

It is all a lie!! Accounting is not a one-man show: tracing accounting roots

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ABSTRACT

Many scholars of accounting have written and known accounting on one seminal view, which is a view that supports accounting as a field that only came into existence after Luca Pacioli's double-entry system. This has given rise to the expression that accounting is a concept developed by Luca Pacioli in 1494. Traces of accounting origins have shown this is incorrect; accounting in Mesopotamia-accounting, in the ancient Egyptian, Greek, China, and Rome and other authors that wrote on the double-entry system before Luca Pacioli. The ultimate purpose of this research paper is to explain in-depth how accounting evolved through reviewing historical literature that existed before and after Luca Pacioli's double-entry system. All research papers published in prominent accounting journals in English in the 90 years were scanned. The review focused on research papers that explicitly explored accounting evolution. The greater part of this research paper focused on the authors who contributed to modern accounting. The majority of published research papers in the accounting field focus on Luca Pacioli, as he is the father of accounting. These research papers pertaining to the field of accounting were categorised and analysed in more detail and qualitatively classified in accordance with selected dimensions. Only a minority of research papers have an explicit history of the other authors before Luca Pacioli. The conclusion is that the state of this research paper is clearly non-paradigmatic in nature.

Keywords: Accounting origin, Accounting Evolution, Accounting Theory, Accounting, Luca Pacioli

1. INTRODUCTION

Unlike most other modern professions, accounting has a history that is usually discussed in terms of one seminal view: the dissemination and invention of Luca Pacioli's double-entry system. Through this, one seminal view of discussing accounting history begins in the year 1494 with the contribution of Luca Pacioli, which has overlooked the long evolution of accounting in both mediaeval and ancient times. Thus, Smith (2018:1) argued and said that accounting only started after the inception of the double-entry system in the 1490s. This was when the first published accounting book titled "*Summa de Arithmetica, Geometria, Proportionai et Proportionalita*" (Everything about arithmetic, geometry, and proportion) was released. The author of this book is Luca Pacioli, who is known as the father of modern accounting (Sangster & Scataglinibelghitar 2010:424). Also, Smith (2018:1) said that accounting was often called "*bookkeeping*" in the 1490s.

This research paper will argue with the above-mentioned seminal view of accounting as the roots of accounting have been in practice in many parts of the world before the 1490s. These roots of accounting were practiced more than 6000 years ago (ACAUS 2000). Authors such as Beneke (2015:15), Unegbu (2014:3), and Taylor, Kritzing, and Puttick (1983:1) talk of these roots of accounting that happened before the double-entry system in 1494. Beneke (2015:15) linked accounting to human life, and in his words, he said that '*accounting has been part of human life for thousands of years.*' Moreover, the view of this research paper that opposes the one seminal view is supported by Sangster (2007:143) and Vittorio (1891), who stated that Benedetto Contrugli is the author who, around early 1400, first wrote a manuscript that included the double-entry system before Luca Pacioli.

Before further discussing the roots of accounting and the different authors who wrote on accounting before and after Luca Pacioli, this research paper seeks to answer the most fundamental question: *why should we care about the history of accounting at all?* According to Alexander (2002), a glimpse back into this period of the origin of accounting will help facilitate an illumination of our past generally, and it is the sort of winding, twisted path that makes for an entertaining story. Additionally, Alexander (2002) said that the most compelling reason is to help explain the phenomenal growth that the profession of accountancy has enjoyed worldwide since the first royal charters were granted to the Society of Accountants in Edinburgh more than 150 years ago.

Thus, even in one of the official accounting journals, namely the Association of Chartered Accountants in the United States (ACAUS), a particular emphasis is placed on knowing the importance of accounting through the history of accounting (ACAUS 2000). According to Botes (2009:14), accounting's history throws light on an economic and business history that may generally help us better predict what is on the horizon as the pace of global business evolution escalates. The importance of knowing accounting history was also emphasized by Lloyd (2002:1), who, in his words, said that "*in addition to providing detailed knowledge of accounting and commercial practice, further review of early accounting texts can offer insight into the level of theoretical awareness at the time of their publication.*"

The literature review offered here does not omit the understanding of accounting but rather organises the central ideas identified in this classic and historic work. This research paper contributes to the body of knowledge through an in-depth discussion of the evolution of accounting. This research paper has three sections: the first section discusses the methodology used in identifying and selecting the research papers cited in this research paper; the second section contains the body of this research paper, whereby the researcher reviews literature on the existence of accounting records before the Luca Pacioli's double-entry system; and the last section contains the conclusion of this research paper. The researcher hereafter discusses the methodology.

