Opposition between ‘community’ and ‘market’ originated with nineteenth-century social theorists like Marx (1867) and Tonnies (1887), who contrasted the modern, capitalist world with a preceding feudal or communal world. The modern world was seen as rational, efficient, and progressive. Economic activities were coordinated by the market and economic agents responded to prices. In contrast, the earlier communal world was seen as irrational and stagnant. Tradition governed economic behavior and thwarted progress. Redistribution rather than growth was the goal. The replacement of ‘community’ by ‘market’ was essential for economic progress. These views have been elaborated in the twentieth century by Polanyi (1944), Geertz (1963), and Scott (1976).

Agrarian organization was the prime example of this dichotomy. In this case, ‘community’ meant the open field village. Open field agriculture was widespread (but not universal) in England and on the continent. Settlement in open field areas was in nucleated villages rather than dispersed farms and hamlets. Each farmer’s land consisted of strips scattered uniformly around the village. The strips were grouped in great fields (usually two or three), which served as crop rotation units. In the case of the three field system, for instance, all the land in one field was planted with a winter grain (wheat or rye), another was planted with a spring crop (oats, barley, beans, or peas), while the third was left fallow. In addition to the arable, there was some meadow and rough pasture. The latter was owned collectively and managed as a common on which the village livestock was grazed. The village herd was also grazed on the fallow field and the cropped fields after the harvest. In this way, the land was fertilized and weeded. While there were elements of private ownership in this system—each farmer owned particular strips in the fields—there were significant communal aspects: The common pasture was collectively owned and managed, and the village herd was also grazed in common on the fallow field. For that to happen, all of the

I would like to thank Masahiko Aoki, Hans Binswanger, Marcel Fafchamps, and Yujiro Hayami and other participants at the World Bank Conferences in Paris (1998) and Stanford (1999) for their comments and discussion.
farmers had to follow the same crop rotation, and that was regulated by the village community often under the aegis of the manorial court.

A long tradition regards the open field village as hidebound and resistant to progress. In Ernle’s (1912: 199) memorable phrase, ‘open-field farmers were impervious to new methods.’ In this view, agricultural progress required the elimination of village control through enclosure. In an enclosure, commons were abolished, land ownership was consolidated, and the institutions of communal management were abandoned. Each landowner or his tenant farmer could use the land as he saw fit. Enterprising farmers could no longer be held back by a hidebound peasant majority opposed to progress. The overstocking of commons was also eliminated. When communalism ended, progress began.

This essay presents an alternative interpretation of the open fields based on the historical research of the last thirty years. The guiding idea of this research is that the open fields were an efficient institution for meeting the needs of small scale, grain growing farmers. These needs included diversification against the risk involved in grain production and increasing agricultural productivity.

McCloskey (1972) has championed the view that the scattered landholdings in the open fields can be explained as diversification. Land was not uniform, so the productivity of different parts of a village’s land responded differentially to variation in the weather. In years of high rain fall, low lying land might have been waterlogged and given low yields, while higher land might have been productive. Conversely, when rainfall was light, the upland might have been too dry to produce well, while yields might have been high in the low lands. Scattering is a feature of low income agriculture around that world, so a simple explanation applicable everywhere commends itself. Diversification is the usual explanation (Hayami 1997: 261).

The second need of poor farmers was higher productivity, and the open fields were an efficient organization for achieving that goal. Since this conclusion is so important and so inconsistent with the standard, negative assessment of open fields, the first purpose of this paper is to present the case for their progressiveness. The conclusion that open field agriculture was conducive to technical progress raises two further questions that have not been intensively studied. The first relates to decision making in the open fields. The negative assessment of open fields presumes that technical change required widespread agreement, which was hard to obtain. How broad a consensus was, in fact, required, and, how was it achieved? The second relates to the enclosure movement. If the open fields were so productive, why were they enclosed? This paper addresses these questions through a case study of open field performance in Spelsbury, Oxfordshire.

While history never repeats itself exactly, it can suggest likely patterns of development. While the Ernle view of open fields as backward and
unprogressive raised the presumption that communal institutions were a poor basis of economic organization, the more positive vision of the open field community developed here leads to the presumption that communal institutions can effectively manage economic resources and secure rising productivity.

2.1 Efficiency of Open Fields—Micro Evidence

The economic performance of open field agriculture has been extensively researched since the World War II. A variety of indicators—crop choice, yield per acre, output per worker and various measures of total factor productivity—have been used. This research all points to a far more favorable assessment of open fields than is found in the social science literature that contrasts the open field ‘community’ with the enclosed ‘market’ economy.

Before considering the evidence on agricultural efficiency, it should be emphasized that the Polanyi view that open field agriculture was ‘precommercial’ is not seriously entertained by most historians today. Quite the contrary. MacFarlane’s highly influential The Origins of English Individualism (1978) argued that English farmers were commercial as far back as the middle ages. This has become the modern view, as evidenced, for instance, by the title of Britnell and Campbell’s recent collection A Commercializing Economy: England 1086 to c. 1300 (1994).

The Polanyi depiction of open fields as premarket organizations—a view asserted without evidence—can be tested with probate inventories commencing in the early sixteenth century. Most people in this period—including, in particular, small scale farmers—made wills and when they were proved, the executor of the estate was required to produce a list and valuation of the deceased’s property. Most farmers had unsold grain in the barn, and one can compute the value per bushel placed on this wheat and barley by the executors. These values were similar to wholesale market prices both in level and movement, as a comparison of the two series shows (Allen 1988). Evidently, the executors, who were themselves often farmers, were attuned to market prices and used them for valuation. It is difficult to see how these findings can be squared with a ‘precommercial’ view of the open fields.

If open field farmers had a commercial outlook, it would be surprising if they did not try to raise efficiency. This issue has been explored with data ranging from the middle ages to the nineteenth century, and the consensus is that open field agriculture was progressive.

Our knowledge of open fields in the middle ages (1000–1500) is sketchy, but even for that period there is overwhelming evidence for advances in efficiency. The two field system was the norm in many open fields in the early middle ages, but many of these systems were reorganized as three
Community and Market in England 45

(sometimes four) field systems by the early modern period (Gray 1915; Thirsk 1973: 255–62). This change reduced the fallow from one half to one-third of the farm land, leading to a substantial increase in output. Such a reorganization would have affected everyone and so is considerably important.

A second important change in medieval agriculture was the substitution of horses for oxen. While this change did not directly involve the village community, there may have been a link in that the shift to three field farming probably increased the production of oats, which were eaten by the horses. In any event, the adoption of the horse shows that small scale open field farmers were willing to take up innovations (Langdon 1986).

