food processing industries (Marsden and Wrigley, 1995). Other work concentrates more on changes in consumer habits and preferences, paying particular attention to the role that diet and food play in shaping and expressing cultural identities (Bell and Valentine, 1997). Here, the shifting position of retailers is linked to a set of changes in consumer practices that have occurred over the past 25 years or so, centering on broad concerns over food quality, personal health, and environmental well-being. These changes in the diet of consumers in the developed world, coupled with occasional consumer activism over specific food issues (e.g. chemical residues, food additives, animal welfare, food labeling, etc.), have reverberated backward through commodity chains. In particular, retailers have responded aggressively to concerns over food quality by promoting the rapid expansion of markets for health-based food products, leading to a shift in the balance of power between retailers and food processing industries in which the retailers are increasingly able to influence the character of food production (Goodman and Watts, 1994).

An example of these processes can be seen today in the struggle over consumer acceptance of bio-engineered food products. Within many commodity chains, the adoption of biotechnologies represents a significant advance in the industrialization process. Yet, traditional food products enhanced by biotechnology (e.g. hormone treated beef or "designer" varieties of corn) are avoided by many consumers because of concerns over quality and healthfulness – they are considered to be "unnatural" and therefore potentially dangerous. Vigorous resistance to such products is visible today in contested discussions over the necessity to label food products containing genetically modified organisms (GMOs). In this case, consumer awareness and resistance threatens to derail, or at least slow down, the transformation of agriculture and food production promised by biotechnology: if consumers demand labeling of GMOs and then refuse to buy these products, farmers will restrict their use of genetically altered seed or livestock, and food processors will restrict their purchase of farm products derived from these sources.

Third, a commodity chains approach provides a framework for grasping the relationships between places and regions. Each agro-food commodity chain exhibits its own technological trajectory, set of organizational forms, and constellation of power relationships. Yet each is also associated with a unique geographic pattern – a spatial division of labor. This is not to imply any sense of immutability or natural determinism, however. Natural conditions (latitude, soils, precipitation, etc.) matter to where agriculture and surrounding activities are located, but such locational constraints can be overcome via the transformation of nature and the creation of new agricultural systems through irrigation, plant and animal breeding, improved production facilities, new transport modes, and so on. Indeed, spatial divisions of labor surrounding agriculture are never static; rather they are constantly being expanded and re-configured in response to competition, market shifts, and persistent social, technical, and political change. At the international scale, an examination of the geography of commodity chains has been used to illuminate the interrelationship of producers in less developed nations with consumers in more developed nations (Friedland, 1994), while at the regional scale, such an examination reveals the mutual dependence of city and countryside (Page and Walker, 1991).

Globalization

A third research theme within the political economy of agriculture is the globalization of the agro-food system. Agriculture and food production have long had a global character, but over the past 20 years this has become more pronounced. Here, research focuses on two related issues: (1) the global character of agricultural regulation; and (2) the increasingly important role played by transnational corporations (TNCs).

With respect to the regulation of the agro-food system, work has concentrated on the internationalization of the US model of agricultural policy after World War II. This policy framework consisted of a host of federal policies and agencies – including agricultural research and extension programs, farm price supports, and subsidized food programs – designed to encourage expanded domestic production and to dispose of resulting surpluses through global food exports. According to Friedmann (1993), these institutions and activities constituted a "food regime" – the broad regulatory apparatus used to establish stable relations between food production and consumption in the post-war era. This food regime became unstable in the 1970s, however, when many other developed nations adopted the US policy framework, leading to overproduction, glutted markets, and the inability to dispose of surpluses. In response to these problems, a new food regime has emerged over the past decade, one characterized by the deregulation of national agricultures in the service of open world trade, coupled with the increasing dominance of transnational firms (TNCs).

The second area of concern, then, is the reworking of global agriculture by TNCs. Here, research concentrates on the involvement of companies such as Coca-Cola, McDonalds, Kellogg, Unilever, and Nestlé in food production and marketing around the world, the standardization of global diets toward processed (or "fabricated") foods produced through global sourcing, and the increasing control of the world's food production in the hands of just a handful of these giant firms (Bonanno et al., 1994; McMichael, 1994).

