Back to the land: the paradox of organic food standards

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Abstract. This paper examines how the rent-creating conventions that regulate organic food production undermine growers’ abilities to farm in a less intensive manner. The paper builds on a growing literature on food governance which points to the unintended consequences of standardization and their verification. The argument is based in theories of rent, with specific attention to how the constructed scarcity of organic food creates rents that are competed away or appropriated. The author also discusses how organic regulations may manifest in monopoly ground rents, especially given the attention paid to land in organic certification. Insofar as these rents pass through to land values, they contribute to a broader pattern of land valuation that pushes farmers to grow the most valuable crops in the most productive ways—an imperative that is not necessarily conducive to organic farming as it is generally envisioned.

In response to a spate of highly publicized food scares and other unseemly stories about the personal health and safety risks of contemporary food production, many (well-heeled) consumers are seeking solace in foods produced with less intensified and otherwise more transparent growing and husbandry practices. Although there are many possible approaches to countering industrial food, producing and eating organic food has come to constitute the primary alternative. Consequently, growth in organic food sales has been phenomenal, estimated to have reached $26 billion in global sales in 2001 (Baker, 2002).

In advance of this recent boom, a lot of work has gone into making ‘organic’ or ‘organically grown’ a tradable descriptor. Over the past thirty years, organic food producers have introduced and elaborated a complicated set of conventions to communicate to consumers the veracity and value of the organic claim. As the ‘mother of all ecolabels,’ as organic farming advocates like to say, the organic label is the only one that is legally codified and broadly recognized. Consequently, the organic system of regulation is increasingly used as a template for other groups of producers who want to make similar claims about their production practices. A growing number of so-called ecolabels compete with, but also bolster the market for, what Bell and Valentine (1997) call, ‘ethical foods’.

As a form of regulation, the organic system is inherently incentive based. The cornerstone of organic regulatory convention is third-party certification, a way to verify that producers grow according to organic standards. In return for compliance with these standards, producers expect to receive a price premium from consumers who are willing to pay the additional food costs for some peace of mind.

Having consumers pay the difference is surely problematic as a vehicle of regulation. The price premium attached to organic food contributes to the pervasive notion that its consumption is an elite practice (DeLind, 1993; Guthman, 2003a). Making risk management a matter of consumer choice rather than public choice is troubling as well (and an exemplary form of neoliberal regulation), as if it is sufficient to make a personal decision as to whether a particular material or practice constitutes harm.
(Guthman, 2003b). Also, as Clunies-Ross and Cox (1994) have argued, allowing sellers to offer organic food as a niche product implies that the nonorganic food by which it sits is acceptable. To be sure, it is the niche positioning of organic food that finally convinced the US Department of Agriculture (USDA) in 1997 that a federal rule for organic production would not disparage the rest of the food supply.

The problem I wish to explore in this paper, while related, is of a different nature. It is how the price premium enabled by organic regulation sets up some contradictory mechanisms vis-à-vis the dynamics of production. Whereas the price premium ideally recompenses the internalization of some environmental externalities (Lampkin and Padel, 1994) and provides economic space to remunerate the ‘real’ social costs of growing food, it fundamentally depends on scarcity. This scarcity is produced through the barriers to entry that certification establishes, including compliance with the standards themselves. In that way, the price premium constitutes a rent (Guthman, 1998). But rents are subject to both appropriation and competition, putting organic farming’s regulatory scheme at odds with the agronomic concerns organic farming is supposed to address.

In what follows, then, I take up the question of the contribution of organic certification to rent and what that means for organic production. I begin with a brief review of the recent literature on standards and certification, with specific attention to the unintended consequences of standardization and verification. Next, I provide a brief overview of the organic system of regulation, illustrating how it is designed to uphold a price premium. In the subsequent two sections I discuss the rent-generating potential of organic certification, beginning with how the new food standardization creates economic rents—overprofits in the marketing of some products based on constructed scarcity—and then monopoly ground rents, especially given the attention paid to land in organic certification. From there I turn to some of the current dynamics in the organic sector, reflecting on both the erosion and the appropriation of these rents, followed by a penultimate section on how these rents might pass through to land values. I conclude by examining the implications of high land values for the organic food system. Although my argument will apply in a general sense to the United States as a whole, I will make specific references to California where the processes to which I refer are particularly manifest. In support of my argument, this paper draws from field research conducted in 1995 and 1997–99. The research involved interviews with approximately 170 organic growers in California, as well as retailers, wholesalers, distributors, regulators, and other industry advocates.

The standard response
The primary response to recent trouble in the food supply has been a turn toward standards. Aside from the broader goal of harmonization in the interest of trade, standards, certification schemes, and labels all enable “action at a distance” (Whatmore and Thorne, 1997), that is, institutional as opposed to personalized ways to (re)establish trust in a given chain of food provision (Busch, 1997; Freidberg, 2003a; Sylvander, 1995). Standards, as Busch (2000, page 274) says, are a way of defining what is socially desirable and what is not, of disciplining people and things. To that end, standards either proscribe what are considered undesirable behaviors, uses, and/or processes, or prescribe those considered desirable, although most do a little of both. The aspect of standards that manufactures trust, however, is their oversight—those verification processes that are supposed to make food supply chains legible, traceable, and perhaps less risky. So to assess how standards work as governance, one must consider how they are verified, in addition to the substance of the standards themselves.
Lately, the efficacy of such standards and their verification have met a good deal of skepticism. For example, a study of HACCP, or Hazard Analysis and Critical Control Point monitoring, a system of surveillance that has become commonplace in meat-packing plants, shows that it provides the appearance of addressing food-safety issues but does little to prevent contamination in the first place (Gouveia and Juska, 2002). As Dunn (2003, page 1501) argues, standards and monitoring are an oblique way to address the risks of industrial food production. “Rhetorically, standards create a problem and provide an answer to it, while at the same time placing consideration of the effects of those standards in wider socioeconomic contexts out of the bounds of discussion.”

Even those standards (and labels) that are meant to construct alternative supply chains may provide window-dressing rather than go to the root of the problem. The organic label, for example, does not disallow the use of all potentially harmful materials, much less provide assurance that supply chains are substantially different than those found in conventional agriculture (Guthman, 1998). Fair Trade, which arguably does construct a different chain of value distribution, still depends on commercial marketing networks and conventions (Raynolds, 2002). Even as mere communication, these labels do not necessarily make the social relations of production all that transparent (Goodman, 1999). Ethicality becomes a fetish itself in that the consumer is left simply to trust that the label speaks for itself (Freidberg, 2003a; Guthman, 2004).