Several important changes in land management were made in the early modern period (1500–1750). First, peas and beans were added to open field rotations. Since the new crops replaced other spring crops, the change was not too far reaching but still shows the innovativeness of open field farmers (Hoskins 1950, 1951). Second, crop yields rose substantially in the open fields. For wheat, the premier crop, the increase was particularly large and equalled most of the gain achieved by enclosed farmers c. 1800 compared to their medieval, open field predecessors. For barley and oats, the gains were less substantial but still impressive (Allen 1999). Why yields rose is an ongoing subject of research, but that they rose is further testimony to the innovativeness of open field farmers. Third, open field villages in areas well suited for pasture converted much of their arable to grass and greatly expanded livestock production. These changes emulated the pastoral husbandry followed in enclosures in the same districts. Open field farmers seem to have converted less arable to pasture than did enclosed farmers, but the change was far reaching for the open field villagers since it required a reorganization of the main aspects of field management (Allen 1992: 121–5). All told the changes in farm methods in the early modern period were far reaching in their importance.

Finally, the innovativeness of open field farmers can be assessed with village by village surveys conducted around 1800. Systematic comparisons of cropping in open and enclosed villages was first undertaken by Yelling (1977) and, particularly, by Turner (1982, 1986). Studies of this sort require stratifying the data by soil type so that the profitability of the new method is the same for the open and enclosed villages being compared. My own research (Allen 1992) has concentrated on the south midlands—a region extending roughly from Oxford to Cambridge to Leicester. The region includes 2,850,866 acres of land and 1,568 villages. The south midlands comprises three natural environments—the pasture, light arable, and heavy arable districts. In each district there was an improvement or cluster of improvements that raised productivity in the eighteenth century. In the pasture district, conversion of most (sometimes all) of the land to grass was its most profitable use. Convertible husbandry was sometimes
practiced here. In the light arable district, most land was kept as arable, and the soil was light enough so that the Norfolk rotation (turnips-barley-clover-wheat) could be profitably used. New Leicester sheep, an improved breed, were often introduced to eat the clover and turnips. In the heavy arable district, there was little change in cropping, but subsurface drains were introduced to deal with standing water.

The comparisons show that Ernle clearly overstated his case, for there is considerable evidence that open field villages adopted the rent maximizing techniques. Nonetheless, the pace of innovation was slower than it was among the enclosed villages. In the pasture district, for instance, open villages allocated an unusually large fraction of land to grass, but the proportion was less than in enclosed villages, and there seems to have been no alteration of land between pasture and arable—the hallmark of convertible husbandry. In the light arable district, open villages certainly cultivated clover and turnips, but to a lesser extent than did enclosed villages. The latter were also more likely to have raised improved sheep. Finally, in the heavy arable district, enclosed villages were much more likely to have drained their land. So there is evidence that open field villages were more rigid than enclosed villages although not as hidebound as Ernle would have us believe.

A more favorable assessment of open field villages is reached, however, by using other indicators of performance. Crop yields have received considerable attention. Table 2.1 compares yields in the three districts of the south midlands. In most cases the yields were highest in the enclosed villages, but the percentage gain was often small and erratic. Yields had approximately doubled between the middle ages and the nineteenth century, and that increase provides another yardstick for judging the gap between open and enclosed villages. The difference between open and enclosed yields was often small compared to the growth of yields that had occurred between the middle ages and enclosed yields c. 1800. This conclusion applies with great force in the case of wheat, for the difference between open and enclosed yields was small for this—the preeminent—crop. The difference between open and enclosed yields was somewhat larger in the case of oats and barley, especially in the heavy arable district. Overall, the yield comparisons lend support to the conclusion that enclosed villages were more efficient than open, but indicate that the advantage was small. Moreover, open field villages had accomplished most of the gain that had occurred between medieval levels and the standard of efficiency reached by enclosed farms c. 1800.

These results carry over to comparisons of total factor productivity (TFP). These comparisons are often developed in the context of the rental value of the land. Enclosures were pushed forward by large scale land-owners with the aim of raising the rent they received from their tenants. McCloskey (1972) first pointed out that rent was an indicator of efficiency since an
## Table 2.1 Crop yields and enclosure, c. 1800

<table>
<thead>
<tr>
<th></th>
<th>Open bushels/acre</th>
<th>Enclosed bushels/acre</th>
<th>Enclosed relative to open</th>
<th>Enclosure gain relative to 19th century enclosed—medieval</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Heavy arable district</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wheat</td>
<td>19.7</td>
<td>20.2</td>
<td>2.2</td>
<td>5.3</td>
</tr>
<tr>
<td>Barley</td>
<td>26.5</td>
<td>31.8</td>
<td>20.0</td>
<td>35.3</td>
</tr>
<tr>
<td>Oats</td>
<td>23.5</td>
<td>33.0</td>
<td>40.4</td>
<td>44.6</td>
</tr>
<tr>
<td>Beans</td>
<td>18.8</td>
<td>22.2</td>
<td>18.1</td>
<td>27.9</td>
</tr>
<tr>
<td>Average</td>
<td>21.2</td>
<td>24.1</td>
<td>14.7</td>
<td>23.8</td>
</tr>
<tr>
<td><strong>Light arable district</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wheat</td>
<td>20.0</td>
<td>19.7</td>
<td>-1.5</td>
<td>****</td>
</tr>
<tr>
<td>Barley</td>
<td>27.0</td>
<td>29.3</td>
<td>8.5</td>
<td>18.4</td>
</tr>
<tr>
<td>Oats</td>
<td>26.5</td>
<td>32.5</td>
<td>22.6</td>
<td>28.8</td>
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<tr>
<td>Beans</td>
<td>19.9</td>
<td>18.1</td>
<td>-9.0</td>
<td>****</td>
</tr>
<tr>
<td>Average</td>
<td>23.4</td>
<td>24.7</td>
<td>5.6</td>
<td>10.9</td>
</tr>
<tr>
<td><strong>Pasture district</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wheat</td>
<td>20.9</td>
<td>21.9</td>
<td>4.8</td>
<td>8.9</td>
</tr>
<tr>
<td>Barley</td>
<td>28.0</td>
<td>32.2</td>
<td>15.0</td>
<td>27.3</td>
</tr>
<tr>
<td>Oats</td>
<td>36.9</td>
<td>38.1</td>
<td>3.3</td>
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<tr>
<td>Beans</td>
<td>22.4</td>
<td>23.4</td>
<td>4.5</td>
<td>7.5</td>
</tr>
<tr>
<td>Average</td>
<td>24.7</td>
<td>26.7</td>
<td>8.1</td>
<td>14.2</td>
</tr>
</tbody>
</table>


An enclosed farmer could afford to pay a higher rent only if he increased his output per acre or reduced his (nonland) costs per acre or some combination. Any such combination implies a rise of output with respect to total inputs, that is, higher total factor productivity.

