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Educating in Economic Calculus: The invention of the 'enlightened peasant' *via* manuals of agriculture, 1830-1870

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Process of economisation, accounting rhetoric, manuals of agriculture, farm management, agriculture in nineteenth-century France.

Abstract:
This article is concerned with the process of agriculture's economic normalisation in nineteenth-century France. The manuals published for rural inhabitants and for use in primary schools between the July Monarchy and the end of the Second Empire are taken here as a means of analysing a process of economic rationalisation underway during this period, in particular as it would affect the peasantry. Drawing attention to the content of agricultural manuals – with a specific focus on those awarded prizes within a competition for agricultural-manual writing announced in 1837 – this article sheds light on the educational forms in which economic precepts and accounting techniques were presented and the manner in which those techniques were employed to promote 'best practices', thus orienting and rationalising farm management and the farmer's decisions. It highlights the *social work* of ideological production and behavioural guidance that unfolded in the first part of the nineteenth century. It stresses the ethic embodied in these agricultural manuals, one directed toward a greater rationality of economic behaviour on the part of the small and medium-scale peasantry in tandem with an idea of disciplined and prudent personal and professional conduct.

Introduction

Mathieu de Dombasle's *Le calendrier du bon cultivateur ou Manuel de l'agriculteur praticien* was published in 1821. This work may be placed within a long tradition of almanacs

on rural economy, but it also presented the economic management of the farm in a new light.[1] Its innovation was to depict agriculture as a speculative activity, one in which it was critical to know precisely what the farmer gained or lost on each article, just as in a factory. As neither more nor less than 'a producer of wheat, barley, meat, butter, etc.' (1821, 345), the *cultivateur*[2] needed to know which of his products were the most profitable and, toward that end, he practised double-entry bookkeeping. *Le calendrier du bon cultivateur* included several pages of technical explanation within the chapter on "*Comptabilité/inventaire*" (Accounting/inventory) for the month of December (195-203): how to calculate the value of different materials for the purposes of inventory; how to allocate the costs of soil amendments across the length of the crop rotation period; the principle of 'debiting' and 'crediting' accounts within bookkeeping. It concluded with a short work, seventy pages in length, entitled, *La Richesse du cultivateur ou les secrets de J.N. Benoit*,[3] presented in the form of an instructive dialogue between an innovative farmer and his traditionalist cousin, the lesson of which was that the success of any farm business would depend on the personal characteristics of its farm manager and, in particular, his ability to make decisions based on a careful study of the numbers involved. The considerable success achieved by Le c*alendrier du bon cultivateur* (seven editions between 1824 and 1846), in which the sympathetic character of J.N. Benoit undoubtedly played a part,[4] heralded a era of popularisation during which small and medium-sized peasant farmers would be introduced to the thinking of incipient agrarian capitalism.

This article is concerned with the economic normalisation of agriculture in nineteenth-century France. My focus will be on books on agriculture published for rural inhabitants and for use in primary schools between the July Monarchy and the end of the Second Empire. Generally speaking, the ambition of such books was to popularise knowledge considered necessary to agricultural progress; as such, these books may be taken as a means of analysing a process of economic rationalisation underway during this period, and in particular as it would affect the peasantry. I will argue that these manuals offered knowledge, techniques, and rhetorical strategies that helped train small- and medium-sized landowners in the ways of thinking that would enable their insertion and participation in the capitalist economy. In the longstanding debate between the proponents of historical materialism, for whom economic circumstances (aka the superstructure) shape the ideas of the capitalist (cf. the Marxist analysis), and the advocates of a more idealist approach, in which the 'spirit of capitalism' existed prior to the rise of capitalism itself (cf. the Weberian analysis, and to some extent that

of Sombart),[5] I align myself on the side of a sociology of the 'spirit', giving attention to the values and competencies of key individuals in history in order to understand their behaviours and their influence. The perspective of this article is thus to examine the economic ethic upheld by certain actors – those involved in the conception and diffusion of agricultural manuals, as we will see – and how that ethic was disseminated within the social space of the peasantry.

The importance of simple, accessible texts has long been recognised as relevant to such a discussion, even when it comes to envisaging the conduct of the élite. Thus Weber would find a 'provisional indication' of his idea of the 'spirit of capitalism' in Benjamin Franklin's highly popular *Necessary Hints to Those That Would be Rich* (1736), and indeed drew from Franklin's sermons the governing idea of his thesis, that is, that what is taught by such maxims for personal conduct 'is not simply "business sense" – such precepts are widely available – it is an *ethos*' (1904-1905, 26). In the same register, Elias reminded us of the fact that Groethuysen relied 'on more or less mediocre literary products to trace the transformation of man and social norms' (1979, 326), acknowledging that he himself considered the textual material on which he founded his analysis of the 'process of civilisation' to be of 'an even lower level', describing it as 'subliterature' (327). The present study, focused on the world of the peasant or small farmer, will likewise make use of popular literature. Intended for the instruction and improvement of small-holder agriculture, this literature can help us apprehend the process of socialisation of such individuals toward a new approach to economic behaviour and the work of management.

The first part of this study will review the foundational ideas of Sombart and Weber on the spirit of capitalism, highlighting those aspects relevant to a consideration of agricultural manuals. The second part will consider why agricultural manuals have been largely overlooked by researchers and will present the corpus of materials proposed for this study. In the third part, a corpus of manuals assembled for this study will be presented, including a brief historical contextualisation. The description and analysis of the content of a small group of manuals – those awarded prizes within a competition for agricultural-manual writing, announced in 1837 – will form the fourth part of this article, leading into a discussion of the results and conclusion.

Introducing a capitalist ethic

In their reflections on the origins of capitalism, Sombart and Weber sought to understand the relationship between the emergence of a new economic ethic and the adoption of specific practices of calculation (discussed in more detail below). Both carried their analysis far beyond the question of simple economic behaviours; rather, their goal was to explain, within a multiplicity of social circumstances, the characteristics of the life of the accomplished bourgeois which slumbered within each capitalist. Examining the interactions between private life and public life, domestic ethics and commercial ethics, the calculations of daily life and financial calculations, Sombart and Weber gave rigorous attention to the rationales underlying the 'social ethic' – to use Weber's term (1904-1905, 28) – of capitalist civilisation.

Sombart (1913) situated the rise of the bourgeois spirit in thirteenth-century Florence, marking a clean break with the habits of medieval lords. Works on domestic economy from this period, particularly those of Alberti,[6] which Sombart examined in detail, testified to these transformations. In place of the love of careless expenditure cultivated by the great lords, there arose a strict ethic of parsimony that seemed to permeate all areas of activity for the new-style bourgeois. For Alberti, Sombart emphasised, frugality was so highly regarded that it became 'the supreme economic virtue' (102). Each item was to be exactly weighed and measured by the '*massaio*' (the household manager), so that 'no expenditure exceeded the limit of what was absolutely necessary (*che dimandi la necessità*) nor was inferior to what honesty (*onestà*) demands' (103, Sombart citing Alberti). The ethic of parsimony imposed 'a rational correspondence between income and expenses' (105) that manifested itself as much through personal conduct that was ordered and without excess (the '*Saint Esprit*' of order or '*Sancta Masserizia*') as in the scrupulous maintaining of accounts. With regard to business, for Alberti, temperance and zeal were the origins of wealth (137). Business ethics thus took on a relatively unexpected meaning in Alberti's writings. According to Sombart's analysis, it was not just a question of loyalty in exchange. It was also 'advantageous (for commercial reasons) to cultivate, or at least to display (or rather, both to possess and to display to advantage) certain virtues'. Among these 'bourgeois distinctions' (115) were correctness, modesty, and sobriety. Thus, the *onesta* of Alberti invited another sort of weighing of action, one allied to the balance sheet of virtues and sins and running in a straight line to the moral accounting of Franklin (to which Sombart likewise made reference).[7]

In the *Ethic and the Spirit of Capitalism*, Weber (1904-1905) emphasised the asceticism of the new-style bourgeois; but above all, he was interested in the bourgeois work

ethic. Weber wanted to understand the 'background of ideas that could lead one to interpret this type of behaviour, apparently guided solely by profit, as a vocation [Beruf] toward which the individual felt a *moral obligation'* (43). For Weber, such ideas provided the ethical foundation and justification for the behaviour of the entrepreneur. In the writings of Franklin, Weber identified the quintessence of a new work ethic, one in which 'making money… was the expression of diligence and competence within a *profession*' (p. 28). As Berlan (2012) has argued, the idea of duty attached to the profession went far beyond 'a pleasure in work well done', and Weber's argument was also larger, 'because *this* component of the "spirit" of capitalism of Modern times – extended *beyond* the economic domain, reaching into highly divergent spheres of human activity' (249). This broad perspective on the various realms of application of the new social ethic, from economic exchange to the habits of daily life to the individual's investment in work – a central focus of sociological thought – can act as a useful guide for interpreting agricultural manuals, helping us to understand the values and assumptions of their authors and the wide range of subjects to which their recommendations could be applied.