2. METHODOLOGY

This section describes the approach utilised in the literature review. The review may be broken down into multiple phases. The analysis only includes publications published in scholarly journals. First, the researcher narrowed the search for publications in terms of both journals included and time period covered. Second, the researcher required criteria for which publications to include in the review, and third, after the researcher had found a number of relevant research papers, the researcher needed a mechanism for assessing them. The subsections below detailed the mechanism

used in this research paper.

2.1 Journal included and time period covered

The field of interest is the origin of accounting. In order to find research papers in this field, the researcher looked for research papers in accounting journals. Given that only a small minority of research papers that focus on the history of accounting are in English and that most of the research papers dispersed are in Italian and Greek in a large number of journals, it was difficult to search potential journals. The accounting literature in English and in the context of available literature does not appear in a few selected journals. Therefore, the researcher chose to focus on the accounting literature in the international context. In doing so, the researcher believed that the research identified the overwhelming majority of research papers on accounting. The researcher acknowledges that he might have missed some research papers.

2.2 Selection of papers

After identifying nearly 100 potential research papers in over 20 journals, the next step was to look for research papers that specifically addressed the origin of accounting. The researcher did this by electronically searching for full-text articles on the origin of accounting. The web search engine used for this research paper was Google Scholar, which was simple as it enabled the researcher to search for scholarly literature broadly. Moreover, Google Scholar enabled the researcher to search across a wide variety of disciplines and sources. This research paper also searched research papers in the following scholarly databases: the Directory of Open Access Journals (DOAJ) and JSTOR. The latter database was chosen because it has free access options. The following keywords were used to search for related research papers: accounting origin, accounting evolution, accounting theory, accounting, and Luca Pacioli. The selected research papers date from the years 1905 to 2021. The researcher excluded research papers that only focused on one branch of accounting. This research also excluded papers where the word "origin of accounting" appeared only in the reference list and footnotes.

3. LITERATURE REVIEW

3.1 Accounting before the inception of Luca Pacioli's Double-Entry System

As mentioned in the introduction, accounting did not start after the inception of the Luca Pacioli's double-entry system, and Beneke (2014) linked accounting to human life. Table 1 hereafter summarises the roots of accounting before Luca Pacioli's double-entry system.

Table 1. Summary of roots of accounting that happened before the double entry system

Year	Place/s	Event
3500 BC – 2000BC	Mesopotamia	Code of Hammurabi
3000 BC – 1100 AD	Ancient Egyptian	Oldest tax accounting records
1122 BC – 256 BC	Ancient Greek Ancient China Ancient Rome	Introduction of coined money Efficiency of programs of government Cash books for household expenditure.
1400– 1458	Italy	First double entry by Benedetto Cotrugli.

Reference: (Muthige, 2022)

Table 1 explores the events that led to the roots of accounting before the introduction of the Luca Pacioli's double-entry system. The literature below discusses these events in detail.

3.2 Accounting in the Mesopotamia (3500 BC - 2000 BC)

This is a period of 5000 years before the introduction of the double entry system in 1465. The Mesopotamia valley is what we today refer to as Iraq. It was during this time and place, when and what we know today refer as an accountant was referred to as a "scribe" (Botes 2009:18). During this time, a scribe's job was to record financial information and make sure that all business transactions followed the rules set by the Code of Hammurabi (ACAUS 2000). Additionally, Botes (2009:18) mentioned that during this time, the general population used papyrus, but scribes used clay to record the transactions as it was less costly and more plentiful.

