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Alan Sangster

Gregory N. Stoner

Paul De Lange

Brendan O'Connell

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Alan Sangster
GRIFFITH UNIVERSITY
Greg Stoner
UNIVERSITY OF GLASGOW
Paul De Lange
RMIT UNIVERSITY
Brendan O'Connell
RMIT UNIVERSITY
and
Giovanna Scataglino-Belghitar
UNIVERSITY OF OXFORD

PACIOLI'S FORGOTTEN BOOK: THE MERCHANT'S *RICORDANZE*

Abstract: Double entry bookkeeping emerged by the end of the 13th century and was adopted by, for example, the Datini of Prato during the 1380s. In the transition from single to double entry evident in the Datini Archives, initially accounting records were kept in an account book called a *Ricordanze*. Record books of this name were typical of Tuscany and, when such books were first used in Tuscany, businessmen began to use them also as a form of personal diary and autobiographical record. Others not in business followed suit and maintained purely personal biographical diaries of the same name. For those in business, the *Ricordanze* thus developed into a hybrid: partly autobiography and personal and, partly, a place to record matters relating to his business, including details of transactions and of other matters he did not wish to forget, such as promises, obligations, and conditional agreements.

As revealed in the Datini archives for the 14th and 15th centuries, use of a *Ricordanze* for this purpose was discontinued in the accounting system and the book was replaced with another called a *Memoriale*, which contained details of all business transactions. By the time Pacioli wrote the first published description of double entry bookkeeping,

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the *Memoriale* was identified as one of the three principal account books of that system. The others were the *Giornale* [journal] and the *Quaderno* [ledger]. However, largely unnoticed by accounting scholars, towards the end of his treatise, Pacioli also describes another book that merchants 'would be wise to keep': a *Ricordanze*. Not a personal *Ricordanze* nor a hybrid personal plus business *Ricordanze*, nor a version of a *Memoriale*. Pacioli's *Ricordanze* was intended to serve a very specific purpose: it was a book dedicated to maintaining a record of things that should not be forgotten. As such, it was intended to provide an extra layer of managerial control over the affairs of the merchant beyond that provided by the double entry system.

This paper considers the role of Pacioli's *Ricordanze*, of the records that may be maintained within it, discusses the merits of maintaining a record book of this type, and questions why such a clearly useful device does not appear to have been adopted even though it was described in the same treatise which led to the universal adoption of double entry bookkeeping.

INTRODUCTION

Without exception, the merchant should not trust his memory, for such trust results in many errors. [Benedetto Cotrugli¹, 1458, translation by the authors]

Many scholars have written about the origins of double entry bookkeeping, speculating upon how and when it emerged [e.g. Littleton, 1927; Peragallo, 1938; Yamey, 1947; Zerbi, 1952; Martinelli, 1977; Kleinhenz, 2004; Arlinghaus, 2006; Orlandi, 2011]. A number of early confirmed instances of its use have been identified, including its adoption by, for example, the Datini of Prato during the 1380s [De Roover, 1937, 1938]; and it is now generally accepted that double entry bookkeeping emerged by the end of the 13th century [Lee, 1977; Smith, 2008]. Some scholars have focused on individual elements of a double entry system, such as the nature and form of ledger accounts [e.g. Lane, 1945; De Roover, 1941] or individual items, such as the origin of the trial balance [Peragallo, 1956], the origin of the journal entry [Littleton, 1928], the development of compound journal entries [Peragallo, 1977, 1983], inventory accounting [Stoner, 2011], bookkeeping practices [Peragallo, 1977, 1980], and closing procedures [Peragallo, 1981]. Many authors have written about Pacioli's [1494] treatise, the first printed text to describe this system of accounting, including Hernández-Esteve

¹ Benedetto Cotrugli was the author of the first known written description of double entry bookkeeping. He did so in five pages of a manuscript written in 1458. It was not printed until 1573.

[1994a and 1994b]; Stevelinck [1994]; Yamey [1994, 2010], Nobes [1995], Sangster [2007, 2010], McCarthy et al., [2008], and Sangster et al. [2008, 2011]. Yet, despite all that has been written and the large number of people who have and are working in this field and, while many scholars from a range of disciplines have noted among Tuscan business records the existence of a special form of notebook or special form of notes entitled a *Ricordanze* [e.g. Edler, 1934; Edler De Roover, 1953; Borsook, 1979; Burke, 2006; Schenk, 2007], no-one appears to have noticed that Pacioli's treatise ends with a description of a record book with this name. This paper explores the nature and purpose of this record book, and considers what may have inspired Pacioli to include the topic in his treatise.

