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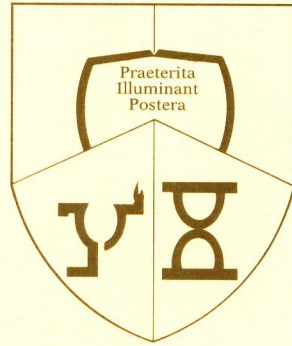
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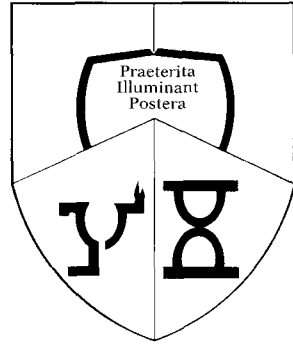


The
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Research on the Evolution of Accounting
Thought and Accounting Practice

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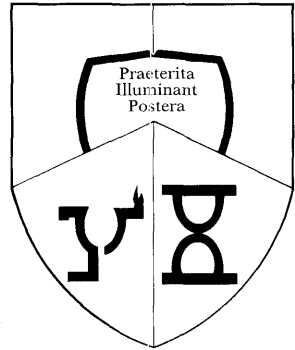
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Richard Mattessich
UNIVERSITY OF BRITISH COLUMBIA

RECENT INSIGHTS INTO MESOPOTAMIAN ACCOUNTING OF THE 3RD MILLENNIUM B.C. — SUCCESSOR TO TOKEN ACCOUNTING

Abstract: This paper examines from an accounting perspective recent work by Nissen et al. [1993], here regarded as an extension of the archaeological research of Schmandt-Besserat [1977, 1992] and its analysis by Mattessich [1987, 1994]. The transition from the 4th millennium B.C. to the 3rd millennium B.C. featured the use of proto-cuneiform and cuneiform accounting techniques to replace the older token accounting. This research reinforces the previously made hypothesis [Mattessich, 1987] that the inserting of tokens into a clay container during the last phase of token accounting corresponded to debit entries, while the impressing of tokens on the surface of the container was meant to convey the credit total of an equity. Similarly, in proto-cuneiform bookkeeping, debit entries appear again on one side while the credit total appears on the reverse side, but this time on the clay tablets. Yet, the research also leads to the hypothesis that the "closed double-entry system" of token accounting could *not* be maintained in the archaic bookkeeping of the subsequent period where, apparently, a debit/credit scheme was used in which only some but not all entries had counter-entries. Finally, the paper illustrates important labor production aspects of archaic bookkeeping and cost accounting which are contrasted to modern budgeting and standard costing.

"The best way to know a thing, is in the context of another discipline" L. Bernstein [1976, p. 3].

Acknowledgments: Financial support from the Social Sciences and Humanities Research Council of Canada for this paper is gratefully acknowledged. Furthermore, I want to express gratitude for permission to reproduce the passages quoted and Figures 1 to 3 from Nissen, H. J., Damerow, Peter, and Englund, R. K. (1993), *Archaic Bookkeeping — Early Writing Techniques of Economic Administration in the Ancient Near East*, Paul Larsen (translator), courtesy Chicago University Press (copyright) as publisher. My thanks extend also to Professor Denise Schmandt-Besserat for reading the original manuscript and for valuable advice on the dating of archaeological periods. Final thanks for many suggestions go to the editorial team (including two reviewers and, above all, the editor) of the *Accounting Historians Journal*.

Studying the early phases of accounting, we are not merely faced with the technological achievements of ancient people, but also experience their need for stewardship and control which they satisfied in relatively simple, yet ingenious ways. Schmandt-Besserat [1977, 1979, 1983, 1992] (hereafter SB) is the predominant researcher on prehistoric or "preliterate" token accounting, and Nissen et al. [1993] (NDE hereafter) can be regarded as an extension of this research for the "literate" period through 2000 B.C. This book has hardly attracted the attention of accounting historians and deserves to be examined.¹ Discussing the relation between "token accounting" and "archaic bookkeeping" may be a proper introduction. These two accounting systems, despite their fundamental differences, possess similarities that enable us to interpret archaic bookkeeping on the basis of my previous analysis of token accounting [Mattessich, 1987, 1994, 1995]. The literature on Mesopotamian accounting is fairly limited; the most prominent book, dealing in a relative comprehensive way with this subject, is probably Melis [1950, pp. 34-71, 111-284]. But the new archaeological evidence on administrative matters, subsequently accumulated, cries out for further expertise and analysis by academic accountants.

As to the differences between SB [1992] and NDE [1993], the latter was primarily concerned with proto-cuneiform and cuneiform accounting of the 3rd millennium B.C., while the former dealt with token accounting from 8000 B.C. to 3000 B.C. NDE [1993] did provide an overlapping section dealing with token accounting which, however, was only cursorily developed. Despite having cited two SB [1988, 1992] publications, it disregarded most of SB's findings about the original function of tokens. NDE [1993, p. 11] also expressed the belief that the "large quantities of clay tokens found in various simple geometric shapes such as spheres, rhombuses, discs, and tetrahedrons, may therefore each be thought of as the representations of different specific numerical values." This contradicts SB's evidence, which clearly indicates that the shape of a token stood for the type of commodity or a *combination* of commodity and quantity, as in the case of bulk goods such as grain where different tokens stood for different quantities of one and the same

¹Vollmers' [1996, p. 4] article referred fleetingly to NDE [1993], but dealt with a much later period of accounting history.

commodity. Hence, tokens were not merely *counting symbols* but mainly *accounting symbols*, a point only hesitatingly acknowledged by NDE [1993].²

In many other respects, NDE were in agreement with SB's research. For example, these authors admitted that accounting tokens were originally kept in perishable containers, such as leather pouches, but later in less perishable clay envelopes (*bullae*). Those authors also confirmed SB's thesis that token accounting was a precursor to writing as well as counting and economic control.³ Furthermore, they acknowledged the impressing of tokens onto the surface of the envelopes, stating that "occasionally, impressed signs on the outer surface of the hollow clay balls referred to the tokens stored inside them" [NDE, 1993, p. 12]. However, they failed to mention that this impressing was a crucially new development in the evolution of token accounting, constituting a "counter-entry" to the input of token-symbols into those clay receptacles. This ancient practice led Mattessich [1987, 1989, 1995] to regard token accounting as the first prototype of double-entry. Such an assumption is justified by the combination of a series of circumstances. First, the inserting of individually movable tokens, representing assets, into clay envelopes corresponds to a debit entry. Second, the impressing of the very same tokens on the surface of the clay envelope as an "inseparable totality" constitutes a credit entry, manifesting the corresponding equity. Third, the symmetry between the tokens on the inside and the impressions on the surface of the envelope confirms the correspondence to modern

²This reluctant admission is reflected in the following question and its answer: "Did these tokens already contain information about the type of the counted product, or did this information have to be added? The latter assumption may be supported by the evidence of a large number of scattered clay objects with incised patterns on their surface. Some of these clay objects were even formed into shapes that closely resemble later written signs. In such instances, these clay objects may be assumed to identify the counted object" [NDE, 1993, p. 12]. This ultimate admission brings those authors closer to SB's evidence.

³"Originally, however, the proto-cuneiform script was almost exclusively restricted to bookkeeping; it was an 'accountant's script'. . . . On one level, the archaic accounting script later developed into language-functional cuneiform, while on a second the system of accounting itself became more and more effective, eventually turning into a powerful instrument of formalized control of economic procedures, employing sign systems and document forms" [NDE, 1993, p. 30].

double-entry where most physical manifestations are recorded on the debit side while social relations appear on the credit side. Fourth, the token envelope can be regarded as a self-contained entity, summarizing the periodic accounting of a firm, just as a balance sheet does in contrast to an archaic accounting tablet which is neither a "closed" accounting system nor part of one. Fifth, a token envelope permits a *tautological control* (i.e., a precise matching of the tokens inside the envelope with the impressions on its surface), similar to the mathematical control of modern accounting where the debit total of a trial balance must match its credit total. Sixth, a token envelope is also amenable to a *physical control* (i.e., the "taking of inventory") by trying to match the tokens inside the envelope with the available commodities they were supposed to represent.

PROTO-CUNEIFORM BOOKKEEPING

NDE [1993] may not be the best source on token accounting of the preliterate period, but it is an excellent one on the "archaic bookkeeping"⁴ of the late 4th and the entire 3rd millennium B.C. The authors carefully researched and documented this period with exciting material and new interpretations of great relevance to accounting history. They did not merely attend to the early development of "debit and credit" techniques, but also to early cost accounting, budgeting, and other accounting aspects. This work also offered discussions on several topics concerning the commercial history of Sumer and Akkad, such as prehistoric means of administration, the emergence of writing, the cuneiform script, archaic numerical sign systems and the development of arithmetic, the education of scribes, and the hierarchy of professions. Above all, it offered detailed information about the bookkeeping in the production and distribution of grain, beer, and animals, as well as the record keeping of real estate (fields) and labor services.

⁴Since cuneiform clay tablets are occasionally regarded as the "first books" [cf., Bram et al., 1979, Vol. 4, p. 80], the expression "archaic bookkeeping" of NDE [1993] seems to be acceptable. On the other hand, the term "token bookkeeping" would *not* be appropriate since clay *bullae* are not recognized as books; hence the term "token accounting," as used in SB [1992], is appropriate. As to the term "archaic accounting," it refers here (as it does in NDE, 1993, p. 35) to proto-cuneiform as well as early cuneiform bookkeeping and related accounting techniques.

