

Scattering and Contracts in Medieval Agriculture: Challenges Ahead

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Among the issues involved in understanding the organization of medieval agriculture, two have particularly interested economic historians: the manorial contractual arrangements between the lord of the manor and the peasants, and the scattering of peasant land holdings on open fields. While our understanding of each issue has improved, the symmetry between them needs further attention. Examining the issues separately is only a necessary first step; it is also important to consider their interdependence.

I argue below that the explanations offered by Stefano Fenoaltea, Donald McCloskey, and Douglass North and Robert Thomas all need modification to address more adequately the facts of the *overall* organization of medieval agriculture.¹ Note, however, that my goal here is simply to alert future researchers to the symmetry between open fields and the manorial organization. Pointing out the incompleteness of earlier explanations offers a way to reopen the debate.

MANORIAL RELATIONSHIPS AND FARMING

The regularities observed by economic historians in the contractual relationships between the lord and the peasants in a "classic" manor were quite peculiar to medieval agriculture. The land in a typical manor was usually divided into two parts. The lord kept one part as his demesne and let the remaining arable land to tenants. The peasants' labor was likewise divided into two parts: the tenants cultivated both the lord's demesne and their own holdings. The characteristic feature of this type of contracting was that it mixed wage and rent contracts. It also differed from sharecropping, since the total output was not distributed between the lord and the peasants in fixed proportion. Instead, each party was entitled to output accruing to his own land, plus wages or rent from the other party.

Historians have traditionally been reluctant to offer general explanations of the organizational structure of medieval agriculture. The reluctance often leads them to explain the variations in the relative importance of the lords' demesne by local circumstances such as topographical, soil, and climate conditions, and the contractions and expansions of the demesne over time by population pressures or the changes in relative prices. Economists, on the other hand, contributed a new dimension by

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¹ I choose these authors since their works have been the most influential, and at the same time the most representative of the partial explanations offered in the literature. See, in particular, Stefano Fenoaltea, "Authority, Efficiency, and Agricultural Organization in Medieval England and Beyond: A Hypothesis," this JOURNAL, 35 (Dec. 1975), pp. 693-718; Stefano Fenoaltea, "Transaction Costs, Whig History, and the Common Fields," *Politics and Society* (Summer 1988), pp. 171-240; Donald N. McCloskey, "English Open Fields as Behavior toward Risk," in P. Uselding, ed., *Research in Economic History* (Greenwich, CT, 1976), vol. 1, pp. 124-70; and Douglass C. North and Robert P. Thomas, "The Rise and Fall of the Manorial System: A Theoretical Model," this JOURNAL, 31 (Dec. 1971), pp. 777-803. The symmetry has actually been recognized by some of these authors. See, for instance, Fenoaltea, "Transaction Costs." Also see Carl J. Dahlman, *The Open Field System and Beyond* (Cambridge, 1980), especially chap. 2.

searching for a theoretical model to explain the organization of the "classic" manor as well as to account for the observed variations in the system. They asked a different question: why this particular system?

North and Thomas, for example, expressed their discontent with the particularistic aspect of the literature and the lack of a consistent theoretical foundation. They proposed a model of the rise and fall of the manorial system that emphasized transaction costs to explain the sharing of inputs between the lord and the peasants. They viewed input-sharing as the dominant contractual structure in medieval agriculture on the basis that it was the cheapest to negotiate.

North and Thomas's model has been criticized on various grounds. Fenoaltea notes, for instance, that the costs of negotiation were not so high as to have a determining effect.² A further complication arises from North and Thomas's model: it fails to consider the totality of the exchange relationships within a manor. In particular, the model neglects the peasants' side of the economy. The known facts about open-field farming seem to contradict their hypothesis. It is well known, for instance, that the peasants exchanged land and employed each other's labor, which points to the role of relative prices of land and labor. One might point out that North and Thomas's explanation rests on the absence of goods markets, and not land or labor markets. The absence of the goods market, however, is important to the extent that it increases the cost of exchanging land and labor (which makes direct exchange cheaper). The exchange among peasants was not in the form of input-sharing. The effect on North and Thomas's model of the presence of an interpeasant market is clear: when negotiating with the lord, the peasants did not have to incur any additional costs to determine the relevant prices.

Fenoaltea agrees that transaction costs were important but emphasizes enforcement rather than negotiation costs as the critical component. He is more sensitive to the interrelatedness of open fields and the manorial system, having contributed to our understanding of both.³ But parts of his argument are still open to criticism from my perspective.