Although Sombart's and Weber's arguments with regard to the significance of double-entry bookkeeping (DEB) have been widely discussed, the relevance of DEB to agriculture is less appreciated. As Bryer has observed, 'few historians have attempted to link the commercial and agricultural revolutions and only rarely [have they] studied farmer's accounts' (Bryer 2006, 387).[8] Sombart's analysis, in which DEB plays a crucial role in the development of capitalism, has been shown to suffer from a number of approximations.[9] If, as later historians have pointed out, merchants, industrialists, and large landowners from the sixteenth to the nineteenth centuries only irregularly balanced their cash accounts and did not always distinguish between business and household expenditures, if they sometimes confused income and capital and could not always specify the exact amount of their profit, this did not prevent them from behaving as capitalists, pursuing the best possible rate of return on capital employed. Weber, alternatively, insisted on the systematic application of monetary accounting as one of the key characteristics of the capitalist spirit: 'what counts is that an estimation of capital is made in terms of monetary value; it matters little whether this is achieved by modern accounting methods or by some other method, however primitive or rudimentary. At each step there is a balance sheet. At the start of the business: the initial balance; prior to each transaction: the estimation of likely profit; at the end: the final balance sheet in order to specify the amount of the profit' (Weber, 1903-1904, 6). It is precisely this principle of systematic accounting that would be highlighted in the extensive literature

dealing with agricultural accounting at the dawn of the nineteenth century. At this period, extended debates took place regarding the development of agriculture and the methods available for making as much profit as possible from landed property. French agronomists, most of whom worked in close professional association with one another and through European networks (Vivier 2009), adopted the techniques of double-entry bookkeeping for managing their model farms and for conducting their agronomic experiments (Depecker and Joly 2015b). Building on the work of their eighteenth-century predecessors (Vatin 2008), these practising intellectuals and those they influenced – great landowners managing their estates directly for their own profit – developed methods for the better exploitation of their lands, workers, and animals with an enthusiasm and a rigour that were fully equivalent to those found in the industrial sector (Depecker and Joly 2015a). By describing and publishing samples of the books and records that they maintained,[10] moreover, these agronomists aimed to reform the management of large- and medium-sized estates.

Edwards (1996 [1937]) was the first to suggest the interest of these French treatises to the study of cost accounting during the nineteenth century, arguing at the same time that 'the British literature during the first three quarters of the nineteenth century was almost barren of ideas' (xvi). In France, Lemarchand suggested some interesting lines of comparison between the model of double-entry bookkeeping inherited from merchants and the so-called 'financial' accounting model practised on agricultural estates (1993, 1995).[11] Lemarchand likewise makes an important contribution to the inventory of works of agricultural accounting that forms part of the database maintained by the World Congress of Accounting Historians.[12]

In this manner, over the course of the first half of the nineteenth century a model for estate administration was developed in which writing and calculating reigned supreme (Joly 2011). Careless accounting practices on the part of large landowners are stigmatised in rural economy treatises; the model of benevolent, informal management, on which the ethos of the small producer is based, is likewise criticised. Reforming the practices of this 'class, so numerous and so useful to the country' – to use the formula of the time – seems to have been pursued with special urgency in France, as we will discuss in the following section.

Instructing the peasant in economic management

Presuming to teach the small-scale farmer how to evaluate profit and choose investments by keeping records and accounts for that purpose may seem like an unlikely undertaking. How could a human being so shaped by tradition, so bound by the rules of the community, and in

any case only semi-literate pay heed to the arguments of intellectuals or of the 'Messieurs'[13] promising to make him rich? Such objections, however, are based largely on received ideas. Research examining the small-scale, diversified farm runs counter to such judgements, offering instead a more nuanced and complex view of the economic behaviour of the small-scale cultivator and his management capacities. Work of this sort depicts the small-scale peasant farmer as fully inserted within the local economy and credit networks (Hubscher 1985), choosing to specialise in response to market demands (Mayaud 1999), mobilising family labour and different combinations of activities so as to weather crises and stay afloat in hard times, and seizing opportunities to increase or restore the family holdings (Hubscher 1985, Béaur 2004). Capable of acquiring new ideas once his capital in land was secure, this small-scale peasant obtained respectable yields compared to larger farms (Herment 2011) and contributed his share to the overall increase in labour productivity over the course of the nineteenth century (Chevet 1994). It is thus not surprising, given its importance in terms of numbers,[14] that the peasantry would be the focus of considerable attention on the part of reformers seeking to accelerate agricultural progress. Recent historiographical data confirms that the small-scale peasant farmer should be recognised as an economic actor in his own right, less dependent on the landocracy than historians have been wont to assume (Postel-Vinay 1971) and less exclusively focused on the simple reproduction of the family unit (as the Chayanovian model suggests) or on an autarkic ideal of self-sufficiency (as the rural sociology of the 1950s to 1970s tended to argue).[15]

Similarly, writing manuals for the peasant farmer was not such an absurd or entirely new idea. Despite low rates of literacy, state officials already engaged in propaganda during the Ancien Régime, knowing they could rely on efficient middlemen in the country to diffuse their directives and other useful knowledge by the way of printed booklets (Bourde 1967). The revolutionaries of 1789 were likewise aware of the importance of writing and the magic exerted by books in the countryside. As they took power, they set up a competition intended to spur the writing of republican catechisms and rural almanacs (Andriès 1996, Durruty 1990). Later they took up Condorcet's idea of writing basic books intended for circulation through the whole territory (cf. the 13 June 1793 National Convention decree). The availability of books adapted both to working farmers' need for knowledge and to their reading skills was an issue throughout this period. As a senior civil servant, François de Neufchâteau supported the translation and diffusion of celebrated agricultural books from neighbouring countries. Among other titles, he is credited with having the Abbé Bexon

translate the Pasteur M. Meyer's books as *Catéchisme d'agriculture ou Bibliothèque des gens de la campagne* (1773). When the ministry failed to support the publication of manuals, agricultural societies and the *départements* stepped in. Nevertheless, de Neufchâteau lamented the reluctance of successive governments and general French backwardness with regard to the instruction of the peasantry in his *Essai sur la nécessité et les moyens de faire entrer dans l'instruction publique l'enseignement de l'agriculture*, submitted to the Minister of the Interior in the Year X. While Switzerland, Prussia, and Italy had managed to spread 'the [agronomic] doctrine in a thousand different forms' (1801, 27) – courses in rural economy, training seminars for school teachers, agricultural catechisms and other short guides presented in simple language – France lacked nearly everything at the dawn of the nineteenth century.

It was not until the end of the 1830s that the publication of popular books began to make real progress, thanks to a shift in how agricultural progress was conceived. As Gaboriaux argues, 'a consensus [was reached] in the search for a balance between the big and the small farm', with the figure of the practical farmer winning over authors of all colours, 'whether they be legitimists or liberals in inspiration, free-traders or protectionists in orientation' (2008, 50). This consensus actually sought to maintain the small peasantry under the large landowners' control. At the same time, however, it suggested that small landowners should be provided with the latest knowledge with regard to science, improved techniques, and management principles that were likely to add to their well-being. From this point on, all rural accounting or agronomic treatises devoted at least some space to questions of small-farm economy and to agricultural accounting. All presented calculation as the best means of opposing peasant routine. Not all authors recommended the adoption of double-entry bookkeeping, which they deemed too complex and useless for small farms. While they generally advocated its use on large and medium-sized farms – although this was a matter of debate among the treatise writers – they urged the small landowner to keep simplified books and, at the very least, to use an *agenda* or a pocket-sized notebook in order to write down daily operations (Joly 2011). For the agronomist Moll and for many others after him, such practices ought to be encouraged because they promoted the acquisition of discipline: 'I would even like the small *cultivateur* to have his notebook so that he would note his receipts and expenses, what he harvests and what he sells or uses, the crops, and the costs incurred by each of them, etc.' (Moll 1833, 326).

The manuals published for rural inhabitants and primary schools between the July Monarchy and the end of the Second Empire were designed for both the school market and the vocational literature market. On the farm, 'they [were] the text and the teacher' (Stray 1993, 73); in the classroom, they were a guide for both the master and the pupil. This multi-purpose quality may have worked against the visibility of agricultural manuals in French historiography. Such manuals have not caught the attention of popular literature historians, as they seemed to be attached to the school arena by their very titles; neither have they attracted consideration by historians of education, given their professional character. Moreover, the great editorial success of almanacs throughout the nineteenth century (Mollier 2003) has overshadowed the existence of agricultural manuals and catechisms. How to compete with almanacs such as *Maître Jacques*, whose annual circulation reached about 500,000 copies in the 1830s, or the famous *Messager boiteux*, whose success was even more phenomenal and reached beyond the borders of the realm?

Research on popular reading practices has concentrated on chapbook literature (a type of literature dominated by almanacs) and on the transmission of agricultural knowledge through printed texts (Chartier and Lüsebrink 1991, Vernus 2003). As for the research on school manuals, the vast bibliometric survey carried out during the 1980s under Choppin's co-ordination could not have been clearer. Over the previous fifty years, the majority of work focused on fundamental learning, including reading and writing, while only 3.7% of the corpus dealt with technical, agricultural, commercial, or vocational teaching (Choppin 1993, 182). To date, the 'Emmanuelle 5' online database[16] identifies three studies of agricultural manuals. The first two offer a short reflection on the evolution of agronomy and animal science as disciplines based on a corpus of manuals dating from 1880 onward (Bonnevialle et al. 1985, Bonnevialle 1986). The third study examines the technical content of about ten manuals used in Québec schools and approved by the Conseil de l'Instruction Publique from 1850 to 1930, with most published between 1880 and 1930 (Saint-Pierre 1999).