This research on globalization makes many vital contributions to an understanding of agro-food system dynamics. It directs attention to the essential role of the state in mediating capitalist development in agriculture and food production – a topic that is much less well developed in the agro-food commodity chains literature discussed above. More specifically, it provides great insight into current processes of change through which nation-state regulation is being challenged by a system of supranational regulation. This literature also points to the systematic dominance of the developed world over agriculture in the less developed world, carried out through both the practices of TNCs and the policies of global regulatory institutions. Agriculture in many developing countries has been re-oriented away from food crops for local markets toward either the production of luxury foods bound for the developed world or the production of feed crops for intensive livestock production. As a result, many of these nations are now net importers of staple and processed foods coming from developed nations, and thus find themselves in an increasingly vulnerable position with respect to food prices on the world market.

The globalization literature, however, has also been the subject of criticism. One issue is that the food regimes approach largely ignores the dynamics of industrial

change in agriculture. Discussions of successive regulatory regimes leave aside any detailed analysis of industrial change in agriculture: instead, a single technical–organizational model (post-war "productivist" US farming) is superimposed upon the agricultural sector, belying the wide variety of directions taken by industrial agriculture in the developed world, let alone world-wide (cf. Goodman and Watts, 1994; Page, 1996). Another issue is that the food regimes approach privileges the macro-structural scale of analysis when discussing shifts in regulation. Yet, it is probably much too soon to herald the triumph of international capital over the nation-state (e.g. McMichael and Myhre, 1991). Such an interpretation underestimates the lasting importance of nation-states by overestimating the stability of current domestic political alignments and resultant agricultural policy. It also underplays the continuing ability of nation-states to circumvent trade rules, overlooks the importance of regional trading blocs, and ignores the sub-national regulation of agriculture along regional and commodity lines (cf. Goodman and Watts, 1994; Marsden, 1998).

Research on TNCs also has a tendency to over-generalize, leaving the impression that such firms are the sole driving force behind a relentless global restructuring of the agro-food system – able to penetrate every location on earth and every aspect of food production. While TNCs do exercise tremendous power, the still sporadic and selective character of their involvement across various commodity chains and around the world raises many questions concerning their limits and even failures. So, too, the internationalization of agro-industrial firms is too readily collapsed into a single model of globalization thought to follow along the lines of the automobile or electronics industries – that is, one characterized by vertically integrated transnational production systems involving centrally coordinated intra-firm divisions of labor and global sourcing. In fact, few, if any, global agro-industrial firms fit this description: instead, the forms of corporate international production are varied, ranging from the establishment of parallel affiliates in multiple countries to the integration of affiliates and parent firms through limited outsourcing (Watts and Goodman, 1997; Gouveia, 1997).

Important global changes are taking place today with respect to agricultural production, food consumption, and agro-food system regulation. Yet, the term "globalization" remains problematic within the literature because it most often describes processes that are overly broad and encompassing and thus obscures important differences in the experience of agricultural restructuring among different nations and regions. Here, the work of geographers is particularly important as it highlights the articulations between world-scale processes and the character of agricultural transformation in particular places.

Social agency in the agro-food system

The fourth research theme centers on efforts to incorporate the individual and collective actions and interests of people – social agents – into accounts of agro-food system restructuring. This research emerged from a critique of the globalization and industrialization approaches just described. Both traditions, it is argued, favor structural explanations wherein change is carried out by industrial firms, nation-states, or global institutions but overlook (and to varying degrees discount) the role

played by human actors across the range of activities linking food production to food consumption.