The relationship between Ricardian surplus per acre and total factor productivity can be shown easily for a Cobb–Douglas technology. Let the production function be

\[
Q = AK^aL^bT^c
\]

where \(Q\) is output, \(K\), \(L\), and \(T\) are the quantities of capital, labour, and land, and \(A\) is the index of total factor productivity. The exponents are positive fractions and sum to one. In that case, the dual cost function is:

\[
P = (r^a w^b s^c)/A
\]

where \(r\), \(w\), and \(s\) are the prices of capital, labor, and land, while \(P\) equals the cost (assumed to equal the price) of agricultural products. Solving equation 2 for \(A\) shows how efficiency can be inferred from land values:

\[
A = s^d(P/r^a w^b)
\]
The variables in equation 3 can be interpreted as relative values in the instances being compared. The denominator involving $P$, $r$, and $w$ is a price index that deflates changes in land values for inflation. If $P$, $r$, and $w$ are constants, then the rise in total factor productivity can be calculated by raising the relative change in Ricardian surplus to a power equal to the exponent of land in the Cobb–Douglas production function. For instance, if the exponent of land was one-third and if rents rose eight-fold, then total factor productivity doubled (two is the cube root of eight). Allen (1982) generalizes this result to production functions besides the Cobb–Douglas.

The most direct way to infer total factor productivity from land values is direct calculation of the Ricardian surplus, that is, the revenue minus the opportunity cost of the labor, capital, and materials applied to the land. Calculations for the south midlands show an erratic pattern. Enclosure in the heavy arable district came closest to the standard story, for enclosed farms realized revenues about one half pound per acre more than open farms with the same cost structure. As a result, the rental value of the land rose by the rise in the value of output. This corresponds to a 13 percent increase in TFP. In the light arable district, however, the gain in TFP was only 3 percent. In the pasture district, the results were mixed with some old enclosures, apparently on the most productive lands, showing significant increases in farm revenue per acre due to high stocking densities of beef cattle. These output increases translated into a 13 percent rise in TFP. In other districts, enclosure did not result in higher stocking densities, and TFP changes ranged from $-4$ to $+0.2$ percent. On average, enclosure gave only a small boost to TFP but in some districts the gains were significant (Allen 1992: 176–7).

Calculations of Ricardian surplus have also been used to test the hypothesis that common pastures were overgrazed. If access were unlimited, then profit maximizing farmers would have increased herds until the cost of an extra animal equaled the average product of animals on the common. In that case, rent would have been zero. While this case is theoretically alluring (Hardin 1977), it has always been doubtful on historical grounds since many villages were aware of the common property problem and set stints limiting grazing. In addition, it has been possible to test the hypothesis econometrically with a sample of 231 farms described by Arthur Young in his tours of England c. 1770. Ricardian surplus was regressed on a variety of variables including the number of sheep grazed on commons. The coefficient of sheep was positive, statistically significant, and equal to the value of the annual 'profit of a sheep' reported in contemporary literature (Allen 1982). This statistical evidence, thus, runs counter to the overgrazing hypothesis.

Direct calculations of Ricardian surplus are the exception rather than the rule. Rents actually paid are the usual measure of land value. These figures are readily available in estate records, and, indeed, McCloskey
originally proposed that productivity be inferred from rent in order to take advantage of this information. There are several limitations to this approach, however. First, poor rates and land taxes were also paid out of Ricardian surplus, and they should be added to rent to ascertain the surplus. Second, and probably more importantly, land markets were often out of equilibrium. This has been shown for two data sets in the late eighteenth and early nineteenth centuries (Allen 1982, 1992: 176–9). Such a disequilibriuim could arise since mobility among tenants was low, rents were adjusted only at long intervals, and accounting was so primitive—certainly with respect to family labor and capital costs (livestock and implements) that bulked large in total costs. Even surveyors relied on rules of thumb and used prevailing rents, rather than Ricardian calculations, as the basis of valuation. In the long run, no doubt, rents tended to follow Ricardian valuations, but significant discrepancies could arise.

Despite these caveats, many economic historians (myself included) have succumbed to the easy availability of rents and used them to infer productivity. Clark (1998b), for instance, has compiled about 20,000 quotations of rents received for lands owned by English charities. Many (on the order of 93 percent) of these reports applied to atypically small and highly valued properties, which are unrepresentative of the normal course of rents. Nonetheless, Clark reports only small rent gains at enclosure.

Rents can also be used to measure productivity growth over time, although in this application they must be deflated by an index of farm input and output prices to purge them of inflation. Such calculations point to significant productivity gains in the open fields. Figure 2.1 plots real rents for open field villages in the south midlands from 1450 to 1800. These curves show considerable rent lag during periods of inflation (the price revolution of the sixteenth century and the late eighteenth and early nineteenth century). Nonetheless, the overall rise in rent suggests productivity growth in the open fields. Such a result is not surprising. Since there was significant productivity growth in English agriculture between the middle ages and the nineteenth century—a fact attested by the rise in crop yields and one supported by other evidence to be considered—a corollary of the finding that enclosure made only a small contribution to productivity growth is that productivity rose sharply in open field villages in the early modern period. This implication is borne out by Fig. 2.1.

The evidence reviewed here runs strongly counter to the depiction of open fields in the standard story. Open field farmers achieved significant productivity growth in the early modern period, and they went part way in adopting the famous improvements of the eighteenth century. Nonetheless, enclosed farming usually had an advantage over open field farming whether the indicator be new methods, crop yields, or rent paid. There is thus some evidence in favor of the view that enclosure raised efficiency. The main point, however, is that the efficiency advantage of enclosed farming
was small, and that open field farmers had achieved almost all of the productivity gains available between 1500 and 1800. Enclosure explains neither the productivity advantage that England enjoyed over other countries c. 1800, nor the rise in efficiency that had occurred since the middle ages.

2.2 England: Macro Evidence

The focus of research in English agricultural history has shifted to macro evidence about output and productivity. This research provides further insight into the performance of open fields and enclosures by testing whether output increased during major enclosure waves as the proponents of enclosure claimed. Overton (1996a, b), who is the only economic historian in recent years to have reaffirmed the view that eighteenth-century enclosures were critical for agricultural modernization, rested his case mainly on these
reconstructions. However, his use of the evidence is idiosyncratic for reasons to be discussed. More plausible reconstructions of the aggregate series support the conclusions derived from the micro evidence.

All of the reconstructions start with the identity that agricultural output \( Q \) equals the population \( N \) multiplied by per capita consumption of agricultural products \( (c) \) and by the ratio of agricultural production to agricultural consumption \( (t) \):

\[
Q = tcN
\]  

(4)

The factor \( t \) incorporates international trade in agricultural goods into the analysis. Before the nineteenth century, it played only a small role in most cases, but it is included for completeness.

Overton used equation 4 to reconstruct aggregate farm output by making the additional assumption that per capita consumption of agricultural products \( (c) \) was constant. Since \( t \) was always close to one before 1800, this procedure effectively interpolated agricultural output from the population. The English population expanded from 1500 to 1650, was then static to 1750, and after that began to grow rapidly in the world’s first population explosion. Assuming that farm output followed the same pattern implies a 115 percent increase in output between 1500 and 1650, a 13 percent rise from 1650 to 1740, and a 39 percent surge in output from 1740 to 1800 at the time of the parliamentary enclosure movement. From this, Overton concluded that there was no agricultural revolution in the open fields between 1650 and 1750, and that the parliamentary enclosures were critical to agricultural productivity growth.