NDE [1993] distinguished four different types of cuneiform tablets. First, small perforated tablets serve merely as tags. Second, somewhat larger tablets with numerical notation also fulfill merely auxiliary tasks. Third, and most importantly, there are larger tablets with characteristic divisions of columns and partitions, each of which reveals one specific informational unit related to the other units of the same tablet. The obverse side of these tablets, with data identified by NDE as debits, contains, in addition to verbal texts, various pieces of numerical information. The reverse side, referred to by NDE as the credit, contains the sum total of the numbers listed on the obverse. This category of tablets are the actual accounts of archaic bookkeeping. Finally, there are tablets similar to those just mentioned, but without the numerical total on the reverse, again apparently serving some auxiliary function.

According to NDE [1993], no less than ten different numerical systems were used to designate not only the units of a commodity but also its type. Indeed, for different goods and purposes different sets of numerical signs were used — one to count “discrete” objects and persons, another to count slaughtered animals, a third to count rations or wages, a fourth for measuring weights, a fifth for measuring surfaces, a sixth for time and calendar measurements, etc. These number systems used some 60 different symbols.

As to the “tautological control” present in token-envelope accounting, Mattessich [1994, p. 22] suggested that subsequent accounting systems, such as the archaic bookkeeping of the early or later 3rd millennium lost such control as they could no longer be regarded as *closed* double-entry accounting. This seemed to be confirmed by NDE [1993]. But there is sufficient evidence that later bookkeeping systems retained at least some aspects derived from the double-entry prototype of the preceding period. First, counter-entries are frequently enough found which, however, are no indication for the existence of a closed double-entry system; and second, those proto-cuneiform tablets (see Figure 1) bear the individual entries on the obverse, showing the debits, while the total is shown on the reverse side, indicating the corresponding overall credit entry. Most likely the accounting tablets emerged from the envelopes of token accounting as a kind of “unfolding” those clay balls. This is reinforced by this separate recording of individual assets on one side, with their sum total on the other side of the tablet.

Token accounting also recorded individual assets on one side,

inside the clay envelope, in the form of separate tokens, while on the other side (i.e., the outside surface), the set of inseparable token indentations revealed a sum total. At any rate, archaeologists have left no doubt that entries on the obverse of an entire category of cuneiform tablets are individual charges, while entries on the reverse constitute the corresponding total as a discharge, at least for proto-cuneiform bookkeeping. NDE [1993] supplied plenty of evidence for the similarity of this kind of record keeping to modern accounting.⁵

The resemblance of recording the *total* on the outside of the clay envelopes during the 4th millennium B.C. with the recording on the reverse of clay tablets during the 3rd millennium B.C. may be taken as reinforcing my hypothesis that impressing the tokens (i.e., making those inseparable indentations) on the outside constituted a collective credit, while inserting the individually movable tokens into the same clay envelope connoted the corresponding debit entry. However, if archaic bookkeeping maintains an analogous procedure, the latter need not be a closed double-entry system. Bookkeeping of the 3rd millennium B.C. matches only some but not all charges to some of the discharges, just as modern single-entry systems may do. Thus, it is very different from the closure of such a simple recording device as a clay envelope, which can be considered a *self-contained unit*. In contrast, a clay tablet of archaic bookkeeping is *not* self-contained and must be seen in context with other recordings. So far, there is no evidence that those other recordings provided closure. But had they done so, it would be extremely difficult to unearth all the matching cuneiform tablets, which are typically found broken and badly damaged in ancient city dumps.

⁵NDE [1993, pp. 30-32] wrote: "The tablets were seldom isolated information transmitters; rather, they almost without exception represent a part of running bookkeeping procedures in which pieces of information from one tablet were transposed to another. . . . Such texts document the most rudimentary level of accounting operations in early redistributive city-states, namely, the bookkeeping control of the receipts and expenditures of storage facilities and stocks belonging to the palace and temple households. . . . This summarizing entry [on the reverse] demonstrates another characteristic of the archaic tablets. In most cases, such entries can be identified as totals, with an accompanying sign summarizing an economic category. . . . We are aware that the sign . . . (NINDA) was used as a comprehensive sign for the distribution of various kinds of cereal rations. . . ."

EARLY DISTRIBUTION AND PRODUCTION COST ACCOUNTING

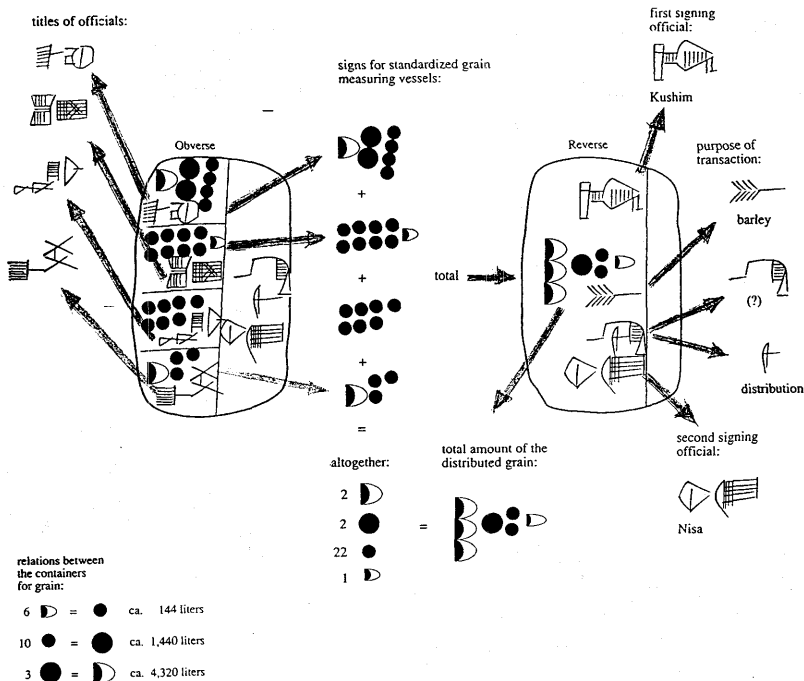
The wealth of information presented by NDE [1993] goes beyond the constraints of this paper; here I merely summarize the gist of the bookkeeping aspects presented by these authors, together with some commentary and criticism from an accountant's point of view. One of the more complete systems (of 18 tablets), discussed and illustrated in NDE [1993], refers to an administrator, Kushim, responsible for the storage and production of beer. Some of these tablets charge the distribution of barley to several officials as various debits, with the summation on the reverse as a single credit for the discharge of Kushim's liability (e.g., figures 33 and 39 on pp. 37-39, here omitted).⁶ Beside ideograms for quantities and for names of officials receiving goods, the tablet also contains an entry for the administrator and usually entries for the date or period(s) of transactions. The lack of an ideogram for zero, crucial for any numerical place-value system, resulted occasionally in arithmetical errors. The zero notion was to be expressed by an empty space which, alas, was sometimes forgotten or overlooked.

Another relatively simple account shows the charging of various amounts of barley to three officials on the obverse, while Kushim was credited on the reverse for the total amount distributed to those three officials (illustrated in figure 34, here reproduced in Figure 1). Each of the three sections on the obverse charges a different official with a specific amount of barley. Thus, each section could, alternatively, be regarded as a separate debit account. As the supply of grain was delivered by Kushim, he was credited with the sum total delivered to the other persons. The reverse side could, alternatively, be regarded as Kushim's account. Other accounts are more intricate and show the input of various ingredients (malt, hops, etc., on the obverse side) in the production of beer, as well as different kinds of beer as output on the reverse side.

⁶In this paper, the term "figure" refers to NDE [1993] or other sources, while "Figure" refers throughout to the present paper.
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FIGURE 1

Sketch of Both Sides of a Proto-cuneiform Tablet Recording the Distribution of Barley to Four Officials (on the obverse, left) and the Discharge of the Administrator Kushim (on the reverse, right)



Source: Nissen et al., 1993, p. 38, Courtesy University of Chicago Press

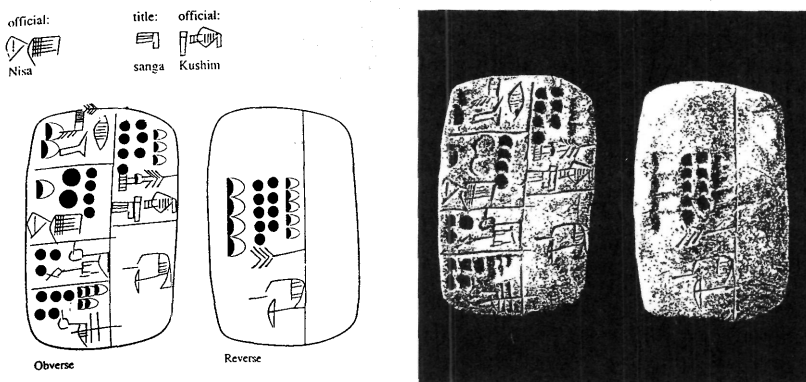
Figure 1 contains four types of impressed numerical symbols. The smallest unit represents ca. 24 liters, the next ca. 144 liters, then ca. 1,449 liters, and finally ca. 4,320 liters. As explained in Figure 1, these numerical symbols must not be confused with the volume measures mentioned in footnote 10. Furthermore, Figure 1 reveals several incised ideograms, most of them representing names of persons or commodities. Finally, it explains the particular addition process which results in the sum total of about 14,712 liters of barley supplied by Kushim, for which he was properly discharged. Regrettably, a photograph of the proto-cuneiform tablet, on which Figure 1 is based, is not available. However, Figure 2 offers a sketch as well

as the corresponding photograph of both sides of a similar tablet, likewise from Kushim's accounts.⁷

The evolution of early accounting systems can be recognized by the marked difference between the proto-cuneiform clay tablets (archaic texts from the Late Uruk period to the Early Dynastic I period; i.e., 3100 B.C. to 2900 B.C.) of Figures 1 and 2; the cuneiform clay tablet (of the Early Dynastic III period; i.e., ca. 2500 B.C. to 2400 B.C.)⁸, shown in Figure 3; and the even more sophisticated cuneiform tablets (of the Ur III period, ca. 2100 B.C. to 2000 B.C.) of NDE [1993, p. 101], here omitted, on which the (translated) Figure 4 is based.