One can add to these rare surveys the contributions made by rural historians and historians of agronomy, who have devoted a few pages to these manuals of popularisation: whether through a large-scale inventory approach, such as the quantitative analysis carried out by Raynaud (2010) on the literature on breeding from 1700 to 1850, or the review of agricultural practices from Antiquity to the nineteenth century made by Vanderpooten (2012); within the framework of a monograph on local agricultural development in the nineteenth century, such

as Bourrigaud's for the *département* of Loire-Atlantique (1994); or through the biographical study of a specific agronomist, such as Knittel's work on Mathieu de Dombasle (2009). Some of these historians have even stressed the leading role played by the manuals' authors. In general, however, such studies provide only partial view of this material, without any specific analytical grid. In the end, historical work on agricultural manuals reflects a more general paradox identified by Michaël in a speech delivered to a meeting of textbook historians in 1998: 'Our work assumes that textbooks are of historical importance. Why then have they not been more thoroughly studied?' (Michaël 1998, 1).

While poorly identified, or even not identified at all, these manuals are not rare. To carry out this study on manuals of agriculture[17], I gathered a corpus of 130 original titles published between 1830 and 1870[18]. Certain books enjoyed great success, with more than ten editions over the period of time considered. According to my estimates, nearly 200 books were in circulation. As has already been seen, *Le calendrier du bon cultivateur*, by Mathieu de Dombasle, is earlier than the period considered here, as were about fifteen other agricultural texts published between 1755 and 1829 and aimed at a wide audience. Nearly eighty manuals have also been identified for the 1871-1924 period.

In the following section, we will consider a small number of manuals, those that were awarded prizes in a *concours* organised under the auspices of the *Société centrale et royale d'agriculture*, with the support of the Ministry of Public Works, Agriculture and Commerce. While other publications will be discussed in passing, the goal here is to focus on texts that clearly responded to the objectives of the State and of the professional and scientific agricultural community, thus shining a bright light on the desired behavioural norms for the small peasantry.

Competing for progress: The political, economic, and institutional matrix

One way of approaching agricultural manuals is to locate them within the wider framework signaled by the term popularisation. Agricultural manuals can thus be seen as a form of popular professional education, similar to the little-known movement for worker education (Christen and Vatin 2009). With respect to early forms of technical and economic education in the context of a diffuse industrialisation, one can plot the connections between the philanthropist discourse and a more general turn toward rationalism and the disciplined mind associated with a range of political and economic discourses[19] emerging during the early-

nineteenth century. One can also compare the mechanisms used to disseminate new principles of economic behaviour and investment in work and the respective commitment of a number of *polytechniciens* to workers' training[20] and of some practical agronomists to peasants' training. While the former wrote cheap booklets that were true guides to the economic behaviour of small-scale manufacturers in the 1820s, the latter provided manuals for the small farmer and emotive pleas for modern agriculture in the 1830s. This section will describe the economical, political, and institutional context in which this popularisation movement took place in agriculture, before describing in more detail several of the movement's key actors and initiatives.

With regard to the education of the peasantry, the turning point that occurred during the July Monarchy was the result of political conditions more favourable to the instruction of the masses. Municipalities with over 500 inhabitants were obliged by the 28 June 1833 Guizot Law to maintain a primary school at their own cost. On 30 July 1836, a circular delivered to prefects required them to 'have the basic principles of agriculture taught in rural primary schools' (Charmasson, Lelorrain, and Ripa 1992, 28). It also demanded that they 'multiply agricultural societies, agricultural shows and model farms by supporting them' (28). This strategy reflects the weakness of agricultural vocational teaching. During the period under consideration, agricultural vocational training was still in its infancy (Boulet, Lelorrain, and Vivier 1998) and agricultural teaching at the primary school level, for its part, was rudimentary due to a lack of both skilled teachers and other resources (Quinton 1983, Lelorrain 1995). Three institutes were created through private initiatives: those at Roville (in 1826), Grignon (in 1828) and Grand-Jouan (in1842). Recruitment at these institutions favoured wealthy landowners' sons, however, and instruction was aimed at a high scientific level, with students introduced to the principles of experimentation, accounting methods, and personnel management.

At the same time, the period took an economic upturn. The growth in urban demand for agricultural products and the rise in prices due to the fact that the countryside was less isolated made it possible for a rising social class to acquire land while a portion of the landed bourgeoisie abandoned agriculture. These small landowners could now invest in fertilisers and turn to other new techniques. They could also contemplate instructing their children and training themselves. As for the very small farm, it survived by adjusting its production to market demand and by resorting to family-based diversification, as mentioned in the previous

section. The economic evolution of the small peasantry was accompanied by a political ascension thanks to the introduction of universal male suffrage in 1848. Placed in the position of arbiter of the national destiny, the numerically dominant class of small producers was the object of particular attention under all the regimes holding power between 1830 and 1870. Efforts intensified to increase the scientific and economic education level of rural inhabitants and to prepare rural youth for the place they must occupy within the national economy. How did agricultural manuals fit within the broader educational arsenal and within other local popularisation techniques such as the agricultural shows that were then getting established? What kinds of authors wrote agricultural booklets? What form did the books take and what rhetorical techniques were deployed to convince farmers of the need for change?

Under Guizot's ministry, 'there [were] two points about which the State truly [wanted] to take decisive action: the *écoles normales* and basic books' (Nique 1990, 82). With a view to standardising teaching in all French schools, Guizot had five manuals written between 1833 and 1835; tens of thousands were disseminated over the whole French territory. The minister of Public Works, Agriculture and Commerce followed his example. In 1837, he created 'six prizes, each a sum of one thousand francs, or a medal of the same value, for writing agricultural manuals adapted to diverse French regions and put at the disposal of primary school pupils' (Charmasson, Lelorrain, and Ripa 1992, 28). He entrusted the *Société Royale et Centrale d'Agriculture* with the organisation of the competition. Between 1838 and 1841, six prizes were awarded to five competitors (one author winning twice) by a committee made up of the Comte de Gasparin (Minister of the Interior and Acting Minister of Industry, Agriculture and Commerce in 1839), Leclerc-Thouin (a teacher at the Conservatoire des Arts et Métiers and at the Muséum d'Histoire Naturelle), Soulange Bodin (a botanist) and Dailly (a large landowner).

Table 1: Prize-winning works in the *Société Royale et Centrale d'Agriculture*'s agricultural manuals writing competition (Cf. 1837 circular)

Date	Author (age)	Book title
1838	GOSSIN Louis (20 years)	*Manuel élémentaire d'agriculture à l'usage des écoles primaires des départements de la Meuse, de la Meurthe, de la Moselle et des Ardennes.* Vouziers: Flamant-Ansiaux. 12mo. 170 pp.; 6 pp. of pl.
1838	RENDU Victor (27 years)	*Manuel d'agriculture à l'usage des cultivateurs et des écoles primaires du Nord de la France.* Paris: J. Angé. 12mo, VI-216 p.
1839	ROYER Charles-Edouard (29	*Catéchisme des cultivateurs de l'arrondissement de Montargis.*

	years)	Paris: Bouchard-Huzard, 16mo. 268 pp. Price 1fr.25c
1840	GOSSIN Louis (22 years)	*Manuel élémentaire d'agriculture à l'usage des écoles primaires des départements de la Mayenne, d'Ille-et-Vilaine, des Côtes-du Nord, du Finistère, du Morbihan et la Loire-Inférieure*. Nantes: Forest imprimeur-Libraire et Paris: Ch Schwartz et A. Gagnot, 18mo, 293 pp.
1840	LECOUTEUX Edouard (21 years)	*Traité élémentaire de l'agriculture du département de la Seine*. Paris: Bouchard-Huzard, 12mo, 215 pp.
1841	BODIN Jean-Jules (35 years)	*Éléments d'agriculture, ou Leçons d'agriculture appliquées au département d'Ille-et-Vilaine*. Rennes: impr. e A. Marteville, 12mo. 178 pp. + pl.

The winners' personal and professional profiles suggest that the committee was concerned with recognising the writers' ties to the famous agricultural institute at Grignon. With the exception of Rendu, who had followed the courses delivered at the *Muséum d'histoire naturelle*, where he developed a passion for botany, all the others had attended the Grignon Institute and one of them, Royer, was working there as a teacher of rural economy when the competition took place, having previously been a farm manager and *maître de poste*.[21] Family renown preceded some competitors, such as Lecouteux,[22] who came from a lineage of large farmers recognised as innovators, and Rendu,[23] a descendant of the famous agronomist Yvart. Clearly, the competition became a springboard for promising young men. Gossin, having earned the prize twice, soon became a departmental teacher of agriculture in the *département* of the Oise[24]. Soon afterwards, Lecouteux landed a job as a teacher of rural economy at the Versailles Agronomic Institute; he became the editor-in-chief of the *Journal d'agriculture pratique* in 1866. The competition also made it possible to recognise the quality of the agricultural teaching delivered by men already employed as instructors, such as Royer at Grignon and Bodin[25] at the Trois-Croix School in Brittany. As for Rendu,[26] a minor public official, he coveted the enviable position of departmental inspector of agriculture (Tochon 1877). To accede to the inspection body, which was created in 1841, the candidates were required to write a book of agriculture concerning the region where they applied for the position. Rendu fulfilled this requirement by proposing a book on the *Agriculture du département du Nord* and forged a brilliant career within the ministry. Thus the five prize winners certainly had some ulterior motives for writing elementary manuals. However, we cannot question their conviction with regard to the interest of writing such books. In addition to the fact that they would later be involved in various other forms of popularisation – agricultural conferences, vocational teaching, journalism – several prize winners would continue to write popular manuals throughout their careers. Rendu, for instance, received the

decoration of *Officier de l'Instruction Publique* in 1869 for his books intended for agricultural teaching in primary schools. Bodin also wrote new books on a regular basis – *Lecture et promenades agricoles pour les enfants*, *Résumé d'agriculture pratique*, *Bibliothèque rurale*, etc. – all of which would be extolled by the public (over twenty re-editions for six distinct books, all published between 1840 and 1886).

