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AGRIFOOD GLOBALIZATION AND COMMODITY SYSTEMS*

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INTRODUCTION

Globalization has become a preoccupation in most of the social sciences and those of us involved in agrifood studies have taken it avidly to our research bosoms. For those of us researching agrifood commodity systems, the emphasis on globalization has been most opportune. Although some foods such as sugar have been *somewhat*¹ globalized for about 400 years and fresh produce — bananas — have been *somewhat* in global circulation for over a century, most foods were, up to the second world war, in restricted circulation: agricultural products were produced and distributed locally, regionally, or nationally. After the Second World War, particularly after the 1960s, production-consumption chains began to expand.

It will be useful first to clarify the definition of globalization as used in this paper... Thomas Friedman, a globalization enthusiast, in his influential book *The Lexis and the Olive Tree*, argues that “globalization... is The One Big Thing” (Friedman 2000:xxi), “...the inexorable integration of markets, nation-states and technologies to a degree never witnessed before...” (p. 9). Friedman is overwhelmingly concerned with two major and one minor empirical reality: the globalization and mobility of capital, cultural developments, and, mostly in passing, production-distribution networks.² Globalization has many meanings and has been used to refer to changes in financial organization (the mobility of capital), manufacturing and distribution of commodities from automobiles to clothing, software, and labor (as in worker mobility and outsourcing), and cultural change (Coca-Cola-nization, McDonaldization). Space does not permit the exploration of the full dimensions of globalization; as used in this paper, globalization is focused on agrifood commodities and refers to the processes by which these commodities move into longer and more complex chains rather than being spatially limited to locality, nation, or region. This expanded spatial dimension produces a new division of labor and increases distance between production and consumption spatially and socially. Following Le Heron (1993, Chapters 1-2) I am concerned with the global-local aspects of capitalist agriculture which, I contend, are manifested through commodity analyses. Moreover, like Le Heron, I will argue that the term “global” is qualitatively different than the older term “international” and represents a different way of conceptualizing modern agriculture as an economic sector.

Globalization in agricultural commodities means that all three classical components of production — land, labor, and capital — experience this shift, albeit variably. Capital is most easily globalized; labor has become more globalized with greater difficulty involving the trauma of population disruption, barriers to mobility, etc. It takes place also in the form of bringing employment to workers as manifested by what is referred to as “contracting out” or “outsourcing”. Land as a physical entity is immobile but becomes mobile, in effect, through surrogate locations of production, e.g., U.S. cotton capital opening vast acreages in Australia or French, Spanish, Italian, Japanese and other winemaking firms buying, renting, leasing, or contracting land in California to grow winegrapes and make wine.

I will use “commodity systems,” “commodity chains,” and “filières” interchangeably in this paper. All have a similar meaning and refer to the methodology for studying a specific commodity from its origins in production to consumption. Commodity analyses are increasingly becoming concerned with global production, distribution, and consumption although, as shall be argued in this paper, the degree to which various commodities are globalized is highly variable. There is also a growing number of what might be called commodity studies or commodity analyses that focus on a single— or limited — aspect of commodity life, usually in a single area or locality or region but are not concerned with analyzing the commodity as a system. For purposes of simplification I will group the two types of studies under the rubric “commodity studies” except where I want to make a distinction between the two types.

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¹ The use of “somewhat” is deliberate. I will be arguing that many of the ancient commodity systems (such as wine and salt) and more modern ones such as grains were not truly globalized. They were, while often long-distance, more accurately regional, i.e., a series of distinct systems between an originating point and a point of consumption. To take bananas as exemplary, the chains developed a century ago were between individual colonial metropolises and their political or economic colonies and the firms that organized the chains were nationally based.

² I will return to Friedman, particularly the issue of production-distribution, later in this paper.

Globalization has accompanied the expansion of commodity systems. As a result of the accretion of a number of commodity studies and commodity systems analyses, it is now possible to begin thinking about them in comparative terms, to begin doing comparative analyses.

This paper focuses on two issues: the *globality* or the *degree of globalization* and the *economic concentration* of segments of agrifood filières. While many commodity studies make no claims about globalization, others unquestionably do and we can now examine such claims in order to understand the degree to which a commodity system is globalized or, more important, which *segments* of a commodity system are global, and which are not. It is also important to consider economic concentration in commodity systems as they become global. Economic concentration is an indicator of economic power; originally researched in national contexts, as commodities and corporations that produce them become globalized, national-level analyses become increasingly irrelevant. Using comparative analysis, a better grasp may be obtained as to why some segments of a commodity system become more economically concentrated than others.

Economic concentration in agrifood commodity chains involves considering commodity systems that have spatial spread and, in particular, which *segments* of filières are more globalized and concentrated than other segments. The degree to which a commodity (or cluster of commodities) is economically concentrated has been of continuing concern in the social sciences since monopoly/oligopoly represent concentrations of economic power. Globalization has had the effect in some commodities of deconcentration as nationally or regionally concentrated commodities have had to adapt to competition globally. Reconcentration, however, is also taking place because of the mobility of capital. Economically-concentrated globalized and globalizing corporations have become the focus of substantial anti-globalization movements and it is useful to understand the degree to which concentration has begun to occur at the global level in the agrifood system.