Pacioli's *Ricordanze* lies outside the double entry system he described. It enriched the information maintained by the merchant over his affairs, arguably expanding the data-and-value-orientated double entry system to embrace qualitative information and so provide a more complete accounting system than is possible from the strictly data-value-focused form of double entry system he described in the rest of his treatise. Yet, despite these apparent advantages and despite Pacioli's text being very clear on [a] what a Merchant's *Ricordanze* is; [b] on what it should contain; and, [c] on how it should be used, such a book does not appear to have been adopted by medieval merchants in the form Pacioli described. Given the fact that Pacioli's system of double entry bookkeeping, as described in that same treatise, became the dominant bookkeeping system, it is surprising that the same did not occur with his Merchant's *Ricordanze*. This paper, therefore, also seeks to offer some plausible explanations for this situation and concludes by suggesting how this line of research may proceed.

In order to clearly distinguish Pacioli's *Ricordanze* from the other books mentioned in his treatise, the next section considers the principal account books of the system of double entry bookkeeping described by Pacioli.

THE PRINCIPAL ACCOUNT BOOKS OF PACIOLI'S SYSTEM OF DOUBLE ENTRY BOOKKEEPING

In Chapter 5 of his treatise, Pacioli wrote (emphasis added): "you **need** three books to make the work proper and easy" [Pacioli, 1494, f. 200r]:

- a *Memoriale* [Memorandum] – "a book in which the merchant shall put down all his transactions, small and big,

as they take place, day by day, hour by hour" [Pacioli, 1494, f. 200r];

- a *Giornale* [Journal] – where details of each transaction were organised and entered so as to facilitate the transfer of these details to appropriate accounts in the third book;
- a *Quaderno* [Ledger] – where all the accounts of the business are maintained.

Pacioli qualifies this 'need' for the three account books by saying that small businesses can exist without a *Memoriale* but that they must operate a *Giornale* and a *Quaderno*. Then, in Chapter 6, he reiterates the necessity of maintaining a *Memoriale* within any business which has many transactions, that employs the services of others, or operates at a pace that precludes the *Giornale* being kept neatly in real time. Thus, for all except small businesses, the *Memoriale* was considered by Pacioli to be an essential book; and, he believed that it was necessary for all businesses to maintain a *Giornale* and a *Quaderno*.

THE OTHER BOOKS PACIOLI SUGGESTS MAY OR SHOULD BE MAINTAINED

These three account books are not the only books described in Pacioli's treatise. He mentions four others that may or should be maintained separately from these principle books. In the context of starting to maintain a set of books, in Chapter 2 an Inventory book is mentioned, though it is suggested that the inventory could be recorded on a sheet of paper which would [in Chapter 10] normally be kept in a box, chest, or pouch. In Chapter 35 three more are suggested, each of which should be maintained as a separate book: a book of important correspondence, a receipt book, and a *Ricordanze*.

Concerning the *Ricordanze*, Pacioli wrote first: "*E similmente e buono havere un libro separato per li ricordi che si chiami Ricordançe*" – "And similarly, it is a good idea to keep a separate record book, called the *Ricordanze*." [Pacioli, 1494, f209r]. He then states that the *Ricordanze* is used to record important items that it would be disadvantageous to forget, such as things you have lent temporarily to friends or neighbours. The book was to be consulted daily, at the end of the day, in order to ensure that everything had been done that should have been done. Once an item was no longer relevant, its entry in the *Ricordanze* was scored-out.