The impulse given by the ministry was relayed, or perhaps anticipated, by agricultural societies and agricultural shows. These rural associations strongly favoured competition and placed themselves 'not only [as] guides, but also [as] the judges of individual achievements and merit' (Chaline 1998, 304). This was a general trend within learned societies in nineteenth-century France and, according to Chaline's assessment, the competitions that they organised dealt with a wide variety of subjects, including agricultural economy. Agricultural shows were even more apt to exert enlightened patronage on the popular classes by taking action on the scale of the canton or municipality. Of course, as Lagadec (2001, 6) argues, when it came to giving somebody an award for innovative practices, the winners were almost always part of the social élite and thus 'too far from the peasants to perform their role of technical mediator'. It is indisputable, however, that they actively took part in the dissemination of books of agriculture in the countryside and at school (Lagadec 2002). Thus, in his study of shows in Ille-et-Vilaine, Lagadec notes that 'books and pamphlets by Bodin, Mathieu de Dombasle and […] the two inspectors of agriculture who succeeded each other in the *département* during the Second Empire [were] often the winners of prizes awarded at shows' (6). He also notes the existence of a library containing 55 books, including those already mentioned above, at a municipal show. Similarly, Neveu-Derotrie would receive considerable support from the shows in Loire-Atlantique for the purchase and diffusion of his *Veillées villageoises*. Another form of encouragement consisted in granting cash prizes to rural teachers who had introduced agricultural teaching in the countryside. Bourrigaud reports that in the Loire-Atlantique *departement* in 1849, the departmental show organised 'a competition for elementary agricultural instruction' (1994, 374), which was repeated until the end of the century. The experience was hardly convincing – the number of competitors was low, and they were almost always the same from year to year. Yet we nevertheless learn that certain primary school teachers received medals for reading an elementary book of agriculture in class or for helping a *cultivateur's* household with income-and-expenses account-keeping.

One can also get an idea of the role played by learned societies and shows by considering the geographical location of the publishing houses that published manuals of agriculture. Of the 220 titles identified between 1779 and 1924 (among which 130 were published between 1830 and 1870), a little more than 40% were published in Paris[27], nearly 15% in the large cities of provincial France (with Lyons, Bordeaux, Toulouse, Nantes, Amiens, Limoges, Metz and Tours at the top of the list, each with only a few titles, however), while the remaining 45% were published in medium-sized or small towns such as Autun, Guingamp, Moulins, Périgueux, Semur, etc. The writers were 'landowner-agronomists', as they called themselves, or departmental councillors, or presidents of agricultural shows. Thus, while the *Société royale et centrale d'agriculture* commission rewarded a handful of writers who were very 'Parisian' with respect to their intellectual background, a whole rural notability – a party to agricultural societies, agricultural shows and local political life – enthusiastically joined this movement for agricultural education. Most of these writers from the countryside expressed their desire to pass their experience on to the younger generations. For instance, Saulnier d'Anchald, in his *Manuel d'agriculture pratique pour le centre de la France* (1830) presented the results of 40 years of cropping on his estate, and Gelez announced that he took stock of 45 years of practice and 25 years of observations in his *Manuel d'agriculture ou Dialogue agricole dédié aux fils des cultivateurs du canton de Montbard* (1839). Among them there were a few first-rank figures, including Joigneaux and Calemard de La Fayette. Joigneaux was an unrivalled publicist and republican representative and the author of *L'Organisation du travail agricole* (1848). Among his many other works we can find, here and there, a few successful small books of agriculture: *Instructions agricoles* (1857), *Le Livre de la ferme et des maisons de campagne* (1860), *Conseils à la fermière* (1861), as well as – under the pseudonym of P.-J. de Varennes, Varennes being his village of origin – *Les Veillées de la ferme du Tourne-Bride ou Entretiens sur l'agriculture* (1861). La Fayette, an agronomist, politician and man of literature, endeavoured to write booklets designed for a readership of all ages, beginning with *Petit-Pierre ou le bon cultivateur* (1859), then *Prime d'honneur* (1866) and lastly *L'agriculture progressive* (1867), which is aimed at mature men.

A third category of authors who contributed to the writing of agricultural manuals was inspectors of primary school teaching. Prominent among these authors was Greff, whose books were republished up until the 1880s: *Un Catéchisme agricole ou Notions élémentaires d'agriculture, enseignées par demandes et par réponses* (1848), *La fermière* (1859), and *L'école et la ferme* (1861). Lastly, a few professional textbook writers could already be

identified, and this tendency would keep expanding in the second half of the nineteenth century. For instance, having written his courses of elementary algebra, physics, chemistry, natural history and meteorology, Puille passed on to the writing of a manual of agriculture in 1853: *Notions élémentaires d'agriculture par demandes et réponses. Nouveau catéchisme agricole à l'usage des divers établissements d'instruction.*

The common point between all these literary undertakings, wherever they came from, lies in the project to put knowledge useful to the progress of agriculture at the disposal of the 'very poor reader'. Books were probably more likely to be written where the peasantry could read. In fact, with the notable exception of Brittany,[28] whose great dynamism with regard to popularisation compensated for a high rate of illiteracy, the production of manuals roughly ran along the Saint-Malo-Genève line, which divided France into two parts with respect to literacy: 'From the end of the seventeenth century to the second third of the nineteenth century, it split North-North-Eastern France, with relatively high rates of couples able to sign their marriage certificate, and a France which comprised the Armorican West, the Massif Central and the whole Aquitaine and Mediterranean Midi, with a very high rate of illiteracy' (Furet and Ozouf 1977, 37). The books awarded by the *Société centrale d'agriculture* concern the northeast *départements*, the Oise, the Seine, the Loiret and Brittany. The manuals of provincial origin widened the range of territories for which books were written, but the corpus built up for this study shows that the Massif Central and the entire Aquitaine and Mediterranean Midi were underrepresented.

During the Second Empire, several measures were taken to strengthen the place held by agricultural teaching in the parish school: the reassertion of the importance of this teaching in the 1850 Falloux Law, the introduction of a horticultural course and elementary notions of agriculture into the training syllabus at *écoles normales* (teacher training colleges) in 1866, the creation of an agricultural teaching certificate for higher primary schools (with pupils aged 11-13) in 1891, the publication of a plan of agricultural courses in 1897. However, under the Third Republic, priorities shifted. The aim was no longer to think of an agricultural course which prepared for a job – which could only rarely be put in place – but rather to give an 'agricultural colour' to the primary school (Boulet 1990). Agricultural popularisation was officially entrusted to a special body of officials, the departmental teachers of agriculture, in 1879, while the establishments run by the Ministry of Agriculture had already taken charge of vocational training. Thus the era opened up by the July Monarchy, which would last for almost 40 years, represents a totally novel experience of popular instruction, grounded in

book-based pedagogy and the participation of widely varied social forces. What ambitions did these various actors have? What was the intellectual stock lying in those small agricultural books conceived of as a Trojan horse for the reform of consciences and practices?

Agriculture *via* capital

This section deals with the moralistic and pedagogical function of agricultural manuals and their use of rhetorics of calculation. Since the sixteenth century, literature of edification formed a key source for popular reading material, promising elevation of the spirit and the sentiments for all virtuous semi-literate Christians. The manuals studied here can be analysed as a form of secular edification literature, in the sense that they seek to form a new type of professional, one whose piety is shown through diligence at work, the acquisition of new ideas, and the seeking of profit. It is no accident that agricultural manuals often take the form of a 'catechism', a form invented in the sixteenth century for instruction in the doctrines of the Christian faith. This literary genre was understood to be a reliable 'technique for assuring the memorisation of specific content by the simplest levels of intelligence. It thus proved advantageous for use in popular education' (Brodeur and Caulier, 1990, 355). It used the 'questions and answers' device as a way of imprinting a set of precepts onto the minds of readers.[29]The ethic residing in agricultural manuals was expressly desired by national leaders overseeing the future of agriculture. Thus, in their 1836 New Year's greetings address, the Council of Agriculture mentioned the need for 'small manuals, clear, simple and accurate, in which one would find, next to the description of excellent agricultural practices, moral precepts of order and economy designed for the working class of *cultivateurs*' (Charmasson, Lelorrain, and Ripa 1992, xxviii). How were these good practices and moral precepts translated into booklets designed for the schoolboy or peasant? The analysis proposed here will draw attention to the formal characteristics of the winning books as much as to their content, highlighting the writers' willingness to moralise conduct.

The 1837 competition offers much information on the stock of knowledge deemed necessary to the practice of agriculture and on the reasoning required of small producers. The representatives of the state and the scientific and agricultural professionals who sat on the competition committee selected books with a discourse similar to that of the rural accounting and agronomic treatises designed for large landed property owners. The winners wished to make the agriculture of their areas more flourishing and more productive, it being understood that 'many faulty practices can be replaced by reasoned methods' (Bodin 1840, 12). They

drew special attention to the issue of work, 'a force whose utilisation must produce the biggest effect possible' (Lecouteux 1840, 126), and to its rational management: 'time lost really is lost capital' (Gossin 1838, 14). They underlined the benefits of rural economy, which taught how to 'combine all agricultural operations with one another, so that one can draw as much profit as possible from the capital investment engaged' (Lecouteux 1840, 121). All advocated the regular use of double-entry accounting; although for reasons of lack of space for treating such a complex subject, according to these authors, they contented themselves with exposing generalities that suggested 'the importance of agricultural book-keeping, a work whose object is to monitor the capital in circulation in all its metamorphoses' (Gossin 1838, 13). We next consider in more detail the rhetoric employed in these books.