Beyond the superficiality of standards, recent research paints a troubling portrait as to their effects on food producers. As Dunn’s (2003) study of the Polish pork industry shows, attempts to impose harmony on an uneven geographic surface can have the effect of exacerbating differentiation among producers. Particularly because standards are designed by those with the most to gain by them, standards create barriers to trade by penalizing firms that developed in other institutional contexts. In her case, institutional barriers imposed by sanitary and phyto-sanitary (SPS) standards in the interest of EU ascension have pushed small Polish pork producers into reinventing a second market for meat. Ironically, this parallels the informal sector that eventually undermined the prior socialist economy.

Again, it is not only the standards themselves. As Freidberg (2003b) points out, the enforcement of standards can also have chilling effects. She discusses how hygienic and environmental protection standards adapted by British retailers have imposed unrecompensed costs and uncomfortable levels of surveillance (for example, guards who ensure that workers wash their hands) on southern African vegetable farmers. Some who formerly were relatively well integrated into European markets have been pushed out of the supply chain altogether. Likewise, organic certification has brought increased work responsibilities and oversight to Mexican coffee cooperatives (Mutersbaugh, 2002). It is particularly ironic when standards and monitoring systems developed to protect direct producers and workers fail to enroll their subjects in any meaningful way, as have some ‘sweat-free’ labels and monitoring programs (Esbenshade, 2001).

As critical as it is, this growing literature that questions food standards as a mode of regulation has yet to address in any systematic fashion how standards (and the labels that represent them) give rise to rents and how those rents affect the dynamics of production. To make up for this lacuna, in the rest of this paper I hope to show how proactive labels in particular are, by nature, rent generating and that the processes of verification allow these rents to materialize. What makes this aspect of standards problematic in regard to organic production is how the economic rents generated through certification are either eroded, appropriated, or passed through to land values. In all cases, the economic basis by which organic producers might farm in more ecological and humane, and even socially just, ways is undermined.
Organic regulation

At this point, organic production is the only legally codified approach to sustainable agriculture in the USA. The basic legal definition for organic crop production was put forth in the national Organic Foods Production Act of 1990. Based on what private certifiers had been doing for many years previously, the act prohibited the use of synthetic chemicals in organic production and handling (with certain exceptions), and selling crops grown on land to which any prohibited substances have been applied during the three years immediately preceding harvest. In response to complaints that organic regulation had come to encourage input substitution (see Buck et al., 1996; Rosset and Altieri, 1997), the federal rule for organic production, which was not implemented until late 2002, used a definition of organic production that drew attention to agronomic processes. As defined by the National Organic Program (2001), organic production is “a production system that is managed in accordance with the Act and regulations in this part to respond to site-specific conditions by integrating cultural, biological, and mechanical practices that foster cycling of resources, promote ecological balance, and conserve biodiversity.” Nevertheless, in practice the crux of the substance of organic regulation remains the avoidance of certain classes of inputs. In particular, the all-important National List itemizes and differentiates between allowable, restricted, and prohibited inputs for organic farming and processing.

Although the standards define organic production, they are enforced primarily through what is ostensibly third-party certification—a noninterested party verifying producer practices. Up until implementation of the federal rule in 2002, enforcement was uneven and chaotic. Some states required that their departments of agriculture certify producers; other states codified organic definitions into law but left enforcement up to private certifiers; still other states did not intervene at all, so that producers in their jurisdiction had only private certification as a way to establish legitimacy. California probably had the most baroque approach. Under the California Organic Foods Act of 1990, producers were required to register with the state’s organic program to use the organic designation; they could then certify with a private certifier on a voluntary basis. Among other problems, this arrangement embittered many growers who were certified before the state program began and felt that third-party certification was the only legitimate way to make an organic claim.

Were that not confusing enough, different certifiers had substantially different operating procedures, in addition to somewhat different standards for organic production. Some, for example, were organized as advocacy-oriented nonprofits and run by membership-elected boards of directors. Although these organizations tended to be more committed to the goals of the organic farming movement, their much heralded practices regarding peer review of standards and inspections amounted to what was technically second-party, not third-party certification. Others were private businesses that operated purely on fee-for-service bases. Within these agencies, employees made all certification decisions without any broader accountability. Although not one of the original intentions, one outcome of federal intervention was to harmonize procedures as well as standards among these agencies. Currently, all growers with sales over $5000 are required to be third-party certified. Furthermore, the USDA now accredits all certifiers.

The heart of organic certification is verification that producers are in compliance with organic standards. Certifiers are required to make initial, annual, and spot inspections, and occasionally sample crops, soils, and machinery for prohibited residues. They check that buffer zones between organic and conventional crops are acceptable and that prohibited substances that might be used in grower’s conventional operations (which are not proscribed!) are adequately segregated. Certifiers also review land-use history
and farm plans, the latter of which are intended to document that growers are doing more than just input substitution in their organic programs. If farmers are found not to be in compliance, they are denied certification, or, if they were once certified, they are decertified. Whereas certification and decertification used to be done solely at the certifier’s discretion, federal involvement has elicited a requirement of due process in certification decisions.

For the grower, certification entails considerable paperwork, including the farm plan. In addition, he or she pays various dues, fees, and assessments in accordance with the pricing structure of the certifier and, in the case of California, pays a fee to the state program, as well. And again, growers receive much more surveillance than they do as conventional growers. Although all elements can be onerous, the most economically difficult aspects are the challenge of growing certain crops in compliance with organic standards and the required three-year transition. During the transition period, for instance, many growers operate on a lower margin or even at a loss; yields generally decline at the initial withdrawal of conventional inputs, at the same time that crops must be sold at conventional prices. Consequently, both the transition period and the more general burden of meeting organic standards act as barriers to entry. In return for meeting these regulatory burdens, organic growers expect to receive a price premium for the crops they sell.

Advocates of organic farming argue that the organic price premium simply reimburses the incremental costs of farming in accordance with organic standards. They claim that organic food necessarily costs more to grow because organic regulations have the effect of internalizing the costs that have been increasingly externalized with modern farming (Lampkin and Padel, 1994). For example, having to forego synthetic fertilizers makes organic farmers subject to lower yields, although eventually organic practices are presumed to restore soil tilth and fertility. If all externalities were imputed into the costs of conventional agriculture, so the theory goes, organic food would seem a relative bargain. Although this argument has much to be said about it normatively, some portion of the price premium still represents an economic rent, subjecting it to rent-seeking dynamics. Let us investigate the nature of these rents.

**Economic rent**

An economic rent is an unusually high return to any factor of production. The concept draws from classical economic assumptions that markets are clearing, that is, that prices equilibrate supply and demand and, moreover, that perfect competition ensures that prices do not generally rise above costs plus a normalized profit margin. Therefore, only scarcity can give rise to rent. Any temporary overprofit would otherwise quickly be eliminated by the competition of new entrants.