THE GLOBALITY OF AGRIFOOD COMMODITY SYSTEMS

When commodity systems analysis began to emerge during the 1970s in the social sciences, there was already a well-established literature on commodities by agricultural economists. Much of this literature is extremely narrow, often focusing on price and markets and rarely venturing into the politics of commodities, institutional elements, and other aspects of commodity life.

Sociologists, geographers, and other social scientists who became involved in commodity studies often approached their research with a specific problem generated within the discipline and literature; the focus was less on the commodity than what a commodity could illustrate about a research problem. Appadurai (1986) sensitized a generation of social scientists to the idea of commodities having *social lives* or “*careers*” and, therefore, a potent locus for research.

Another element was added to the research agenda with the advent of globalization studies as researchers understood that a new level of analysis was required to deal with the expansion of trade and the restructuring of commodity chains. Where, before, commodity production, distribution, marketing and consumption had been focused around national and regional activity, increasingly economic action began to be organized globally. Agrifood social scientists moved into globalization analyses with rapidity and a globalization literature began to build.³

By the turn of the millennium many non-economist agrifood researchers were writing about global aspects of specialized commodities. This paper argues, however, that such studies were rarely global in character and that most agrifood commodities were not truly globalized.

I will contend that globalization involves the integration of all or most segments of a commodity chain on a global level. That is, if one examines a specific commodity system, the question should be asked: which segments of the commodity filière are globalized and which are not? For this purpose, it is useful to briefly consider the automobile filière.

The automobile commodity chain is chosen because, with the exception of financial commodities (such as money), it is probably the most globalized of filières. Not only do automobiles appear on all continents (except Antarctica) but about a dozen corporations make almost all of them. These corporations are increasingly inter-owned by each other; in production terms, a small number of base models are produced on a variety of continents with parts for each coming from other places and continents; there are some regional and national variations for marketing purposes, but these tend to be “on the skin” rather than internal to the commodity itself. Adjustments are made for specific local conditions (i.e., cars in Europe tend to be smaller than in the New

³ See, for example, Bonanno *et al.* 1994; Gereffi and Korzeniewicz 1994.

World to fit narrow urban settings). Marketing strategies vary by region and nation just as they do by income, age, and education. Such variation as exists is based on producing automobiles for specific market niches using different names: Ford historically did this nationally in the United States with its Ford, Mercury, and Lincoln labels; nowadays, it uses its ownership of marques like Volvo and Jaguar for the same purposes although it does not manufacture these marques in the U.S.

Other commodity systems such as clothing, wrist watches, or computers are similar to automobiles, with increasing domination of specific filières by a small — but much larger than with automobiles — number of increasingly transnationalized corporations producing the same basic products composed of components manufactured in many world locations for world-wide distribution and marketing.

Agrifood commodity systems are generally different. A few are globalized, at least in some segments, whereas others are much more regional, national, or local. This can be seen by comparing commodities such as grains and flowers. Grains are a cluster of commodities, particularly wheat, rice, and corn. While each has its own particularities, these are bulk, storable, relatively low-value commodities whose distribution is primarily globalized even when production and marketing remain primarily national (Kneen 1990, 1995; Morgan 1980). In contrast, flowers — which are found increasingly in transnational movement — are primarily the product of nationally owned capital, i.e., where capital has not yet aggregated at the transnational level but where distribution is increasingly long distance.

To deconstruct globality, I will take three commodity analyses of processing tomatoes and one of iceberg lettuce. This will include the studies of lettuce and processing tomatoes with which I have been involved (Friedland and Barton 1975; Friedland, Barton, and Thomas 1981), a fresh tomato chain (Barndt 2002), and a global study of processing tomatoes (Pritchard and Burch 2003).

CALIFORNIA: PROCESSING TOMATOES AND ICEBERG LETTUCE.

The two studies my collaborators and I undertook (Friedland and Barton 1975; Friedland, Barton, and Thomas 1981) were done before globalization emerged as a focus for agrifood studies. Both centered on a specific problem in the literature: mechanized harvesting of crops, an issue that preoccupied agronomists, plant breeders, and other scientists and technologists during the 1960s.

Our processing tomato studied social consequences of the mechanization transition in processing tomatoes that accompanied the closure of the bracero program which had imported Mexican workers to the U.S. The literature generated by one of the most rapid transitions to mechanization glowed with the success of the research and the transition. Historical analyses (Rasmussen 1968) and economic studies (Schmitz and Seckler 1970) showed the transition to be easy, with few problems, and benefiting agriculture. The tomato study showed other consequences that the literature did not consider: the precipitous decline in the number of harvest workers, the shift of the labor force from men to women, the substantial decline in the number of tomato growers, and the spatial shift of production from one part of California to another. The lettuce study also derived from mechanization concerns except that its purpose was to project the conditions for the transition to mechanized harvesting and what the social consequences might be.

According to the earlier distinction made between commodity studies and commodity systems analyses, both should be characterized as commodity studies but the lettuce study manifested more of a commodity systems approach since it incorporated analysis of projected effects on community life. Neither study paid attention to globalization which had not yet arrived on our research agenda.

