

The First Manuscript in the World on Double-Entry Bookkeeping Written by Benedetto Cotrugli

By Yasuhiko Kataoka

I. Introduction

The world's first printed publication in which double-entry bookkeeping was described was 'Summa de Arithmetica Geometria Proportioni et Proportionalita' by Luca Pacioli, published in Venezia in 1494¹.

However, on March 17th 1458, 36 years before Pacioli's 'Summa' was published, Benedetto Cotrugli of Ragusa finished writing a manuscript entitled 'Libro dell' arte di mercatura' (A book on mercantile arts), part of which was about double-entry bookkeeping. Unfortunately it was not published then. In 1573, some 150 years after it was written, it was at last published, in Venezia under the title 'Della mercatura et del mercant perfetto' (Commerce and the perfect merchant). There were only an extremely small number of copies published, so it is difficult to obtain and has considerable scarcity value.²

Cotrugli's original manuscript has never been discovered, even in Italy, but later it was transcribed by hand, by one Giovanni di Matteo di Giovanni Strozzi. He completed it on March 17th 1484, so this transcription, part of which was about double-entry bookkeeping, was completed 10 years before Paciolo's 'Summa' was published.

In August 1995, I discovered Strozzi's manuscript in Florence's National Central Library (Biblioteca Nazionale Centrale Firenze), and had the opportunity to investigate it. Florence's Central Library is situated on the banks of the beautiful River Arno. At its rear is the famous 'Chiesa di S. Croce' church and it is surrounded by ageing, sombre Renaissance style buildings. I was able to see this transcription in the first floor manuscript room where it is kept.

For a manuscript it is relatively small, only 14 centimetres wide, 21 centimetres high, and 3 centimetres thick. It had been newly re-bound, and although some of the folios were somewhat discoloured, they were still all in their original state ;

nothing was missing.

Cotrugli explains double-entry bookkeeping in Part I, Chapter 3 (the contents of the manuscript are described in detail later) 'Del ordine di tenir le scritture' (Rules for the recording of transactions). In the published edition, the name of this chapter has been changed to 'Dell ordine di tenir le scritture mercantilimente' (Rules for the recording of mercantile transactions).

A second edition of the 1573 publication was published in Brescia in 1602. It is 11 centimetres wide, 16.5 centimetres high, and 2 centimetres thick, and the binding is made from sheep's hide. On the first page is the title, then there are 3 pages for the introduction, 2 pages for the contents, and 9 pages for his preface. The main text starts from Page 9 and goes up to page 213. The page numbers are different from the folio numbers of the transcription.

In this paper I examine the main points of Cotrugli's bookkeeping theory by comparing it with Pacioli's theory, and to assess its value from a historical perspective.

II. The Transcription and Cotrugli the Man

(1) The Transcription

According to the folio numbers in the top righthand corners, Strozzi's copy of the Cotrugli original contains 162 pages, but there are 165 if the introduction (1 page) and the contents (2 pages) are included. It is divided into 4 parts. Part I is concerned with commercial matters and skills, and has the following 19 chapters : On the origins and principles of trade, A definition of commerce, On the nature of the person of the merchant, On areas in which merchant is skillful, On barter sales, On cash sales, On payment deadlines, On how to collect a payment, On how to pay a debt, The universal manner and mode of trading, On exchange rates, On deposits and pledges, Rules for the recording of mercantile transactions, On insurance and insurers, On jewellers, On drapers and haberdashers, On wool traders and other merchants, On things strictly forbidden to a merchant.

Part II deals mainly with matters concerning religion, and is made up of the

following four chapters : On mass, On prayer, On charity, On licit and illicit cases of conscience.

Part III describes the behaviour of merchants, and is made up of the following 18 chapters : On the dignity and office of a merchant, On the prudence of a merchant, On the knowledge of a merchant, On the confidence of a merchant, On the fortune of a merchant, On the integrity of a merchant, On the diligence of a merchant, On the aptitude of a merchant, On the acumen of a merchant, On the civility of a merchant, On the sense of justice of a merchant, On the constancy of a merchant, On the authority of a merchant, On the generosity of a merchant, On the tranquillity of a merchant, On the modesty of a merchant, On the praiseworthy condition of a merchant, On the temperance of a merchant.