Fenoaltea's focus on enforcement costs alone explains the superiority of fixed rents over other types of contracts. The sharing of inputs then must have had other offsetting benefits. For this Fenoaltea offers another hypothesis: the advantage of exercising authority over the labor force. The lord's advantages for his hierarchical position were, in fact, twofold: his authority over peasants (required for long-run social stability) and his differential expertise in production. After specifying costs and benefits, Fenoaltea asserts that their balance determined the institutional structure and the size of the lord's demesne.

Fenoaltea's argument justifies demesne agriculture so long as the benefits to the lord of direct farming exceed its costs. That, however, is precisely the reason why his explanation of input-sharing needs additional hypotheses. It is not obvious how the balancing of costs and benefits takes place to determine the size of the lord's demesne. If the expertise of the lord is superior for each type of land and for all crops, then the only way the lord would not cultivate all the available land is if at some point costs outweighed benefits. Fenoaltea's hypothesis, however, is based rather on the difference in the required expertise between different crops. The peasants generally did not

² See Andrew Jones, "The Rise and Fall of the Manorial System: A Critical Comment," this JOURNAL, 32 (Dec. 1972), pp. 938-44; and Stefano Fenoaltea, "The Rise and Fall of a Theoretical Model: The Manorial System," this JOURNAL, 35 (June 1975), pp. 386-409, for criticisms of the North-Thomas model. North answers the criticisms and modifies his argument somewhat in his later work, *Structure and Change in Economic History* (New York, 1981), particularly pp. 129-31.

³ Furthermore, he uses the symmetry to criticize McCloskey's and Dahlman's explanations of open fields. See his "Transaction Costs."

possess the necessary skills and information in growing certain crops such as wheat, causing a differential expertise in production. Thus the lord's benefits exceeded his costs for such crops, but not for others. The peasants needed supervision in growing wheat, but their skills were sufficient to undertake production of other crops independently. The question needing to be answered is this: why did the differences in expertise persist?

Fenoaltea's argument is essentially dynamic. Differential information could exist in a changing environment if the lord introduced a technological innovation first. The important question, however, is the longevity of the differences in technique. Peasants were not innovators perhaps, but that should not exclude them from the possibility of imitating the new techniques. Two reasons could explain the longevity of the lord's differential expertise. Either the peasants did not know the new techniques or they refused to adopt them. The first cannot be true, since peasants worked on the lord's land as well as on their own. A typical peasant, according to Fenoaltea, was a "casual" worker on the lord's demesne. Casual or not, peasants had to be taught the new methods in order to labor effectively. The relevant issue might be the timing of agricultural operations. This argument seems contradictory, however, in juxtaposition with the facts of peasant farming. The peasants were in the same business of agricultural production as the lord, and acted as independent producers on their own land. They made decisions as to the choice of crops and the timing of agricultural operations. The argument may hold true for some peasants but does not explain the existence of others who held large quantities of land and employed (and supervised) others' labor.

The second reason, the appeal to peasant conservatism, is not convincing either. According to Fenoaltea, "[t]he master may deem his method successful, but the workers might refuse to replicate it, even if they could, until they had enough evidence to convince them that it was indeed superior to the method that had proved itself since time out of mind."⁴ The peasants were conservative perhaps, but that in itself does not explain why they would refuse to accept a change for so long. To see that the new technique was indeed superior, they needed only to observe for "some" years the increase in agricultural output or the saving in labor required for a specific job.

It is also not clear why input-sharing should be desirable to peasants as well. Even if we accept Fenoaltea's explanation of why the lord would lease part of the land, the fact remains that he needs a leaseholder. Therefore the peasants' side of the adjustment and the conditions under which the peasants might cultivate the land left vacant by the lord need to be explained. His hypothesis amounts to justifying demesne agriculture but not the sharing of inputs.

The foregoing argument suggests, therefore, that a proper treatment of peasant farming is essential for the history of medieval agriculture—in particular, for a complete account of the plausibility of input-sharing arrangements. Both North-Thomas's and Fenoaltea's models neglect farming by the peasants.

What we can learn from a partial analysis of the manor is limited, since the changes could not be made unilaterally. The lord certainly had the authority, especially over dependent tenants, to design and change things to his taste, but there were limits to his decision-making power. It is important to understand the constraining factors. The gains and losses resulting from a decision by the lord depended on how the peasants were affected by the decision and how they reacted.