Although scarcity is founded on supposedly rare inputs, this scarcity is always at least partially socially created. Even in the case of fertile land and other biophysical resources, the development, distribution, and valuation of these resources reflect material and ideological power. In this discussion, though, I am most interested in three types of scarcities, all of which are more clearly social: (1) consumption-based scarcities that result from consumers’ culturally constructed wants and needs (here, the classic example is the sports star whose valorization allows him to command an extraordinary salary); (2) production-based scarcities that arise from regulations that create industry-specific monopoly conditions; and (3) production-based scarcities that arise out of technological developments (so-called Schumpeterian rents after the economist Joseph Schumpeter).

The economic rents that are most relevant for the current discussion are consumption based. These superprofits stem from people’s willingness to pay more for certain
goods and services that are construed to be particularly desirable. Luxury foods such as caviar and truffles provide such rents precisely because they are scarce. Alternatively, producers have used brand names to create economic rents for mass-produced food.

Generally, though, it is not easy to construct these sorts of rents in food provision. Agriculture is competitive to the point of systematic overproduction, and there is little demand elasticity for food, meaning that consumers do not buy significantly more food as they become wealthier or prices drop (Cochrane, 1993). In effect, the introduction or promotion of a new food simply ‘cannibalizes’, or displaces, another. Furthermore, the intense price competition of the last two decades has eroded brand-name credibility, attested by the rise of supermarket generic brands and deep-discount food outlets, such as Costco in the United States (Fine and Leopold, 1994). Finally, the use value of food is so critical to industry qua social reproduction that cheap food is a social expectation, particularly when the social wage is low. Indeed, these days the brand name can be a guarantee of extremely cheap food, as exemplified in the case of fast-food restaurants where profits are made from market share and deep-discount wages.

Nevertheless, the importance of meaning and aesthetics even to the cognitive aspects of biophysical taste (Korsmeyer, 1999) provides some avenues for rent creation and appropriation in the food sector. For, if consumption involves consuming ideas, images, and symbolic meanings (Bocock, 1993), there is, as Fine and Leopold (1994, page 26) say, “a complex and shifting relationship between the two aspects of the use value of a commodity—its physical content and its interpretation.” The gap between a commodity’s (physical) use value and its imputed use value (image) is what Fine and Leopold call the “aesthetic illusion”, drawing from the work of Haug (1986). The use of this terminology is not to say that meanings are necessarily frivolous, imaginary, or fraught with conspicuous consumption—as Sayer (1997) says, aesthetic qualities may have actual use values to consumers—but to distinguish the metabolic use value of food analytically from its cultural content.

From time to time, agricultural producers have generated economic rents by focusing their efforts on so-called specialty crops, those that almost by definition reflect consumer demand for something beyond the standard commodities. In the last few decades, fresh fruits and vegetables have taken on particular economic importance, in large part because suppliers have catered to changing discourses about food (Arce and Marsden, 1994; Goodman and Watts, 1994; Jaffee, 1994). What makes these crops high value is how the advertising media, nutritional experts, supermarket displays, restaurant reviewers, cooks, and other arbiters of taste (and political sentiment) all construct desire.

Other new opportunities for rent seeking stem from attempts to instill trust in the food supply, when assurance becomes the symbolic value consumers most desire (Beardsworth and Keil, 1997; Thevenot, 1998). For, an important, if ironic, outcome of the ultracheapening of food is a growing fear of ingesting it, as so many food scares have been linked with such cheaply produced food. One way to generate trust is to give consumers more knowledge about the food in question, including where it comes from, how it gets to them (so-called biographies of distribution), and in what settings it can and should be used (Cook and Crang, 1996; also Arce and Marsden, 1994). In that way, the symbolic value added is transparency. Another way is to develop the image of wholesomeness, tradition, simplicity, or naturalness. The problem is that to give credibility to these appearances—to fill the gap of the aesthetic illusion—producers have to reincorporate these challenges to the food system by doing less (except, perhaps in the case of true craft production) (Beardsworth and Keil, 1997; Goodman and Redclift, 1991). Generally, it takes not only a label but also some sort of certification that
the commodity is made differently. In that way, the economic rent is really constructed in two steps: first, by the standards which do the discursive work of creating difference; then by the system of verification, that creates both trust and scarcity. It is really the latter step, then, that allows sellers to demand prices higher than the norm.

Not completely irrelevant to this discussion, then, are regulatory mechanisms that act as barriers to entry, which are effectively production-based scarcities. Although all sorts of regulations can affect industry structure, from safety codes to marketing orders to anti-trust legislation (Barham et al., 1994; Schumpeter, 1939), as Kaplinsky (2000) points out, in today’s political economy rent is often generated in the intangible parts of value chains. In that way, patents, copyrights, and other forms of intellectual property rights are sources of rent, insofar as they function as barriers to entry. By the same token, verifiable claims of difference (in production practices) are the basis of rent.

These sorts of production-based rents are distinct from those that result from technological innovation. In this final case, innovations that increase productivity give rise to a cost advantage for earlier adopters of the new technology. These Schumpeterian superprofits (also recognized by Marx) are quite temporary and disappear with more widespread adoption of the technology. For now, they are also only of minor interest.

Until recently, the organic system of regulation has done an impressive job of generating the first two sorts of economic rent. Not all commodities are more costly to grow organically—in fact some crops can be grown more cheaply in organic systems, as many California growers testified, yet prices, particularly at the retail level, reflect markups over conventional produce of 10% to 100%. The organic industry has benefited from a good deal of aesthetic illusion, drawing from the current discursive allure of the organic moniker as the best known antidote to industrialized food (for recent iterations see, for example, Michelsen, 2001; Morgan and Murdoch, 2000; Pollan, 2001). The seeming integrity and elaborateness of its standards—now widely regarded through the battles over the new federal rules—have given meat to its claims of difference, as well.

In the final analysis, though, it is the verification conventions (and, I would add, the cultural politics that surrounds them) that created the barriers that for a long time prevented rapid and prodigious entry, and thereby allowed producers to accrue economic rents. For a long period from the late 1970s to the early 1990s, many otherwise innovative conventional growers in California were put off by organic certification, both in terms of the bureaucratic requirements they had to meet and the distrustful attitude they encountered from the certifiers who they often characterized as countercultural. As told to me by such growers, many postponed or protracted their entry into the organic market until the newer business-oriented certifiers eased the way. Many others dropped out from the organic program altogether for these reasons.