FIGURE 2

Sketch and Photograph of Both Sides of a Proto-cuneiform Tablet Recording the Distribution of Barley to the Officials Kushim and Nisa



Source: Nissen et al., 1993, p. 39, Courtesy University of Chicago Press

⁷Kushim's signature (or sign) can be found on top of the reverse side of Figure 1, as well as in the right uppermost field of the obverse side in Figure 2 (Does this indicate that Kushim himself received some barley?), while the signature of the official Nisa can be seen at the bottom of the obverse and reverse side of Figure 1, as well as in the second section of the obverse side of Figure 2 (but apparently no signature appears on the reverse of this tablet).

⁸There may be some controversy in assigning precise dates to certain periods; according to my correspondence with SB, for example, this period should extend from 2600 B.C. to 2334 B.C., instead of 2500 B.C. to 2400 B.C. as in NDE

FURTHER DEVELOPMENTS AND THE USE OF BUDGETARY PROCEDURES

The improvement of the proto-cuneiform script and the transition to cuneiform writing allowed scribes to impress and incise more details and information on clay tablets:

Whereas during the archaic age [ca. 3000 B.C. to 2800 B.C.] the addition of further information concerning product quantities was restricted to placing a numerical sign at a predetermined place within the text format, such information was incorporated into grammatically structured sentences in later Old Sumerian texts from pre-Sargonic Lagash [i.e., before 2300 B.C.], . . . [NDE, 1993, p. 47].

For the last phase of the Old Akkadian period (ca. 2250 B.C.), NDE showed tablets recording the production and distribution of various quantities of bread as well as jars of beer rationed to various individuals. What is particularly notable, from at least this period onward, is an *ex post* juxtaposition of budgeted amounts, called "theoretical" in NDE, to actual amounts produced and the recording of the discrepancy in the form of a "balancing" entry [see NDE, 1993, p. 49].

Some illustrations in NDE [1993] showed the juxtaposing of budgeted and actual data, not merely during one year but over several consecutive years, often in terms of the amounts of labor. Frequently the foremen's quotas were overdrawn, which may indicate tight budgeting with standards set at maximal performance. It also shows that the setting of standards and equivalent values, as well as the standardization of measures and budgeting procedures, had attained a surprisingly high level of sophistication. "There can be no doubt of the existence of explicitly formulated norms which were strictly adhered to. They can be reconstructed from conversions of labor performances and products into equivalent products specific to the respective sector of the economic organization" [NDE, 1993, pp. 49-51]. This is confirmed by an example from the Ur III period which shows the annual account, based on "female labor days," of a foreman supervising 36 female workers engaged in the milling of grain. The authors pointed out that the settling of a foreman's deficit was a serious matter and could result in such retribution as the confiscation of his property. The incorporation of budget standards into the regular accounting system (as illustrated in Table 1), the comparison with actual

performance, the charging of a deficit to the person responsible, and the carrying forward to future periods were typical for state-run organizations of this time (occasionally resembling the accounting and budget procedures of 18th century cameralism and even later). However, some of these ancient records may remind us of modern standard costing systems, especially those versions that combine actual material inputs with standard (budgeted) labor inputs (see Table 1 and comments below).

THE DEVELOPMENT OF LABOR AND PRODUCTION COSTING

Although most labor costs during the 3rd millennium B.C. were incurred in agriculture (see next section), I shall discuss their recording here. Those records concern the distribution of food rations to a strictly and centrally directed labor force. NDE pointed out that those rations were likely to be kept at a subsistence level and should not necessarily be regarded as "wages" since those workers might have been a kind of "state property." The daily rations per person, usually one "bevelled-rim bowl" of barley, a standard capacity of ca. 0.8 liters or more, were distributed by public granaries, through high-ranking officials, to foremen, and finally, to the workers. Particularly noteworthy are the following statements from NDE [1993, pp. 74-75]:

Three . . . texts from the administrative building of Jemdet Nasr [around 3000 B.C.] offer a good description of the way books were kept on captives employed in forced labor. At the same time, they provide a convincing example for the practice of setting up balance sheets based on individual documents. . . . This balance sheet again lists all the entries from both individual documents, totaling 27 male and female laborers. Once the scribe had filled the obverse side of the tablet, he turned it over (according to the orientation chosen in the figure) by making a half rotation around its vertical axis [a custom probably introduced for the sake of convenience] and then completed another column on its reverse⁹ After having booked the entries, the

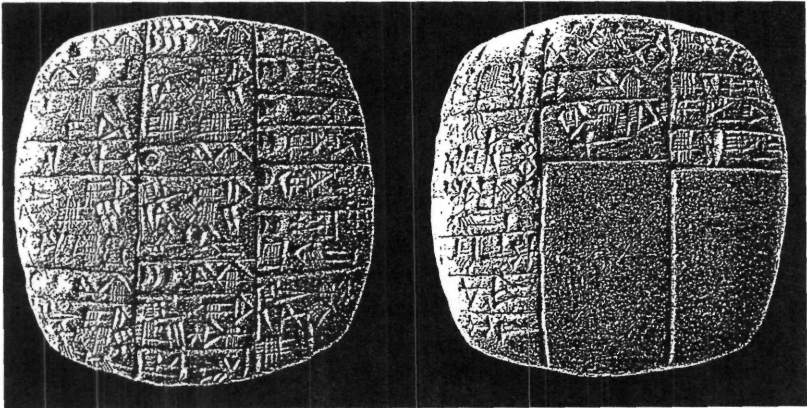
⁹The use of the term "balance sheet" in NDE [1993, pp. 74-75] must be clarified. What was meant is rather a "balancing tablet" which lists individual workers or slaves on the obverse side of a clay tablet and their totals (apparently with subtotals) on the reverse side. From the text I discern neither any

scribe proceeded by turning the tablet upside down, recording two subtotals within the central column of the reverse. In a last step he entered the grand total of the recorded laborers in the left column of the reverse.

Again, administrative progress can be noted by comparing the "labor accounts" of the archaic period (ca. 3000 B.C. to 2800 B.C.) with those of the Early Dynastic III period (which according to NDE [1993, p. 5] seems to extend from ca. 2500 to 2400 B.C.) and, even more so, with the Ur III period (ca. 2100 B.C. to 2000 B.C.). Not only are the accounts of the latter two periods more explicit about food rationing, they also reveal the calculation process in setting standards for labor budgeting. Figure 3 shows an Old Sumerian tablet in which, again, the obverse is regarded as the debit side and the reverse as the credit side. As pointed out in a previous section, a comparison with Figure 2 reveals the change from proto-cuneiform to early cuneiform writing.

FIGURE 3

Old Sumerian Text Citing Labor Quotas in Canal Construction



Source: Nissen et al., 1993, p. 83, Courtesy University of Chicago Press

evaluation of the slaves in equivalent units of barley, silver, etc., nor an integration of this inventory with that of other commodities as would be done in a proper balance sheet.

Not only can such accounts be interpreted as a juxtaposition of *ex post* expectation and actual performance, it must also be regarded as the juxtaposition of production input to output, as encountered in modern cost accounting and illustrated in NDE [1993, pp. 84-85, figure 69 with translation], here reinterpreted in our Table 1. The pertinent commentary from NDE [1993, pp. 83-86] averred:

The account is divided as usual into two distinct sections. The first section running from the beginning of the text to the fifth line of the second column . . . deals predominantly with quantities of processed raw materials, the number of employed laborers and the time they were employed. This section forms the 'debit' part of the account since raw materials as well as the labor force, expressed in (female) laborer days . . . , had to be balanced at the end of the accounting period against real delivered products and the work actually performed. In the second section of the text, the 'credits,' all finished products produced within the stated period are noted, plus the theoretical time of work necessary for their processing, the other jobs performed, all of which were totaled at the end of the section. The final step was then to calculate the difference between debits and credits. The amounts of grain and work days calculated as deficits [balance] were then recorded as such (Sumerian LÁ+NI); these probably formed the first entry of the 'debit' section . . . of the account of the following period. In some cases, such deficits had to be cleared directly, a procedure which is attested by corresponding administrative documents (the so called LÁ+NI su.ga texts = 'replaced deficit' [balance transferred]).