Thus, at a glance a merchant who maintained a *Ricordanze*

could see which of the items recorded within it were still outstanding. Supplementing what he wrote in Chapter 35, Pacioli then devotes Chapter 38² to a description of the types of items to record within it. The chapter is entitled, "*Casi che acade mettere ale recordanze del mercante*" – "*Things to enter in the Merchant's Ricordanze*". Yet, despite its being dealt with in a separate chapter, as mentioned above, its inclusion in Pacioli's treatise has gone virtually unnoticed in the Anglo Saxon literature, not just by accounting historians and economic historians, but also by researchers specialising in the history of note-taking of that period, such as Soll [2010, pp. 367-368], who describes the books in Pacioli's double entry system but appears to assume that the material in the treatise about the *Ricordanze* is describing items in the *Memoriale*. The source of such oversights and misunderstandings can be traced to problems with the five 20th century translations of the treatise into English.³

TRANSLATION PROBLEMS

Translation and interpretation issues are not uncommon with Pacioli's treatise. For example, none of the first three modern English language translators, nor their German counterparts, successfully translated the text of Chapter 24 of Pacioli's treatise [De Roover, 1943, p.149]. De Roover implies this was because Pacioli's language, "*is sometimes so condensed as to be unclear*", a point reiterated by others, including Hernández-Esteve [1994a, pp. 18-9] and Stevelinck [1994, p. 14]. Another example concerns the translation of Pacioli's Chapters 34 and 36, with respect to the *summa summarium* and the *balancio del libro* respectively. A number of authors have confused these

² Chapter numbering ceases towards the end of Pacioli's treatise. Thus, in order that it be clear to which part of the treatise this paper refers, it is necessary to explain the chapter numbering adopted by the authors. After the final chapter heading in the treatise, Chapter 36, there are five sections of text:

- (a) A summary of the rules and ways for keeping a ledger
- (b) Things which should be entered in the books of a merchant
- (c) Things which should be entered in the merchant's *Ricordanze*
- (d) How to write down lire, soldi, denari, and other abbreviations
- (e) How to make entries for debtors and how to make entries for creditors

Four of these sections are unnumbered in the treatise. For convenience and consistency, this paper adopts the numbering convention for this material used by Crivelli [1924], Von Gebstattel [1994] and Yamey [1994]: [a], [b], and [c] are labeled as Chapter 36, 37, and 38 and [d] and [e] are described as being in an appendix.

³ Geijsbeek [1914]; Crivelli [1924]; Brown and Johnston [1963]; Von Gebstattel [1994]; and Cripps [1995].

two terms, including Manzoni [1540], who used Pacioli's treatise as the basis for his own. As Peragallo [1956, p. 389] makes clear, these are two different procedures and the understanding and then translations of these two chapters were hindered by "ambiguity of terminology" in the original resulting in the belief that "both the 'bilancio del libro' [balance of the ledger], and the 'summa summarium' [sum of sums], as described by Pacioli, were trial balances and that the two terms refer to the same book-keeping procedure."

Anglo Saxon translators of Pacioli's treatise have also struggled with their translations of Pacioli's term, 'Recordance'. Yet, they had a clear warning that this may be a problem from Simon Stevin, the Dutch author of a bookkeeping text in 1604, who complained that use of the term 'Memoriale' in Italian texts was confusing and ought not be used [as it was in Pacioli's bookkeeping treatise], for a record of daily transactions but, for a book of things to be remembered [Stevin, 1604 cited in Geijsbeek, 1914, p. 116] – a record book for important notes. That is, for a record book of the type Pacioli labelled a 'Recordance'.

This confusing suggestion, which would have switched the names of these two books, was ignored or overlooked by later writers of texts on double entry bookkeeping. However, it does indicate the existence of some ambiguity in terminology of which, in particular, later translators of Pacioli's treatise should have been aware. Nevertheless, despite noting this in the text of his book containing his translation of Pacioli's treatise, Geijsbeek [1914] forgets Stevin's warning and translates the term 'Recordance' as 'Memoranda' in Chapter 35, so wrongly distinguishing it from the book he calls a 'Record Book' in Chapter 38 and causing confusion for readers who have noted his use of 'Memorandum' as the translation of 'Memoriale' when describing the account books in his double entry system.