For most of this same period, already existing organic growers enjoyed very comfortable profit margins. To protect these profits (and to ensure organic integrity), these long-time organic growers became especially keen to fortify barriers to entry (including extending the required transition period), as the sector started to expand in the 1980s. By the time I spoke with many of these growers in the late 1990s, their disdain for the new certifiers whose procedures had enabled quick and easy entry into the organic market was equal to their nostalgia for a gone heyday.
Ground rent

Because of its attention to land, the organic regulatory system also potentially contributes to ground rents. Ground rent is a payment on land as a factor of production. In keeping with the concept of economic rent, ground rent exists because land is a scarce and monopolizable resource (indeed it is scarce because it is monopolizable). Nevertheless, here I want to acknowledge that many would argue that classical theories of ground rent are incommensurable with neoclassical understandings of economic rent. Not only are these two theoretical traditions at ontological odds, they use rent in quite different ways. (My purpose in reviewing this literature on ground rent is not to wade in on these overly contested technicalities, but to pluck some basic insights regarding the unintended consequences of a certification scheme that is at least partially land based.) In the first tradition (starting with Ricardo and moving on to Marx), rent is conceived as a form of surplus appropriation specific to landed property as a class (although it can be appropriated away by others) (Fine, 1979).

In the second, rent refers to a temporary overprofit that can prevail in any sector, but is typically competed away.

The key point of contention is that classical theories of prices insist on a labor theory of value—that value is based in production, that the origin of profits lies in the difference between the value of the goods that workers produce (roughly, the price of goods as recognized in the market) and the value that is paid to them in the form of wages. The problem that so vexed Marx and his classical predecessors, then, was how to conceptualize payment to unimproved land, known as ground rent, as it embodied no socially necessary labor time (Harvey, 1982). The answer, they decided, lies in the power of landed classes to withhold the scarce and vital resource of land. Indeed, the reason that ground rent occupied so much attention in classical political economy was precisely because landed property was so dominant in earlier phases of agrarian capitalism. What is called absolute rent, then, arises out of monopoly conditions of land holding (scarcity) and the collective ability of landowners to exercise market control over land (Ball, 1980; Harvey, 1982).

Nevertheless, a labor theory of value does not exclude the possibility of a temporary excess profit in selling a good based on scarcity. So although these two concepts of rent cannot be used interchangeably, it is not incoherent to apply the notion of economic rent to a political economy of food standards. Indeed, what I hope to show specifically is that these two concepts of rent articulate in food labels that make some claims about the land on which it was grown, the basis of monopoly ground rent. For even as Harvey has more recently pointed out (2001, page 410), it is in search of monopoly rents that, if producers cannot establish a claim of uniqueness, they will find “other modes of distinction to establish monopoly claims and discourses to guarantee the truth of those claims.”

To be sure, in monopoly rent we see a clear parallel to the concept of consumption-based economic rent. Although technically a form of ground rent, monopoly rent derives from the differential prices of that which is grown on the land. That is, the rent is based on a return that the producer gets in the market, which in the first instance is independent of the relationship with the landowner. In this case, the producer of the agricultural commodity has the monopoly and can sell it at a monopoly price (Ball, 1980; Harvey, 1982). What is effectively an economic rent turns into ground rent when the producer must pay the asking price for renting the land, to continue to grow a commodity to sell. Monopoly rent thus represents a kind of scarcity of land with the ability to produce commodities of special quality.

Ground devoted to relatively scarce specialty crops thus receives monopoly rent, although many specialty crops eventually become commonplace (witness kiwis),
reducing or eliminating their associated rents. Some monopoly rents are particularly robust, however. Monopoly rents are much more stable when the land itself is deemed to be of exceptional quality in its location or agronomic properties. Napa Valley vineyards, for example, exact unusual monopoly rents, because it is the Napa appellation (that is, the wine bottle label) that drives the market in land. Other legally controlled appellations or codified significations of scarcity, locality, or craft expertise have similar powers. In other words, legally fortified barriers to entry make for more durable forms of economic rent and, hence, monopoly rent.

Ricardo and Marx also recognized the possibility of ground rents based on differential costs of producing the same product (a production-based rent). Differential rents (or Ricardian rents) derive from the potential to produce more on better land. In strictly Ricardian terms, then, agricultural rents are solely differentiated by so-called natural qualities, generally having to do with soil quality, access to irrigation water, and climate. Since commodity prices are set by the production costs on the least fertile land, all else being equal (including farmer knowledge), land with higher productivity translates into surplus profits for farmers on that land. Yet, if better land fetches higher profits, landowners will intervene to appropriate those extra profits, having the power to release the farmer from that land altogether. So, differential rents come into being because landowners appropriate farmer surpluses.

Marx also talked about a second type of differential rent, which arises from the unequal application of capital to improve land quality (Harvey, 1982). This is a more socially derived differential, because fertility is enhanced by investment in land improvement and/or infrastructure that improves profitability (such as irrigation works). And, as Harvey notes, other spatial factors besides land quality can create differential rents. For instance, when the costs of transporting products to market are reduced by better location, the higher productivity in transport labor gives rise to differential rent. Investment in water infrastructure has similar effects (Walker, 1974).

It is worth pondering in what ways these categories of ground rent apply to organic certification. At first glance, one might assume that the process of becoming an organic grower creates the second type of differential rent, as claimed in Buck et al (1997). The effort spent in the beginning of an organic program on, for example, cover cropping, composting, and hand cultivation seems an investment in soil tilth and fertility, although many new organic growers do not follow such an intense program of soil improvement, instead replacing disallowed synthetic fertilizers with allowable organic ones (for example, sodium nitrate and purchased compost) (Guthman, 2000). In addition, considerable attention is paid to the parcel of land in the grower certification process. Certifiers determine, for example, the existence of some sort of soil-improvement program, whether there are toxic residues in the soil, and when a prohibited substance was last used. And the certificate itself describes that exact location of the parcel. One could even argue that what is ultimately being certified is the piece of land. For once land is certified, it can be passed on to the next buyer or lessee who does not need to make the initial investment, whereas, if a certified organic grower moves to a new piece of land, he or she must start the transition to organic farming all over again.

Nevertheless, what makes already certified land a marketable improvement is the ability to grow crops that receive a price premium, a consumer-based economic rent. The investment in certification makes the land suitable to production of a scarce commodity, and does not enhance productivity or reduce costs per se (although some farmers in some commodities claim that they save on costs with organic production). Particularly insofar as the basis of the rent lies in claims that the land is less intensely worked the rent must be other than a differential rent. But by enabling an
economic rent, the certification process eventually translates into monopoly ground
rents when landowners stake their claims to the surplus profits that their land helps
generate.