While the assumption of constant per capita food consumption was once commonly made, it has been rejected by most investigators for over twenty years. Crafts (1976) first pointed out that consumption depended on income and prices, and he and subsequent investigators (Jackson 1985; Allen 1999) have used that fact to estimate agricultural output by specifying a demand curve for farm goods. The simplest formulation is to specify per capita consumption of agricultural goods \( (c) \) as:

\[
c = ap^e i^i m^b
\]  

(5)

where \( p \) is its price, \( i \) is income per head, \( m \) is the price of other consumer goods, and \( a \) sets the units of measurement.\(^1\) Calculation of agricultural

\(^1\) The calculations are explained in Allen (1998b), and the data sources are described in detail in Allen (1998a). Briefly, \( p \) is a retail price index of foodstuffs, \( i \) is the wage of building craftsmen, and \( m \) is a retail price index of nonfood goods. All of these variables are expressed in real terms by deflating them by an international, intertemporal consumer price index made up of the food and nonfood prices used in \( p \) and \( m \).
consumption requires values for \( e \), \( g \), and \( b \). These are taken from analyses of English budget studies and from demand studies for developing countries. The usual assumptions in the historical literature (Crafts 1976; Jackson 1985; Clark et al. 1995; Allen 1999) are that the income elasticity of demand was 0.5, the own price elasticity was −0.6, and the cross price elasticity between food and manufactures was 0.1. (Other reasonable values give similar results.)

Substituting equation 5 into equation 4 gives the following equation for estimating the growth in agricultural output:

\[
Q = tae^{g}m^{b}N
\]  

Making demand a function of income and prices implies a very different pattern of output growth from extrapolations from the population. Far from being a period of stagnation, the years between 1650 and 1740 stand out has a period of significant advance when output increased by 26 percent. This finding supports the view that output grew rapidly before the parliamentary enclosures when small scale family farming (the yeoman mode of production) was predominant in the open fields. Furthermore, the period from 1740 to 1800, which includes major waves of parliamentary enclosures, was characterized by a negligible increase (only 3 percent) in farm production. While the population was increasing, which tended to raise demand, the prices of agricultural goods were rising rapidly in the last half of the eighteenth century, and that inflation indicates that supply was not keeping pace with demand. The demand curve simulations do indicate a resumption of agricultural output growth after 1800, but the main period of enclosures is remarkable for its stagnation.

The aggregate evidence, thus, points to substantial productivity and output growth in the seventeenth and early eighteenth centuries. Growth slackened in the second half of the eighteenth century. The progressive period is the same as that in which the open field, yeomen farmers were ascendant, while the period of stagnation coincided with the parliamentary enclosures and the elimination of peasant proprietorship. Micro and macro evidence point to similar stories of the agricultural revolution.

### 2.3 Agricultural Labor Productivity: A European-Wide Perspective

Further insight into the causes of agricultural productivity growth and of the role of enclosure can be gained by extending the macro evidence to a European-wide perspective and by combining the output estimates with estimates of agricultural employment to gauge labor productivity.
The point of departure is Wrigley’s (1985) well-known paper on economic structure and labor productivity. He presumed that the population could be split into agricultural and nonagricultural components. Dividing agricultural output (as defined by equation 4) by the agricultural population (A) gives an expression for agricultural labor productivity:

\[ \frac{Q}{A} = tc(N/A) \]  

Like Overton, Wrigley assumed that \( c \) was a constant and \( t \) was one (in most cases). With those assumptions, output per worker is inversely proportional to the share of the population in agriculture \((A/N)\), and the problem of measuring agricultural productivity is reduced to demography.

\( N \) and \( A \) are required to implement Wrigley’s procedure. Historical demographers have estimated the total populations of European countries back to the middle ages. Estimates have also been made of the urban population. The difference is, of course, the rural population. Wrigley split it into agricultural and nonagricultural components as follows: the division in 1800 was obtained from nineteenth-century censuses. Values ranged from about 0.5 to 0.8. Wrigley guessed that 80 percent of the rural population was agricultural in 1500—a plausible value in view of Dutch evidence (de Vries and van der Woude 1977: 233). The increase in the rural, nonagricultural share from 20 percent in 1500 to as much as 50 percent in 1800 corresponds to the ‘proto-industrial’ revolution that occurred in that period. The nonagricultural fraction of the rural population was interpolated for intervening dates.

Wrigley undertook these calculations for England and France from 1500 to 1800. Output per worker rose in both countries, but the pace of advance was higher in England. The results provide support for the traditional view that enclosure raised productivity since they show England ahead of France and since ‘labor productivity’ measured in this way rose sharply between 1750 and 1800, i.e. during the intense phase of parliamentary enclosing.

But that interpretation cannot be sustained for the same reason that Overton’s reconstructions of English farm output were abandoned: Wrigley’s calculations do not provide an accurate depiction of labor productivity since per capita consumption depended on income and prices. The solution is to compute per capita consumption \( c \) with equation 5. In that case, output per worker becomes:

\[ \frac{Q}{A} = \left( \frac{t}{p} \right)^m N \]

Output per worker depends on the fraction of the population in agriculture \( A/N \), the trade balance \( t \), and per capita consumption, which is a function of income and prices.
Figure 2.2 plots the results for England, Belgium, Italy, Spain, the Netherlands, and Austria/Hungary, which cover the main possibilities. Most of the European continent—Spain, Italy, France, Germany, Austria/Hungary, Poland—shared a common agricultural productivity history, as exemplified by the curves for Spain, Italy, and Austria/Hungary in Fig. 2.2. Italy, whose data run back to 1300, shows a rise in labor productivity from 1300 to 1400 due to the population losses associated with the Black Death. Between 1400 and 1800, population grew steadily, and output per worker in agriculture declined. There is no evidence of an agricultural revolution on the continent.

The history of labor productivity in present day Belgium was quite different. Output per worker was very high in the middle ages—Flanders was renowned for its agriculture—but did not increase thereafter. However, it set a standard showing what might be achieved.

The Netherlands and England had agricultural revolutions in the early modern period. In 1500, output per worker in Dutch agriculture was similar to that on most of the continent, but productivity rose sharply to 1700
when the Belgian level was surpassed. This rise was achieved despite a rapidly growing population.

From 1300 to 1600, the productivity history of England was like that of most of the continent. Output per worker rose after the Black Death and remained high to 1500 due to the continued stagnation of the English population. Demographic growth accelerated in the sixteenth century and labor productivity fell due to diminishing returns. This typical continental pattern was broken after 1600 when labor productivity surged upward reaching the highest level in Europe in 1750.

The patterns in Fig. 2.2 have two important implications for agrarian history. First, the rise in English labor productivity was confined to the period 1600–1750, that is the period when open field, yeoman agriculture was ascendant. The last half of the eighteenth century again stands out as a period of stagnation despite the enclosure movement.