Geijsbeek was the first modern-English language translator of Pacioli's treatise. Of the four other modern translations into English, one fails to give the book a name in either Chapter 35 or 38, another uses a different term in each chapter, and the other two called it a 'record book' in both chapters but without any capitalisation, though they did capitalise the names of the three account books.⁴

⁴ This apparent misunderstanding is surprising given the availability to all these translators of Gitti's [1878] translation of the treatise into Italian. Gitti's translation reveals unambiguously that the *Ricordanze* is an additional book that a merchant may maintain, and that it is that book which is mentioned in Chapter

The failure of three of these translators to use the same name for the *Ricordanze* in both chapters 35 and 38 leaves the readers of those translations to assume they are references to different books. As a result, they are deprived of the clarity of description of use and content of the *Ricordanze* that may be derived from combining the information given in these two chapters. By comparing the content of the *Ricordanze* and the *Memoriale* we can, however, relieve potential confusion and make clear that the *Ricordanze* is a different book to the *Memoriale* and therefore that it is inappropriate for 'Ricordanze' to be translated as 'Memoranda' or Memorandum'.

THE RICORDANZE AND THE MEMORIALE

The *Memoriale* is a record of transactions that have occurred. Pacioli's *Ricordanze* has a different purpose: it was to be used to record things important to the merchant *in the future*. Some of the entries in the *Ricordanze* may relate to past transactions but all the entries include aspects that need to be monitored for a period of time after they are recorded in the *Ricordanze*. They matter to the business and to its future and, as will be seen in the list of items the *Ricordanze* could contain, sometimes may do so significantly. Those in the *Memoriale* have finished and cannot impact the well-being of the business in the future. The focus of all items entered in the *Ricordanze* is thus upon events that will or may occur in the future rather than upon events that have already occurred.

The nature of the two books was also different:

- The *Memoriale* was an account book that was part of the double entry system, with annotations connecting it to entries made to the relevant accounts within the other books of that accounting system. It provided the detail of the transactions underlying those entries.
- The *Ricordanze* was *not* an account book and was *not* part of the accounting system. The entries within it were not necessarily connected to each other, nor to accounts in the double entry system and, in some cases, may not have been expressed in a way that would ascribe them a value [an essential element of entries in account books]. It was a device intended to provide and enhance managerial control over the business beyond what was possible from the inherent controls within a double entry accounting system.

35 and discussed in Chapter 38.

Further distinguishing the *Ricordanze* from the *Memoriale* is Pacioli's choice of words in recommending use of such a book. He suggests that it is a *good idea* for businessman to use a *Ricordanze*. In contrast, as mentioned earlier in this paper, the *Memoriale* is described by Pacioli in Chapter 5 as one of the three principal books of the merchant and as being essential, for any but small businesses.

Having confirmed that Pacioli was referring to a separate book, was there something in the origins of the term '*Ricordanze*' that may have confused readers of his treatise and caused them to ignore the text of Chapter 38?

RICORDANZE

'*Ricordanze*' was the name given to personal record books typical of Florence and the rest of Tuscany⁵ where they were in use from the late 13th century. They contained records of important family matters: "... autobiographies and citizen family histories which grew directly out of the books of memoranda in which businessmen recorded their personal affairs, particularly those which did not properly belong to the books of the partnership or company" [Hyde, 1979, p. 116]. Often autobiographical, containing personal information or parental advice for children, they were private and intended to be kept within the family.⁶

The Tuscan *Ricordanze* of the 13th, 14th, and 15th centuries "contained records of family events, world affairs, and business matters" [Edler, 1934, p. 242], including in some cases, details of debtors, creditors, and assets. The Medici, for example, maintained a *Ricordanze* for moveable and immovable property [Hirsch, 1963] and the account books of the Alberti Company of Florence included a *Ricordanze* dedicated to the records of purchases of real estate, farms, and farmland [De Roover, 1958, p. 9]. In some cases, these Tuscan *Ricordanze* were maintained for very specific purposes. In others, they contained details of all business activity, including the transactions that Pacioli indicated should initially be recorded in the *Memoriale*.

For example, *Ricordanze* were used by the Datini of Prato in the branch office in Avignon in the 1360s and 1370s before they started using double entry bookkeeping. Details of debtors and creditors in the Datini's *Ricordanze* were copied to the *Memoriale* where they were collated and entered in the *Quaderno*

⁵ Only one Venetian *Ricordanze* dating from before 1500 was known to have survived compared with over 500 from Florence [Grubb, 1994, p. 375]

⁶ See, for example, Jacks [1992]; Grubb [1994].