To date, the main thrust of this research on social agency has been an exploration of the persistent family-based character of farming in the developed world. Contrary to predictions dating back to the posing of the original agrarian question in the nineteenth century, household farm producers have not been swept away by capitalist farms, but continue to persist and compete. Overall, however, household producers have become differentiated into two broad groups: farms that employ industrial production methods, are closely tied to corporate agro-industries, and are integrated into global networks of production and trade; and farms that remain marginal to the agro-food system in terms of on-farm practices and market linkages (Whatmore, 1995).

With respect to the first group of farms – by far the more important from the standpoint of total farm output – the literature treats industrialization not as a top-down imposition of new farm practices by industry, but as a process that is negotiated between family enterprises and corporate agro-industry. Though such negotiation clearly takes place under conditions of uneven power, farmers are nevertheless held to play an active role through household-level decisionmaking – a process in which decisions concerning the adoption of intensive production practices are bound up in a host of other social and cultural issues such as family-life cycles, kinship relations, and gender relations (Whatmore, 1991; van der Ploeg, 1993). Thus, the response to industrial transformation can vary tremendously from one farm to the next given the diversity of household forms, goals, and strategies. For this reason, an understanding of agricultural restructuring cannot easily be read off general tendencies toward industrialization and globalization, but must be based on a careful treatment of the variegated social and technical world of farm households in particular commodity sectors and in particular places.

In terms of the second group – the large number of farm enterprises that remain marginal to the industrialized agro-food system – research again focuses on the great range of "livelihood strategies" employed by a diverse set of households, but also emphasizes the importance of these farms as sites of alternative production strategies. This represents a shift in the treatment of social agency from a focus on the ways in which farmer decisionmaking shapes and conditions (yet, in the end, also advances) the industrialization process, to a focus on the emergence of active resistance to industrial agricultural and food production. In this case, the focus is on the interaction of so-called marginal farmers with new social movements. Over the past 20 years, several important social movements – centering on environmental issues, food contamination issues, animal welfare issues, and so on – have arisen in response to the problems associated with industrialized food production. Though sporadic and mostly uncoordinated, these movements have nevertheless exerted an important influence on consumption habits, thereby encouraging the expansion of traditional production practices and the development of new marketing networks (Buttel, 1997).

Take the case of organic farming. Organic farming accounts for only a small fraction of total farm output in the developed world, but despite this apparently marginal position, organic farmers (particularly in Europe) have been able to influence farm policy decisions beyond their numbers due to their alliance with

environmental and consumer groups. From this standpoint, then, organic farming appears not as a fringe activity, but as the leading edge of alternative agro-food relationships rooted in broad social resistance to the industrial model. Yet, it must be noted that because of its increasing importance, organic production has also become the target of agro-industries (at least in the USA) seeking to absorb organic farms into conventional input and marketing channels (Buck et al., 1997).

This issue of the political, or contested, character of change in agriculture has been addressed in a variety of other contexts as well, ranging from explorations of the role of national farmer political organizations in shaping domestic agricultural policy and international farm–industry relationships (Pritchard, 1998) to localized studies of farmers' political struggles over water rights (Roberts, 1996), to the role of place-specific labor–management struggles in shaping trajectories of agricultural industrialization (Wells, 1996). The importance of social agency and resistance is also a central concern of researchers seeking to apply actor–network theory to studies of agro-food system development (Whatmore and Thorne, 1997; Ward and Lowe, 1997). While this sort of approach has received a good deal of attention recently, it has also been criticized for tilting so far toward individual action that it may suppress an appreciation of how TNCs (or other global actors) continue to profoundly affect social equity and human well-being in agro-food systems (Gouveia, 1997; Walker, 1997).

Reincorporating Agriculture into Economic Geography

For years, agriculture occupied a secondary position (at best) within economic geography, a situation that did not change when political economic approaches became prevalent within the subdiscipline. In fact, there remained a deep conceptual schism between agriculture and industry wherein agriculture was comparatively under-theorized as an arena of capitalist development – cast either as a simple backdrop to industrialization processes or as an active brake on wider capitalist growth. Worse, early efforts to re-position agriculture within industrial political economy simply extended theories drawn from the industrial restructuring literature (in this case regulation theory) to cover the farm sector, an effort which, ironically, only obscured the distinctive technological, organizational, and institutional character of agriculture (Kenney et al., 1989).