NDE [1993, pp. 83-85, figure 69] contained both sides of a cuneiform tablet from Umma together with a translation. But the text was presented in a highly complicated fashion, partly due to the unfamiliar arrangement of the account, and partly due to various strange measures and measure units. Some effort is required to achieve contemporary compatibility. For this reason, I have tried in Table 1 to translate this presentation into a T-account and approximate the numbers through modern measure equivalents (conversion into liters seems to be a meaningful way of explaining the clay tablet). This permits the disclosure and analysis of various discrepancies and offers an opportunity for future research.

The original translation of figure 69 into English in NDE [1993, pp. 84-85] was said to document the production accounting of a foreman, Ur-Šara, in charge of 36 female laborers processing grain, as well as doing some secondary tasks, over a period of approximately one year. The records were kept in terms of various types of cereal with conversions into barley equivalents.¹⁰ These fixed conversion ratios may also have fulfilled a function similar to prices, especially to transfer prices

¹⁰This laborious footnote may be skipped by readers not interested in verifying Table 1 on the basis of Nissen [1993, figure 69 and translation, pp. 84-85]. Since this book fails to concentrate all of those data in a single place, I have summarized in the following the “conversion rates” necessary for such verification by serious students of Mesopotamian accounting.

Barley seems to have been one of the basic measures or “currency units” (others were labor hours, fish, and silver — cf., NDE, 1993, p. 51). Cereals, flour, and many other commodities were expressed in volume measures (one gur = 300 sila; one barig = 60 sila; one bán = 10 sila; one sila = approximately 1 liter in modern terms) at least for the Ur III period, while during the earlier Old Sumerian period, 1 sila was about 1.5 liters, etc. [cf., NDE, 1993, pp. 82, 142]. As far as the conversion of “breads” into barley equivalents is concerned (see Table 1), I have relied on the following passage from NDE [1993, p. 47]: “With some reservation one would therefore translate the sentence: ‘40 kagu-breads baked at the rate of 50 per bán’ which would mean 1 bread is about equivalent to 0.25 sila (or one-quarter of a liter) of dabin flour. Another passage, ‘3 bán of flour are needed for 90 loaves of bread’ [NDE, 1993, p. 49], yields a result only slightly different, namely 0.3 sila of dabin flour per loaf of bread.

As to the conversion of labor hours, first a distinction between female labor days and male labor days was made. This difference manifested itself, for example, in regard to “free time.” Female workers got one-sixth of their total labor time off as free (cf., Table 1, lower debit side), while male workers got only one-tenth. Furthermore, the wages or rations (in barley) for labor varied greatly: “The sizes of the registered monthly rations vary between 2 bán and 2 barig (i.e., 12 bán). The great majority of the rations, however, amount to figures between 1 barig and 1 barig 2 bán, hence between 6 and 8 bán” [NDE, 1993, p. 82].

Finally, as to the conversion of finished goods into barley equivalents, NDE [1993, p. 88] provided the following conversion ratios, but I wonder whether these conversion ratios might not be contradictory. On one hand, NDE [1993, p. 88] stated, as regards various *cereals*, that “1 unit measure of dabin (flour) = 1 unit measure of še (barley)” and “1 unit of eša = 2 units of še” while, on the other hand, the book stated that “the work times required to process a unit measure of the noted grain products are . . . : for dabin 10 sila [ca. 10 liters] per day [of female labor?]” and “for eša 20 sila per day [of female labor?].” What puzzles me is that, according to the first statement, eša flour would have double the value of dabin flour; while according to the second statement, twice the quantity of eša can be processed in the same time as dabin. Hence, one would assume that dabin has, at least from a labor point of view, twice the value as eša (in barley equivalents). I do not claim that there is

so important in an economy of regulated and manipulated values.

For several reasons, this account (Table 1) is particularly fascinating and may prove rewarding for the serious student of archaic bookkeeping. However, the reader must be warned that the rest of the current section and next section requires concentration and constant reference to the details shown in Table 1. A first glance at this table reveals that, in contrast to a modern work-in-process account, only the raw materials (upper part of the debit side) and the finished products (upper part of the credit side) are endowed with “values” (expressed in liters of barley equivalents — see second figure column; the first figure column indicates actual liters of the grain specified). The labor input is merely shown in “female labor days” (FLD, lower part of the account), but is not evaluated in barley equivalents. Furthermore, unlike the upper part, the lower debit side contains a *global budgeted* figure (plus an adjustment near the bottom), while the lower credit side shows *actual* FLD, detailed by type of work. Finally, the deficit (to be brought forward to the next period) on the lower credit side and the ultimate total (valued in equivalent barley liters) also exclude the labor contribution. From this we may conclude that the purpose of such accounting was mainly *stewardship*, not the determination of the “true” cost or value of goods.¹¹ The foreman’s production account is charged with those amounts of grain he received from various sources or persons (Ir, Lugal-usur, and Nin-melam) for which he gave account on the credit side by showing what he had produced and distributed. The balance of these commodity values was shown as a *deficit* (or surplus) and, usually, carried forward to the next accounting period for settlement. To account for the labor days consumed, the foreman had to include

a contradiction here because it might be that, precisely because eša could be processed faster, it was more highly valued. Nevertheless, this seems strange and should be reevaluated.

¹¹NDE [1993, figure 43 and the pertinent text, p. 51] presented a general schema of a “flow chart revealing the structure of the accounts . . . ,” in which only the budgeted and actual labor days are taken into consideration, while neglecting the actual raw material input (dr.) as well as the output of finished products (cr.) based on actual (not on budgeted) data. If the raw material input would also have been on a budgeted basis, the actual input of those items would have to be shown somewhere in the account which, however, was not the case. This is surprising and contrary to NDE [1993, figure 69] where raw materials and finished goods, instead of labor, appeared to dominate the account.

in this account, as a kind of side calculation, a comparison of budgeted labor hours (dr.) with actual labor hours (cr.).

TABLE 1
The Author's Accounting Interpretation of Nissen et al.,
1993, pp. 84-95.

Debit Side (in ltr.) <i>in barley equiv.</i>		Credit Side (in ltr.) <i>in barley equiv.</i>	
Inputs/From Ir:		Produced and distributed:	
barley	92,665	dabin flour	89,325
emmer	18,240	sig flour	26,069
wheat	15,840	esa flour	1,091
From Lugal-usur:		fine gr. bread	44
barley	1,935		150
spelt	525	Total (in barley equivalents):	143,734
emmer	100		
From Nin-melam (rest. deficit of Bida):			
spelt	101		202
Total in barley equiv.:	145,872		
unexpl. discrepancy	<u>2,186</u>	unexpl. discrepancy	<u>343</u>
<i>Total (from Nissen et al.)</i>	148,058	<i>Total (from to Nissen et al.)</i>	144,077
Budgeted Work (in FLD):		Actual Work (in FLD):	
Processing flour, etc.	11,304 FLD	Allow. for free time	1,884 FLD
		For flour filling	7,226 FLD
		For grinding barley	238 FLD
		For loading flour	30 FLD
		signed: Se-šani.	
		For carrying straw	19 FLD
		For other work	188 FLD
		signed: Šara-zame.	
		For bala(-service)	270 FLD
		For weaving mill work	96 FLD
		signed: ADU	
		For sieving flour	30 FLD
		signed: Ur-zu.	
		For ar<za>na fl. proc.	240 FLD
Allow. for free time of dec. lab. (1/6 of 187)	31 FLD	Allowance for FLD of <u>deceased labourer</u>	<u>187 FLD</u>
		Actual. labour total	10,408 FLD
		unexpl. FLD-discrep.	<u>304 FLD</u>
<i>Total adj. lab. budget</i>	<i>11,335 FLD</i>	<i>Total (according to Nissen et al.):</i>	<i>10,715 FLD</i>
		Lab. budget variance	<u>620 FLD</u>
		Deficit (to be br. forward)	3,981
Total (in ltr.)	148,058	Total (in ltr.)	148,058

Note: For lack of better information I have identified "sig" (top Cr-section) as "zi-sig₁₅" (which is double the barley value equivalents versus "ninda ar-ra-sig₅" which is only 1.5).

A further interesting aspect of this particular account is a recording procedure made necessary by the death of a female laborer during the budget period. As the FLD were budgeted in advance, though recorded *ex post* for comparison with actual data, the foreman was responsible for all the projected FLD of the deceased, even for days she could no longer work. Thus, after her demise, the remaining, but budgeted, 187 FLD had to be cancelled by a credit entry. Yet, this was complicated by the fact that each worker had a budgeted allowance for free days (for females, usually one-sixth of her total budgeted work). Hence, one-sixth of the 187 FLD had to be reversed by a debit entry. In referring to this example, NDE [1993, p. 88] emphasized that “no detail of this text exemplifies so drastically the high level of formalization achieved by bookkeeping of labor performance during the Ur III period.”

UNEXPLAINED DISCREPANCIES AND OTHER ITEMS TO BE CLARIFIED

To balance the account in Table 1 in terms of barley equivalents,¹² I had to insert on the *debit side* an “unexplained discrepancy” of minus 2,000 liters. It results from the difference between the total of 92,618 liters (in the original: 308 gur, 3 barig, 3 bán, and 8 sila) *minus* the sum total (94,618 liters) of the individual items listed on the top of this account. Although this discrepancy, not noted in NDE [1993], is merely slightly over two percent of the total, it would require clarification.