[Kleinhenz, 2004, p. 148; Arlinghaus et al., 2006]. As illustrated in the CD accompanying their book, Arlinghaus et al. [2006] show that, in time, the use of a *Ricordanze* as the first book of entry in the accounting system ceased and the first entry was instead made in the *Memoriale*. Sometimes, as with the Alberti, Datini and Medici companies, these business-related *Ricordanze* were separate books. In other cases, such as that of the publisher, Girolamo Strozzi of Florence, the *Ricordanze* formed a section in one of the account books, in this case, the *Giornale* [Edler De Roover, 1953, p. 227].

Consequently, Tuscan *Ricordanze* were records of business affairs that came to also be used as personal diaries before the two aspects separated back into two separate record books, one of which focused upon the affairs of the business and can be seen as the forerunner of the *Memoriale* of Pacioli's system of double entry, a book that was *not* used to record autobiographical data. The biographical and personal *Ricordanze* continued to be used for that purpose for centuries thereafter.

None of these forms of *Ricordanze* match the description Pacioli gave to this book. There may, therefore, be grounds for considering that Pacioli's use of the term, '*Ricordanze*' for the book he describes in Chapter 38 may have led to some confusion in the minds of those who read it.

PACIOLI'S RICORDANZE

Pacioli presents the merchant's *Ricordanze* as a supplement to, rather than an integral part of the double entry system. It serves a very specific and appropriate purpose, highlighting the importance to merchants of exercising control outside the double entry system over assets [including cash] and liabilities, both existing and contingent. Any transactions recorded in it are short-term and soon reversed [Pacioli, 1494, f210v]; and the emphasis placed by Pacioli is upon ensuring they are not forgotten and, where relevant, that they occur, rather than [as would be the case with the *Memoriale*] noting that they have occurred and therefore ensuring that they are recorded properly in the account books.

There is no mention of the autobiographical detail that dominated many of the Tuscan books of this name. Pacioli instead focuses upon the assets of the owner and a range of business and personal activities that could have repercussions for the merchant if they were not continuously monitored:

1. Details of all household and business utensils⁷ of the merchant except things of insignificant value.
2. A note of all such items belonging to the merchant that are missing.
3. Explicit and full details of all sureties, obligations, or promises to pay that the merchant has made on behalf of friends.⁸
4. Details of all goods or other things left with the merchant.
5. Details of all goods or other things borrowed by the merchant from friends.
6. Details of all goods or other things lent by the merchant to friends.
7. Details of all conditional transactions, such as agreeing to pay a certain amount for a shipment of goods providing that they are of good quality and to pay a different amount if the goods are not of good quality.
8. Details of all property which the merchant rents-out and of the rental agreements.
9. Details of short-term⁹ lending of anything to friends.
10. Details of short-term borrowing of anything from friends.

In order to comprehend the implications of the maintenance of a *Ricordanze* in the manner suggested by Pacioli, it is necessary to appreciate that, as suggested by Pacioli himself in Chapter 23: “... *accounts are nothing other than the orderly records of the merchant's own devising, which provide information about all his business and tell him in a simple way whether his business is doing well or badly.*” [Pacioli, 1494, f206r, translated by Von Gebattel, 1994, p. 73]

Nobes [1995, p. 380], discussing Pacioli's treatise, reemphasises this by stressing the important role of bookkeeping in administration, control and decision making in stating that: “*The purpose of bookkeeping [at that time] was not primarily for the calculation of profit, let alone for the preparation of financial*

⁷ Household utensils are not capitalised in Pacioli's double entry system [Pacioli, 1994, f205v]. Rather, they are charged to profit or loss as a household expense. They do not, therefore, appear as assets in the ledger [*Quaderno*]. They are, however, recorded in the *Ricordanze*.

⁸ While the literal translation of Pacioli's term, ‘*amico*’ is ‘friend’, it seems likely that he was using this term in the broader sense of someone whom the merchant knows rather than a close friend.

⁹ Pacioli suggests 8 to 15 days.

statements for users. It was for the better administration of the business and better decision making by the owner-manager."

Pacioli's description of the *Ricordanze* reveals that it has a similar purpose, indicating that it exists almost entirely so as to facilitate better administration of the business and better decision making by the owner-manager. It supplements the control facilitated through the double entry system, extending it and enhancing decision-making in aspects of the business and a merchant's personal affairs that are beyond the scope of the double entry system. Pacioli was not describing a Tuscan *Ricordanze* which mixed autobiographical entries and business-related entries, but a record book entirely dedicated to enhance the control of the merchant over his affairs – a book to record: "*annotations in narrative of affairs disparate in nature including terms of contracts, the hiring and dispatch of personnel, and the progress of specific jobs and so on...*" [Melis, 1962, translation by the authors].