Three ways of prescribing change

The educational form in which these precepts were presented varied significantly across authors. Bodin, Rendu, and Lecouteux wrote classically constructed books; Royer chose the catechism with questions and answers; while Gossin composed two fictions in dialogue form, imagining a long conversation between a father and his son in his first manual and, in the second one, a discussion between an experienced sergeant and two *cultivateur*-friends of his, assisted by the parish priest.

Except for a few details, the plan of Lecouteux's manual was followed by the other writers, apart from Gossin. Lecouteux's book begins with a preface describing agriculture in the *département* of the Seine (1-15), including information on the climate, transportation routes, markets, 'the moral condition of the inhabitants', cropping systems, etc. The body of the text is divided into two long sections, one devoted to large farms (16-152), the other to small farms (153-198). The section on large farms is made up of three parts, the first of which is devoted to soils and crop production (tillage, sowing, inputs and fertilisers, weed control, etc.); the second to domesticated animals (horses, dairy cows, sheep, pigs, rabbits, poultry, bees, and silkworms), including breeding techniques; and the third to rural economy. Lecouteux's discussion of the latter (121-152) – most relevant to this paper – is again divided into three chapters. The first considers capital investments, labour, the soil, and land tenure; the second deals with the general principles of crop rotations and their use in France; the third discusses accounting. Lecouteux presents the basic concepts of economic analysis: the definition of production agents (capital investment, soil, labour) and the way 'their proper distribution works towards the end result of the entire undertaking' (134). The knowledge and personal qualities of the entrepreneur are described as moral capital, 'which, up to a point, can

be substituted for other types of capital' (124). Concerning investment income (animals and instruments), the author advises his reader to be cautious: 'Above all, avoid acquiring draught animals from too powerful a breed'; or again, 'avoid having too many teams in harness' (125) – with the objective being to distribute the work as evenly as possible over all the seasons of the year. Circulating capital – which includes money, whether in active circulation or not; the *cultivateur*'s credit; and the commodities in stock, fertilisers, and seeds – must be carefully monitored, for the aim is to 'wait for the most favourable moment for the sale of products' (126). Concerning the work done by employees and animals, the author contents himself with presenting a general view, much shorter than with what we find in longer agronomic treatises of the period, which typically include detailed analyses of labour costs (Depecker and Joly 2015a). Lecouteux urges the small *cultivateur* to closely supervise day workers, since these 'have an interest in making their work last as long as they can' (129).

Concerning crop rotations, an agronomic subject highly debated at the time, the author again contents himself with very general principles, advocating alternating crop rotations 'approaching the wish of nature as much as possible, so as to best reconcile the interests of the soil with those of the *cultivateur*' (142). This conveys the impression of a short course that the young winner followed at the Grignon Institute. A final 'chapter' – just two pages long – extols the benefits of double-entry accounting, since 'the *cultivateur* has a direct interest in keeping books whose mere perusal presents him with his situation' and which can indicate to him 'which branch of speculation is more profitable than another' (151).

The departmental monograph obviously appealed to Soulange Bodin, the committee's reviewer for this manual. While the winner was reproached with being too brief with regard to the small farm, he was congratulated for showing small *cultivateurs* 'how the work done by the whole family was intelligent and profitable, [and] how the small farmers who attended to the crop as day labourers and landowners were commendable and the friends of order' (1840, ix and x).

This first, rather dull type of manual seeks to speak to the reader's intelligence without overwhelming him with figures. In light of the stated objectives of the competition, Lecouteux's work can be seen as somewhat lacking in practical sense and illustrations. More experienced writers sought to address for this potential criticism. Bodin, for instance, included in his section on accounting several tables displaying records of the work performed by horses or labourers, the horses' feed intake, the consumption of dairy products, etc. He also ended his lesson on rural economy with a series of handy references: 'sowing periods, seed quantity

per hectare, product per hectare, daily feed quantity for a horse, an ox, a cow, a pig, quantities of fertiliser and input to employ per hectare so as to obtain good manure, weight of diverse products per hectolitre, approximate value of a few local measures against new measures' (152).

Royer's *Catéchisme des cultivateurs de l'arrondissement de Montargis* represents a second type of manual. Thanks to his long professional experience, however, and original personality, the catechism Royer submitted was different from most of the other catechisms that were on the market. In the first chapter, Royer summarises the *arrondissement*'s key statistics and topography (1-30), including a variety of observations regarding local practices with which he was familiar: gleaning rights, the typical diet of day labourers providing their own food and its negative effects on their health, etc. Generally speaking, the catechism was supposed to alternate short questions and answers, as in the following example:

> Q: *What is the objective of improved agriculture?* A: The aim of improved agriculture is to yield the highest net product from the soil, while maintaining it in a condition of ever-increasing improvement. Q: *Through what means is such a result to be obtained?* A: Through carefully considered crop rotations, which leads one to have neither fallow nor land at rest. Q: *How can this aim be reached?* A: By combining one's crops so as to have forages sufficient to produce enough fertiliser. Q: *What is meant by crop rotation?* A: Crop rotation is to be understood as a succession of crops, or the art of diversifying farm output. Q: *So it is necessary to diversify output, isn't it?* A: Certainly, that is what we call rational agriculture. Q: *Why must products be diversified?* A: So as not to exhaust the soil. Q: *What do you mean by saying one does not exhaust the soil when diversifying products?* […]. (Bruno 1836, 17-18)

Royer did things entirely differently. Far from a repetitive mechanism that could become exasperating, the author offered long, developed answers that gave a more satisfying rhythm to his text. He presents his views and unfolds some very insightful arguments:

> *How should one study agriculture, and how can one distinguish between what is useful and what is not useful among the numerous innovations proposed by different landowners?* One has first to observe, and this for several years, the farmers who are famous for cultivating well and who have acquired this reputation because they

> systematically pay their rent as expected while drawing profit from the worst and the best farms alike. One must know the best customs of the country; the good farmers' secrets regarding certain uses of the plough that are unknown on bourgeois-run farms where unintelligent *laboureurs* are only able to draw the most despicable advantage from it. One must go over the lands of one's *arrondissement* for several days during the spring so as to recognise the differences shown by various crops (do this when going to fairs and when travelling to grain sales, etc.). When one observes innovations, one must ask for the advice of the landowner himself, who alone can estimate merit: farm employees themselves are very bad judges since they only see the result (not the cost incurred). (1839, 14-15)

Again, when Royer treats of economy, the answers that come from his pen are unconventional:

> *What is rural economy?* It is the science that deals with the appreciation of agricultural operations; with the expenditures they generate; with the profit or loss they can represent in the numerous circumstances in which they can be applied; and with the consequences of their utilisation specifically on the individual's, and more generally on the country's, happiness and fortune. This science can be defined as the material and moral appreciation of all agricultural operations. Through calculation, it demonstrates the value of things and the best advantage that can be derived from them individually. Through reasoning, it indicates their influence on the whole farm and often leads us to neglect partial profit in order to achieve the highest total profit. Thus a soil improvement can be [gained from manure] and thus the cattle's consumption of products may be preferred to a sale in kind, etc. Through judgement, it leads one to sacrifice probable or even certain profits to the demands of society in its current state of civilisation and, conversely, to cleverly and progressively overcome the most unjust of these requirements. (1838, p. 130)

For Leclerc-Thouin, who reviewed this volume for the committee, none of 'the manuals that have been awarded to date has a more local colour than this one'. As a teacher at the *Muséum d'histoire naturelle*, he especially appreciated the spirit in which the book was written: 'Mr Royer has sought not so much to set out under a general form the fundamental principles of cropping and agricultural economy as to deduct from a few of them the applications useful for the Loiret inhabitants' (1839, vii). Criticisms of the book, interestingly, made similar points: Brame states in the *Journal d'agriculture pratique* that Royer 'has done something different

from what the minister and the Société centrale had asked for, and by this he may have done something better than what the programme required' (1839, 224).

The third type of award-winning manual was that of the imaginary conversation, the format chosen by Gossin. In his two books, we seek in vain for a description of agriculture in Lorraine, the young writer's adoptive home, or in Brittany, his native country. He offers in his foreword a few disparaging remarks on the former – the *cultivateurs* lack intelligence and are ready 'to share all that can be divided' in a spirit of jealousy (1838, iii) – and a few positive words about the latter, which he says is destined to become 'one of the most prosperous regions' in France (1840, 7).

This deviation from the ministerial order is compensated for by the originality of the dialogue form, which is nonetheless not new (earlier examples include *La Richesse du cultivateur ou les secrets de J. N. Benoît*, mentioned above). In Gossin's book the dialogues are devoted to the education of a young man, Adolphe, who is destined to take over his father's lands. The book begins with an eloquent lesson on rural economy, as the father has just dismissed 'his worthy farmer' in order to cultivate his estate himself. The aim is to demonstrate that practices based on 'reasoning and the natural sciences' are superior to the local agriculture, which 'is grounded solely in short-term-interest views' (1838, 10). Encouraged by Adolphe's positive attitude ('A moment ago, I didn't know of the existence of agricultural science; now I want to know it and I feel in the right frame of mind to like it, judging it can be useful for you and for the country'), his father launches into a long exposé of the various types of capital and on how to combine them 'so as to derive from them as much net profit as possible' (11). On a regular basis, the novice's questions ('But, father, how do you recognise in all circumstances that this profit occurs?') maintain kind of plot line, preventing the text from lapsing into the form of a lecture, as in the other manuals.