The upper half of the *credit side* shows an “unexplained discrepancy” of 60 liters (90,076 liters according to the total versus the 90,016 liters derived from adding the individual items — see upper credit side of Table 1 and NDE, 1993, p. 85). Furthermore, considerable discrepancies seem to exist with regard to “sig flour” and “ground bread” when comparing the individual items [NDE, 1993, p. 85, section II] with the totals (in its section IV) of these two products (55,905 liters of dabin flour and 16,349 liters sig flour, shown in the upper credit side of Table 1). Above all, the labor for excavation (270 FLD indicated in the lower part of the credit side of Table 1) seems to have, in contrast to the milling labor, no equivalent output data on the upper credit side of this Table 1 and its corresponding

¹²All amounts in Table 1 are rounded up or down to whole liters (sila) of actual grain or barley equivalents.

data in NDE [1993, p. 85]. This movement of about 1,189 cubic meters of soil, 20.5 volume-šar per laborer, would correspond to a barley equivalent of about 200 liters, assuming minimum rations, that might have to be inserted on the upper credit side.

As to the lower part of Table 1, the accounting for labor appears to be proper on both sides of the clay tablet, including the correctly inserted discrepancy of 620 FLD, called "deficit" by NDE [1993]. However, that last point requires clarification. How can this discrepancy be a deficit if the actual female labor hours used, hence contained in the output, are less than the budgeted ones? It rather appears to be a "surplus" or, more expertly expressed, a "favorable budget variance." The confusion may have been due to something that may, indeed, be puzzling to archaeologists. In accounting with *actual* data, a loss (deficit) is balanced on the credit side when expenses (dr.) are larger than revenues (cr.). But in accounting with *estimated data* (budgeting, standard costing, etc.), a "deficit," more appropriately called "unfavorable variance," is balanced on the debit side, provided the budgeted amounts are recorded on the debit side and are larger than the actual amounts on the credit side. And since our account, Table 1, contains actual data in the *upper part* (different cereals and ingredients as input and different flour types as output) with budgeted data of FLD in the *lower part*, the "deficit" for the commodity data and the "favorable budget variance" for the labor hours have both to be balanced (i.e., separately inserted) on the credit side. No wonder that NDE [1993] took a favorable budget variance for a "deficit" (i.e., an unfavorable budget variance). But perhaps the term "LÁ+NI," translated by NDE [1993, p. 49] as "deficit," merely means "discrepancy;" but this only a language expert could decide.

There still is another problem to be resolved. As hinted at, the commodity deficit of 2,542 liters is a genuine deficit because it concerns the discrepancy between larger input values versus smaller output values in real terms. It was mentioned by NDE [1993, p. 85, figure 69] in the last section of the credit side and is shown in barley equivalents in Table 1. It constitutes the foreman's debt, be it because of inefficiency or embezzlement, vis-à-vis the state at the end of the accounting cycle. This deficit is brought forward to the next period for settlement. However, apart from the question why the actual labor hours used are not converted into equivalent barley units and added to the total input, as would be done in modern production accounts, a

special dilemma arises. Since the production output (i.e., the various flour types milled) is evaluated in barley equivalents, this "value" should also include the labor input besides that of raw material. But if that were the case, this entire enterprise of milling flour would appear to have been an unprofitable affair as the value of raw material input alone, apart from labor input, already exceeds the value of the total output by some 2,542 liters of barley equivalents.

Might it be possible that the workers (or slaves) received their standard rations from the same production process without having been recorded? Given this situation, the total of those labor rations (which, as footnote 10 shows, were much lower than the labor/product conversion rates there indicated) would have to be added on the credit side as an additional output. Perhaps the budgeted amount (including the unexplained discrepancy and labor deficit), in addition to figuring out the budget variance and the commodity deficit (or surplus), fulfilled a second task; namely, implying (instead of actually recording) the output of labor rations consumed by the workers during the production process. If this was the case, there are no indications that NDE addressed this particular problem or considered the need for entering actual labor values on the upper part of the credit side. It is also possible that the fixed conversion ratios were so distorted, in comparison to potential free market values, that the finished products were "undervalued" relative to raw materials. But if the foremost goal of the Sumerians was stewardship and its monitoring, such a scheme might have accomplished this task regardless of manipulated values or "transfer prices." Nevertheless, all those unexplained items and problems show that further inquiry is necessary. This may indicate that archaeologists alone might not be able to discover and resolve the pertinent intricacies involved, and that accounting expertise could play a vital role in this kind of research.¹³

¹³An excellent illustration of archaeologists drawing advantageously on the expertise of other scientists is the recent discovery of details in brewing beer by the ancient Egyptians. The "beer of Nefertiti," as it is jokingly called, yielded its secrets only after chemists and brewing experts were called upon.
https://egrove.olemiss.edu/aah_journal/vol25/iss1/15

AGRICULTURAL ACCOUNTING: REAL ESTATE AND ANIMAL HUSBANDRY

Apart from clay tablets manifesting the surveying and measurements of arable land, there exist tablets containing the management and bookkeeping of real estate, usually public fields. Some tablets show on the obverse side the amount of grain necessary for seeding the fields based on systematic economic planning or budgeting, while the reverse side contains the pertinent field area based on standardized measurement techniques or approximations. Sometimes these measures are accompanied by a name or title indicating tradesmen, scribes, fishermen, and other professions. One such tablet contains no less than 104 such "allotments" for seed grains, probably from a central public granary. In Lagash (ca. 2400 B.C.), for example, fields were either (1) the domain of the ruler, (2) allotted to public officials, or (3) leased to farmers. The pertinent tablets contain such details on agricultural cultivation as expenditures, yields, and property status ("current rights of disposition"). In the agricultural area, no less than in the previously discussed non-agricultural recording techniques, progress over time can be observed: "In the Ur III period, field administration was improved by better documentation of the results of surveying. From this period on, sketched plans of the fields were included with the documents, annotated with length measures and calculated area measures like a modern land register. Similar plans have been found referring to buildings and, in rudimentary form, even to entire cities" [NDE, 1993, p. 68].

Bookkeeping for animal husbandry (sheep, goats, bigger cattle, donkeys, and, occasionally, horses and pigs) was another crucial component of ancient agricultural accounting. Of special interest is the recording of the holding and the annual productivity of some of those animals. The accounting dealt not only with productivity in terms of the production of milk, cheese, wool, fleece or fur, and textiles, but even processed dung for building or heating material and the propagation of the animals themselves. One text, for example, reveals that one-third of the ewes lambed during the year. To account for all this, the tablets had to reveal the sex as well as the age of the various animals cared for by the herdsman named in the record. Some of these records are quite comprehensive and, occasionally, refer to thousands of animals. In budgeting the production of such agricultural products as dairy fat and

cheese, the number of cows in the care of a particular herdsman was the criterion for calculating the expected output:

One unusual document preserved from the Ur III period discloses crucial information on the calculations carried out in connection with cattle breeding and the expected output of dairy products of that time (see fig. 76). In this document, the annual production of 'dairy fat' and 'cheese' are calculated over a period of ten years based on the hypothetical growth of a cattle herd consisting, at the beginning of that period, of four milk cows [NDE, 1993, p. 97].

FIGURE 4

Schema of Budgeting the Growth of a Cattle Herd and its Dairy Output during a Ten-Year Period

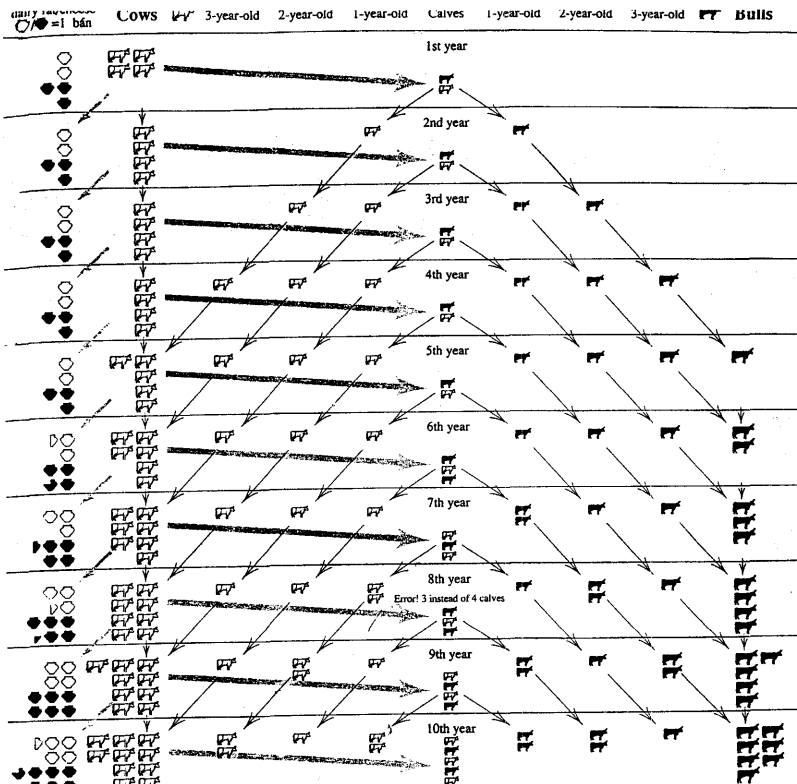


Figure 7R The growth of cattle herd according to the text illustrated in figure 76.