Pacioli did not invent the concept of such a book, nor was he the first to write about it. That honour rests with Benedetto Cotrugli and his *Il Libro dell' arte di mercatura*, a text written in 1458 for the small and medium-sized merchant [Jouanique, 1996, p. 271] in which, in accordance with what Pacioli said about the need for a *Memoriale* being related to the size of the business, Cotrugli wrote that all entries were made *first* in the *Giornale* and then in the *Quaderno*. More relevant to the present study, he also recommended that merchants use a *Ricordanze*: "[a book where] *details must be kept of all contracts, commitments, exchanges, and whatever you do as soon as they are agreed, and before they give rise to journal entries, as there are many things that are contracted and not passed to the journal, though no doubt must be remembered and recorded for that purpose.*" (Translation from Hernández-Esteve [1992, p. 98] by the authors.) As with Pacioli's *Ricordanze*, Cotrugli's lay outside the double entry system and does not appear to have been intended to perform the function of a *Memoriale*.

Pacioli's description of the *Ricordanze* was considerably more detailed than Cotrugli's but, nevertheless, it does appear that they were both describing the same book – an aide memoire outside the double entry system which was in use at that time in Tuscany and, perhaps, beyond – Cotrugli had worked as a merchant in Tuscany [in Florence] but also did so in Naples, Barcelona, and Genoa [Jouanique, 1996, pp. 269-270].

However, maintaining a *Ricordanze* as described by Pacioli, does not ever appear to have been 'normal' practice in Venice.

While claiming that his treatise described the Venetian method of bookkeeping, it appears that in the final chapters he may have been attempting to improve the control a merchant has over his affairs beyond the then current practice, adopting a normative approach by suggesting a form of record that Venetian merchants should use, rather than one they did use. This use of his treatise to educate merchants about a 'better' practice is consistent with his stated aim [at the beginning of his treatise] to provide merchants with everything a merchant needs and is consistent with the manner in which he appears to have attempted to encourage Venetian merchants to adopt other control features typical of Tuscan businesses that were not commonly practiced in Venice, such as regular closing of the books [Pacioli, 1494, f207r] – Tuscan businessmen regularly balanced the accounts and produced balance sheets in order to assess their profit; Venetian merchants did not, assessing their performance primarily from the inventory account of each venture [Lane 1945, p. 167-8].¹⁰

Adding Pacioli's *Ricordanze* to a full Pacioli system of double entry bookkeeping, including regular closure of the books, would have given merchants considerably greater control over their business affairs than the relatively laissez-faire approach to overall control that was the norm in Venice at that time.

Further justification for including a chapter about a book called a 'Ricordanze' in a treatise on double entry bookkeeping lies in the fact that, as indicated by Cotrugli, there is a connection between a *Ricordanze* of this type and the double entry system: if it transpires that an item entered in the *Ricordanze* changes status from something to be aware of to something that affects the state of affairs of the business, it may be necessary to record details of the item in the account books. Thus, for example, if a merchant agreed to underwrite a business venture, he would have entered details of this guarantee in his *Ricordanze*. If the venture failed, the merchant would need to record the resulting expense in his account books. The relationship of each of the items recorded in Pacioli's *Ricordanze* to the account books is presented in the next section.

THE *RICORDANZE* AND THE ACCOUNT BOOKS

Based on the information provided by Pacioli and applying common sense where information is omitted, the following is

¹⁰ See also De Roover [1956, p.157]

known or may be deduced about these items:

- When utensils listed in the *Ricordanze* [Items 1 and 2] were declared lost, sold, gifted, or scrapped, a note to that effect was made in the *Ricordanze* beside their entry in that book. No entry recording these events was entered in the account books.¹¹
- Contingent liabilities [sureties], obligations, and promises to pay on behalf of someone else [Item 3] on a specific future date would be scored-out when no longer relevant. If they had to be paid, appropriate entries would be made at that time in the account books; similarly for receipts of this category.
- Temporary arrangements [Items 4-6] were entered in the *Ricordanze* so that they could be monitored. Should they become undeliverable or unrecoverable, any compensation due, paid or received would be entered in the account books and the item crossed out in the *Ricordanze*.
- When details concerning conditional transactions [Item 7] were clarified, the entry in the *Ricordanze* was scored-out and an appropriate entry was made in the account books.
- The details of rental agreements [Item 8] never appeared in the account books, though, of course, the rental payments would have been entered in the account books as they occurred.
- While short-term lending and borrowing [Items 9 and 10] were not entered in the account books, when the *Quaderno* was closed in order to produce a balance sheet, details of these items which were still outstanding might be entered in the account books if the item lent or borrowed was cash.