CANADA-MEXICO: A FRESH TOMATO CHAIN

Barndt's (2002) *Tangled Routes* begins with an explicit theoretical formulation derived from world systems analysis. Drawing on the formulation of global commodity chains (GCCs) projected theoretically by Hopkins and Wallerstein (1986) and Gereffi and Korzeniewicz (1994), Barndt explains GCCs theoretically before turning to her empirical material. Empirically, however, the fresh tomato chain she describes is transnational but not global. Barndt details a single chain working upstream from retail to primary production, from Canada to Mexico, with some discussion of seasonal production in Canada. Barndt pays no attention to other fresh tomato chains proximate to this Mexico-Canada filière, passing on U.S. involvement except for the fact that the commodity passes physically through the United States.

The virtue of Barndt's study is its attention to the entirety of the filière she describes. Three foci of analysis stand out in this respect: (1) the attention given to gender; (2) the analysis of exploitation within each segment of her chain; and (3) the inclusion of transportation and logistics as part of the analysis, a topic sorely neglected

by most commodity analyses. These are significant virtues that benefit the analysis but the GCC theoretical development is not fulfilled.

THE GLOBE: PROCESSING TOMATOES

Pritchard and Burch (2003) undertook a mammoth task researching the global processing tomato filières. What they have accomplished is the nearest I have yet found of a study that aims at a truly global analysis.

Examining processing tomato networks in the United States, Australia and Canada, Europe, Thailand, and China, Pritchard and Burch have encompassed most of the global processing tomato networks. Dealing with growing, processing and reprocessing, and marketing, this study is encyclopedic. While there are obviously lacunae — aside from minor sub-chains of the global system — they should be credited with what is probably the most comprehensive of commodity systems analyses.

Pritchard and Burch (2003: xi) summarize their argument:

What passes for ‘the global food system’ consists of a set of heterogeneous and fragmented processes, bounded in multiple ways by the separations of geography, culture, capital and knowledge.... Global agri-food restructuring needs to be understood as an intricate set of processes operating at many scales, and on many levels, rather than a unilateral shift toward a single global marketplace.

One point stands out in their analysis: processing tomatoes, unlike some other agrifood commodities, are not globalized at the level of capital. Their global picture has to be understood *less* as a globally integrated system but as a handful of regional systems only partially connected to each other at the global level. A closer integration between the various subsystems may be underway as we are informed (p. 7) that “in 2001, a southern Italian canning company fulfilled a contract for private label canned baked beans for a British supermarket, using Mexican-sourced beans and Chinese tomato paste...”

This brief treatment hopefully illuminates that most commodity chain analyses are somewhat less than global. As I shall argue in the next section, where globalization has taken place in segments of a commodity system, those segments are most frequently found at the level of capital and marketing and less so in production. This shows up most clearly when we consider which segments of commodity chains are notable for their economic concentration.

ECONOMIC CONCENTRATION IN GLOBAL COMMODITY CHAINS

One implicit notion accompanying the concept of globalization is that the process contributes to economic concentration. The basic idea is that, as economic sectors develop under capitalism, all other things being equal, there will be a “normal” process in which the number of producers of a commodity will decrease until only a small number remain, constituting an oligopoly or monopoly. Most capitalist democracies, under popular political pressures, have installed regulatory mechanisms to control these tendencies. The regulatory apparatuses were of some use but, over time, have been of limited value. Globalization increases the tendency to concentration because regulation at the transnational level is even weaker than at the national level.

An attempt to answer the question: does globalization lead to economic concentration? requires a massive analysis that goes beyond the possibilities of this paper. What I will do is make two assertions, providing some empirical evidence, that some concentration takes place but that much more comparative research will be necessary before we have a good understanding of how globalization affects concentration. The assertions: (1) concentration processes are very uneven; and (2) where concentration takes place, it does not necessarily occur in the similar segments of a commodity chain.

Let us consider four empirical examples that are differentially globalized. These are, in descending order of the degree of globality (in my estimation): frozen concentrated orange juice (FCOJ), wine, fresh fruits and vegetables (FFV) and processing tomatoes.

Frozen Concentrated Orange Juice. FCOJ is a commodity that never appears directly as juice or as frozen concentrate. In its traded commodity form it appears as super-concentrated slurry (Friedland 1991). It is a commodity that is an input to juice re-manufacturers and other value-adding manufacturers, primarily for mixed juices and drinks.

Brazil is the leading producer of FCOJ and the oranges are grown on a number of sizeable plantations, many owned by a small number of very large processors. A somewhat similar situation exists in the United

States in Florida, also a major FCOJ producer. Coca-Cola, for example, is engaged in primary agricultural production but also is a concentrator of juice from its own orchards and for oranges produced by other growers.

Once harvested, juice is produced and concentrated by removing water. In Brazil, the frozen slurry is pumped into trucks and transported to ports where it is pumped on to tanker ships which transport it to ports in the well-developed world where it is stored and reprocessed with the augmentation of water since the frozen slurry is too concentrated for normal human consumption. It is canned and sold as (consumer) concentrate or remanufactured by adding water to be sold as “reconstituted” orange juice to consumers.

The FCOJ system is heavily globalized, being produced in a number of countries and shipped to secondary processors for mixing and preparation for retail sale or direct consumption. I have collected labels of juice reconstituted from FCOJ produced in Florida, Brazil, California, Mexico and Israel.

Except for growing oranges, FCOJ is a thoroughly globalized commodity in long-distance movement and is comparatively economically concentrated at the grower, processor, reprocessor, and retail levels.