But agriculture has been retrieved from this conceptual backwater by political economic research that – as discussed above – takes seriously the analytic importance of agriculture's peculiarities, and on that basis has begun to rethink the relationship of agriculture to nature, industry, the state, and the dynamics of regional development. Arguably, the study of agriculture belongs at the very heart of economic geography not only because of the centrality of food production and consumption in modern society, but also because the political economy of agriculture literature engages a range of issues that stand at the center of social science inquiry into the dynamic spatial reconfiguration of contemporary capitalism.

For instance, work on the industrialization of agriculture points to the importance of broadening our vision of social arrangements of production, technical differences, and divisions of labor across all sectors of industry. Recent approaches to industrial restructuring, particularly the regulation and flexible specialization schools, tend to

take all industries to be variations on a basic theme drawn from the specific histories and geographies of one or two industrial sectors. The case of agriculture, however, reveals the fallacy of attempting to collapse the diverse experience of industry into a few limited molds. The food producing system exhibits a mix of social relations of production, an incredible breadth of technological development, and a wide range of forms of industrial organization. Such variation – deriving from differences among agro-food commodity chains rooted in the landed basis of production and the natural circumstances of plant and animal growth – suggests a remarkable openness in the evolution of production systems under capitalism and a multiplicity of possible paths of industrialization, and serves to caution against the adoption of overly rigid and reductionist general theories (Goodman and Watts, 1994; Page, 1996).

In addition, debates over globalization within the political economy of agriculture demonstrate the importance of recognizing regional divergence in forms of economic development despite tendencies toward globalization. Recently, economic geographers have begun to address this issue by paying more attention to the historical and regional contexts of industrial development, concentrating in particular on the ways in which class relations, technical advances, business culture, regulatory structures, etc. emerge from specific local circumstances over time (e.g. Storper, 1997). This focus on the place-specific social context of economic relations and economic institutions resonates with attempts within the agro-food systems literature to make sense of social heterogeneity and the deeply embedded sources of local difference in agriculture, and both mark a re-affirmation of a long-standing research theme in economic geography – namely, that geography matters. After all, interest in locality in political economy was in large measure sparked by Massey's (1984) pioneering analysis of the ways in which contemporary economic restructuring is shaped by the accumulated sediments of regional and local history.

Finally, this literature on agriculture points to the importance of building toward a more complete treatment of social agency in studies of economic development. The use of agency-oriented methods to study agriculture reflects a more general quest within economic geography (and the social sciences generally) to move beyond overly structural accounts of economic restructuring. While recent studies of regional industrial development offer great insight into the varied social worlds of capitalism, they most often remain abstracted from the realm of human action, motivation, and experience. Yet, as studies of the agro-food system have begun to show, industrial restructuring is always a contested process – one shaped in vital ways by the exercise of power in the micro-politics of everyday life. One strength of this orientation is that it demands a broadening of the concepts of social resistance and struggle to include not only class, but also other dimensions of social difference such as gender, race, and ethnicity. Another is its recognition that struggles over resources, labor, and technological practice that stand at the center of the restructuring process are simultaneously struggles over culturally constructed meanings and identities (Hart, 1997). This, in turn, opens up some interesting lines of geographical inquiry (following the cue of cultural geography) concerning how the contest for social power is carried out by encoding the landscapes of everyday life with symbolic meaning. Still, as critiques within the field make clear, great care must be taken so that this focus on agency does not slip into a reification of difference leading to a

myopic concern with particularism and local heterogeneity that is blinded to the way in which broader configurations of power within capitalism (for instance, class relations) continue to create systematic imbalances in social equality.

These and other discourses within the political economy of agriculture have the potential to contribute a great deal to the field of economic geography by expanding the scope of the field's inquiry into rural and extractive realms of economic activity, and by providing a valuable new vantage point from which to scrutinize theories of industrial growth and change.

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