As mentioned in the paper, this was 5000 years before the introduction of the double entry system, and the Assyrian, Chaldaean-Babylonian, and Sumerian civilizations were flourishing in the Mesopotamian Valley, producing some of the oldest known records of commerce (Jeremiah & Daferighe 2019:228). In this part of the Mesopotamian area between the Tigris and Euphrates Rivers, which now mostly sit within the borders of Iraq, periodic flooding made the valley an especially rich area for agriculture (Bochenski & Diamond 1950:54). As farmers prospered, service businesses and small industries developed in the communities in and around the Mesopotamian Valley (Riyadh, Sukoharsono & Alfaiza 2017:18). The cities of Babylon and Ninevah became the centers for regional commerce, and Babylonian became the language of business and politics throughout the Near East (Bertman 2005:2). There was more than one banking firm in Mesopotamia, employing standard measures of gold and silver and extending credit in some transactions (Ibukun-Falayi 2021:244).

Moreover, during this era, which lasted until 500 B.C., Sumeria was a theocracy whose rulers held most land and animals in trust for their gods, giving impetus to their record-keeping efforts (Saidu, 2013:13). The legal codes that evolved penalised the failure to memorialise transactions. The renowned Code of Hammurabi, handed down during the first dynasty of Babylonia (2285–2242 B.C.), for example, required that an agent selling goods for a merchant give the merchant a price quotation under seal or face invalidation of a questioned agreement (Riyadh, Sukoharsono, & Alfaiza 2017:19). Thus, it is believed that most transactions were recorded and subscribed to by the parties during this period (Singh 2015:35).

The Mesopotamian equivalent of today's accountant was the scribe (Sy & Tinker 2006:106). Their duties were similar but even more extensive. In addition to writing up the transaction, they ensured that the agreements complied with the detailed code requirements for commercial transactions (Bernstein 1996:1767). Temples, palaces, and private firms employed hundreds of scribes, and it was considered a prestigious profession (Oyedokun & Emmanuel 2016:4). In a typical transaction of the time, the parties might seek out the scribe at the gates of the city (Palliam 2010:149). They would describe their agreement to the scribe, who would take from their supply a small quantity of specially prepared clay on which to record the transaction (Berisha & Asllanaj 2017:157). Clay was plentiful in this area, while papyrus was scarce and expensive (Lucas & Harris 2012:23). The wet clay was shaped and sized so that it could hold the terms of the agreement (Bergaya & Lagaly 2006:4).

Using a wooden rod with a triangular end, the scribe recorded the names of the contracting parties, the goods and money exchanged, and any other promises made (Ibukun-Falayi 2021:243). The parties then "*signed*" their names to the tablet by impressing their respective seals (Oyedokun & Emmanuel 2016:5). In an age of mass illiteracy, men carried their signatures around their necks in the form of stone amulets engraved with the wearer's mark, and were buried with them at death (Ibukun-Falayi, 2021:4). The owner's name and religious symbols, such as the image and name of the gods worshipped by the owner, were frequently included on the seals (Lerner 2009:13). After these impressions from the amulets were made, the scribe would dry the tablet in the sun for important transactions that needed a more permanent record (Saggs & Fairfield 1965:17). Sometimes, a clay layer about as thick as a pie crust was fashioned and wrapped around the tablet like an envelope (Sy & Tinker 2006:107). For extra security, the whole transaction would be rewritten on this outer "*crust*," making a carbon copy of the original (Ogbonnaya 2015). Attempted alterations of the envelope could be detected by comparing it with its contents, and the original could not be altered without cracking off and destroying the outer shell (Lambert, Lerner, Bui, Somers, Aizawa, Liddell & Sockett 2016:6).

3.3 Accounting in the ancient Egyptian Suza (3000BC-1100AD)

Accounting records that date from the period between 3000BC and 1100AD were found in Egypt, Suza (ACUS 2000). Suza is what we refer to today as Africa, and in the northern part of Suza is where we find Egypt (Botes 2009:19). Records kept in the form of clay tablets were unearthed. Among these records were the oldest tax accounting records (ACUS 2000). During these times, the Egyptian King was King Scorpion (Keister 1963). Botes (2009:19) urges that there are no dates on these records. However, according to Johnson and Kaplan (1987:6), these records date back to 3 000 BC and are a symbol that proves accounts of oil and linen that the great Egyptian King charged his people taxes on.