Part IV deals mainly with their households and lifestyle, and is made up of the 10 following chapters : On the home of a merchant, On the country residence of a thrifty merchant, On the thrifty merchant, On the clothes and ornaments of a merchant, On the furniture and fittings of a merchant, On the wife of a merchant, On the care and control of children, On the servants and attendants of a merchant, On the personal wealth of a merchant, On the objectives of a merchant.

The section in which bookkeeping is explained is Part I, Chapter 13, *Dell'ordine di tenere le scritture* (Rules for the recording of transactions). In the published version this section has been partially altered and is entitled, '*Dell'ordine di tenir le scritture mercantilmente*' (Rules for the recording of mercantile transactions). This chapter is only 5 pages long, from the back of folio 27 to the back of folio 29. It is only a brief explanation of bookkeeping.

The preface occupies the first four and a half pages of the main section. In it Cotrugli says how busy his work had kept him, and how he had frequently had to suspend writing the manuscript. He also tells how he found it difficult to decide whether to write it in high Latin or everyday Italian, but that he eventually decided upon the latter because merchants would find it easier to understand.

(2) Cotrugli, the Man

Benedetto Cotrugli was born in Ragusa, known as Dubrovnik in the Slav

tongue. Kheil tells us that up until the 4th Crusade in 1205 it was part of the Byzantine Empire, that from 1205 to 1358 it was ruled by Venezia, from 1358 to 1526 by Hungary, from 1526 to 1806 by Turkey, and from 1806 to 1814 by France.³

Ragusa is a port in the Dalmatian region. It has a sturdy castle. Its period of greatest commercial prosperity was the 13th to 15th centuries. During this period it was a trading port linking east and west, and fulfilling an important role.

In the first half of the 15th century when Cotrugli was born, Ragusa was already under the protection of Hungary. However, according to E. Taylor, links between Ragusa and Venezia were still strong.⁴

We do not know what year Cotrugli was born in, but it is believed to be in or around the 1420s. His father was Giacomo Cotrugli, his mother Nicoletta Illick, and his grandfather was called Mickael.

His father and his grandfather were involved in the management of a saltworks in Apulien and a mint in Naples. Both men had been born with ability and an honest attitude and devoted themselves to these businesses, which prospered, and both came to be highly regarded in Ragusa. As a result, first Cotrugli's grandfather in 1404, and later his father in 1417 and 1434, were sent to Luxembourg by the Senate as ambassadors. The King of Hungary ruled Luxembourg at the time. Also in 1429 his father was appointed as ambassador to King Johanna of Naples. In those days ambassadors were normally selected from the ranks of the aristocracy ; hence this was an indication of the great faith the Senate placed in these two men. Subsequently, the dedicated service of Cotrugli's father resulted in Ragusa being granted significant commercial privileges.

Cotrugli himself worked hard at his studies during his youth, and mastered the laws of the land. His knowledge of the law was a great help to him when he came to make his way in the world, and in the political arena he was even more active than his grandfather and father had been. He stayed in Barcelona for a time, but returned to Ragusa in 1446, and there married Nicoletta Natale Bondenaglio, a Ragusan citizen's daughter. They would have 5 sons and 5 daughters.

In 1458 he was appointed Consul for Ragusa in Naples. There his abilities were

recognised. He was trusted, and was made a Judge under King Alfonso. On February 8th 1462 he was appointed First Minister of State by Alfonso's son King Ferdinand. Subsequently King Ferdinand sent Cotrugli to Bosnia and to Ragusa, his place of birth.

When Cotrugli returned to Ragusa he explained King Ferdinand's demands to the Senate. Relations between the kingdom of Naples and Ragusa had been deteriorating, and the king of Naples had prohibited trade with Ragusa, putting them into a very difficult predicament. All the Senate's efforts to improve the situation had been to no avail.

It was Cotrugli who rescued Ragusa from this crisis. He succeeded in reasoning with the king, and the privileges and freedoms that Ragusa had enjoyed previously were restored.