Figure 4 offers the schematic-graphical presentation of a cuneiform tablet and illustrates the budgetary technique employed. It shows the anticipated development of a herd of cattle over a period of ten years. This tablet not only projects the growth of calves, cows, and bulls, but also the anticipated output of dairy fat and cheese from the first year (which starts with four cows on the left-hand side, but apparently with no bull until the fifth year) to the tenth year (which ends with ten cows and seven bulls; the latter indicated on the right-hand side). The left-hand side also shows the yearly expected output (in *bán* = ca. 10 liters) of dairy fat as well as cheese. Apart from the fact that the annual dairy production seems small from our modern point of view, it is surprising that no bull is recorded until the fifth year. As calves were produced in the first year, this was ostensibly with the aid of a "borrowed" bull, not revealed in the budget. The reader will also notice that, quite appropriately, the production of female and male calves is assumed to be equal over the entire decade, but not necessarily for each individual year. To maintain this long-term balance the sixth, seventh, eighth, and tenth years showed unequal numbers of male and female calves (see Figure 4).

A further tablet from Uruk III not only records on its reverse the total amounts of dairy fat (possibly butter or cream) and cheese, but converts these quantities into their equivalent silver values based on exchange rates such as 10 *sila* (1 *sila* = ca. 1.5 liters during the Old Sumerian period and about 1 liter during the Ur III period) of dairy fat per shekel of silver (1 shekel = ca. 8.3 g) and 150 *sila* of cheese per shekel of silver.¹⁴ This indicates that silver equivalents were occasionally used as an accounting or quasi-monetary unit (together with certain volumes of grain, animals, etc.) over four thousand years ago.

CONCLUSION

Historical research of early accounting and bookkeeping has brought forth a series of exciting and surprising results during the last two decades. Since SB's [1977, 1978, 1992] publications on this subject, we have been made aware of the ar-

¹⁴Note the difference in "price" or assigned value between cheese versus dairy fat (perhaps cream or butter) which, according to these ratios, would have been 1 to 15. Such a difference may seem to us extreme but was apparently appropriate in those times.

archaeological evidence of small clay tokens that were used by the peoples of the Fertile Crescent for recording the transfer of goods and the accumulations of debts or similar obligations from about 8000 B.C. to 3000 B.C. and occasionally later. The most decisive of these innovations was the idea to impress the tokens onto the outer surface of the clay envelope, the token content of which could thus easily be revealed without breaking the seals that identified the debtor and other features. This practice of "impressing" was antecedent to cuneiform writing, and constituted a particular kind of double-entry. Impressing the tokens on the surface of the container recorded, as an inseparable totality, a credit or ownership claim, while the inserting of those same tokens into the clay envelope recorded individually separable assets, including silver and claims to labor units, as charges. For a concise survey of token accounting, its evolution and discovery, see Mattessich [1995, pp. 23-32, figures 2.2 to 2.4].

Another decisive step, occurring in the late 4th millennium B.C., refers to the substitution of clay envelopes by more convenient flat clay tablets. At this stage clay tokens were merely impressed onto the tablet, indicating the individual goods and total debt owed, together with the appropriate seals revealing the debtor and possibly other information. Although the token shapes still continued for some time to represent types of commodities, this approach reduced the clay tokens from three-dimensional ideograms for commodities to *mere tools* for impressing two-dimensional ideograms. While the budding idea of a closed double-entry system as encountered in the token accounting of the 4th millennium B.C. disappeared, the legacy of debit/credit entries without systematic double-entry, as still found in some 20th century, single-entry accounting systems, was preserved in the archaic bookkeeping of the subsequent millennium.

The present paper dealing primarily with this legacy encountered in the proto-cuneiform and cuneiform record keeping of the 3rd millennium B.C. demonstrates the further development of early accounting into a relatively sophisticated system. In the late 4th and early 3rd millennia B.C., a transition seems to have taken place in which, increasingly, the form of the clay impression was determined by the commodity type in *combination* with a specific quantity of this commodity. Furthermore, some information about commodities and other data was incised instead of impressed and led, during the 3rd

millennium, to proto-cuneiform and cuneiform writing. But beyond this development, which concerns more the history of writing, a series of important accounting innovations occurred. In the beginning of the 3rd millennium B.C., the practice of proto-cuneiform recording of commodity and labor transactions is characterized by placing the individual debit entries on the obverse side of the clay tablet while placing the sum total as a credit entry on the reverse side. This practice became less frequent during the late 3rd millennium B.C.; it might have been a residual from token accounting where individual tokens were put into hollow clay containers while those very tokens were impressed on the outer surface as the sum total of its content. From the middle of the 3rd millennium B.C. onwards, relatively sophisticated budgeting procedures with their *ex post* juxtaposition of budgeted amounts (particularly labor times) and actual data are encountered. If the stewardship function, between individuals or between them and a powerful temple administration, stood at the cradle of token accounting, this function became all the more important in times of centralized and highly bureaucratic governments. Therefore, the recording of a "surplus" or "deficit," the transfer of those balances to the subsequent period, and their ultimate settlement became a pivotal feature. This bureaucratization of economic life in the 3rd millennium B.C. (well known to the historically interested public through the names of such potentates as Mes-anni-padda, Sargon of Akkad, Gudea of Lagash, Ur-Nammu, etc.) was apparently the driving force for the development of more and more refined accounting and budgeting procedures, such as better calculation and surveying records, "transfer prices," and standard setting. Above all, the subsidiary information to the quantitative-numerical entries became much more sophisticated and semantically structured. The move from proto-cuneiform accounting to different stages of cuneiform accounting finally led to writing in general, and ultimately to literature and poetry.

A major incentive for discussing here crucial aspects of NDE [1993] is the fact that this book contains important evidence for conceiving new hypotheses and for strengthening those previously made [e.g., SB, 1983, 1992; Mattessich, 1987, 1994]. Such reinforcement is especially important in hypotheses that are not amenable to statistical testing. Another justification for this paper lies in novel insights concerning the Sumerian archaeology of accounting and some necessary rein-

terpretations beyond NDE [1993]. The challenge, be it to the archaeologists' or the accountants' traditional way of thinking, may be summarized as follows:

(1) This book and my paper present evidence that strengthens the hypothesis that *Sumerian token-envelope accounting of the 4th millennium B.C. is linked to the very different proto-cuneiform and cuneiform bookkeeping of the subsequent 3rd millennium B.C.* This link lies not merely in the acceptance of many results of SB's research in NDE [1993], but in a specific similarity between those two systems. It was originally hypothesized in Mattessich [1987, 1994] that (i) the inside of the envelope contains clay tokens representing individual assets, and (ii) that the *total* of these "asset values" is shown on the reverse; i.e., on the surface of the envelope, as a totality and equity in form of a set of inseparable token impressions. The similarity between this practice and proto-cuneiform or cuneiform bookkeeping is too striking to be coincidental. Those latter systems also carry on the obverse side individual entries as debits, while on the reverse side they carry the sum totals as credits, clearly evidenced in NDE [1993]. But this specific, yet decisive link between two very different debit-credit systems and its implication for the new hypothesis that *the way of making entries in "archaic bookkeeping" evolved directly from token accounting* are neither articulated in NDE [1993] nor in any other publication known to me.

(2) The above-mentioned evidence and hypothesis establishing the debit-credit character of both systems and their link, together with the fact that every token-envelope accounting can be considered a closed and self-contained system, reinforce the other previously made hypothesis [cf., Mattessich, 1987, pp. 80-81, 1994, pp. 18-21]; namely, that *token-envelope accounting constitutes a prototype of systematic (i.e., "closed") double-entry*, in which every entry has a counter-entry, and is not to be confused with a mere debit-credit system where only some but not all entries have a counter-entry.

(3) The preceding items, together with further evidence in NDE [1993] from proto-cuneiform and cuneiform bookkeeping, support and reinforce a third claim [cf., Mattessich, 1994, pp. 21-22]; namely, that those later record-keeping systems, despite having debit and credit features and showing occasional counter-entries, were not systematic double-entry systems. Here another pertinent difference to observe is that the counter-entries of token-envelope accounting represented

exclusively equity claims (either from debtors or owners, thus "closing" the system), while those of proto-cuneiform and cuneiform bookkeeping often represented transfer entries (outputs to other accounts).

(4) Furthermore, the paper translates (in Table 1) a fairly typical cuneiform account into a more conventional format, thereby revealing additional details as well as errors of interpretation, pardonable for archaeologists but important for accountants to observe. For example, what NDE [1993] called a "deficit" is, in one case, a "surplus" (or more precisely, a "favorable budget variance"). Also, the pertinent account contains, on several levels, "unexplained discrepancies" and deviates crucially from modern accounts in that it is a combination of a current account, of raw materials input and finished goods output, with a budget account, juxtaposing only labor input projections with actual output. None of those items were analyzed in the text of NDE [1993] which, therefore, requires some reinterpretation and further analysis.

(5) I hope this paper also dispels the conventional view that cuneiform record keeping was so primitive that such terms as "bookkeeping" and "accounting" cannot be properly applied to it. This misconception is compounded by the erroneous belief that accounting requires writing and abstract counting as prerequisites, as stated in conventional accounting texts [cf., Skinner, 1987]. Above all, this paper shows that accounting has deep cultural roots to be explored in cooperation with such subjects as archaeology. Should our discipline aspire to overcome its parochial tradition, then accountants ought to concern themselves with a broader range of knowledge and must take the effort to look at the pertinent research with a critical eye. Above all, those doing this work must convey their insights to the academic accounting community in general, not merely to specialized groups.