According to Keister (1963), government accounting in ancient Egypt developed in a fashion similar to that of the Mesopotamians. The use of papyrus rather than clay tablets allowed more detailed records to be made more easily and extensive records were kept, particularly for the network of royal storehouses within which the "*in kind*" tax payments were kept (Kilgour 1998:23). The Egyptian bookkeepers associated with each storehouse kept meticulous records, which were checked using an internal verification system (Unegbu 2014:3). These early accountants had good reason to be honest and accurate, because irregularities disclosed by royal audits were punishable by means of a fine, mutilation, or death (Stettler 1994:4).

Although these records were important to the ancient Egyptians, accounting never progressed beyond simple list-making in its thousands of years of existence (Saidu 2013). Perhaps more than any other factor, illiteracy and the lack of coined money appear to have stymied its development (Blackley & Howell 2015:103). While the Egyptians tracked the movements of commodities, they treated gold and silver not as units of fungible value but rather as mere articles of exchange (Von Glahn 1996:13). The inability to describe all goods in terms of a single valuation measure made the accumulation and summation of goods difficult and the development of a cohesive accounting system all but impossible (Brandon & Lombardi 2010:23).

3.4 Accounting in ancient China, Greek and Rome 1122 BC and 256 BC

Accounting records that date to the period between 1122 BC and 256 BC were found in the Chao Dynasty in ancient China, in ancient Greece, and in ancient Rome (Botes 2009:20). These accounting records existed before the Luca Pacioli's double-entry system (Sargiacomo, Servalli & Andrei 2012:250). During this time, it is said that the Chinese used accounting to determine whether or not government programmes were effective and efficient (Price, Levine, Zhou, Fridley, Aden, Lu & Yowargana 2011:2166). During the same period as in ancient China, in ancient Greece, public accountants were employed and their duty was to use them to monitor government funds during the fifth century BC (Botes 2009:20).

Marshall, McManus, and Fiele (2004:5) attributed that coin money to the Greeks in 600 BC. This introduction of coin money still plays a significant role in the measurement of monetary units used in financial statements today. Additionally, ACAUS (2000) mentioned that during this time in Greece, the Greek bank kept accounting records whenever there was money borrowed and also in instances where cash transfers were needed by the public. The pre-Christian China used accounting chiefly as a means of evaluating the efficiency of governmental programmes and the civil servants who administered them (Ikram & Meslouhi 2019:71). A level of sophistication was achieved during the Chao Dynasty (1122–256 B.C.), which was not surpassed in China until after the introduction of double entry processes in the 19th century (Brown 1905).

According to ACAUS (2000), accounting in Rome was legislated, and traditional records were made and kept by the heads of families (mostly men at the time). It was during this time that these families' heads used a cash book for their household expenses. This cashbook was known as the "*codex accepti et expensi*" (Botes 2009:20). Penndorf (1930:245) said that keeping accounting records of household expenses in the "*codex accepti et expensi*" during this time was important for taxation purposes. As citizens of Rome were required during this time to submit statements that comprised of liabilities and assets (Crawford 1977:43). ACAUS (2000) credited the Romans for their innovation in using yearly budgets to curb uncontrolled expenditure.

Government and banking accounts in ancient Rome evolved from records traditionally kept by the heads of families, wherein daily entries of household receipts and payments were kept in an "*adversaria*", or daybook, and monthly postings were made to a cashbook known as a "*codex accepti et expensi*" (Singh 2015:34). These household expenses were important in Rome because citizens were required to submit regular statements of assets and liabilities, which were used as a basis for taxation and even determination of civil rights (Palliam 2010:153). An elaborate system of checks and balances was maintained in Rome for governmental receipts and disbursements by the *quaestors*, who managed the treasury, paid the army, and supervised governmental books (Sunder 2002:175).

Public accounts were audited on a regular basis, and *quaestors* were required to account to their successors and the Roman senate when they left office (Edwards 1956:446). The transition from republic to empire was, at least in part, to control Roman fiscal operations and raise more revenues for the ongoing wars of conquest (Kiser & Kane 2007:193). While the facade of republicanism was maintained, the empire concentrated real fiscal and political power on the emperor (Sunder 2002:175). Julius Caesar was in charge of the Roman treasury, and during his rule, Augustus completely changed how the treasury worked (Salmon 2013:62).