Wine is a commodity very different from FCOJ. It is produced in a great many countries and is characterized by having incredibly differentiated markets. It can be bought by consumers for several dollars or several hundred dollars (and even higher) a bottle. Wine tastes vary significantly between countries and regions. Yet wine moves between countries/regions except with some important exceptions in which traditional wine producers such as France, Italy, Spain, Chile, and Argentina, mostly drink wines produced nationally. In the newer wine producers countries — the U.S., Australia and New Zealand — much local wine is consumed from local producers but wines from other countries/regions are also consumed.

Within the older production locations, wine follows a pattern of very slow concentration with a few large firms, many growers and small winemakers organized in larger co-operatives for making wine. There are significant differences between the commodity structures of wine in the U.S., Europe, and the antipodes. For simplification purposes, this analysis will focus on the U.S. where there are similarities with the wine systems of Australia and New Zealand in contrast to Europe where the systems tend to be less concentrated.

In the U.S., there is concentration at the production and marketing levels but wine is still relatively unconcentrated except in distribution where, *at the global level*, a handful of firms have become dominant, although it is not yet possible to determine the percentage of the market under their control. Concentration at the global level does not necessarily mean that these firms are hegemonic in wine at national/regional levels.

The large global firms include: Diageo, Allied-Domecq, Constellation, Foster’s, and Gallo. Two of the five (Diageo and Allied Domecq) are primarily large alcohol and food firms; one (Foster) is primarily a beer firm; and only two are primarily focused in wine (Gallo and Constellation, with the latter also being heavily into spirits). Of these, Diageo is the most globalized and Gallo the least. Two of the transnationals are U.K.-based (Diageo and Allied Domecq); two are mergers between Australian and California drinks/alcohol companies (Foster’s of Australia and Beringer of California; and Constellation of New York and California, and BRL Hardy of Australia). Gallo is strictly California and privately owned whereas the other four are public corporations.

Diageo is a London-based corporation composed, as of 2002, of 329 subsidiary companies in 27 countries. Most of these companies are involved with the distribution and sale and sometimes the production of spirits and foods and include such well-known brands as Burger King, Cinzano, Express Dairy, Guinness, Haagen-Dazs, Heublein, Johnny Walker, Saccone & Speed, and Smirnoff, to name just a few.⁴

Diageo was formed in 1997 by the merger of Guinness (established in 1759) and Grand Metropolitan (established in 1931).⁵ Among its many subsidiaries, there are 17 bearing the names “United Distillers” and “United Distillers and Vintners” and one of these — United Distillers and Vintners, North America — is owner of four wine brands (Beaulieu, Glen Ellen, M. G. Vallejo, and Blossom Hill). Headquartered in San Francisco, there are three production wineries in Napa (Beaulieu), Sonoma (Glen Ellen) and Monterey counties (Blossom Hill). United has 2,000 acres of vineyards and produces a modest 6 million cases of wine annually.⁶ Beaulieu is an old winery name tracing its heritage back over a century. Glen Ellen is a popular mid-priced wine which has a significant market share.

⁴ *Who Owns Whom 2002/03*, Vol. 1, pp. 273-4 (High Wycombe, U.K.): 273-4.

⁵ *Hoover’s Handbook of World Business 2002* (Austin, Texas: Hoover’s Business Press): 206.

⁶ *Wines & Vines Buyer’s Guide 2002* (Wines & Vines: San Raphael, CA): 110.

Diageo is a genuine transnational corporation with extensive distribution capability over much of the globe but with relatively small wine interests. In the wine world, however, Diageo, by agrifood standards, is an enormous transnational corporation.

Allied Domecq, like Diageo as of 2002, is a U.K.-based transnational substantially into drink and food in 25 countries with 248 subsidiaries. It has some well-known brands such as Baskin & Robbins, Beefeater gin, Bristol Cream, Courvoisier, Dunkin' Donuts, Hiram Walker, John Harvey, J. Lyons, Kahlua, Maker's Mark, Mumm Perrier-Jouet, Pedro Domecq, Sauza Tequila, Togo's, and William Teacher.⁷

Allied Domecq, second largest drink/food company in the U.K. after Diageo, was formed in 1994 by the merger of Allied (a merger of three English regional breweries) and Pedro Domecq of Spain.⁸

Unlike Diageo which has grouped its wine subsidiaries under a single controlling subsidiary, Allied Domecq has maintained the separateness of its five U.S. wineries which include Atlas Peak, Buena Vista, Calloway, Clos Du Bois, and William Hill. Of the five wineries, four are in premium areas, two each in Napa and Sonoma, with the fifth in southern California. The wineries own or control 3,510 acres of vineyard and produce an estimated 2.5 million cases annually. Allied Domecq is somewhat more oriented to wine than Diageo, with more vineyard acreage but smaller and more elite (upscale) wineries.

Brewing Holdings Ltd. of Australia is the owner of Foster's Beer. In 2000, in a US\$1.5 billion deal, Foster's bought California's Beringer, a publicly traded winery, from Texas Pacific Group, a private investment partnership and Beringer's majority owner.⁹ Already the owner of substantial vineyard acreage and one of the largest producers of wine through a number of wineries in Australia, the new subsidiary, Beringer-Blass, immediately emerged as one of the top winery clusters in the world.