Subsequently, for some reason, the Senate came to harbour doubts about Cotrugli, and summoned him in order to confirm whether there was any truth in the suspicions, but Cotrugli did not obey the summons. The Senate's judgement, after some deliberation, was to banish Cotrugli from Ragusa. In spite of the enormous contribution Cotrugli had made to his homeland he was from it on the basis of suspicions. This was his reward for all his efforts on their behalf.⁵

III. Cotrugli's Bookkeeping Theory

C. P. Kheil, the foremost researcher on Cotrugli, selected the following three main points to summarise Cotrugli's bookkeeping theory :

(1) All items concerning a company's capital and assets should be recorded in a journal, and from there transferred to a ledger. Cotrugli does not discuss an inventory at all. (2) At the beginning of each year, a balance sheet should be drawn up from the information in the ledger. (3) All profit and loss items should be transferred to the capital account.⁶

I feel that Kheil's summary does not cover all the main points of Cotrugli's bookkeeping theory, so next I will attempt to describe his theory, comparing it with Pacioli's.

(a) Cotrugli says that the official accounts should be made up of three books,

a day book (*memoriale*), a journal (*Giornale*), and a ledger (*Quaderno*). Pacioli describes a similar way of organising the accounts. His description of the day book, however, raises a question. Its existence has not been identified in accounts before Pacioli's time. Pacioli described the style of bookkeeping in contemporary Venezia. Where, then, did he learn about the existence of day books ? They had been described in Cotrugli's bookkeeping theory, before Pacioli wrote his. We cannot say for certain that Paciolo referred to Cotrugli, but it is entirely possible.

(b) Cotrugli describes a small memorandum book (*un libriccino piccolo delle ricordanze*) used before filling in the day book. He writes, 'merchants should not rely on their memories, it is certain that such confidence has resulted in many mistakes being made', and he tells merchants to 'always keep your memorandum book nearby, and enter details of your transactions, every day, every hour, every minute'.

In other words he recommends that merchants should use a memorandum book as well as a day book. Pacioli says nothing whatsoever of a memorandum book.

It is not clear whether the small memorandum book described by Cotrugli is similar to the book of memory (*libro di ricordanze*) used by the merchants of Toscana from the 13th to the 15th century. In it they did keep simple records of their father's will, assets, inheritance, marriages, births, deaths, transfers of assets as a result of marriages, the founding of companies, details of income and expenditure, and purchases of property, houses. It was a secret account book in which they recorded the private dealings which occurred within their households.⁷

It is also said that the origins of this book of memory can be traced to the 'book of administration' (*libro amministrativo*) and the 'book of debtors and creditors' (*libro del dare e dell'avere*).⁸

According to Pacioli, only commercial transactions were recorded in the day book. In this book of memory, however, in addition to such transactions, a variety of important items were recorded. Hence, it may be argued that Cotrugli's small memorandum book was similar to this book of memory. In any case, Cotrugli described four books, a small memorandum book in which to record

important items, a day book in which to enter commercial transactions, a journal, and a ledger.

(c) He explains terms used for debits and credits.

He describes debits (*debito*) and credits (*credito*) in the ledger, and debits (*a cui dare*) and credits (*debbe havere*) in the journal. Whereas Paciolo explains these terms in quite a lot of detail, Cotrugli's explanation is brief and simple. However, I think it we can be certain that Cotrugli was very knowledgeable about these terms.

(d) He explains that at the beginning of each year merchants should draw up a balance sheet (*bilancione*).⁹

Cotrugli explains that at the beginning of each year they should draw up a balance sheet for each account in the ledger and the journal, and transfer profit and loss items to the capital account. Cotrugli's description of the balance sheet is not a detailed one. Also, although he recommends that a balance sheet be produced annually, it is not clear whether he knew about the annual closing of the ledger. He does explain how to close accounts and transfer the balances to a new ledger when a ledger is filled.

He does compare a journal and a ledger, and describe how to draw up a balance sheet when changing to a new year. While the content is virtually the same as Pacioli's chapters 29, 32, and 36, Cotrugli's explanation is much simpler than Pacioli's, it is rather infantile in fact.

(e) Cotrugli explains that merchants should put an alphabetical index in the ledger, so that each account can be located quickly. Pacioli explains the same in chapter 30, but in more detail.

(f) Cotrugli says that on the first folio of the ledger you should write the name of God, and say a prayer.

While Cotrugli was not a monk, he appears to have obeyed the customs of the period, and was conscious of the power of the Almighty. In Pacioli's work God's name appears repeatedly, not surprisingly since he was a monk.

(g) Cotrugli asserts that symbols should be used on the three accounting books to indicate their chronological order.

He says to put an 'A' on the first day book, journal, and ledger, then a 'B' on

the second ones, and so on. This is important, he says, in order to be able to differentiate between them. Pacioli explains the same in more detail in chapters 6 and 36.