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The transition from republic to empire was, at least in part, to control Roman fiscal operations and raise more revenues for the ongoing wars of conquest. While the facade of republicanism was maintained, the empire concentrated real fiscal and political power on the emperor. Julius Caesar personally supervised the Roman treasury, and Augustus completely overhauled treasury operations during his reign. Among the Roman accounting innovations was the use of an annual budget, which attempted to coordinate the Empire's diverse financial enterprises, limited expenditures to the amount of estimated revenues, and levied taxes in a manner that took into consideration its citizens' ability to pay.

3.5 The first double entry system of Benedetto Contrugli

Benedetto Contrugli was a native of Dalmatia and is considered to be the first person to write about the double-entry system (Sangster & Rossi 2018:22). His book, titled "*Della Mercatura e del Mercado*", was written in Italian but later translated into other languages such as Spanish (Van der Helm and Postma 2000:148). But during the writing of this book, Contrugli was undecided because during this period, Latin was considered noble and was dignified and Italian was more intelligent to merchants (Sangster 2015:10). Sadly, Contrugli's book was not published and remained unpublished for over a century (Sangster 2018:73). But according to his unpublished book that was found by a certain Giovanni Guiseppe, the last page was written and finished on the 25th of August 1458 (Van der Helm & Postma 2000:148). In his dedication, Contrugli claimed that he was often interrupted in his writing because of his other duties—he was a judge under King Alfonso and also under King Ferdinand, his son, at Naples (Sangster 2018:72). As already mentioned, a certain Giovanni Guiseppe had a copy of this book which he decided to publish in 1573 (Sangster & Rossi 2018:22). In his book, Contrugli said that three books are necessary for every business to have adequate records — a ledger, a journal, and a memorandum book. He also stressed the importance of recording every transaction that happens in a business, having a merchant, and having a bookkeeper (Sangster 2016:310).

3.6 Authors who contributed to modern accounting

Academic literature traces the authors that contributed to modern accounting from the period before the contribution of Luca Pacioli and the period after the contribution. This literature of various authors who contributed to modern accounting is mentioned and supported by Anthony Hopwood in his critique of historical accounting research titled "*The Archaeology of Accounting Systems*" published in 1987 and A.C. Littleton work published in 1933. Using the table below, this research paper presents the authors that contributed to modern accounting. The period that these authors

wrote about accounting is often referred to as the *renaissance period*.

Table 2. Authors who contributed to modern accounting

Period	Author	Publication	Translation	Source
1450-1458	Benedetto Contrugli	<i>'Della Mercatura it del merchant'</i>	Of commerce and the perfect merchant	Anzovin and Podell (2000:36)
1494	Luca Pacioli	<i>'Summa de arithmetica'</i>	Summary of arithmetic, geometry, proportions and proportionality	Sangster Stoner and McCarthy (2008:111)
1498	Giovanni Tagliente	<i>'luminario di Arithmetica'</i>	luminary of Arithmetic	Bunget Dumitresc and Deliu (2013:2).
1530 -1540	Domenico Manzoni	<i>'Quderno doppio col suo giornals'</i> <i>'il costume di Venezia'</i>	Double notebook with his newspaper The costume of Venice	Mari Picciaia And Sangster (2020:1177).
1558	Alvise Casanova	<i>'Ordine modo et osseruantie, che gli fattor debbeno tenere gli conti delle'</i>	Order and devor, that the factors must keep the accounts of	Sargiacomo, Coronella and Mio (2018:7)
1564	Gerolame Cardano	<i>'libe de ludo'</i>	free to play	Costa (2015:7)

Reference: (Muthige, 2022)

It can be observed from Table 2.1 that the first contributor to accounting literature was not Luca Pacioli but Benedetto Contrugil, who was a native of Dalmatia and is considered the first person to write about the double-entry system (Sangster & Rossi 2018:22). His book, titled "*Della Mercatura it del merchant*" was written in Italian but later translated into other languages such as Spanish (Van der Helm & Postma 2000:148). In the year 1530, a book titled '*Quderno doppio col suo giornals*' was published alongside, "*il costume di Venezia*" (Mari, Picciaia & Sangster 2020:1177; Chindea et al. 2011:19). The author of these two books was Domenico Manzoni. Manzoni was actually a bookkeeper and probably the first accounting author who worked in the accounting profession. Manzoni was criticised by most Italians, as most of his chapters was a duplicate of Luca Pacioli's work (Coronella, Antonelli & Lombrano 2017:3).