FARMING BY THE PEASANTS

Peasant farming becomes an important consideration in an explanation of the peculiar locational distribution of land holdings. The peasants often preferred to hold their land

⁴ Fenoaltea, "Authority, Efficiency," p. 700.

in scattered rather than consolidated plots. A typical villager held twenty or so plots of land, less than an acre each, separate from one another and widely scattered on the village arable.

McCloskey was first among economists to address the problem by pointing to the importance of risk in agricultural production and the absence of insurance against it. While earlier historians searched for the system's origin, McCloskey questions its persistence and decline. The persistence of scattering for many centuries implies that it was a purposeful action. Any account of peasant land holdings, therefore, must explain not only how the peasants scattered, but also why. He observes that the land within a village had varying characteristics, as did the weather. A typical peasant would be averse to the risks of poor yield, high prices, and so on, which he would assume if he were to specialize in one crop and one crop area. Therefore the scattered holdings by the peasants had a purpose, namely, to insure against disaster.

McCloskey formulates a "risk-aversion hypothesis" to represent the peasants' desire for safety. His formulation, however, neglects an important consideration, namely, the presence of the lords. The peasants already had a "safe asset" in their portfolio: labor income. If the peasants were concerned with "safety first," they could easily achieve it by working for the lord. It is true, of course, that if the land had varying characteristics the variance of the output from the peasants' land could be reduced by scattered holdings. But his formulation is nevertheless incomplete if the problem of allocating resources is taken to include the distribution of land and labor among individuals as well as different locations. The incompleteness associated with the neglect of peasant farming discussed earlier is reversed here, as McCloskey neglects farming by the lord.

Fenoaltea offers a different explanation of scattering on open fields, based on the peasants' pursuit of productivity. He views scattering as a means of stabilizing the peasants' individual labor needs. He notes that "[s]ince the village arable is heterogeneous—in chemistry, drainage, exposure to wind and sun—different parts of it are best worked at different times, and productivity depends critically on the careful allocation of labor over space as well as over time.⁵ He notes that peasants could keep consolidated land holdings and hire each other as workers to meet individual labor requirements when needed. Such an arrangement, he argues, could not be optimal because of the costs of supervising outside labor. Thus private scattering, according to Fenoaltea, is designed to maximize productivity by optimizing self-employment.

Fenoaltea's argument is plausible. Fenoaltea's and McCloskey's arguments can actually be seen as complementing each other to a degree. Fenoaltea shows the advantages of scattering with self-employment. McCloskey explains scattering (and diversification by crops) regardless of how employment and land ownership were related. Fenoaltea's argument, like McCloskey's, is an explanation of why peasants scattered land, given that they had some. On this basis, however, it is open to criticism. Recall the criticism of the previous section, only this time see the problem as caused by the neglect of the lord's side. If supervision was costly, but the lord had offsetting advantages in employing peasants as workers, then why did the lord not employ all the villagers? Depending on weather conditions, he could direct labor around the village for the desired optimal allocation. With his superior technology he could reap all benefits from scattering despite the costs of supervision.

A similar issue remains open even if we accept Fenoaltea's justification of demesne as constituting only part of the land. We would expect the lords to scatter their land holdings to benefit from the advantages of scattering. Fenoaltea's discussion of demesne agriculture, however, argues the contrary. He states: "where the qualities of the soil (including exposure and drainage) vary over small distances, even a scattered demesne

⁵ Fenoaltea, "Transaction Costs," pp. 190–91.

could well represent a selection of relatively homogenous land.⁶ The two hypotheses Fenoaltea employs to explain demesne agriculture and open fields seem to argue against each other here: the lords' desire to exploit the systematic differences in expertise (by selecting homogenous land) and the advantages of scattering (by selecting heterogenous land). Why, then, would the lords ignore the possible advantages of scattering by choosing only a certain type of land?

The lord's employment of peasant labor has further implications for Fenoaltea's argument. Most peasants, if not all, worked for the lord (and for each other) part of the time. Fenoaltea notes that "the lord exercised his prior claim to labor at the busy times of the agricultural cycle."⁷ In other words, if conditions were ripe for work on a particular type of land, then the peasants needed to finish the work on the lord's land first. Fenoaltea does not discuss whether and how the lord's priority would interfere with the optimality of the peasants' allocation of labor on open fields. The peasants, after all, may not even have had enough time to exploit the advantages of the conditions on their own land.

Both McCloskey's and Fenoaltea's explanations of scattering on open fields, therefore, need modification.