There is evidence in California that this conversion of economic rents into monop-
oly ground rent is beginning to occur. Many interviewed growers expressed reluctance
to grow organically on leased land for fear that landowners would raise their rents
were they to note higher crop values. Conversely, in a few cases landowners sought out
organic growers or asked existing lessees to convert to organic production precisely to
share the premiums to be had. Finally, I noted at least two instances where already
converted organic land fetched a higher lease cost than otherwise similar land in the
same area.

### Competition and appropriation in the organic sector

Organic producers have counted on economic rents to enable them to farm less
intensively by, for example, rotating fertility-enhancing cover crops with their cash
crops, or allowing flowering weeds to grow to attract beneficial insects to their farm.
This is not to say that all organic farmers follow these practices; many do as little as
possible to be legally organic (or even cheat) to get the premium. This raises the issue
of the overall stability of these rents given the dynamics that rents induce.

As suggested above, economic rents are not a sure bet. Most forms of rent are
temporary, particularly for direct producers. Consumption-based and technology-
based rents almost always disappear because of competition. At first, firms with a
novel, valorized commodity see premium prices; new firms are attracted to the above-
normal price as they enter into production of that commodity; thereafter, scarcity
diminishes, prices fall, and rent is eroded. Or, as with the case of a new technology
(giving rise to a production-based rent), early adopters see above-normal profits as
their productivity is enhanced while prices stay the same; as more firms adopt the
technology, price competition ensues and profits return to normal. Such rent seeking
is trickier, of course, when there are barriers to entry, including regulations that allow
the other form of production-based rents. Firms may attempt to skirt existing entry
barriers, but often these barriers can sustain scarcity for a while and, thus, sustain
monopoly prices, as occurred in the organic sector during its formative years.

Alternatively, rents may disappear because of appropriation. We have already
reviewed how landowners’ appropriation of economic rents (and productivity differ-
entials) gives rise to ground rents. Here it should be noted that the ground-rent relation
is not only between capitalist farmers and landowners; the rent relation can take many
different forms, dependent on the historical relations of landed property (Fine, 1979).
Owner-occupancy, the form of tenure most prevalent in the USA, does not necessarily
eradicate the rent relation. Usually owner-occupiers either receive rent in the capital-
ized form of a selling price for land, or they pay it through land purchase (Ball, 1980,
page 304). In either case, owner-occupancy often conceals a mortgage or credit rela-
tion. Even in the case of freehold land, where land is handed down from generation
to generation, “the income forgone by virtue of the fictitious capital locked up in the
'value of the land cannot be cavalierly thrust aside’” (Harvey, 1982, page 365).
Finally, nonlanded capitals can appropriate rents, including suppliers of seeds and
other seemingly necessary inputs, processors, distributors, retailers and other buyers,
and, of course, agricultural lenders (Fine, 1994; Goodman et al, 1987). Even those
more durable rents—those upheld by barriers to entry—eventually may be redistrib-
uted to other actors in the chain of provision, especially those who can exercise some
monopoly control.
Because organic regulations have constructed both consumption-based and production-based rents, one sees erosion from both competition and appropriation within the organic sector. Indeed, rent seeking has driven much of the sector’s growth since the early 1980s. Of the 105 California growers I interviewed in 1997–98 who had converted partially or wholly to organic production, 44 (a plurality of those interviewed) explained that their primary reason to attempt organic production was in search of higher commodity prices or more value per acre. In addition, many more growers hinted of similar motivation, offering that organic farming was a cheaper way to grow or that buyers had offered a good price. Yet, because of the rapid entry of such growers, farm-level prices for certain organic commodities dropped considerably during the 1990s, in keeping with the theory of economic rent. The effective elimination of the price premium that used to support organic growers embittered many old-timers.

Much of this rapid entry occurred because barriers to entry for organic production proved surmountable. For instance, in California, the major center of the organic fresh market, the required transition period was only one year until 1995, at which time it graduated to three years by 1997, at the insistence of already existing organic growers. Nevertheless, many farmers entered into organic production just before the transition period was extended. Since then, many entries have occurred on abandoned and/or fallow land as explicit efforts to skirt the barrier of a transition period. Even more significantly, many institutional buyers paved the way for new growers to enter at little cost, by actually paying the costs of transition or buying their crops while in transition. In that way and others, the erosion of price premiums was not entirely a result of competition. For, what happened concurrently was the growth and consolidation of large buyer firms, which created a highly oligopsonistic industry structure. Some of this restructuring was homegrown from the organic sector: firms that were in on the ground floor and expanded their operations over time. The quintessential example in this regard is California-based Earthbound Farms/Natural Selection Foods, which began as a two-acre market garden and now dominates the US organic fresh vegetable market, with well over 10,000 acres in its direct production or under contract. So meteoric was Natural Selection’s rise that several of its erstwhile competitors in the lucrative area of growing–shipping are now contractors to Natural Selection.

Other buyer firms are multinational food corporations that entered late into the organic sector, such as General Mills, the parent company for many organic brands (for example, Muir Glen, Cascadian Farms). Whether homegrown or newly arrived, these firms grew primarily by recruiting conventional growers to produce one or two organic commodities on a contractual basis. Along the way, farm-gate prices were cut considerably to the extent that some contract growers left the organic arena because it was no longer profitable. Meanwhile, many of the retail chains specializing in natural foods became important (and consolidated) buyers themselves. Whole Foods, for example, is one of the most successful retail chains in the USA, and was recently added to the list of the 100 largest NASDAQ companies (Hart, 2003). Neither do these retail firms want to work with small individual farmers any more, granting grower–shipper firms that can sell and distribute on a large scale such as Natural Selection even more market share.

The astounding success of the major buyer firms speaks to a remarkable degree of appropriation in the organic sector by other firms, overshadowing that by landowners in the form of monopoly ground rents already noted. To be sure, even land-owning organic farmers saw premiums diminish (or never saw them in the first place) during this period. Many of these freehold growers were very small owner-operated orchards and groves that sell marginal fruit to the processing market as supplemental income. Buyers of these crops are notorious for their low farm-gate prices, even though
they sell the finished product with an organic label that still sees premiums in retail markets. For their part, these growers were happy to rid themselves of the stuff, some farming only for agricultural tax breaks. What this case suggests is weakness on the part of this particular subsector of landowning farmers relative to these intermediary firms.

At the same time, some landowning growers were using their organic designation to attract credit. Furthermore, those who market independently—the exceptions that prove the rule—were continuing to do quite well financially. Their success, however, was dependent on highly intensive modes of crop rotations and a selection of highly desirable crops. This last point suggests that economic rents may still pass through to land, with perverse effects for the logic of organic production.