Second, the figure requires us to reformulate the search for the causes of agricultural productivity growth. Three countries were highly productive—England, Belgium, and the Netherlands. What did they have in common that distinguished them from the less successful countries? They certainly did not share enclosures—the notion that these institutions were the recipe for rapidly rising agricultural productivity dies a fast death when subjected to the test of comparative history. It is more accurate to say that they shared systems of owner-occupying family farms, for they were very common in England between 1600 and 1750 and were widespread in the Low Countries. Open fields were also common there. Indeed, their agricultures have been criticized for the prevalence of just such institutions. However, Fig. 2.2 shows that they were the bases of progress in the early modern period—not poverty.

While open fields and family farms were a good base for agricultural advance, they are not a complete explanation for these institutions were found elsewhere as well. However, there was one thing that farmers in England and the Low Countries had in common and which distinguished them from farmers elsewhere in Europe, and that was rising urbanization. In medieval Belgium where high levels of productivity were first achieved, 39 per cent of the population was urban. From 1500 to 1750, the share of the population living in cities in the Netherlands rose from 30 percent to 36 percent, and, in England, the share rose from 7 percent to 23 percent over the same period. These percentages are higher than elsewhere or rising more (Bairoch et al. 1988).

Urbanization affected agriculture through the demand for farm products—a theme running back to von Thünen—and it also affected agriculture through the labor market. Early modern cities had extremely high mortality rates and could not exist, let along expand, without high rates of rural–urban migration. Wrigley estimated that half of the natural increase of the English population was required by the growth of
London, and the same was true of Dutch cities (Wrigley 1967: van Zanden 1993). Wages were very high in the cities of northwestern Europe (Allen 1998a).

Agriculture responded to the high urban demand for labor in ways that raised agricultural labor productivity. In England, where the property law favored the landlords, agriculture was eventually reorganized by enclosure and large farms—changes which generally reduced employment per acre. Throughout the region, peasants responded to the high demand for labor by increasing their output since that raised their incomes without reducing employment.

2.4 A Case Study of Decision Making in the Open Fields

The conclusion that open fields were highly innovative makes sense on one level but not on another. The finding makes sense in that early modern England was a poor, backward economy, and so it would be a surprise if its farmers did not want a higher standard of living. From that perspective, it is not surprising that their basic institutions supported productivity growth. On the other hand, the progressiveness of the open fields is hard to square with the 'inflexibility' usually imputed to them in the historical literature. The place to begin is the presumption that unanimity—or, at least, widespread agreement—was required for most changes in cropping to occur, so a few hidebound traditionalists could block progress.

Testing this view requires looking inside the open fields to see how decisions were made and, in particular, whether unanimity was required and how it was achieved. This can only be done with a case study, and I review evidence for the parish of Spelsbury in Oxfordshire. For this parish, one can trace the adoption of new crops in the eighteenth century. In one case, unanimity was required at the outset, and that requirement raised significant problems that were only overcome by coercion on the part of the manorial lord. In other important cases, the need for unanimity was avoided, and the changes in field management were structured so that farmers had a *individual* choice as to whether to take up the new crops. After the initial phase of voluntarism, the extension of the cultivation of the new crops was done on the basis of majority rule; unanimity was never required. There were, thus, at least two approaches to organizing innovation in the open fields.

Flexibility was a desirable strategy from an economic, as well as a social, point of view. Technical progress involved experimentation. There was a risk that new crops might fail, and, even if they were suitable, their culture had to be adapted to local conditions. Demonstration or experimental farms are a twentieth-century solution to these problems, but there were no state agricultural services before the industrial revolution. The home
farms of great estates rarely served this function. The task was left to the peasants.

In the open fields, experimentation was accomplished by letting people do what they wanted. In that case, enterprising individuals could try out new methods and adapt them to local conditions. Their more risk averse neighbors could follow suit when they were convinced the new techniques paid off. This view of open fields is, of course, the antithesis of the standard straight jacket model, which presumed that entrepreneurial farmers could try new crops only after enclosure.

The records of Spelsbury give some insight into the way experimentation and innovation were carried out in an open field community. The adoption of sainfoin early in the eighteenth century was one of the first examples of the innovativeness of open field farmers adduced by historians (Havinden 1961). I will review those agreements, and then carry the story forward to the enclosure of the village in the early nineteenth century.

Spelsbury was an unusually large parish (3,900 acres according to the 1851 census) containing several settlements with their own field systems. I am concerned here with the townships of Taston, Fulwell, and Spelsbury proper. Their fields amounted to 2,016 acres divided into 53 yardlands of 38 acres each. A yardland was a standard early modern farm. It could have been cultivated by a family without much hired labor. In the early eighteenth century, most holdings were held as copyholds. Fifteen holdings were one yardland, and twelve amounted to half a yardland in size. These were yeomen farms. In addition, there were a few two yardland holdings, which required considerable hired labor, and a single four yardland (152 acres) holding, which was a fully fledged capitalist farm. The demesne of eight yardlands (304 acres) was also operated as a single farm. With the exception of the four and eight yardland holdings, family farming was the predominant mode of production in Spelsbury.

2.5 The Adoption of Sainfoin

Three new crops—sainfoin, turnips, and clover—became available to Spelsbury farmers in the eighteenth century. They were extensively cultivated in nineteenth-century enclosed farms, and open field farmers adopted all of them in the eighteenth century. Sainfoin was grown in meadows for hay. It was the first to be adopted.

Special agreements were made to reorganize the land for sainfoin cultivation. The first agreement was made in Taston in 1701, and it created a special sainfoin meadow. The agreement provided for withdrawing several furlongs from the fields of Taston and fencing them with walls or hedges and ditches. Sainfoin was to be planted and mowed for hay and then grazed. The agreement calls this ‘inclosing’ and it was in that the land was
withdrawn from the common fields, fenced, and managed separately. But many features of the open fields remained: landholdings were not consolidated; each copyholder retained his original, scattered strips within the enclosure. While each copyholder now mowed his own strips for hay, the aftermath was grazed with a common herd. Each proprietor was required to maintain the perimeter fence where it crossed his strips. Three fieldmen were chosen on the first of each year to establish the dates when sainfoin would be planted, when animals could graze, and to enforce the maintenance provisions. Violations of the agreement (like withdrawing land or allowing stock to graze at unauthorized times) were punishable with fines paid to the lord of the manor. The Taston sainfoin agreement created an improved meadow that was operated in the traditional, open field manner.

The Taston sainfoin agreement was signed by all of the copyholders in Taston. It was thus the result of a unanimous decision. The ‘inflexibility’ of communal decision making could be transcended.