(h) Cotrugli asserts that bookkeeping must be explained verbally.

He writes that if everything was written down in great detail, it would be too longwinded, and insists that a verbal explanation is indispensable. Here he differs from Pacioli, whose detailed explanation of bookkeeping theory was in written form only. Cotrugli's view on the necessity of verbal explanation is one factor which lead to the over-simplification of his written theory.

(i) Cotrugli asserts that merchants should employ an able, practical young bookkeeper.

Merchants, he writes, should know how to keep their books in an orderly and satisfactory manner, but if they do not, they should either seek guidance or employ a bookkeeper. Pacioli also recommends employing a good accountant, so they agree on this. Where they do differ is that Pacioli explains the importance of the merchant keeping his own records.

(j) Cotrugli says nothing about an inventory. Pacioli describes it in detail.

(k) Cotrugli describes how bookkeeping was carried out in Venezia.

Among the bookkeeping terms used by Cotrugli can be found quite a few terms also used in the accounting books of the merchants of Venezia and in Pacioli's bookkeeping theory, for example *quaderno* (ledger) and *gli utile e li danni* (profit and loss account).

Although *quaderno* was the term used for ledger in Venezia, in Milan it was *liber tabulle*, in Genoa *cartularium*, in Florence *libro dei debitori e creditor*, while in Arezzo *libro real* was used. The term used for profit and loss in Venezia was *utile e danno*, while *Lucra et perdite* was used by the Catalonia Mercantile Association of Lombardia, *proventus et dapnum* (Latin) was the term used in Genoa, and the term used by the Del Bene Mercantile Association of Florence was *avazo e disavanzo*.

We can deduce from the use of common terminology, our knowledge of the relationship between Ragusa and Venezia, and the common content of Cotrugli's and Pacioli's works, that Cotrugli is describing the style of bookkeeping used in

Venezia.

IV. In Conclusion

There are two main issues relating to Cotrugli's bookkeeping theory and the opinions of accounting history scholars. The first is whether it was the first work in the world on double entry bookkeeping, the second their assessment of the worth of its content.

Most accounting history scholars say that it was the first work on double entry bookkeeping. Bariola, for example, writes that 'Cotrugli's explanation of the rules for entries in accounting books is double entry bookkeeping,'¹⁰ Besta says 'it was written in 1458, but not published ; in the document published in 1573, after his death, we can probably see the first evidence of double entry bookkeeping.'¹¹ Fogo argues as follows 'This book contains a short chapter on book-keeping, showing that the writer was familiar with double-entry, which, as we know, was first practised more than a century earlier,'¹² and Peragallo asserts that 'The first to write on double entry was probably Benedetto Cotrugli, a native of Dalmatia.'¹³

On the other hand Penndorf, although supporting Kheil's hypothesis, expresses doubt, 'It is not clear that Cotrugli was describing double entry bookkeeping.'¹⁴ Kheil does not say categorically that Cotrugli used double-bookkeeping, but that his work included many indications of double entry bookkeeping.¹⁵ I believe that Cotrugli was in fact the first person in the world to write about double entry bookkeeping.¹⁶ His manuscript describes double entry bookkeeping, and although it was not published, the transcription of his original manuscript preceded the publishing of Pacioli's 'Summa' by 10 years. Fogo also suggests that Cotrugli's work 'may have circulated in MS., as old works did even after the invention of printing.'¹⁷

The second issue is the assessment of its worth. It is not regarded very highly. Peragallo, for example, says that 'The importance of Cotrugli's book lies not so much in its intrinsic worth as in the time when it was written. It antedates Pacioli's work by 36 years !'¹⁸ Penndorf argues that it had no influence on Pacioli

and his successors.¹⁹

While Pacioli described double entry bookkeeping in great detail, Cotrugli did not believe it was possible to learn bookkeeping from a document. He reasoned that for an education in bookkeeping the written word was insufficient, that it was essential to explain it verbally. Also whereas Pacioli was able to ride on the crest of the wave of cultural dissemination brought by the introduction of printing, Cotrugli was not. When Cotrugli wrote his paper, printing had not yet been introduced to the the Italian region.²⁰ Having no knowledge of printing, he relied on word of mouth to pass on education in bookkeeping, and his written explanation was therefore extremely brief. Hence, this innovation, introduced to Italy in the 1460s, accounts largely for the difference in how Pacioli and Cotrugli are now regarded. We do not know why the 1484 transcription of Cotrugli's original was not printed.²¹