**Back to the land: rent, land values, and the production treadmill**

Rent is broadly the basis of land valuation. In Marxian economics, “ground-rent, capitalized as the interest on some imaginary capital, constitutes the capitalized value of land.” What is bought and sold is not the land, but title to the ground rent yielded by it (Harvey, 1982, page 367). Neoclassical economics similarly interprets the selling price of land as the capitalization of future values, including rents to be received, discounted by an assumed rate of interest. Assuming a relatively uniform grain-based cropping pattern, the market value of any given parcel of land would therefore be directly related to the capitalization of crop value, as realized through rent payments.

Three critical features of contemporary agricultural land markets substantially alter these basic land-valuation mechanisms: rapid technological innovation, specialty cropping, and commercial and residential development. All add a temporal dynamic to land values by unleashing the potential to get more income from a piece of land in the future. For, as land becomes a vehicle of speculation vis-à-vis future uses, it exerts upward pressure on land values in the present (Harvey, 1982, page 368; Shoemaker, 1989, page 43). Consequently, the expectation of rising land values affects production practices in the present. So, even if economic rents remain stable, growers are forced, essentially, to keep up with the Joneses.

The effects of rapid technological innovation on land markets is related to the concept of differential rent, as it interfaces with a highly developed agrarian capitalism. Because surplus profits are likely to be appropriated by landowners, rates of profit among agricultural producers tend to equalize (Fine, 1979). Farmers must then compete on the basis of new methods rather than the fortune of having better land (Harvey, 1982, page 361). As discussed earlier, productivity-enhancing innovation cuts costs at the margin; whoever adopts first gets more profit for the same amount of land (Schumpeterian rents). Although price competition eventually erodes these super-profits, those who fail to adopt are squeezed out of the market altogether when they become wholly unprofitable. The more productive technology then becomes the norm. In that way, landowner appropriation is one of the driving mechanisms of agricultural intensification.

Yet, in fully developed land markets landowners have certain incentives to see improvements to land. No longer will they draw off all productivity gains, if they recognize that long-run cooperation with capitalist producers will raise the overall value of land as the revenue basis increases (Harvey, 1982). So, not only do growers innovate to keep from being put out of business; landowners encourage such innovation in anticipation of future rents. In that way, the technological treadmill, at least as it has transpired in the USA, contributes to secularly rising land values (Strange, 1988).
Coastal California represents an extreme example of this process. In part because of year-round temperate weather (moderated by cool ocean breezes) and in part because of heavy doses of synthetic nitrogen and innovations that speed up crop turnover (such as greenhouse and transplanting operations), coastal growers are able to harvest three to five rotations of crops per year, and land is capitalized on this presumption. The cycle of innovation reflects a bargain between highly innovative growers and rent-seeking owners (FitzSimmons, 1986). These large vegetable and field-crop growers are expected to innovate; in return, they survive on scale economies, with many farming upwards of 1000 acres. They are exactly the sort of growers converting to organic production at the behest of buyer firms, precisely to meet the rent demands of landowners, some of whom were once farmers but no longer have to farm to make a living.

Specialty cropping affects land values in much the same way, except that land values are based on the capitalization of monopoly rent, reflecting the relatively high margins of specialty commodities. Based on the same copycat logic, it follows that land devoted to specialty crop production is usually capitalized on the basis of the ‘highest and best’ crop. In California, for example, agricultural land values have risen steadily relative to the rest of the USA, as figure 1 shows, precisely as more land becomes devoted to specialty crops (in addition to those innovations that allow multiple crops per year). Moreover, because various specialty crops are valued differently in the marketplace, agricultural land in different regions within California is assessed quite differently depending on the model crop grown there, as shown in table 1. Once these

Table 1. Agricultural land values by crop and region in 1999 (source: Cal ASFMARA, 2000).

| Region                | Crop                  | Value ($ per acre)$^a$ |
|-----------------------|-----------------------|------------------------|
| Central coast         | truck crops and vegetables | 27,000                 |
| Southern California   | oranges               | 16,000                 |
| San Joaquin Valley    | orchards              | 9,000                  |
| Sacramento Valley     | rice                  | 2,450                  |
| San Joaquin Valley    | extensive field crops | 4,250                  |

$^a$Figures reflect middle of the range.
valuations become standard, though, growers have little choice but to grow a crop with at least as much market value. And with more stable monopoly rents, such as appellations, the difference in land values between such designated land and that devoted to commodity crops is extreme. For example, premium wine acreage in California’s Napa Valley routinely sells for more than $100,000 per acre (Burnham, 2000), whereas field-crop land in less advantaged areas sells for $2000 to $3000. It would be folly to plant barley in the Napa Valley in lieu of wine grapes.

Finally, urbanization drastically revalues agricultural land situated in the shadow of cities. The potential of future commercial development is always imputed into agricultural land values; where agricultural land abuts a rapidly growing urban fringe, the difference between capitalized crop value and assessed land values can be marked. Moreover, whereas the urban influence on agricultural land values has affected only 17% of all US acreage, it affects almost all of California’s harvest acreage (Blank, 2000, page 4). This, too, exerts pressure on agriculture, albeit the source is external to agriculture. Among other things, the logic of ‘highest and best use’ forces agriculture to compete with other land uses and/or act as a holding place for future development. Many growers thus affected intensify production to the limit. In fact, farmland preservation advocates propose intensification or high-value market gardening as a way to protect farmland (Daniels and Bowers, 1997).

In many cases, more than one of these dynamics is operative. Strawberry production in California provides an example that combines all three. Strawberry land is some of the most expensive land in California, despite the strawberry’s compatibility with sandy soil and sloped ground. First, strawberry productivity has been largely enhanced by varietal improvement, allowing fruit to be grown ten months per year in the coastal areas of California. This increases the revenue base per acre of land by extending it temporally. In addition, the widespread use of piece-work wages ensures care and commitment and, hence, less shrinkage (Wells, 1996). Second, strawberries are also a high-value crop because strawberries have been represented as sweet and nutritious, a quintessential summer fruit (despite the changes in production practices). The market value of strawberries compensates for the tremendous labor required to grow and harvest strawberries, although it also give rise to monopoly rents. Finally, strawberries are grown precisely in the areas facing the most development pressure, as the coastal zones are also desirable for housing. Growers choose strawberries to meet high lease costs—in some rapidly growing areas (for example, Oxnard, Irvine) strawberries are the only remaining crop grown amidst the construction—but at the same time are constantly looking to increase productivity to survive in such an environment. In other words, the contribution of strawberries to rising land values feeds back onto agricultural producers in a treadmill effect, illustrating again how high land values can lead to intensification as well as the reverse.