Achieving unanimity was not effortless, however. William Canning, the steward of the estate, regularly wrote to the Earl of Litchfield about estate matters. On 3 April, 1703, Canning recounted that ‘at the Court I found a great disturbance a Mungst them of Tastone & Fullwell about Settling their Methods of Managing the sainfoine Grass that they had Sowed.’ The management of the sainfoin enclosure had shifted to the manorial court—this was not a surprise—for the court was the arena in which rules for the fields were normally promulgated, field men appointed, and fines assessed. While Canning believed that sainfoin cultivation ‘is like to be a great Improvement if it be inCouraged, & carryed on as it should be, But I found so much Crossness…a Mongst the Mainuagers of it; that if they be not overawed, the designe will soon be destroyed.’ Canning does not tell us what they were arguing over. The dispute may have centered on the schedule of sowing, mowing, and grazing, or it may have been more fundamental like removing land from the enclosure, something which was explicitly prohibited in the agreement. In any event, dissent was confined to two copyholders. ‘Therefore, I took upon me to force Wilt. Rooke & John Hull of Tastone to a better Comployance, and the way that I took was the next day after the Court, I took John Freeman [another copyholder in Taston] with me & went to them both.’ Canning ‘told them that if they wold not Imedially Comploy to the Well ordering of all those Matters we had on foote, I wold forthwithe Report to ye Losp, their Ill Manners & misbehaviour at the Court Thursday that their should be such a course taken with them as to have them severely

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2 This conclusion is based on a comparison of the Spelsbury quit rental for 1703 (DIL II/b/33) and the Taston Inclosure Agreement (DIL II/n/1). All documents referenced in this paper are deposited in the Oxfordshire County Record Office.
punished.’ In addition, Canning threatened to harass them until they complied. He proposed to punish them ‘for leting their Houses run to Ruin.’ In addition, ‘for every little offense which they should commit against ye well ordering of the Sainfoine I would have a writ on their Backs, and as for Hull if he did not Imediately pay me 20 for the Tree he cut down I wold serve him with a Writ the next day.’ These threats worked. ‘So then they bothe agreed with me that they Wold comply to any orders I should make.’

Evidently unanimity could be obtained by manorial coercion, but that was not the only—or, indeed, most desirable—way to effect change in the fields. The alternative was to restructure the change so that it could proceed voluntarily. This was done in a 1708 agreement to enclose land in Spelsbury. The purpose of the agreement was to make ‘a certain quantity of land Every years Land,’ that is, land that was continuously cropped. As in Taston, communal grazing was practiced after the harvest, fieldmen were chosen to regulate the grazing, and fines were assessed for violations of those rules. The main difference with the Taston agreement was that each copyholder could use his Every Year’s Land as he liked—‘to soo Corne or Sainfine or What they please.’

The only sensible use of this enclosure was to cultivate sainfoin as in Taston, but that was not required of everyone at the outset. It is likely that it became the usual practice, however. Court records later in the eighteenth century refer to the ‘old sainfoin’ field as does the field map prepared at enclosure. By providing flexibility at the outset, the kind of disputes that occurred at Taston were avoided, the entrepreneurial copyholders could proceed with experiments, and the others could adopt the sainfoin culture after it was proved in their village.

2.6 The Adoption of Turnips and Clover

Sainfoin was a major improvement, but clover and turnips were the most famous new crops of the eighteenth century. Their cultivation in England began in East Anglia in the seventeenth century. At first, their culture was not linked; it was only in the eighteenth century that they were combined in rotations like the famous Norfolk rotation (turnips-barley-clover-wheat). In the eighteenth century, the cultivation of clover and turnips spread north and west. The earliest reference to turnip cultivation in Oxfordshire was in 1727 (Allen 1992: 111).

How receptive were Spelsbury farmers to these most famous of crops? The first reference to them was in the manorial court rolls for 1751. The management of the open fields was carried out in the manorial court, and

3 Dil. I/k/1 h.  4 Dil. II/n/26.  5 E.g. Dil. II/w/134.  6 Misc. Sta. I/1.
the court rolls, the minutes of the proceedings, frequently summarized orders regulating the fields. The Spelsbury orders for 1751 state:

First, we do order and agree that the Over Furlong Shooting into Chipping Norton Road in a field called Sinquefoil field in Spelsbury be sowd with turnips this next Season, we agree to abate our sheep common for every Bushel of Barley Seed that the Ground shall take for Sowing thereof, any neighbour that shall agree to Sow Turnips in any part of the Same Field shall have the same abatement, that every person shall make his own mind.  

This order is significant in several respects. First, the principle of voluntarism was respected: each person could decide for himself whether to grow turnips. Second, the turnips were not introduced at first in the fields but into the sainfoin enclosure, the original Every Year’s Land where everyone could choose his crops. Third, the abatement of common rights was normal: If people were not growing sainfoin on the every year’s land they were not contributing aftermath to feed the common herd, and so they had to reduce the number of animals they could put in the herd. (The measurement of common rights in terms of the barley seed that could be sown on the land in question was the standard formula in Spelsbury.)

By the late 1750s, these procedures were modified. While the cultivation of turnips was still confined to the ‘sainfoin enclosure,’ cultivation became obligatory. Unanimity was not required, but the majority ruled. Thus, the 1758 field orders state that ‘We do order and agree to Sow White Turnips the next Season in such part of Spelsbury Field called Old Saint Foyne Field as the Landholders or Major part of them shall by next May Day Agree.’

By 1762, a portentous change had occurred. The cultivation of turnips was shifted out of the sainfoin enclosure into the open fields themselves:

We order & agree that the Barley quarter shall be sowd with Turnips and that each person shall abate three sheep for a quarter of Barley seed. Also it is ordered and agreed that if any person shall let his lambs go loose out of the fold and thereby trespass upon his Neighbours Turnips he shall forfeit ten shillings for each offense.

The orders for 1763 were more explicit in indicating where the turnips were to be planted:

Also We Order and Agree to Sow Briar Furlong Turnips and to hain [fence] them so soon as the Turnips are up And that winter beer furlong and Butt furlong shall be sowd with Turnips and hained as the others, to be sowd as low down as the owners of the Land shall think proper, to be Mounded by the Outside Proprietors and for each breach of this Order the person offending shall pay to the Lord the Sum of five shillings.

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7 DIL II/w/108. 8 DIL II/w/108. 9 DIL II/w/134. 10 Ms. summary of Spelsbury court rolls.
Community and Market in England

1762 was also the first year in which clover was mentioned in the court records. Their cultivation began in the fields:

Also We agree to plant almshouse Furlong and Winter Bere with Clover and that the same shall be hained from Christmas Day to tenth of April under the penalty of ten shillings for each person who shall turn in any Cattle between Christmas and the said Tenth of April.\textsuperscript{11}

Subsequent courts record a slow shifting of turnip and clover cultivation around the fields. In 1765, for instance, winter beer furlong was planted with turnips, and briar furlong with grass seed.\textsuperscript{12} This was a reversal of the practice in earlier years. Gradually, the cultivation was spread to other furlongs.