Founded in 1876 by the Beringer brothers in Napa County, Beringer was a well-known premium wine before Prohibition. The brothers built a huge manor house in the German style, an early investment that has provided continuity for the Beringer winery even as it went into decline. In 1971, the winery was bought by Nestlé through a subsidiary, Wine World, Inc., and began upscaling the wine for a higher priced market. During the 1980s, Wine World acquired two additional wineries, Chateau Souverain in Sonoma County and Meridian in Santa Barbara County, both premium wine locations. Wine World, in other words, was aimed at the premium wine market.

Beringer¹⁰ is a sizeable winery with 10,300 owned or leased acres and storage capacity of 3.5 million gallons. Chateau Souverain and Meridian add an additional 2.7 million gallons of storage capacity. I do not have data on the acreage and storage of the Australian holdings but Australian commentators noted that BHL was one of the largest clusters of wineries on the subcontinent and, of course, a major brewer and exporter of Foster's beer.

Constellation, a U.S. owned corporation, was until 2003 the second largest U.S. wine company after Gallo. While having distribution capacity outside the U.S., Constellation — and its major wine subsidiary, Canandaigua — is primarily an alcohol distribution company that grew by acquiring a host of spirits companies, entered the wine business by acquiring wineries, initially in New York before buying up wineries in California and elsewhere.

The scope and span of Constellation's wine subsidiary, Canandaigua, is remarkable. Prior to the merger with Australia's BRL Hardy wine group, Canandaigua owned one brand in the "value box" category (inexpensive wine in a box); seven "value" (low-priced in bottles) brands; nine "fighting varieties" (\$3.50-5.50 bottles); three California and four northwest U.S. "premium" wines (\$5.50-9.50); three imported wines; one kosher wine; one non-alcoholic wine; 10 sparkling wines; three "traditional" dessert wines; five "beverage dessert" (aimed primarily at "wino" [low-income alcoholics] consumption) wines; two brandies; one cream liqueur; one cider; and one "wine with fruit flavor."¹¹ It owns a galaxy of well-known labels including Inglenook and Almaden, two names with historic significance in California from pre-Prohibition days, and

⁷ *Who Owns Whom 2002/03*, Vol. 1, pp. 56-57 (High Wycombe, U.K.).

⁸ *Hoover's Handbook of World Business 2002* (Austin, Texas: Hoover's Business Press): 84.

⁹ *Santa Rosa Press Democrat*, Aug. 29, 2000: B1.

¹⁰ This section is based on: *Wines and Vines Buyer's Guide 2003* (San Rafael, California: The Hiaring Company); *Who Owns Whom 2002/03*, Vol. 1, p. 48 (High Wycombe, U.K.); and *Encyclopedia of Consumer Brands*, Vol. 1, pp. 31-32 (Detroit: St. James Press).

¹¹ *Wine Business Monthly* (October 2002)

Arbor Mist and Wild Irish Rose, wines aimed at the wino market. The acquisition of BRL Hardy, a major Australian wine producer, cost \$1.1 billion.¹²

The Ernest and Julio Gallo Winery was, until the Constellation-BRL merger, the largest wine company in the world. Founded by two Gallo brothers immediately after Prohibition, the Gallos produced bulk wine for sale to bottlers for more than a decade before beginning marketing wine under their own labels. The company is privately owned and vertically-integrated into bottle-making, transportation, and sales.

With each brother paying separate attention to winemaking and marketing, Gallo grew from a small operation into the largest winery in the world with storage capacity of 330 million gallons, hundreds of winegrape growers providing the bulk of its grapes, with at least 25 labels for its wines, sparkling wines, brandies, and vermouth. Its production spanned the low-to-middle range of the price spectrum in wine. It did not move into the premium end of the spectrum until the wine “revolution” had proven itself, after which it spawned six premium labels.

Gallo long been an innovator in marketing and the utilization of wine science, having the largest laboratory of enologists of any wine company in the world. It has not been an innovator in anticipating wine trends. It was slow to move into premium wines but, when it did, it did so with muscle. The same was true when the wine cooler phenomenon showed an amazing spurt. Gallo entered the wine cooler market after it was well-established; its Bartles and James label overwhelmed the competition.

Gallo orients itself primarily to the U.S. market but it has taken advantage of federal subsidies for export to establish a base in Europe, primarily in the U.K. Gallo has not hesitated to undertake penetration of the most impenetrable of European markets: France. It has opened a modest venture and indicated it will remain until it becomes established.

What is notable about two of these five corporations is (1) their base in spirits and food, and two in beer and wine; (2) of the five, four easily win the designation of TNC (transnational corporation) although there are gradations in their transnationality with Diageo being the most, followed by Allied Domecq, the two Australian-U.S. groupings which are mainly oriented toward the U.S. and U.K. markets. Gallo has been mostly U.S. oriented but has undertaken a major effort in the U.K. and smaller efforts elsewhere in Europe.

If we consider wine just from a U.S. point of view, the most important companies — indicative of concentration — have to be configured somewhat differently. The spectrum of wine consumption has to be considered and this complicates determining the degree of concentration. For my purposes, I will distinguish wines into two groupings with flexible and permeable borders, i.e., “ordinary” and “premium”. I cannot provide statistical measures to indicate concentration but am doing this on the basis of lengthy research on the U.S. wine industry.