If Cotrugli and the people around him had known of the development and uses of printing, the modern-day assessment of Cotrugli's bookkeeping theory would surely have been more favourable. However, Benedetto Cotrugli should at least be given the honour of having the written the first document in the world on double entry bookkeeping.²²

Sources of Reference

1. For a description of Luca Paccioli's 'Summa' see Kataoka, Yasuhiko, *'Itaria Bokishiron'* (The History of Double Entry Bookkeeping in Italy), pub. Moriyama Shoten, 1988, pp.143-254.
2. Kheil, Carl Peter, *'Benedetto Cotrugli Raueo'*, Wien, 1906, S. 20.
3. The description of Cotrugli the man and Raguso is based on Kheil's text. a. a. O., SS. 16-19.
4. Taylor says the following about Ragusa : 'Ragusa was under Venetian domination as early as the year 998, but on occasion, with the weakening of power, Venezia exercised only a protectorate. Like the other Dalmatian cities, Ragusa periodically governed itself independently or put itself under the protection of

- some powerful neighbor ; there were times when it paid a small tribute to the protector, the King of Hungary, or gave a tribute to the Turks.' Taylor, Emmett, 'No Royal Road, Luca Pacioli and his times', North Carolina, 1942, p.154.
5. Kheil, a. a. O., SS. 19.
 6. Kheil, a. a. O., SS. 24-25.
 7. Shimizu, Koichiro, '*Itaria Chusei no Toshi Shakai*' (City Communities in Mediaeval Italy), pub. Iwanami Shoten, 1990, p.171.
 8. Tokuhashi, Yo, '*Chusei Itaria Shonin no Oboegaki*' (The Book of Memory of the Mediaeval Italian Merchant), pub. Chichukaigakkai, 1992, p.98.
 9. Peragallo explains that the 'bilancione' is a trial balance and not a balance sheet. Peragallo, Edward, 'Origin and Evolution of Double Entry Bookkeeping', New York, 1938, p.5.
 10. Bariola, Plinio, '*Storia della Ragioneria Italiana*', Milano, 1897, pp.365-366.
 11. Besta, Fabio, '*La Ragioneria, Ragioneria Generale*', 1922-1929, p.360.
 12. Fogo, J. R., 'A History of Bookkeeping' in R. Brown ed., 'A History of Accounting and Accountants', London, 1905, p.109.
 13. Peragallo, op. cit. p.54.
 14. Penndorf, Balduin, '*Luca Pacioli, Abhandlung über die Buchhaltung 1494*', Stuttgart, 1933, S. 13.
 15. Kheil, a. a. O., S. 24.
 16. In Japan research on Cotrugli has been carried out by Toichiro Tanaka, Osamu Kojima, and Etsuzo Kishi. Kishi's comments are the most detailed of the three, and he regards Cotrugli as occupying a high position in respect of double entry bookkeeping. Tanaka, Toichiro, '*Fukushiki Boki Hattenshiron*' (The History of the Development of Double Entry Bookkeeping), pub. Hyoronsha, 1961, pp.26-28. Kojima, Osamu, '*Bokishi*' (The History of Bookkeeping), pub. Moriyama Shoten, 1973, pp5-8. Kishi, Etsuzo, '*Kaikei Zenshi*' (The Early History of Accounting), pub. Dobunkan, 1983, pp.136-152.
 17. Fogo, op. cit., p.109.
 18. Peragallo, op. cit., p.55.
 19. Penndorf, a. a. O., S. 70.

20. Kojima, Osamu, '*Bokishi*' (The History of Bookkeeping), pub. Moriyama Shoten, 1973, p.12.
21. Even in Germany, where printing was invented, documents on bookkeeping by Mattäus Schwartz, the head bookkeeper of the House of Fugger, written in 1516, 1518, and 1550, were not printed. 3 copies were transcribed by hand. For details see Kataoka, Yasuhiko, '*Doitsu Bokishiron*' (The History of Double-Entry Bookkeeping in Germany), pub. Moriyama Shoten, 1995, pp.55-82.
22. Recently Johanna Postma and Anne J. van der Helm discovered a manuscript, dated 1475, of Benedetto Cotrugli's "Libro de l' arte de la mercatura" in the National Library of Malta, Valleta.