By the 1780s, the cultivation of clover and turnips had been standardized:

At this court it is agreed to sow Clover on Costar Hill and Dean Field side and that the same shall be hained at Michaelmas and broke the twelfth of July with Sheep and the Sheep to be stocked as usual And to sow Turnips from Jack’s Brake to Slate Pits and to hain the same as soon as they are up & that they shall be mounded by the Occupiers. And that the Clover shall lie two years at Coom Road to be hained the first of January and broke the twenty sixth of April.\textsuperscript{13}

While land was planted with turnips for only one year before it was shifted to another crop, the land was planted with clover for two years before being rotated. It might also be noted that the language had shifted subtly from that of the 1760s. Twenty years before, it was the owners (i.e. copyholders) who were required to mound the perimeter of the turnip field, but by the 1780s, it was the occupiers. This change in language reflects the replacement of copyholders with tenant farmers, a change to be analyzed shortly.

Separate field orders were recorded for Spelsbury and for Taston, but agricultural practices developed in similar ways in both hamlets. In 1785, the court minutes record:

Also it is ordered and agreed to sow Clover on West Field from caught-house to Banbury Gap & to sow Clover upon small Narnills for a Sheep Common to lye with Sharigo Hills to be paid by the yard Land. To sow Turnips upon Enwellin Quarter up to Green Ball to be hained as soon as they are up. The Clover to be hained at Michaelmas and broke the Twelfth of July. The Sheep commons to go as usual. All the mounding to be done by the yard Land. The drift Road for the Sheep to go by Shilcott Wood. Sharigo Hill & small Narnills to be hained the first of November and broke at old May Day. Also that no person shall turn their plows on the Sain Foin that shall be sown this year, next Spring under the penalty of Ten Shillings to the Lords for each year.\textsuperscript{14}

\textsuperscript{11} DIL II/w/134. \textsuperscript{12} DIL II/w/18. \textsuperscript{13} Ms. summary of Spelsbury court rolls. \textsuperscript{14} Ms. summary of Spelsbury court rolls.
The reference in the last sentence to sowing sainfoin is significant in two respects. Organizationally, it represents a transfer of jurisdiction over the sainfoin to the manorial court. The first sainfoin enclosures were created with formal contracts independently of the court. By the middle of the eighteenth century, sainfoin cultivation was sufficiently routine that the enclosures were managed by the manorial courts along with the ordinary business of the fields.

Agriculturally, the reference to sowing sainfoin is important since it suggests that the farmers of Taston were practicing a form of convertible husbandry in which land was alternated between sainfoin meadows and arable planted with corn, clover, and turnips. For instance, the court rolls for 1766 recorded an extension of the sainfoin field.

Ordered...that the Field of Taston from the old St. Fine wall down to Guys Close and as far as the Landholders can agree shall be planted with St. Fine in the Spring of 1767 and mounded by the Michmas following by the Yard Land to continue for Twelve Years to be hained at Christmas and broke at Michmas but no sheep to go thereon at any time. And all Folds to be off on the one Cropp Land by Lady day and to have the Folds to be staked from Ladyday till Harvest is in under the penalty of Ten Shillings to the Lord for each offence.\(^\text{15}\)

The minutes for 1788 prescribe the reverse sequence: ‘Also it is agreed and ordered that Turnips shall be sowed on part of the Old Saint Foin down Deadman Hill as far as each tenant thinks proper and that the same shall be hained as soon as they are up.’\(^\text{16}\) Converting field land to sainfoin enclosures for a dozen years, and then converting the land back to cultivation of turnips, clover, and corn amounts to convertible husbandry—hardly the practice that Lord Ernle imagined open field farmers to have been capable of.

We have seen how open field farmers took their first steps in adopting sainfoin, clover, and turnips. There was an evolution in practice across the century as farmers learned the best way to grow and integrate these crops. This is not surprising. In 1700, no one knew the optimal system; it was developed by trial and error everywhere. Spelsbury was no exception.

What is perhaps more surprising is that the open fields were a suitable environment for this evolution, for two reasons. First, furlongs rather than fields were the fundamental operating units, so land could be shifted to new or experimental uses in small quantities. Second, not everyone in each furlong had to do the same thing. The first Spelsbury sainfoin enclosure was set up so that each person could grow what he wanted. The aim of the enclosure was certainly to grow sainfoin, and ultimately it did, but uniformity waited until the gains became obvious to everyone. (Failure to follow this procedure resulted in disputes like those in Taston. While manorial

\(^{15}\) Ms. summary of Spelsbury court rolls. \(^{16}\) Ms. summary of Spelsbury court rolls.
authority could force a minority to comply with a majority, voluntary procedures could achieve similar ends without coercion.) The voluntary principle was also applied again when turnip cultivation was tried. ‘Every person shall make his own mind.’ By letting those eager to try the new crops take the first steps, small scale experiments were undertaken to establish whether and how the new crop should be cultivated. Other farmers soon followed. Eventually, majority rule replaced individual decision making. Even then, however, the open fields catered to many tastes. By the end of the eighteenth century, the majority had not forced all the land to a four course Norfolk rotation. Instead, a complicated system evolved incorporating the new crops but also old practices like the use of the fallow. The late eighteenth-century survey data discussed earlier in this paper shows that to have been the typical pattern in the open fields. The flexibility of the open fields, which had been a strength at the outset when it allowed enterprising individuals to try out new crops, became a weakness later since it continued to make way for the least enterprising.

2.7 Enclosure Reconsidered

If open fields were so good, why were they enclosed? There are three explanations in the literature. First, enclosure accelerated technical progress. We have seen that there is some truth to this and, indeed, have just offered an explanation for why the open fields lagged behind enclosures in the use of the newest crops at the end of the eighteenth century. But evidence discussed earlier shows that the gains from these changes were small, and the increases in land value were frequently not large enough to justify the expense of enclosing. Second, enclosure redistributed income. Enclosure extinguished many insecurely established customary rights. It also gave the landlords an opportunity to raise rents. Redistribution may have been a more important factor in enclosure than one might expect due to the primitive nature of cost accounting and agricultural knowledge. While today’s economists can computerize eighteenth-century data and compute by how much enclosure on a particular type of land should have raised its value, such calculations were impossible for people in the eighteenth century. Even in the nineteenth century, land surveyors paid lip service to Ricardo, but valued land by rules of thumb because they could not put Ricardo’s concept of surplus into practice (Allen 1992: 171–87). All landlords knew was that they could usually raise rents after enclosure, and that is what improvement meant to them. Whether the rent gains came from higher efficiency or income redistribution was unclear.

The concept of social capital (Coleman 1990; Putnam 1993, 1996) provides another approach to the incentive to enclose and relates enclosure to changes in the social relations of production in agriculture. Much of
England's open field farm land was in the hands of small-scale farmers in the eighteenth century, who were quasi proprietors and held their land on copyholds or beneficial leases. In Spelsbury, as we noted earlier, most of the land at the beginning of the eighteenth century was divided into farms of one half or one yardland (19 or 38 acres). Three holdings were leases for lives, but the great majority were copyholds. The latter were held 'according to custome of one life & a widdow's estate in possession & one in reversion'. At any time, there were at most three people—specifically named—with a right to the copyhold—a man, his wife, and a third person, usually a child. If nothing was done, the copyhold would revert to the lord of the manor at the death of the three named people. Before the eighteenth century, it was usual for parents to extend the agreement to include a child by 'buying a reversion.' According to a document dated 1705, a reversion cost five times the annual commercial value of the estate. A yardland was valued at five pounds per year in 1705, so the value of the reversion was 25 pounds.