Having these short-term financial items and items of an initially non-financial nature which might ultimately become important all in one book dedicated to this aspect of business must have made them far easier to monitor and control than if they were buried in the midst of everything else in the *Memoriale*.

CONCLUSION

On the last page of his bookkeeping treatise Pacioli includes

¹¹ Though the original purchase transaction would have been entered in the account books, at which time it would be treated as expenses and therefore charged to profit or loss [Chapter 22].

a section of text entitled, “*Things which should be entered in the Merchant’s Ricordanze*”. In this text, Pacioli describes how to use a record book based upon the Tuscan *Ricordanze* but with a very much more business-focused use and utility than is typically found in Tuscan *Ricordanze* of the 15th century. That is not to say that Pacioli invented his own version of this book – Melis [1962], for example, reports their use and Cotrugli’s description [1458] predates Pacioli’s by 36 years but, Pacioli’s is the first and only known detailed description to have been included in a treatise dedicated to describing an accounting system based on double entry bookkeeping.

The strength of Pacioli’s *Ricordanze* was its utility as an *aide memoire* for a number of items listed by Pacioli that would not be recorded in the double entry system, or which may have bordered upon invisibility within it. As such, it is not difficult to understand why Pacioli felt it was worthwhile promoting use of this book in his treatise, especially as it was printed in Venice, a region where use of any variant of the Tuscan *Ricordanze* appears to have been, at best, extremely limited. It would have assisted merchants in following the advice offered by Benedetto Cotrugli at the beginning of this paper and it would have made daily monitoring of those items considered important to remember far easier than if they were scattered among the entries in the [clearly far larger] *Memoriale*. Furthermore, while Pacioli’s system of double entry did not include the mandatory maintenance of his *Ricordanze*, by doing so merchants were provided with a means to keep the three principal books of their business free of the clutter of control-related detail which is, instead, recorded ‘at a distance’ in the *Ricordanze*.

All other things being equal, such a boon for merchants would be expected to have been widely adopted even, perhaps, more willingly than Pacioli’s system of double entry bookkeeping, but it does not appear that it was. Perhaps, merchants saw no need to maintain a separate book dedicated to this purpose and simply recorded such details in sections of their account books, something that we know did occur in some cases, or in informal records. These may be the most plausible explanations for the apparent lack of any significant adoption of Pacioli’s *Ricordanze* but, even examples of its use as a distinct section of an account book identified in the literature are scarce.

It is also possible that the lack of adoption of Pacioli’s *Ricordanze* was due, at least in part, to its absence from many of the texts based upon his treatise in the same way as Pacioli’s explanations, advice, and his material on audit, corporate gov-

ernance, management, and ethics were omitted from many of those works which were based upon his treatise.¹² However, while both these suggestions may offer explanations for this situation and, while we can explain why Anglo Saxon researchers may have failed to notice Pacioli's *Ricordanze*, we are left unable to do more than speculate as to why it apparently failed to be widely adopted as a separate record book in the manner described by both Pacioli and Benedetto Cotrugli.

Further research in this area is needed before there is any likelihood of fully explaining what happened in practice at the time and why the keeping of a *Ricordanze* did not spread. The most appropriate place to start is likely to be in the archives of Venice – where the merchants for whom he wrote his treatise were based – and in the other 15th and 16th century commercial centres of Italy, seeking evidence which indicates where the information that Pacioli recommended be recorded in a *Ricordanze* was kept by the merchants who adopted Pacioli's double entry system.

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¹² See, for example, Geijsbeek [1914, pp. 9, 29]; also, Sy [2005] for a discussion on aspects of Pacioli's treatise concerning labour, women, and ethics that have been overlooked by scholars.

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