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IN MEMORIUM
PROFESSOR LOUIS GOLDBERG

Professor Lou Goldberg, emeritus professor at the University of Melbourne, died at the age of 89 years on October 18, 1997 at his home in Melbourne. He has the distinction of being the first full-time lecturer and professor in accounting in Australia, serving his entire academic career at the University of Melbourne. An Australian pioneer in financial accounting theory, with strong interests in Australian accounting history, he will be particularly remembered for his 1965 American Accounting Association monograph, *An Inquiry into the Nature of Accounting*. Professor Goldberg remained a dedicated scholar, researcher, and writer to the end of his life, and his theories and perspectives await rediscovery by generations of accounting researchers to come. He was elected to life membership of the Academy of Accounting Historians and was designated an Officer of the Order of Australia by his country for his services to accounting education. A true scholar, philosopher, mentor, and colleague, Lou Goldberg has made a profound and sweeping Australian contribution to our literature. We are thankful for his lifetime of service to our discipline.

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THE FORGOTTEN ACCOUNTING ASSOCIATION: THE INSTITUTE OF ACCOUNTS

Abstract: This paper focuses on the origin and operation of the Institute of Accountants and Bookkeepers established in New York City in 1882, one of the earliest recorded efforts to establish the accounting profession in the United States. This organization is often overlooked or confused with the American Institute of Accountants (the predecessor of the AICPA), so that little has been written about it. Periodicals published during the late 19th and early 20th centuries were used to reconstruct the history and contribution of this Institute. Its contributions were many, including forming and influencing the passage of the first CPA law, developing tests of fitness for membership 14 years before the first CPA exam, and setting standards for professionalism in the U.S. In addition, the Institute developed a foundation for treating accounting as a science which helped elevate the status of bookkeeping and public accounting during the late 19th century.

On July 28, 1882, a certificate of incorporation was filed for the Institute of Accountants and Bookkeepers of the City of New York (IABCNY), though the name was officially changed in 1886 to the Institute of Accounts (IA). This organization of bookkeepers, accountants, and businessmen should not be confused with the American Institute of Accountants (AIA).¹ Aside from the contribution of its members to the formulation and

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¹ This organization, originally started in 1887 as the American Association of Public Accountants, became in 1957 the American Institute of Certified Public Accountants.

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passage of the New York Accountants' Law of 1896, very little has been published on the history of the Institute.² In most histories of accounting, only a paragraph or two are devoted to this organization, even though the Institute was very active in New York City during the infancy of modern accounting. The IABCNY should not be viewed simply as an association of bookkeepers and businessmen. While those historians who have known its history have given it proper respect [Wilkinson, 1903, 1928], others, perhaps threatened by the Institute's contribution to the passage of the New York Accountants' Law of 1896, have been less generous.³

One reason that so little has been written about the IA is the absence of extant records, except for what was published in the journals and newspapers of the time. Webster [1954] could not find the minutes or any other records of the IA. Its last two members, upon joining the AIA, had not preserved any records. Even though many IA members subsequently joined the New York State Society of CPAs (NYSSCPA), no IA records are to be found in its archives as well.

² In his articles on the history of accountancy in the U. S., Wilkinson [1903, 1928] devoted several paragraphs to the IA, attributing to it a major role in the passage of the New York CPA Law of 1896 and acknowledging it as the first accounting organization to base membership on a formal examination. Webster [1954], writing about the American Association of Public Accountants from 1886 to 1906, mentioned the IA in several chapters but did not adequately discuss its contribution to the accounting profession. Edwards [1960] devoted two paragraphs to the Institute as did Previt and Merino [1979], listing some of the monthly lecture topics that constituted the meetings for the period from 1883 to 1887. Miranti [1990] examined the individuals in the IA from a political aspect in their contribution to the passage of the 1896 Accountants' Law and the founding of the New York State Society of CPAs. McMillan [1996] credited the IA with providing a forum for the development and refinement of the science of accounts.

³ Webster [1954] attributed the passage of the New York CPA Law to Melvil Dewey, three members of the American Association (Richard F. Stevens, Richard M. Chapman, and Francis Gottsberger), and only one member of the Institute (Charles E. Sprague). Wilkinson [1928] also attributed the passage of the CPA Law to Henry Harney, the President of the Institute. *Business* [July 1896, p. 289] gave credit to both organizations, with special consideration to Sprague, the third President of the Institute, who drafted the law. *Business* [July 1896, p. 320] actually printed Sprague's original draft of the bill prepared under the auspices of the Institute and the final version that became law. In an obituary published in *Commerce, Accounts, and Finance* [April 1903, p. 9], Anson O. Kittredge, a charter and active member until his death, is credited with being "one of the prime movers in securing the passage of the law."

The goal of this paper is to reconstruct the history and contribution of the IA, to establish its proper place in the history of U.S. accountancy by reference to materials printed in early accounting and business periodicals published in the late 19th and early 20th century.⁴ A chronology of the IA is presented in Appendix A. The remainder of this paper traces aspects of the IA's history — its origin; its establishment of the first examination in the accounting profession in the U.S.; its role as a forum for the science of accounts; its meetings and membership structure; its assistance in passing the New York CPA Accountants' Law of 1896; and, finally, its demise and a summary of its lasting contributions.

⁴Since the first *Accountants' Index* did not include most journals published before 1905, the following periodicals had to be examined: *The Book-Keeper* (July 1880 to May 1883), *American Counting-Room* (July 1883 to November 1883), *The Office* (July 1886 to May 1891), *Business* (January 1891 to December 1901), *Accountics* (April 1897 to September 1900), *Business World* (January 1902 to December 1906), *The New York Accountants and Bookkeepers' Journal* (February 1903 to October 1904), and *Commerce, Accounts and Finance* (January 1901 to April 1903). For references after 1904, the *Accountants' Index* was used.

The Book-Keeper was the first professional accounting journal in the U.S., published fortnightly by The Book-Keeper Publishing Company of New York with Selden R. Hopkins and Charles E. Sprague as editors. Both were founding members of the IA. The *American Counting-Room* was a continuation of *The Book-Keeper*, published monthly. The publishers felt that the original name of the journal was too narrow for the topics that were covered by the journal [*American Counting-Room*, July 1883, p. 1]. Both publications were reprinted by Garland Publishing in 1989. *The Office* was a professional journal for managers and accountants published monthly in New York and edited by Anson O. Kittredge, another founding member of the Institute. There were no professional accounting journals published from December 1883 to June 1886 except for the *Treasury*, of which copies could not be located. Webster [1954, p. 108] was able to examine only five copies of the *Treasury*. However, some of the information about the IA from these years can be found in *The Office*. *Business* was a continuation of *The Office*, also edited by Kittredge up to October 1896. All of the above journals published summaries of the monthly meetings, as well as many of the full texts of the lectures delivered at these meetings.

Accountics was the official journal of the IA and edited by Kittredge. It was a monthly magazine devoted to the science of accounts. *Accountics* was also reprinted by Garland Publishing in 1992. *Business World* was a continuation of *Business*, published since 1897 by the Business Publishing Company. In later years the IA received less coverage in these periodicals since the IA had its own publication and since there were so many societies competing for space.

ORIGIN OF THE IA

Professional accounting societies emerged in Scotland in the 1850s and 1860s. The Institute of Chartered Accountants in England and Wales, when incorporated by a royal charter in 1880, had as its goal to help in "the elevation of the profession of public accountants as a whole, and the promotion of their efficiency and usefulness, by compelling the observance of strict rules of conduct as a condition of membership, and by setting up a high standard of professional and general education and knowledge" [Haskins, 1901, p. 5]. Young men were apprenticed to the profession for five years, during which time they had to pass three examinations before becoming chartered. The examinations tested knowledge of Latin and the classics, decimals and fractions, double-entry bookkeeping, partnerships, company, chancery, bankruptcy, trustee and other types of accounts, and business law.

As a result of these stringent requirements, English accountants were recognized by U.K. courts and were allowed to practice under rules similar to those governing attorneys. In the 1870s and 1880s, American newspapers were praising the services of the many chartered accountants practicing in Boston and New York [*American Counting-Room*, October 1883, pp. 234-235; *New York Times*, November 1885, p. 4].

Due to the growth of manufacturing and commercial interests in the U.S. in the second half of the 19th century, the professional accountant was becoming a necessity. The speculative expansion of railroads in the 1870s and 1880s resulted in retrenchment, loss of capital, and bankruptcies. Investors became leery of dishonest railroad prospectuses and overly sanguine promoters. This environment created a need for professional accountants that apparently was being met with qualified and unqualified individuals. A letter to the editor of *The Book-Keeper* [August 1881, p. 26] raised the following question:

Is it not high time, I would ask, that the word 'accountant' should mean something here as well as in the Old World? When a man in England advertises himself as an expert accountant his capabilities are no more doubted than those of one lawyer compared to another. But in this country we are startled to see the announcement of a young man who has 'just graduated from college' referring to his capabilities as 'a good accountant'. . . . But, if what I have said shall have any

effect upon hastening the organization of the Book-Keepers' Association of the City of New York, I shall feel amply rewarded for the effort made.