Likewise, as a basis of monopoly rent, the organic designation has this potential to manifest in higher land values, particularly insofar as the creation of market scarcity is bound up with the scarcity of certified land. At this point, there are insufficient data to track whether organic regulation has actually had these effects in California, although there are anecdotal reports of certified organic land turning over at above market prices. But, again, many conversions to organic production thus far have skirted the land-based barriers to entry. As these possibilities dry up, or receive more regulatory oversight, the value of certified (or certifiable) organic land could increase substantially. Nevertheless, many California growers enter into organic production as a response to already existing high land values. This says something about the treadmill that could ensue.
**Conclusion: the paradox of organic standards**

Current research has hardly exhausted the evaluation of food standards and their verification. Nevertheless, there is a growing body of evidence that, as a response to an increasingly distrustful public, the new food standards pose some thorny problems. Some elide what they are supposed to solve by drawing attention to monitorability or traceability of the food supply without addressing the underlying causes of increased risk. Almost all affect industry structures by favoring those players, many of whom were involved in creating the standards, who can most easily attain them. And, if the standards themselves fail to create an even playing field, the processes of verification can be even more troubling, imposing economic costs and discomfiting levels of surveillance on those who have least to gain. Even those standards that are supposed to effectuate alternative systems of food delivery potentially share these pitfalls, although there still may be overriding benefits. But what is fundamentally troubling about these proactive standards is that their efficacy turns on rents, the dynamics of which can undermine the behaviors that the standards are intended to produce.

No case illustrates this paradox more clearly than the regulation of organic foods, the prototype of this new sort of governance. The purpose of the original organic standards was to allow then-existing organic growers to differentiate themselves in the market, precisely so consumers would pay more for an organically grown commodity. The barriers to entry inherent to the standards and their verification made organic food relatively scarce, holding up the economic rents implicit to the price premium. Such is the point of incentive-based regulation, which rewards those who are willing to do the extra work. Yet, these rents are based on legally constructed barriers to entry and socially constructed preciousness, hardly a recipe for the spread of sustainable agriculture. Furthermore, because economic rents are the more ephemeral portion of profits, they are inherently dynamic and subject to competitive erosion, or appropriation by others in the chain of provision. Either way, they become a dubious basis of ecological sustainability, as organic producers are expected to grow food in a kinder and gentler manner (which might reduce their yields) at the same time that their premiums become unreliable.

Yet, the crucial piece is that processes of certification that focus on land pass these rents onto land in the form of monopoly ground rent. In that way, organic regulation contributes to already existing dynamics of land valuation, such that the future is always anticipated in the present. Land is generally assessed at the highest and best crop, grown with state-of-the-art technologies. Threats of commercial development add an additional premium to agricultural land. It is telling that many growers enter into organic production precisely as a response to the squeezes that ensue.

The problem is that the land value spiral affects organic practices, as well, as land values effectively shape what can be grown and how. So, for example, growers who might otherwise farm in a less intensive manner, say by rotating marginal value crops as a way of restoring soil fertility, are constrained in doing so in a high-rent market. Indeed, successful organic growers—those who market independently and still see price premiums—already intensify to a high degree, constantly rotating high-value cash crops into production. In other words, higher land values—potentially driven by organic regulation—raise the cost of doing business and lessen the opportunities to replenish biophysical systems, in utter contradiction to the ostensible purpose of organic farming. In that way at least, the standards that once seemed to offer a way out of the logic of intensification seem to have failed.
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References
Agriculture Research Service, 1958, “Current developments in the farm real estate market: November 1957 – March 1958”, US Department of Agriculture, Washington, DC
Arce A, Marsden T, 1994, “The social construction of international food: a new research agenda” Economic Geography 69 293 – 311
Baker L, 2002, “The not-so-sweet success of organic farming”, http://www.salon.com/tech/feature/2002/07/29/organic/index.html
Ball M, 1980, “On Marx’s theory of agricultural rent—a reply to Ben Fine” Economy and Society 9 304 – 326
Barham B, Bunker S G, O’Hearn D, 1994 States, Firms and Raw Materials: The World Economy and Ecology of Aluminium (University of Wisconsin Press, Madison, WI)
Beardsworth A, Keil T, 1997 Sociology on the Menu (Routledge, London)
Bell D, Valentine G, 1997 Consuming Geographies: We Are Where We Eat (Routledge, London)
Blank S C, 2000, “Some facts about farmland values” Agriculture and Resource Economics Update 3 (Summer) 3 – 4
Bocock R, 1993 Consumption (Routledge, London)
Buck D, Getz C, Guthman J, 1996, “Consolidating the commodity chain: organic farming and agribusiness in northern California”, Development Report 11, Institute for Food and Development Policy, Oakland, CA
Buck D, Getz C, Guthman J, 1997, “From farm to table: the organic vegetable commodity chain of northern California” Sociologia Ruralis 37 3 – 20
Burnham T J, 2000, “Liquid assets” California Farmer, 29 – 30 November, pages 32, 34, 36, 38
Busch L, 1997, “Grades and standards in the social construction of safe food”, paper presented at The Social Construction of Safe Food, Norwegian Technical University, Trondheim, http://www.me.u.edu/user/ifas/papers.html
Busch L, 2000, “The moral economy of grades and standards” Journal of Rural Studies 16 273 – 283
Cal ASFMARA, 2000, “Land and lease values”, http://www.calasfmra.com/landvalues/2000/
California Organic Food Act, 1990 Cal ALS 1262; 1990 Cal AB 2012; Stat 1990 chapter 1262
Clunies-Ross T, Cox G, 1994, “Challenging the productivist paradigm: organic farming and the politics of agricultural change”, in Regulating Agriculture Eds P Lowe, T Marsden, S Whatmore (David Fulton, London) pp 53 – 74
Cochrane W W, 1993 The Development of American Agriculture (University of Minnesota Press, Minneapolis, MN)
Cook I, Crang P, 1996, “The world on a plate: culinary culture, displacement and geographical knowledges” Journal of Material Culture 1 131 – 154
Daniels T, Bowers D, 1997 Holding Our Ground: Protecting America’s Farms and Farmland (Island Press, Washington, DC)
DeLind L B, 1993, “Market niches, ‘cul de sacs’, and social context: alternative systems of food production” Culture and Agriculture 47 7 – 12
Dunn E, 2003, “Trojan pig: paradoxes of food safety regulation” Environment and Planning A 35 1493 – 1511
Economic Research Service, 2000, “Farm real estate values”, Statistical Bulletin, 855, http://www.ers.usda.gov
Esbenshade J, 2001 The Social Accountability Contract: Private Monitoring and Labor Relations in the Global Apparel Industry PhD dissertation, Ethnic Studies, University of California, Berkeley, CA
Fine B, 1979, “On Marx’s theory of agricultural rent” Economy and Society 8 241 – 278
Fine B, 1994, “Towards a political economy of food” Review of International Political Economy 1 519 – 545
Fine B, Leopold E, 1994 The World of Consumption (Routledge, London)
FitzSimmons M, 1986, “The new industrial agriculture” Economic Geography 62 334 – 353
Freidberg S, 2003a, “Cleaning up down south: supermarkets, ethical trade, and African horticulture” Journal of Social and Cultural Geography 4 27 – 42
Freidberg S, 2003b, “Culture, conventions and colonial constructions of rurality in south-north horticultural trade” *Journal of Rural Studies* **19** 97 – 109