THE SYMMETRY IN THE ORGANIZATION OF MEDIEVAL AGRICULTURE

My critical review suggests that the questions asked by economic historians have biased their answers. The problem is to determine the relevant decision makers for a particular issue. Should the peasants be viewed as involved in the decision-making process in a manor, or was the lord the only relevant decision maker? The question is implicitly answered by the problem chosen. Explanations of scattering neglect the lord's side, yet the manorial contractual arrangements are viewed from the lord's side only. As a result the economic explanations of the allocation of resources in medieval agriculture become partial accounts of its organizational structure.

The problem associated with the improper neglect of one of the potential decision makers generates a problem of inconsistency in the explanations of the two issues. Input-sharing, after all, concerned the division of resources between the lord and the peasants, and scattering concerned the locational allocation of those resources. If an explanation of one issue fails to consider the known regularities concerning the other, then the picture of the organization of medieval agriculture is likely to be incomplete.

My examples show that leaving the lord or the peasants out of the picture has far-reaching consequences. North and Thomas's hypothesis becomes incomplete because it neglects the transactions among peasants and between the lord and the peasants. Similarly, Fenoaltea's explanation of the sharing of inputs explains demesne farming only. Thus the neglect of the peasants makes the explanations offered by North and Thomas and by Fenoaltea an unsatisfactory account of the sharing of inputs.

Explanations of scattering are incomplete as well. McCloskey's explanation, based on *his* formulation of the risk-aversion hypothesis, remains incomplete, since the peasants' desire for safety could be achieved through other contractual arrangements with the lord. Similarly the presence of the lord weakens Fenoaltea's claim that the open fields were designed to maximize productivity, because of the constraints the lord's presence places on the maximization. The pioneering efforts of North and Thomas, Fenoaltea, and McCloskey in explaining the organization of medieval agriculture need completion by considering all relevant decision makers and the wider set of exchange relationships.

⁶ Fenoaltea, "Authority, Efficiency," p. 703.

⁷ Stefano Fenoaltea, "Risk, Transaction Costs, and the Organization of Medieval Agriculture," *Explorations in Economic History*, 13 (Apr. 1976), p. 132.

One might argue that mere criticism without showing a way out is an incomplete procedure in itself. While criticism is valuable, proposing alternative hypotheses is more satisfying. I now turn to that task. It is at least possible to offer some general remarks about the direction in which future research might lead. I have argued that explanations of scattering must be compatible with the lord's interests, and that the proposed benefits of the sharing of inputs must be plausible to the peasants. It is important to determine who the decision makers are on a particular issue and to decide whether a proposed explanation remains consistent within the constraints of the system as a whole.

One promising line of research would be to examine the risk-sharing properties of the overall organization of medieval agriculture. A brief preface to such an inquiry can be given as follows.⁸ In the absence of any means to prevent, transfer, or avoid agricultural risks, the organizational structure of medieval communities would be affected by and would respond to these factors. A lord and his peasants could deal only internally with the risks; they could share the risks only among themselves.

As McCloskey argues, given the variability of land the peasants could reduce the variation in their personal incomes by scattering their land holdings. Yet this could not eliminate the risks altogether. A reinterpretation of McCloskey's risk-aversion hypothesis is necessary to include the contractual arrangements between the lord and the peasants. Risk aversion does not necessarily imply that a person would try to minimize risks. Given that the lord and the peasants had risky as well as safe income sources, risk aversion means that each party preferred a combination of the two rather than wholly risky or wholly sure income. Portfolio theory supports the argument: a good analogy, for instance, is a risk-averse investor's decision to invest in a combination of stocks and bonds rather than only stocks or only bonds.

The contractual arrangements between lords and peasants gave each party a further chance to adjust the allocation of resources to their risk attitudes. In order for both parties to achieve the desired allocation of risks, the contractual structure had to take the form of input-sharing rather than wage, rent, or sharecropping contracts. Input-sharing contracts—in addition to scattering—observed in medieval agriculture provided lords and peasants with the opportunity to allocate risks optimally within the manor. This argument, therefore, may explain the overall organization of medieval agriculture by extending McCloskey's hypothesis to include the peasants' relationships with the lord.

Clearly, the explanation above demands a more thorough and rigorous treatment, which is beyond the scope of the present study. But the brief discussion here does suggest the possibility of a comprehensive treatment of the issues examined. Further progress in understanding the organization of medieval agriculture will require that the symmetry between open fields and the manorial organization be considered.

⁸ What follows is a brief description of work currently in progress. For a more extensive treatment, see Metin M. Cosgel, "Risk-sharing Properties of the Organization of Medieval Agriculture" (Unpublished Manuscript, University of Connecticut, June 1990).