Among the ordinary producers, Gallo and JFJ Bronco stand out. There are several other large winery operations such as Golden State Vintners that are important. These “ordinary” producers have the overwhelming bulk of this part of the spectrum. I would estimate that half dozen wineries have over half of production and probably the top ten might have as much as 75-80%. The premium category wines are more difficult to estimate. Again Gallo should be included through its subsidiary, Gallo Sonoma. Also important are Robert Mondavi and Kendall-Jackson. After these three, which I would estimate have possibly as much as 30-40% of production, there are hundreds of smaller wineries competing for top-dollar sales. Most are relatively small in acreage, storage, and sales. Some have no intention of producing more than a miniscule volume of cases of wine since their ability to command prices in the hundreds of dollars depends on the scarcity of their wines.

Fresh fruits and vegetables. After the second world war, in North America and western Europe most people consumed most of their fresh fruits and vegetables (FFV) based on provisioning from local, regional, and national sources. In western Europe, there was more “international” trade of produce from other western European countries until the European Community was set in place.

In North America and western Europe, there had been trade in bananas for over a century from tropical locations, political and economic colonies of France, Britain, and the U.S. Beginning in the 1970s, this trade expanded to include a wider variety of tropical FFV, the development of non-traditional export agriculture

¹² *Newsday.com*, March 31, 2003.

(NTEA) from tropical and southern hemisphere locations to take advantage of counter-seasonality. By the early 1980s, extended filières from Chile and South Africa were producing table grapes and other FFV for North America and western Europe so that there was year-round supply for FFV which had previously been seasonal.

The explosion in consumption of FFV was driven by the changing structure of labor forces in advanced capitalist countries which required a shift from manufacturing employment to highly-skilled, -educated, and -remunerated technology workers. Concern about food safety and general health contributed to the “explosion.”

Entry into the extended FFV chains required heavy capital investments in transportation, refrigeration, and coordination of the different segments of the commodity systems and logistics to ensure that reliable transportation segments would be available for transport of FFV over enormous distances. Getting table grapes and stone fruits from Chile or asparagus from Peru or flowers from Columbia to North American ports and major distribution centers in Europe called for unprecedented chain organization.

Companies such as Chiquita (formerly the United Fruit Company), Dole, and Del Monte in the U.S., which had only limited banana sales in Europe, sought to take advantage of the ostensible “openness” of trade developed under GATT and the World Trade Organization to expand distribution networks to Europe. Previous banana shippers in the U.K. and Ireland such as Fyffe’s expanded on to the continent.

In addition to the established banana shippers, two new actors appeared on the scene: Polly Peck International (PPI) and Albert Fisher.¹³ PPI became a major actor after Asil Nadir, a Cypriot Turk living in the U.K., saw the opportunity of taking a small clothing manufacturer and growing it into a major shipper and distributor of FFV to Europe. Based on dirt-cheap Northern Cyprus citrus, Polly Peck became one of the hottest items on the London stock market. Albert Fisher represented the same trajectory; entrepreneur Tony Millar bought a small U.K. FFV distributor and proceeded to acquire dozens of FFV distribution firms in the U.K. and the continent before turning to the U.S.

By the early 1990s, five firms had emerged as the dominant actors in fresh fruits and vegetables in western Europe and North America. These included the ex-banana giants: Chiquita, Dole, and Del Monte Tropical and the two new upstarts: Polly Peck International and Albert Fisher. Polly Peck bought Del Monte Tropical in 1989 and held it briefly until 1990 when PPI collapsed after Asil Nadir was charged with insider trading. Albert Fisher had a brief exciting life in the U.S. before selling off its American holdings and returning to Europe.

It is not possible to calculate the percentage of total FFV controlled by these corporations but qualitative analysis indicates that, taken together, they had the lion’s share of FFV. Most other FFV firms engaged in long-distance sourcing tended to specialize in a few specific FFV rather than seeking to incorporate the gamut from artichokes to pineapples. Driscoll of California is exemplary of the specialists focusing exclusively on strawberries and a few other berries and prepared to ship their product not only to North America but to Europe and Asia.

There were anomalies affecting the concentration process. Grower export organizations in New Zealand saw and invented opportunities with kiwifruit, which spread like wildfire, and apples. Washington State, which had been a dominant factor not only in the U.S. but in the export trade, found themselves with outmoded varieties (Red Delicious) no longer wanted by a market that was absorbing Braeburn, Gala, and Fuji apples from New Zealand. The New Zealanders gained a ten year advantage on the Washingtonians before Washington growers responded to the new market demands (McKenna 2000). The Netherlands, major suppliers through co-operatives to the German market, responded by developing seven different colors of bell peppers and, after complaints about tasteless tomatoes, “invented” cluster tomatoes (attached to the vine) to show how ripe their fruit was. This was so popular that Dutch tomatoes were being sold in Santa Cruz, California at three times the price of local tomatoes that had not yet graduated to cluster tomato production.

Despite variations in the complex set of FFV commodity systems, the “Big Three” are currently dominant. They command the capital resources to build the filière networks that move enormous volumes of FFV over great distances.