The idea of taking 'agronomic walks', which are punctuated by observations and encounters, gives life to the father and son's conversation, while also offering the possibility of breaking down a series of prejudices. An interaction with the *laboureur* Bertrand, for example, is used to present all the work routines that one may hate. Old Bertrand keeps taking a six-horse team into his waterlogged fields and remains deaf to all the advice that he is given. Contrary to what is done elsewhere, Bertrand won't reduce the number of horses, for 'it's not done so in our country', let alone replace them with a team of oxen, despite the advantages offered by Adolphe's father, for the *laboureur* hates 'those slow-coach animals' (17).

The chapter on accounting is very good from a pedagogical point of view. Having the son give voice to a series of reflections on the technique of double-entry accounting, the master can then qualify and deepen this juvenile perspective:

> *Adolphe:* Father, in order to see the loss or profit from any given item, isn't it enough to merely put on one side all the values that have been devoted to it, and on the other the values it has produced over the year? For instance, concerning a wheat field, I would tell myself it has received such-and-such a quantity of fertiliser, ploughing, and seed, and benefited from such-and-such mowing and harvest expenditure; it has produced so many sheaves that gave me so much grain and so much straw. *The father:* I see, my friend, that you understand things very well so far: now, let's go into a few details I imagine are necessary. (157)

He then presents, concerning the 'cow' account, the estimated facts and figures for the capital written down to the credit for the inventory for 1837, the estimate for the following year, and so on. Within ten pages or so, the reader comes to understand this peculiar accounting technique and can understand the examples given.

For each topic taken up by the father and son, judgement is formed based on the authority of science and rural economy, the new 'religion'. The authority of the church is thus minimised, with the author acknowledging its importance only in the concluding pages, by way of an apology for life in the fields and the moral qualities of the man who must make his land yield a profit.

The Comte de Gasparin, who reviewed Gossin's first book for the awards committee, could not stop praising it. Likening the manual to 'the genre of Miss Martineau's stories or Madame Marcet's dialogues on chemistry and political economy' (1838, ii), de Gasparin predicted that it would be a success: 'Among the books we have recognised, some are as good as this one with respect to scientific accuracy; but we think that none will achieve the stated aim as well as this one, none will be as much read by children, none will be read more fruitfully by primary school teachers, none will spread more [information]' (iii). He later praised Gossin's second manual presented to the commission in similar terms; and overall was very pleased with the young man's ability to try something new.

The agricultural-manual competition thus throws an interesting light on the committee members' uncertainties with regard to the best way of prescribing and supporting change. Between the 'classic' manuals' appeal to reason, the subtle digressions of a catechism, and the

edifying moralism of a fictional dialogue, they seemed to refuse to choose, considering that each type of manual would find its most appropriate audience, whether children, teenagers or practising *cultivateurs*.

Double-entry bookkeeping and the rhetoric of economic rationality

Overall, the authors of these manuals approach the techniques of accounting succinctly, arguing that the full exposition of the methods of double-entry bookkeeping would be both too long and too complicated for the general public. Only Bodin and Gossin make a pedagogical effort in this regard. The first imagines a system (151-158) which he suggests is best adapted to small-scale farmers and which consists in maintaining a single register, known as the *grand-livre*. He provides a sample synopsis, with sample entries, an initial page of tables of various accounts maintained in double-column format (wheat, cows, losses and profits, etc.), and on a second page, registers for listing various items (hours worked, household consumption, etc.). The keeping of accounts, theoretically 'simplified' – in fact, the author also recommends taking notes in a pocket notebook (*main courante*) – adheres to the sacrosanct principle that 'nothing is received that does not come from somewhere' (156). In this way, the eight pages of explanation are of a very practical nature. Bodin proposes less to familiarise the reader with the methods of accounting analysis (accounting's conceptual aspect) as to guide the reader step by step through the business of writing, calculating, and verifying accounts (accounting's procedural aspect), including use of the inventory and the balance sheet.

It is in Gossin's 1838 manual that we find the most complete presentation of DEB[30]. In nine pages of dialogue between the father and son, the principal notions of accounting are presented with clarity and a quality of demonstration (apart from one case described below): the annual result defined as the difference between two yearly inventories, the results of the various branches of activities, the movement of values through the accounts, the allocation of fertilisation expenses over several years, the difference between fixed assets and working capital, etc. After a basic comparison of the two yearly inventories' 'cow' account, showing a negative balance sheet, Gossin tackles harder issues. First, he offers rules to assist in the calculation of manure value across a multi-year crop rotation. For example, in a rotation running, '(manure) row-crop, cereal, clover, wheat', with the initial two-thirds of the manure value being absorbed by the row-crop year and the first cereal, Gossin recommends allocating the last third as a credit to the second cereal (wheat) account. Next, he explains how to

calculate the value of the wheat while it is still in the sheaves: 'one opens an account for the sheaves, which shows a receipt for the sheaves as they come from the hands of the harvesters, then the cost of transport to the stacks and to the barn, and then the cost of threshing. This account, in turn, provides straw and grain to the account of the straw and grain in storage. To establish the value of the sheaves in the field, since the wheat account provides it, and the sheaves account receives it, we allocate to each of these the value of the straw and the grain, less the cost of transport and threshing' (161). The example is a puzzling one, with disturbing errors. Gossin's overall message, however, is clear: all expenses and income must be a matter of calculation and valuation in order to take their place in the farm accounts. Other recommendations relate to records that should be kept every evening (hours worked, along with other useful information such as the birth or death of an animal, sowing and harvest dates, sales, etc.). Lastly, Gossin stresses the importance of the 'land register', maintained for several years and usually closed at the end of each crop rotation. From this register, the landowner may draw consistent information in order to estimate, as a part of his profit, the extent to which he has increased his capital.

Among the prize-winning authors, several underline the need for a special treatise for instruction in accounting. Rendu, who only provides three pages of generalities on the topic (209-212), invites the reader to consult 'the excellent article of M. de Dombasle on agricultural accounting in the second volume of the *Annales de Roville*' (p. 212). Contenting himself in his catechism to a number of hints on making cost calculations, with the notions of cost production and depreciation being introduced in the chapter on rural economy, Royer offered in the following year a much-discussed *Traité de comptabilité rurale* (1840), recognised by the *Société royale et centrale d'agriculture* and in which Royer presented some very original ideas on management. [31]It seemed that it was difficult to translate the advances in accounting and the sophisticated techniques described in treatises intended for more sophisticated audiences into a style appropriate for an audience of 'young readers'[32].

If the techniques of accounting appear somewhat neglected by these manual writers, the manner in which those techniques are employed to select 'best' practices (i.e., the most profitable) and thus to orient and rationalise the farmer's decisions is at the centre of their argument: whether it is a question of adopting a new cropping sequence, trying out a new plough, or planning a land purchase, every idea that the farmer has should be assessed in the light of financial data. The rhetoric of accounting is all the more powerful and effective in that it is diffuse. The manual writers make particular use of this rhetoric in cases where recent

scientific advances (notably in agronomy, physiology, and chemistry) had helped calculation conquer new territory. Knowledge as to the nutrient requirements of plants and animals or the nutrient and other values of fertilizers and forages were so many entry points for the introduction of numbers into agricultural practice. A striking example can be found in the last lesson of the *Veillées Villageoises* (1849, seven edition). The author, Neveu-Derotrie, concludes his book—presented as a series of monthly agricultural lessons offered by a clever, progressive farmer named Jérôme—with a remarkable discussion among three of Jérôme's best 'students':

> François, Baptiste and Auguste had outpaced their fellows in the classroom where Jérôme gave his lessons. Standing near the board, chalk in hand, they were engaged in a lively discussion: 'Your calculation is incorrect', François was saying to Baptiste. 'Your land wasn't that exhausted through the nine years of your three-year crop rotation'. 'Listen to me then', replied Baptiste, 'I will prove to you that my land lost 75 degrees of its strength and fertility out of the 118 it had the first year: the average value of the fertility and richness of my soil over the nine years, adding up each year and dividing by nine, was 68 degrees and 83 hundredths; the average consumption of this richness and fertilising principles was 25 degrees and 74 hundredths; so I am left at the end with 43 degrees 9 hundredths, and since I had 118 degrees to begin with, it is clear that my land has lost approximately 75 degrees. Ask Master Jérôme if that's not correct'. (Neveu-Derotrie 1849, 251)

This strict, somewhat ridiculous demonstration put in the mouths of these three young protagonists aims to bear witness to the rapid adoption of the new economic reasoning, according to which young peasants are inculcated in the principles of science and rural economy. So convinced of the superiority of practices based on rigorous calculation, they have become the strongest advocates for DEB. Indeed, in the passage cited above, we see François and Baptiste debating crop rotations, soil amendments, and yields, relying throughout on the use of a series of data that only a systematic accounting of inputs and outputs over the length of an entire rotation (nine years, in this example) could effectively provide. In this way, the manuals propound the idea that accounts are indispensable to drawing conclusions about the consequences of past decisions as well as to resolving on new investments. Adolphe's father concludes his lesson on double-entry bookkeeping with the

idea that it is extremely important to him to 'clarify things with regard to everything one does, and to be able to stop if one finds oneself to have started along a wrong path' (Gossin, 165).