Goodman M, 1999, “Developmental consumption: embedding relationships of the international organic food commodity”, paper presented at Conventional and Organic Agriculture—Encounters at the Interface, University of California, Santa Cruz, CA; copy available from the author, University of Southern California, Los Angeles, CA

Goodman D, Redclift M, 1991 *Refashioning Nature* (Routledge, London)

Goodman D, Watts M, 1994, “Reconfiguring the rural or fording the divide” *Journal of Peasant Studies* **221** 1 – 49

Goodman D, Sorj B, Wilkinson J, 1987 *From Farming to Biotechnology* (Basil Blackwell, Oxford)

Gouveia L, Juska A, 2002, “Taming nature, taming workers: constructing the separation between meat consumption and meat production in the US” *Sociologia Ruralis* **42** 370 – 390

Guthman J, 1998, “Regulating meaning, appropriating nature: the codification of California organic agriculture” *Antipode* **30** 135 – 54

Guthman J, 2000, “Raising organic: an agro-ecological assessment of grower practices in California” *Agriculture and Human Values* **17** 257 – 266

Guthman J, 2003a, “Fast food/organic food: reflexive tastes and the making of ‘yuppie chow’” *Journal of Social and Cultural Geography* **4** 43 – 56

Guthman J, 2003b, “Eating risk: the politics of labeling transgenic foods”, in *Remaking the World: Genetic Engineering and Its Discontents*. Eds R Schurman, D Takahashi-Kelso (University of California Press, Berkeley, CA) pp 130 – 151

Guthman J, 2004, “The ‘organic commodity’ and other anomalies in the politics of consumption”, in *Geographies of Commodity Chains*. Eds A Hughes, S Reimer (Routledge, London) forthcoming

Hart P, 2003, “Hitting the organic jackpot by making shopping a state of mind, the whole foods market chain has become a giant among natural-foods retailers” *Boston Globe* 16 March, page 10

Harvey D, 1982 *Limits to Capital* (University of Chicago Press, Chicago, IL)

Harvey D, 2001 *Spaces of Capital* (Routledge, New York)

Haug W, 1986 *Critique of Commodity Aesthetics: Appearance, Sexuality and Advertising in Capitalist Society* (Polity Press, Cambridge)

Jaffee S, 1994, “Exporting high-value commodities”, DP 198, World Bank, Washington, DC

Kaplinsky R, 2000, “Globalization and unequalisation: what can be learned from value chain analysis?” *Journal of Development Studies* **37** 117 – 146

Korsmeyer C, 1999 *Making Sense of Taste: Food and Philosophy* (Cornell University Press, Ithaca, NY)

Lampkin N, Padel S (Eds), 1994 *The Economics of Organic Farming* (CAB International, Wallingford, Oxon)

Michelsen J, 2001, “Recent development and political acceptance of organic farming in Europe” *Sociologia Ruralis* **41** 3 – 20

Morgan K, Murdoch J, 2000, “Organic vs. conventional agriculture: knowledge, power and innovation in the food chain” *Geoforum* **31** 159 – 173

Mutersbaugh T, 2002, “The number is the beast: a political economy of organic-coffee certification and producer unionism” *Environment and Planning A* **34** 1165 – 1184

National Organic Program, 2001, “Definitions—regulatory text”, http://www.ams.usda.gov/nop/NOP/standards/DefineReg.html

Organic Foods Production Act, 1990, P.L. 101-624, title XXI, §2102, 104 Stat 3935, short title 7USC §§6501 et seq.

Pollan M, 2001 *The Botany of Desire* (Random House, New York)

Pressly T J, Scofield W H (Eds), 1965 *Farm Real Estate Values in the United States by Counties, 1850 – 1959* (University of Washington Press, Seattle, MA)

Raynolds L, 2002, “Consumer-producer links in Fair Trade coffee networks” *Sociologia Ruralis* **42** 404 – 424

Rosset P M, Altieri M, 1997, “Agroecology versus input substitution: a fundamental contradiction of sustainable agriculture” *Society and Natural Resources* **10** 283 – 295

Sayer A, 1997, “The dialectic of culture and economy”, in *Geographies of Economies*. Eds R Lee, J Wills (Arnold, London) pp 16 – 26

Schumpeter J, 1939 *Business Cycles* (McGraw-Hill, New York)
Shoemaker R, 1989, “Long run determinants of land values”, Situation and Outlook Report, Agricultural Resources, Agricultural Land Values and Markets Economics Research Service, US Department of Agriculture, Washington, DC
Strange M, 1988 Family Farming: A New Economic Vision (University of Nebraska Press, Lincoln, NE)
Sylvander B, 1995, “Conventions de qualité, concurrence, et coopération: cas du ‘label rouge’ dans la filière volailles” [Conventions of quality, competition, and cooperation: the case of the ‘red label’ in the poultry commodity chain], in La Grande Transformation de l’Agriculture: Lectures Conventionalistes et Régulationnistes Eds G Allaïre, R Boyer (Economica, Paris) pp 73 – 96
Thevenot L, 1998, “Innovating in ‘qualified’ markets: quality, norms, and conventions”, paper presented at Workshop on Systems and Trajectories of Agricultural Innovation, Institute of International Studies, University of California, Berkeley, CA; copy available from the author, École des Hautes Études en Sciences Sociales, Paris
Walker R, 1974, “Urban ground rent: building a new conceptual framework” Antipode 6 51 – 59
Wells M, 1996 Strawberry Fields: Politics, Class, and Work in California Agriculture (Cornell University Press, Ithaca, NY)
Whatmore S, Thorne L, 1997, “Nourishing networks: alternative geographies of food”, in Globalising Food: Agrarian Questions and Global Restructuring Eds D Goodman, M J Watts (Routledge, London) pp 287 – 304