Processing tomatoes. The Pritchard-Burch study illustrate a comparatively small set of filières consisting of production systems built on national and regional bases, producing a commodity similar to FCOJ which “disappears” as a component of prepared foods, i.e., pizzas, pasta sauces, soups, etc. Only a small percentage of

¹³ Each company’s story has been told in Friedland et al. 1998a and 1998b

the product goes directly to consumers. Growing tomatoes for processing is still relatively unconcentrated although, as a result of mechanization, concentration has taken place among growers in California. In contrast, processing tomatoes have become significantly concentrated with only small numbers of processors in national or regional production. Most processors prepare tomatoes for use by value-adding companies that make soups, ketchup, sauces, etc. Some companies further process the product into forms appropriate for retail consumption either with specific corporate labels (Heinz, Hunts, etc.) or for retail supermarket own-labels.

The world processing tomato industry consists of hundreds of thousands of farm and factory workers, tens of thousands of tomato farms, thousands of processing tomato factories, hundreds of specialist processing tomato companies, a dozen key transnational corporations, tens of thousands of individual products, brand names, trademarks and patents, and millions of consumers. (Pritchard and Burch 2003: 247).

The geographic or spatial concentration is shown by Pritchard and Burch (2003:253): the U.S. produces 42% of world production, the European Union 34%; the remaining percentages of production are small and include: Australia, 1%, Canada 1%, Chile 3%, China 4%, Latin America (without Chile) 5%, Middle East and Africa 4%, Turkey 4%, and other 2%. Consumption, unsurprisingly, is also substantially spatially concentrated with the U.S. and the E.U. accounting for 63% of output, mostly from their own locations.

Far from replicating the automobile model, processing tomatoes consists of a series of discrete commodity systems, the two major ones being in the United States (and especially California) and the European Union. Even these two groupings manifest different characteristics in concentration. The U.S. grouping is still relatively unconcentrated in growing but substantially concentrated in processing. The European Union is also marked by considerable variation, with Greece and Spain being most unconcentrated and Italy being only slight more concentrated in growing and processing. Relatively minor production systems in Turkey, Australia, China, Thailand, and elsewhere are varying in their degrees of economic concentration. At the global level, despite the fact that we are dealing with an important food commodity, little global economic concentration has taken place and, despite the fact that processing tomatoes are like FCOJ in that they serve entirely as an input to other manufacturers, FCOJ is concentrated and processing tomatoes are not.

Pritchard and Burch point out, however, that the spatial separation of processing tomatoes may be beginning a gradual process of integration. With China's paste turning up in Italy and elsewhere and Chinese product being available at unusually low prices, China may soon become a significant actor in processing tomatoes globally (Pritchard and Burch 2003: 167) just as it has become the Hercules of garlic production.

What is clear in the cases Pritchard and Burch describe is that concentration does not take place in growing. Further down the chain, greater economic concentration becomes manifest. The most concentrated segment of processing tomatoes, as Pritchard and Burch point out (p. 247), occurs with "a dozen transnational corporations" who mainly utilize processed tomatoes as inputs to food manufacturing.

ASSESSING COMMODITY SYSTEM GLOBALITY AND ECONOMIC CONCENTRATION

This has been an exercise in attempting to understand the character of globalization in agrifood commodity systems and how this fits with economic concentration, long considered a fundamental process of capitalism. Until now, most globalization studies have focused on macro trends and only a few have paid attention to the degree to which globalization occurs in specific locations, spatially, or in political units such as nations.

Thomas Friedman (2000), the pre-eminent globalization enthusiast, while acknowledging some of the problems that globalization creates, argues that its momentum has become increasingly compelling. At the level of analysis at which he is working, there is some validity to his argument. Friedman, however, is functioning primarily at the financial level as is manifested by his metaphors for the movement of capital globally. This occurs through what he calls "the electronic herd" composed of long-term investors, the "long-horned cattle," who move capital to build factories and infrastructure, and more speculative and mobile capital that moves in and out of investments depending on moment-by-moment prices, the "short-horned cattle" (p. 13; Chapter 7) .

Most firms involved in agrifood growing, processing, handling, transportation, and marketing are of the "long horned" variety. Companies that want to invest in frozen concentrated orange juice, wine, fresh fruits and vegetables, or processing tomatoes can move capital rapidly but establishing the political infrastructure for such ventures takes time as does assembling the buildings, equipment, and a labor force. Once in place, companies are reluctant to abandon this infrastructure on short notice.

First, the analyses that have been undertaken argue that agrifood commodity chains are of the “long horned” variety. The analysis also indicates that globalization — in its spatial sense — is extremely uneven, possibly especially in agrifoods.¹⁴ As far as globality — global reach — is concerned, the uneven development of the four examples is notable. FCOJ is a highly integrated system from growing to marketing and distribution, a truly global agricultural product. Wine is also a global product, consumed in its traditional European locations but increasingly in New World locations and very new consumption locations such as Japan, Hong Kong, and China. Moreover, distribution and marketing, while retaining heavy emphases in traditional production locations, show strong signs toward globality. FFV has become global in consumption based on counter-seasonal production to take advantage of hemispheric growing conditions. This means that, increasingly, to supply wealthy northern hemisphere markets, production has expanded enormously in the southern hemisphere for northern consumers. This globality, however, is limited, with the somewhat exception of bananas, to lucrative markets in the north. Finally, processing tomatoes have become global as a commodity but this does not mean that growing, processing, or marketing and distribution have manifested global integration.