It is this capacity to rationalise decision making, to render the outcome of an investment – whether good or bad – more transparent, that Weber identified as the technical superiority of DEB. Carruthers and Espeland (1991), based on close study of accounting treatises from the sixteenth through the nineteenth centuries, have emphasised an additional feature of DEB overlooked by Weber, which is that independent of its technical power, DEB also took on a symbolic effectiveness, a power to legitimatise capitalist forms of business. [33] Emphasis is placed thereby on the role of accounting rhetoric in the processes of legitimatisation of specific practices characterising a new entrepreneurial style: 'Accounts are a way to display the rationality of decisions and thus enhance their legitimacy. They help to demonstrate that alternatives were considered, trade-offs were made, and potential outcomes compared. Business accounts, as a "rhetoric of numbers" engender legitimacy because they document the rationality of decisions in an age when that form of rationality is legitimate' (61). From this analysis, the authors draw an essential conclusion for understanding what was at stake in the world of business at the dawn of capitalism and what one senses taking form in the world of agriculture at the beginning of the nineteenth century, from treatises of accounting and even in the very modest manuals of agriculture discussed here: 'One consequence of pervasive rationalization and institutionalization is that symbols of rationality become legitimate even if totally decoupled from the sphere of technique. As a symbol of rationality, double-entry bookkeeping legitimized business activities, even when the actual account did not conform, or conformed only loosely, to the strict method' (61). Caution should thus be used in interpreting the relationship between practices and norms, particularly in agriculture, where, too often, it has been concluded from the weak adoption of accounting techniques, and particularly of double-entry bookkeeping, that there was an incommensurability between the reasoning of the small landowner and the reasoning of the entrepreneur[34]. This caution should likewise be used in the study of manuals. Although they only present the techniques of DEB in embryonic fashion, they were nonetheless vehicles of accounting rhetoric, firmly supported by the schemes of capitalist thought.

Conclusion

The discipline of modern political economy, in its early years, placed agriculture at the centre of its reflections on capitalist accumulation. The much-anticipated disappearance of the small peasantry, foretold by the physiocrats as by Marx, failed to come to pass, and much research

has sought to explain the various pathways leading from peasant agriculture to capitalist agriculture,[35] or to question the very possibility of capitalist agriculture in industrialised Europe (Koning 1994, Moser and Varley 2013, Herment 2014).[36] The present article, without contradicting these views, has pursued a different line of research, approaching capitalism not through property relations, production methods, productivity, and wage labour, but rather through an exploration of the rhetoric of economic calculation as manifested in what seemed an unlikely place, in the largely forgotten books written for the rural inhabitants and primary schools of nineteenth-century France. The agricultural manuals discussed here suggest that far from spelling the elimination of small-scale agriculture, the advance of 'capitalism' actually sought to accommodate it through a variety of initiatives aimed at educating and encouraging small and medium-sized landholders to participate in the new capitalist order.

The primary finding of this study has been to highlight the *social work* of ideological production and behavioural guidance that unfolded in the first part of the nineteenth century. Indeed, studying agricultural manuals reveals the ways in which economic behaviour was disciplined in a manner stronger than that employed within the more sophisticated literature targeted at large landowners already convinced of the value of agricultural progress. Relieved of scientific ambition and its associated rhetorical trappings, these books offer a more concentrated version of an ethic promoted by men and institutions eager to hasten agricultural progress. It is remarkable to note the stability of the discourse addressed to the small-scale peasantry over the length of the period considered here. Although France witnessed major political and economic transformations from the July Monarchy to the end of the Second Empire, and agriculture itself was subject to important technical, economic, and social change through this period, the content of these manuals seems almost immutable, capable of being republished in the same form over three or four decades, with later publications often simply copying the material of their predecessors.

Faced with scientific and technical novelties and the possibility for the development of an intensive mixed farming, injunctions for change were applied to a large range of practices. As a result, manuals dealt primarily with technical matters, often dealing with questions of rural economy in a special chapter at the beginning or the end of the work. This fact does not lessen their interest for those seeking to understand the processes of economic rationalisation at work in these manuals. Certainly, the sections on rural economy are of greatest interest in demonstrating to what extent this topic became 'the new religion' for its advocates and in revealing how the concepts of fixed capital and circulating capital, the inventory and the balance sheet reorganised understandings of the farm and its management. In this manner,

manuals reproduced and adapted the new discursive formation on calculation that appeared around the middle of the eighteenth century under the direction of the large landowners (Trive, 1978) and that received a tremendous push in the first part the nineteenth century. In place of the moral or theological principles concerning the good performance of the farm, Trive emphasised the fresh idea that 'profit was held to result from the good management of the farming process' (70).

Nevertheless, a second important finding of this study is how economic reasoning was extended to every question relating to agricultural practice. From the set-up of a plough to the selection of a wheat variety or a breed of livestock, calculating reason touched every area of agricultural activity, and thus all sections of these manuals. This deep impact of the logic of accounting, often coupled with new thinking on the organisation of work – since there were always inputs or elements that might be poorly understood – had the effect of reversing the order of thinking: first, one sought to understand the economic performance of a procedure and its conditions of application; next one examined its technical aspects. Thus, it was the chapters on crop rotation (discussions on agricultural accounting, incidentally, were often placed here), livestock management, etc., that could be most revealing with regard to new ideas about work and decision making.

The ethic embodied in these manuals was undoubtedly one directed toward a greater rationality of economic behaviour on the part of the small and medium-scale peasantry. Yet it was also one directed toward a greater discipline, emerging from the fact that accounting functions both as a form of power and as a form of knowledge, knowledge engineered through writing and examining, as described by Foucault (1977). Manuals clearly fostered the examination of practices on the basis of written evidence and calculated data. They call on farmers to leave their ploughs and put pen to paper[37]. This call for formal farm management irreversibly plunged the small peasantry into a new representation of professional behaviour and a way of life. Even if 'individuals seek to avoid or subvert the calculations made of or by them, the economic norm installed by such calculations remains in place and provided a more or less enduring reference point' (Miller 1994, 2). One could draw the same conclusion with regard to the moral norm embedded in such a process of economisation.

Finally, calculation as a technology appears intrinsically linked to the mastery of one's individual desires. In line with the writings of Alberti and Franklin, agricultural manuals remind us that the search for profit is indissociable from a disciplined and prudent behaviour, as here in a passage from Rendu's manual: 'It is not enough for the *cultivateur* to possess the requisite information and intelligence, he must also have good sense, activity, prudence, and

that wise economy that consists not simply in saving capital but in employing it wisely, without avarice, but also without prodigality' (Rendu, 1838, 176). Seeking to imitate Franklin and Jacques Bujault, the agronomist Desvaux published in his *Précis d'agriculture à la portée de toutes les intelligences* (1832) a series of proverbs summing up what he considered the core of 'good professional practice.' These comments would seem to offer a suitable way to close:

> 'The poorly managed household eats the fruit of the best fields'; 'Going to fairs for no purpose is like trampling on one's wheat'; 'Having everything in its place saves time'; 'Thirty pounds of plaster are worth twelve hundred of hay'; 'Sowing without feeding the soil is like burying money in the ground'; 'A calf well-nourished for a year is worth more than a calf poorly taken care of for two'. (1832, 92)

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[1] Mathieu de Dombasle did not initially intend to create a new 'farmer's calendar', but rather to translate that of Arthur Young, which he admired greatly. Confronted with innumerable differences in soil, climate, agricultural systems, etc., in France, however, he decided to write a new work while still following the example of the English pioneer in the promotion of costing, cost allocation, and exit-value accounting (see Juchau 2002).

[2]As Lethuillier (1999) has shown, the term *cultivateur* was in vogue at the beginning of the nineteenth century and tended to take the place of *laboureur* as used in the previous century. *Cultivateur* covered a wide range of social contexts depending on the region and the context. To signal the difference between small-scale and medium-scale farming, one also sees references to the '*petit cultivateur*'.

[3] *La Richesse du cultivateur ou les secrets de J.N. Benoit* appears not to have been written by Mathieu de Dombasle. In 1821, *La Richesse du cultivateur ou les secrets de J. N. Benoit* was attributed to A. Lemercier in Quérard's *France littéraire ou Dictionnaire bibliographique du XIXe siècle*, as was another excerpt from the *Calendrier du cultivateur*. The 1821 and 1830 editions of the *Calendrier* have A. Lemercier's name on the title page. Lermercier had already published *Le trésor du cultivateur ou Le moyen d'augmenter les richesses du laboureur en améliorant la culture des terres et plusieurs branches d'Economie rurale* (1819). The preface to his *Trésor* says that the book was written 'at the invitation of the Conseil d'Agriculture [and] the Ministère de l'Intérieur'. Lemercier had already employed the form of a dialogue between 'a good *cultivateur* and a poor farmer' as the narrative fabric for his 1819 agricultural catechism.

[4] In his *Quelques mots sur M. de Dombasle et sur l'influence qu'il a exercée; par un élève de Roville* (1846), Meixomoron notes the great attachment of readers to the figure of Jean-Nicolas Benoît, many of whom believed he was a real person (1846, p. 24).

[5] In *The Protestant Ethic and the Spirit of Capitalism*, Weber claimed to distance himself from Sombart's position (27). However, when Sombart discussed in *The Bourgeois* (1913) the correspondence between the form of an economy and the spirit giving rise to it, he aligned himself with his colleague: 'as Max Weber has shown with regard to Benjamin Franklin, this relationship and this correspondence is not a strict one and does not authorise us to conclude that such a form necessarily calls into being such a spirit, or vice versa' (Sombart, 1913, 14-15). Later, Sombart would advance an intermediate position between Marx and Weber: 'at the foundation of nascent capitalism, it is the entrepreneur that creates capitalism, while at later stages, it is capitalism that makes the entrepreneur' (Sombart 1926, 235).