The lord of manor was under no legal obligation to sell reversions, and he stopped doing so in the first quarter of the eighteenth century. The change in policy took many decades to achieve its full effect because some copyholds had been recently renewed and the heirs lived long lives, while others were coming up for renewal and were held by old people. By the end of the eighteenth century, only three copyholds were left. The history of Spelsbury was typical of many villages in England.

The concentration of landownership in great estates obviated the advantages of open fields. They had been an effective means of diversification for small farmers, but scattering land over the village was no attraction to the lord who now owned the whole village. The creation of great estates presented new management problems, and open fields frustrated their solution.

Before the eighteenth century, manorial lords were not directly concerned with motivating farmers. Land was let as copyholds, and the lords realized income from them when entry fines or other levies were collected, but the management of the land, including any subtenants, was the responsibility of the copyholders. Even demesnes had usually been let as beneficial leases, so, again, the lords collected a fine occasionally but otherwise land management was limited. In both cases, the tenants farmed with fixed and low rents for long periods of time, and consequently received the full benefit of any improvements as higher income. Tenancy terms encouraged innovation but made it difficult for landlords to capture the gains.

When copyholds and beneficial leases were run out, landlords had to deal directly with farmers. They had the chance to appropriate increases in land values due to rising productivity or prices, but they had to do this without destroying the farmer's incentive to improve: If rents were raised

17 DIL II/b/32.  18 DIL II/a/4e.
whenever productivity increased—i.e. if English landlords followed the (perhaps mythical) Irish model of ‘predatory landlordism’ (Mokyr 1983: 81–111)—then the incentive to improve would have been destroyed. On the other hand, leaving the tenants with fixed rents indefinitely would provide a great incentive to raise productivity but the gains would stay with the tenants.

Share cropping was one possible solution, but it was not utilized in eighteenth-century England. Tithes (a 10 percent tax on grain output) were regularly denounced as a tax on improvement, and the much larger percentage of output that would have been paid as rent would have been a considerably greater disincentive to increase efficiency. Furthermore, improvement often meant the conversion of arable to grass, and that, in turn, meant that output fell with labor costs dropping more. If the landlord’s income was a fixed share of output, then it would have fallen even though the commercial value of the land was rising. Share cropping did not commend itself as a simple way of managing landed property.

Long-term, fixed rent contracts were another solution, and, indeed, twenty-one year leases were frequently advocated. They were not frequently used, however, because the unstable price level between 1750 and 1850 meant that a reasonable rent could not be predicted in advance. Instead, the English gentry and aristocracy developed a management system consisting of several elements. Legally, tenancies were short term; indeed, most farmers were merely tenants at will who held their land for a year beginning on Michaelmas (the 29th of September), and rents were officially determined at the outset of that year. In practice, however, these agreements were renewed repeatedly, and farmers occupied the same farms for many years. Rents were raised infrequently, so farmers had a financial incentive to raise productivity since they realized the gains. Rents might not be adjusted for decades, although the period could be shortened if inflation was rapid. Rent adjustment was done in a bureaucratic manner, i.e. by hiring a surveyor to revalue the estate, so that it appeared objective and fair. Fluctuations in farm prices and yields were accommodated by allowing tenants to postpone rent payments (run up arrears) when farm incomes were low.

The object of this system was to create incentives for farmers to raise productivity while guaranteeing that eventually productivity gains were passed to the landlords in the form of higher rents. While the rental agreements were officially annual, the tenants had to regard them as long term if they were to have an incentive to raise productivity. Tenant confidence and loyalty were fostered by the infrequent and bureaucratic method of raising rents, by renewing tenancies every year, and by allowing the tenants to fall behind in rent payments. Landlords gained when tenants felt a long run attachment to the estate and believed they would be fairly treated by it. These tenancy terms and associated norms of behavior and
expectations of proper treatment were forms of social capital. When this capital was in place, productivity rose.

The open fields had also had social capital, but it was directed antithetically. The open field village fostered solidarity amongst the tenants. The communal management of open field land required a forum—usually the manorial court—in which the tenants could negotiate their economic affairs together. Courts were also responsible for other aspects of local government (McIntosh 1999). These continued associations and the economic benefits that derived from them encouraged solidarity among the villagers. Moreover, this solidarity was often opposed to the lord. Many times in the preceeding millennium peasant communities had had to act in concert to protect their interests vis-à-vis the lord. This too reinforced solidarity, which may have facilitated the management of the fields. Open field farming strengthened bonds between peasants and made them wary of lords.

While the social capital of the open field village raised productivity in that context, it was counterproductive when the yeomen were eliminated and replaced by tenants at will. The self-governing institutions of the open fields were now manned by tenants: participation in these institutions encouraged solidarity among the tenant farmers vis-à-vis the lords. In particular, each tenant could plead that he could not improve his cropping because the village majority would not accommodate it. More generally, tenant self-government strengthened bonds among tenants whereas the new system of short-term leases put a premium on the tenants identifying with the great estate. The new system of short-term leasing worked best if the social capital of the open field village were replaced by a new kind of social capital. Once landlords had run out copyholds and beneficial leases, the days of the open field village were numbered.

2.8 Conclusion

Nineteenth-century interpretations opposed ‘community’ to ‘market.’ Economic relations were noncommercial and nonprogressive in the ‘community,’ and the reverse with the ‘market.’ The research of agricultural historians in the last fifty years has demolished this paradigm. The open field community has been shown to have been innovative, effective, and progressive. An important reason that the open fields were progressive was because communal field management was far more flexible and open to experimentation than was imagined by proponents of the community–market dichotomy.

The biggest puzzle about open fields is not why they persisted but why they disappeared. A variety of explanations were reviewed, and we have also suggested that another factor that was at play. In the eighteenth
century in many villages, the yeomen lost their land as their lords refused to renew their copyholds and beneficial leases. The land was then let on short-term agreements to capitalist farmers. The new system of leasing required a new psychological commitment. The open fields had their characteristic form of social capital in which an assembly of villagers governed the fields and opposed lordly claims. These associations fostered solidarity among the yeomen in opposition to the lord. In contrast, the great estates that emerged in the eighteenth century required that each farmer identify his fortunes with the estate rather than with his fellow villagers. Open field social capital was obsolete and had to be replaced with social capital appropriate to the great estate. Enclosure was the result.

It was not, therefore, that enclosure overthrew community and created market capitalism. Rather, the reverse was the case: market capitalism undermined the open field community from within and precipitated enclosure.

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