Second, a similar unevenness is found in economic concentration. Automobiles are very concentrated and probably moving to even more concentration. Agrifoods are more complex. Overall, what should be noted is the slow tendency toward economic concentration in agrifoods and for concentration to take place in specific *segments* of commodity systems.

In FCOJ, economic concentration is advanced in all segments of the commodity: growing, processing, marketing, and distribution, all of which are handled by a relatively small number of TNCs. Wine is characterized by unconcentration in growing, definite tendencies toward concentration in winemaking which are subverted by the increased consumption of the products of boutique up-scale winemaking firms. Marketing and distribution in wine, however, is relatively concentrated with a small number of TNCs. Fresh fruits and vegetables, like wine, are unconcentrated in growing, with the exception of bananas, a historically concentrated commodity in all of its segments. The former banana TNCs have now diversified into other FFVs and, while they have sizable growing operations in the tropics and southern hemisphere, growing is still largely handled by thousands of producers. The handling (shipping), marketing, and distribution of FFV, however, is concentrated in a small number of firms. Processing tomatoes are a global commodity in which marketing and distribution are mostly unconcentrated whereas processing is mixed with European processing being relatively unconcentrated and New World processing being largely concentrated. Growing processing tomatoes in New World locations has become more concentrated than is found in Europe, primarily under the impetus of harvest mechanization.

Concentration occurs where the heavy capital requirements can only be organized by Friedman’s “long-horned cattle”. Typically, the agricultural segment lags behind other commodity segments although, as noted, the banana segment has long been concentrated. Banana “exceptionalism” can be traced to the historic need to develop an integrated production-transport-marketing system of a fresh market commodity under primitive logistical conditions; once in place, however, with the emergence of counter-seasonal consumption, the FFV TNCs have extended their banana hegemony to capture logistics, marketing, and distribution.

As for the future, mixed tendencies auger uncertainty. For commodities whose markets become increasingly global, the pressures will be toward concentration at the global level, following historic patterns of capitalism. But all commodities will not necessarily behave in the same way. FCOJ, for example, is a standard and basic commodity whether it appears in North America, Europe, or elsewhere. Becoming a truly global commodity depends on the expansion of refrigeration capacity. As refrigeration becomes available globally, the expansion of existing TNCs into new markets will almost certainly continue to dominate the commodity. Wine, in contrast, can be expected to retain its basically European constituency while new locations of production-consumption manifest more global tendencies. The globality of FFV will continue to depend on income distribution; as long as the South remains relatively poor, the logistical costs of FFV will preclude much expansion. Some markets will grow and develop, however; Japan is already a major FFV consumer as are locations such as Singapore and Hong Kong. FFV TNCs will almost certainly seek continual expansion and domination of opening markets, maintaining relatively concentrated control. I hesitate to estimate concentration in processing tomatoes.

¹⁴ This must be carefully qualified since we have yet to see comparative analyses between economic sectors such as automobiles, agrifoods, textiles, clothing, etc. While it is guaranteed that we will find considerable uneven development in the different economic sectors, it is unclear which sectors will be more advanced or more retarded. Certainly automobiles will be among the more advanced sectors globally.

On the other hand, to the degree that nation-states resist the specific forms of integration being promulgated through the World Trade Organization, national regulatory apparatuses could impede accelerated global economic concentration. National cultures will also contribute. While we are seeing the increased cosmopolitanization of diets, many nations continue to adhere, at least in part, to traditional elements of cuisine. Pizza and Coca-Cola may be in global consumption but polenta and Inka-Cola are still more popular in their original places of origin than they are in global consumption and the Slow Food movement, which emphasizes localism and artisanal production, continues to grow.

TWO CONCLUDING NOTES

Commodity systems, commodity chains, and filière analysis is a relatively young branch of the social sciences, at most about two decades old. While our agricultural economist colleagues have been involved with it for much longer, their efforts have been more market-driven than concerned with seeking to grasp commodities in their entirety. Attempts by other social scientists to examine agricultural commodities have been more focused on specific aspects of commodity life, particularly on one or two segments of a commodity chain rather than the totality of a chain. There has been good reason for this; even limited commodities have considerable complexity and the structure of one segment does not necessarily reflect the structure of other segments. Studies undertaken of complete chains (Barndt 2002, Dixon 2002, Pritchard and Burch 2003) are still rare because of the research necessary to grasp an entire filière.

With complete chain studies and the accretion of dozens of smaller-scale commodity analyses, comparative analysis has now become a possibility, albeit still somewhat limited. The present paper has undertaken a consideration of globality — the degree to which a commodity has become globalized — and the location within segments of a commodity system where economic concentration is taking place. Comparative analysis has proven its utility in other areas of the social sciences; the application to commodity analyses can open new areas of inquiry.

Future research will probably still not move heavily into complete commodity analyses but, with the increase in research on limited aspects of commodity life, the prospects for future comparative analysis will brighten. This paper has concentrated on only two aspects of analysis — globality and economic concentration. Future research should be able to comparatively examine other areas: the state and regulation, the internal organization of commodity systems, the politics of the various segments, and so forth.

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