[6] Alberti (1441).

[7] It is this nearly 'word for word' equivalence between the writings of Alberti and those of Franklin that Weber would judge 'unsustainable' in *The Protestant Ethic and the Spirit of Capitalism* (1904-1905, 29).

[8]Bryer recurred to earlier studies, such as those of Tawney (1941) and Coleman (1963), on the accounting of large landowners who were closely connected with the business world in England from the sixteenth through the eighteenth centuries. Bryer pointed to certain failures in the bookkeeping and calculation methods of these semi-capitalists, but nevertheless drew from this re-reading a validation of Marx's predictions regarding the emergence of capitalism in England.

[9] See Chiapello's review of a few of the key texts involved in the post-Sombartian debate and the new interpretations some historians have proposed. In addition, Chiapello offers a fresh perspective on the origins of the idea of capitalism, arguing that 'the concept of capitalism is indissociable from a representation of economic life shaped by an accounting outlook' (2005, 264). For a discussion of the links between accounting and agrarian capitalism, see Bryer's study of large landowners' ledgers and practices of calculation in the East Anglian agriculture of the seventeenth and eighteenth centuries (2005). For a newer and more complete discussion, see Dean, Clarke and Capalbo (2016), Toms (2016) and Bryer (2016).

[10] A pioneer in agricultural training, Matthieu de Dombasle published in the second issue of his *Annales agricoles de Roville* (1825) a copy of all the articles recorded in the estate's books during the month of May 1824, as well as about twenty tables he had composed himself. He seems to have been excessive with regard to records. He needed no fewer than 23 special auxiliary books to record the daily operations of the demesne, transferring the results to the *journal* and the *grand livre* on a fortnightly basis.

[11] Industrialists were slow to adopt double-entry bookkeeping and both it and the financial method were used in the eighteenth century, with DEB being definitively adopted only in the 1820s (Lemarchand, 1995).

[12]For the purposes of this online database Lemarchand used a broad definition of works on accounting, also including agronomic works with a section devoted to bookkeeping. The database includes 196 references, more than 100 of which are from before 1900. See: http://www.msh.univnantes.fr/documentation/comptabilite/comptabiliteprivee/index.php?action=helpDisplay

[13] The term 'Monsieur' was the familiar term used for *rentiers* living off the products of/income from their land, the *demi-bourgeois* who, for Agulhon (1975), constituted an important segment of the rural élite in the nineteenth century.

[14] During the French Revolution, the transfer of national goods, the division of inheritance, and the suppression of feudal servitudes all acted to favour peasant ownership, which continued to increase throughout the nineteenth century, as shown by estate inventories: in 1884, out of 14 million estates, 74% were of less than two hectares (Barral 1968, 24).

[15] The model of an autarkic peasantry, central to the opposition between the peasant and the entrepreneur, was particularly important in the work of Mendras, the father of French rural sociology. From *La fin des paysans* (1967), in which he established the foundations of his theory of the peasantry, to his more synthetic work *Les sociétés paysannes* (1976), we find the same prominence given to economic autarky, accompanied by a devaluing of peasants' managerial practices, for example: 'Within an traditional autarkic mixed farming system, the peasant had few choices to make, and economic and technical management were reduced to a few items: stay out of debt, save enough to get your children settled, and add to your stock of land if the opportunity arises' (Mendras 1984 [1967], 123); 'Pay the levy and satisfy the household's needs using the strength of the land and your own back, such was the simple equation that the peasant had to solve year after year' (Mendras, 1976, p. 46).

[16] The Emmanuelle 5 database includes all publications taking old manuals as an object of study. In 1993 this national scientific observatory included 1,271 references, see http://www.inrp.fr/emma/web/index.php.

[17] For my survey of agricultural manuals and other books of popularisation, I consulted the catalogues of the Bibliothèque nationale de France, the patrimonial library of Rennes, and the Bibliothèque ancienne of the Ministry of Agriculture in Caen. I also consulted the collections in the library of the Académie d'Agriculture de France. Other sources were found in publishers' advertisements – particularly the Librairie de la Maison rustique and the Librairie encyclopédique de Roret – and in the bibliographic reviews appearing in the *Journal d'agriculture pratique*. I identified titles using various combinations of keywords including '*manuels*', '*catéchismes*', '*éléments d'agriculture*', '*précis d'agriculture*', '*causeries*', and '*dialogues*', associated with '*cultivateur*', '*paysan*', '*ferme*', '*village*', '*champs*', '*habitants des campagnes*', '*écoles primaires rurales*', etc. The first titles identified made it possible to gradually refine the search.

[18]I also gathered a corpus of rural and domestic economy manuals (around 150 original titles identified between 1804 and 1945), analysis of which is beyond the scope of this article.

[19] The doctrines of Smith, Say and Ricardo found a large audience among those interested in agriculture. In the first volume of the cours de Gasparin (1843-1848), in the section on *fermage*, there is a summary of the three economists' views on land rents (280-300). De Gasparin also devotes several pages to an analysis of '*le salaire de l'intelligence directrice*', comparing the remuneration costs for head ploughmen and managers and considering the relationship between the manager and the accountant within an estate (380-387).

[20] Two leaders in the workers' education movement were the *polytechniciens* Dupin and Bergery. In Paris as in provincial France, free courses in industrial drawing, mechanics, and geometry were offered, and they were often supplemented with published booklets to reinforce key ideas through reading. Dupin and Bergery both composed cheap popular booklets of this sort (Dupin 1827, Bergery 1829). Among the five booklets written by Dupin for *Le petit propriétaire français*, the second (1827) relates to the small agricultural landowner.

[21]Royer had an unusual career compared to the other prize winners. Coming from a poor family, he began as an apprentice gardener at the Muséum d'histoire naturelle, eventually becoming director of the experimental/trial gardens. He went on to manage several farms, held posts as head of works and head of accounting (from 1828 to 1832) and then secured a position as postmaster (1832-1836). After several years as a professor of rural economy at Grignon, he was named inspector general of agriculture in 1843 (Zert, 1999).

[22]See Boulet et al., 1998.

[23]See Tochon, 1877.

[24] Cf. Blanchemain's obituary.

[25] See Fourchon 2016.

[26] In 1835, Victor Rendu had already published *Notions of agriculture* in *Maître Pierre ou le Savant du village*, a collection created by the Librairie Levrault. These small 18vo volumes sold for between 40 and 60 cents and addressed a wide range of topics (geometry, astronomy, education, health, morals, etc.). They reflect the active role of publishing houses in popularising science at this time (Bensaude-Vincent 1993).

[27] This figure may need to be qualified, as the analysis of the corpus underway shows that some provincial authors were published by Parisian booksellers. A complete analysis of the corpus should make it possible to map the results.

[28]It is not easy to understand the reason for this exception. Broadly speaking, one could propose another analysis of manuals' place of publication that would seek to draw a comparison with the distribution of various categories of landholding in the different parts of France. From this point of view, Brittany is among the areas most strongly characterised by small landholdings (Agulhon 1975, 91).

[29]The 'catechism' format was used in several fields of knowledge (medicine, banking, etc), and was adopted by the authors of some of the earliest books on accounting in France, including those of de La Porte (1685) and Gobain (1702).

[30]Curiously, the second manual by this author, recognised by the committee in 1840, devotes not a single line to accounting.

[31]Conscious of the fact that certain values are only registered at key moments of the year (before fairs or markets, when animals are ready for slaughter, etc.) and that wear and tear could detract from farm output, Royer outlined a provisional budget using a system based on records made of farm activities.

[32]We should note however the publication of two works devoted to the teaching of accounting to a young audience: the first was by Bahier (1840), a former professor at the Institut de Lannévez and former accountant at the student farm at Garland (Côte du Nord). Bahier was awarded a silver medal by the Société nationale et centrale d'agriculture for this work. The second title was by Querret, inspector of agriculture for the arrondissement de Morlaix. This was a remarkable work, an agricultural catechism written for Breton youths, and included an example of accounting for one year for a small Breton family farm, with all the various registers and account books specified.

[33]Carruthers and Espeland used a sample of accounting textbooks over several centuries drawn from the holdings of the Goldsmiths'-Kress Library of Economic Literature (1991, 35).

[34] Among others, see Postel-Vinay's call (1998) to rethink peasants' social networks and their capacities for accessing information, credit, and markets, far from "a vision of peasants attached to their fields, their lord, their landlord […] with professional and family trajectories remaining restricted 'within the limits of the farmyard or the hamlet' (15).

[35] These works have discussed in particular the introduction of a capitalist relation of production in agriculture, land rent as a central point in the exploitation of the peasantry, the proletarisation of the poorest peasants, etc. For an overview of these arguments, see Gavignaud (1978) and for a fuller discussion, Postel-Vinay (1971) and Mollard (1975).

[36] Koning (1994) presents a comparative analysis of agrarian policies in the UK, Germany, the Netherlands and the USA from 1846-1919, concluding that agriculture failed to establish itself as a profitable industry independent of government. Moser and Varley (2013) contend that agriculture was finally integrated into capitalism through a process of subordination; Herment locates capitalist development both upstream and downstream from the farm.

[37] For more details on farmers' writing practices, see my historical and ethnographic research on the role of the *agenda* (a kind of diary or notebook) (Joly 2000 and 2009).