Nevertheless, his work contributed value that Luca Pacioli lacked, practical accounting knowledge. Not only did Manzoni reveal his professional knowledge, he also completed a set of the double-entry system standard used in the field (Gaffikin 2011:236). Lastly, he and Luca were not the only authors, other authors who contributed to modern accounting includes Gerolame Cardano, Alvise Casanova, and Giovanni Tagliente, but none of these great authors' work surpass that of Contrugli, Luca Pacioli and Manzoni (Costa 2015:7). The next subsection focuses on the development of accounting.

3.7 The development of accounting

There was development in both accounting practices and literature after the renaissance period. A view shared among accounting historians and accounting scholars was that the development of accounting literature was due to improved trading methods (Botes 2009:21). One such accounting historian was AC Littleton, who further came up with a better way of determining whether or not a profit was made (ACAUS 2000). Table 2 relates to the factors used to determine profit developed in ancient times.

Table 3. Factors used to determine profit in ancient times

Key factor	Discussion
Private property right	The reorganisation of private property rights such as properties in accounting meant that accountants needed to record facts about this private property rights.
Capital	Accounting started to revolve around the concept that the definition of capital is wealth that has been properly used.
Money	Money, it could be coin or paper started to become a common denominator in accounting and is still even today relevant to record the transactions' value/(s).
Increased commerce	As the exchange of goods to either goods or money started to become widespread, a requirement of formal recording become prevalent.
Credit availability	As more products came to the market, people's desire grew but had traders limited money traders started offering credit. Botes (2009:21) and Postan (1928:234) said that only credit transaction was recorded and cash was not.
Arithmetic	The details of monetary transactions had to record.
Ability to write	A prevalent skill to write and read made records to be kept in a common language which is accounting.

The factors shown in the above table did exist in ancient times, but, until the Middle Ages, they were not found together in the form and strength necessary to push man to the innovation of Luca Pacioli double-entry system (Alexander 2002:3). Additionally, Alexander (2002:3) further mentioned that the ability to write, for example, is as old as civilization itself, but arithmetic—the systematic manipulation of number symbols—was really not a tool possessed by the ancients. Rather, the persistent use of Roman numerals for financial transactions long after the introduction of Arabic numeration appears to have hindered the earlier creation of double-entry systems (Littleton 1933:22). Nevertheless, there were problems encountered by the ancients with record keeping, control, and verification of financial transactions that were not entirely different from our current ones. As a result, governments in particular had strong incentives to keep detailed records of receipts and disbursements, particularly those pertaining to taxes (Alexander 2002:3).

In any social setting whereby individuals accumulated wealth, there was a desire to perform audits on the honesty and skill of slaves and employees entrusted with asset management. But the lack of the above-listed antecedents to double entry bookkeeping made the job of an ancient accountant extraordinarily difficult. Furthermore, in societies where nearly everyone was illiterate, writing materials were expensive, numeration was difficult, and money systems were incoherent, a transaction had to be extremely important to justify keeping an accounting record (Littleton 1933:22).

4. CONCLUSION

The main aim of this research paper is to explore the existence of accounting before Luca Pacioli's double-entry system in the year 1494. To explore the existence of accounting, the research paper searches for research papers on the origin of accounting using Google Scholar as a search engine and also the following scholarly databases: DOAJ and JSTOR. It is envisaged that this research paper will provide a holistic new view of accounting to be both used and viewed by accounting scholars as well as business scholars. This research paper provided new insights into the possibility of changing the one-seminar view that Luca Pacioli is the originator and creator of accounting.

This research paper is not discrediting the work done by Luca Pacioli but contributing to accounting evolution. As it is always said in accounting, for every debit there should be a credit. The author credits all the contributors to accounting in the same way as Luca Pacioli. This research paper can serve as a base for further research that wants to explore the existence of accounting before Luca Pacioli's double-entry system. Lastly, further studies can investigate and explore the practices in Africa and other parts of the world.

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