The formation of the IA was one of the earliest recorded efforts to establish the accounting profession in the U.S. It was a voluntary association of bookkeepers and accountants who organized for mutual advantage, mainly for educational purposes [Wilkinson, 1928]. The Bookkeepers Beneficial Association of Philadelphia (BBAP) had been organized eight years earlier to provide sickness and death benefits and to act as an employment agency for members. Before the end of the 1880s, there were at least 18 societies or organizations throughout the country.⁵ Many of these early societies were organized along the lines of the IA; for example, the objective in Chicago in 1883 was to "organize a Book-keeper's Association, similar to the one in New York City, which is flourishing" [*The Book-Keeper*, April 24, 1883, p. 139].

The IA had been advocated and promoted by editorials in *The Book-Keeper*, the oldest accounting journal in the U.S., first published in 1880. On January 18, 1881, Selden R. Hopkins, the editor of *The Book-Keeper*, lay the groundwork for the IA's foundation by publishing extracts from the by-laws of the BBAP. Later that year, on June 7, he asked for names and addresses of "those who are willing to take a part in such an organization." Other letters indicating a desire for an organization appeared in *The Book-Keeper* periodically throughout the year.

A call from the outside was expressed in a letter to the editor of *The Book-Keeper* [September 27, 1881, p. 58] by William Anderson, the President of the Ontario Institute of Accountants:

I am surprised that in a city of such enterprise and business activity as New York, where trained accountants must be in constant demand, some efficient organization is not established whose aim should be to encourage and endorse those who have by years of study and practice acquired such a knowledge of accounts as enables them to master intricate matters in figures or adjust complicated details in book-keeping. . . . The

⁵ A list of associations, clubs, and institutes in the *Office Men's Record* [October 1889, p. 269] delineates 17 organizations; however, the American Association of Public Accountants is not included, even though it was founded in 1887.

sooner such an Institute is established by the skilled accountants of your city, with branches in the leading commercial centers of your country, the sooner the status of those men who are really deserving of public confidence will be recognized and their services properly remunerated.

A letter, dated December 1881 and published in *The Book-Keeper*, listed the advantages of having an organization of book-keepers in all cities. Among these were lectures and discussions on relevant business issues, aid in securing positions, and the possibility of insurance provisions for deceased members' families. At the end there was a call to others to express their views on this subject [Hickcock, 1881, p. 156].

An issue of *The Book-Keeper* [January 3, 1882, p. 7] dedicated half a page to the Eighth Annual Report of the BBAP. The article in the New York-based journal reflected jealousy through comments such as "Philadelphia — the cautious — has taken the initiative step in this country at least toward organizing and perfecting an association of practical book-keepers," and "is destined to eventually make itself felt as a power in the intellectual department of the commercial world."

To stimulate even more interest in such an organization, a satirical, tongue-in-cheek essay under the pseudonym Mark Checkup (probably Selden Hopkins) appeared on the first page of the April 25, 1882 issue of *The Book-Keeper*, urging the book-keepers in New York City to halt progress toward an association.⁶ The tenor of his essay can be judged by just one of his many comments: "A book-keeper would rather spend nine or ten evenings of the week hunting for a discrepancy of two cents in his last month's trial-balance, than spouting eloquence about the glories of his high calling before an assemblage of his brother craftsmen" [p. 125].

The first meeting with the goal of forming an organization of accountants and bookkeepers in New York City was held April 11, 1882. A committee (Thomas B. Conant, Edward T. Cockey, and Selden R. Hopkins) presented the potential members with six objectives for such an association. The first called for the "elevation of the moral and intellectual status of each

⁶ There are numerous satirical essays on various topics penned by Mark Checkup in *The Book-keeper* and *American Counting-Room*. The content and location of these essays indicate that Mark Checkup was probably the pseudonym of the editor of the journal.

and every member of the profession." The second encouraged fellowship among accountants. The third objective was a more pragmatic one, advocating proficiency for its members by having the organization provide presentations of papers on germane themes and a forum for the discussion of questions on accounting and business in general. The others envisioned a society that would serve as an employment agency for members, provide death and sickness benefits, and would bring renown and respect in commercial circles. With these objectives, the committee believed that the society's name would be "synonymous with professional skill and practical proficiency" [*The Book-Keeper*, May 9, 1882, p. 141].

A preliminary charter was signed by 25 men and temporary officers were elected. The official charter was signed by 37 men on June 8, 1882. Most of the signatories were bookkeepers and professional accountants in the City of New York and adjoining cities. A complete slate of officers, an Executive Council, an Examining Committee, and a Board of Auditors were also elected or appointed [*The Book-Keeper*, June 6, 1882, p. 173].⁷ The organization was formally incorporated on July 28, 1882. The by-laws of the nascent IABCNY were published in a pamphlet of 20 pages. The motto on the triangular seal was KNOWLEDGE and EXPERIENCE, uniting under the base of INTEGRITY. For organizational purposes, members were divided into standing committees, including a Committee on Lectures and Entertainment to foster education, one of the most important and practical aspects of the IABCNY. The press praised the formation and goals of the Institute and its objectives, with special thanks expressed to Hopkins, the editor of *The Book-Keeper*.⁸

⁷ The officers elected were Edward C. Cockey, President; A. O. Field, Vice-President; Thomas B. Conant, Corresponding Secretary; Joseph Rodgers, Financial Secretary; A. Garrison, Treasurer. The Executive Council elected for the first year included Edward C. Cockey, Chairman, Harry S Ogden, Joseph Hardcastle, Clarence Rudyard, A.O. Kittredge, W.E. Nason, Selden R. Hopkins, William Calhoun, Peter Lowe, W.G. Allen, C.E. Lucas, and Charles A. Underhill.

⁸ Besides praising Hopkins for his contribution, an article in *The Iron Age*, reprinted in *The Book-Keeper* [May 9, 1882, p. 150] indicated that membership in the Institute "should carry with it a strong indorsement of professional skill and ability" and that the purpose of the Institute "shall be the elevation of the profession, the intellectual improvement and the advancement of the general welfare and interests of its members."

Right from the beginning, it was stressed that "admission should be most zealously guarded and that none falling below a high degree of ability as accountants be granted membership" [*The Book-Keeper*, May 9, 1882, p. 142]. Thus, to become a member, an applicant first needed either practical experience as a bookkeeper or be in a position that required an understanding of accounting. Second, the applicant had to pass an examination before an Institute committee in which his knowledge of accounts, as well as his moral standing and integrity in the community, were investigated. This examination, a prerequisite to membership, was established 14 years before the first CPA exam.

EXAMINATION

The IABCNY founders stressed the importance of qualifications for prospective members, perhaps sacrificing a larger membership. Requiring an entrance examination may have been detrimental to the growth of the organization. To alleviate fears about the examination, the Examining Committee addressed requirements in *The Book-Keeper* [October 24, 1882, p. 338]. The candidate should be "of good moral character, and [understand] what are usually known as the 'principles of double-entry bookkeeping'." Very few technical questions seemed to be part of the examination, as indicated by the Examining Committee in the same article: "The fact that the applicant is keeping a set of books for a reputable house in a correct manner is in itself almost a complete answer to the question of his ability." There is a paradox in that the examination was deemed to be necessary to maintain standards; yet, it appears that no written answers were required.⁹

The Examining Committee and the examination were involved in controversy when the question arose whether a person living a distance from New York City could pass a personal examination.¹⁰ Calling applicants before the Examining Committee for the purpose of testing their fitness limited member-

⁹ During the September 1882 meeting, the Examining Committee reported on eight applicants for membership. One removed his application, one was rejected, and six were recommended and elected to membership [*The Book-Keeper*, September 26, 1882, p. 302]. This is the only time the Examining Committee rejected a member because of sub-par qualifications.

¹⁰ By the 1890s, the Institute had become a prestigious organization with members not only from the New York vicinity but throughout the U.S. [*The Office*, January 1890, p. 23].

ship to men from the New York vicinity. Many members were in favor of dispensing with the examination, except in cases where the applicant preferred it or could not provide adequate references. An editorial in the *American Counting-Room* [November 1883, p. 294] agreed that such a plan would be more sensible, satisfactory, and successful in promoting the best interests of the IABCNY. Compared to the Institute's examination, those in the U.K. were more structured, testing general education (mathematics, the classics), bookkeeping, and business [*New York Times*, November 8, 1885, p. 4].

As the organization progressed, it becomes obvious from the articles and the advertisements in the periodicals during the 1880s that the entrance examination was dropped. However, when the Institute introduced structured membership in 1886, the requirement to become a "Fellow" (senior grade of membership) or "Certified Accountant" (middle grade of membership) involved passing a comprehensive examination.

SCIENCE OF ACCOUNTS

As mentioned previously, the first objective of the IA was "elevation of the moral and intellectual status of each and every member of the profession." To accomplish this objective, the organizers intended to make the IA an educational vehicle to promulgate the "science of accounts." The members involved in achieving this goal included such prominent accounting educators and writers as Charles Sprague, Selden R. Hopkins, E. T. Cockey, Joseph Hardcastle, Anson O. Kittredge, S.S. Packard, and Charles W. Haskins. Sprague, Hardcastle, and Kittredge became professors at the New York University School of Commerce, Accounts, and Finance, where Haskins was the first dean.

Sprague wrote about treating the "science of accounts as a branch of mathematics" and reduced accounting to "an algebraic notation." His series, "The Algebra of Accounts," was published in the first four issues of *The Bookkeeper* in 1880. In this series, Sprague [1880, pp. 2-4, 19-21, 35-37, 51-53] presented his thesis that "all the operations of double-entry book-keeping are transformations of the following equation: What I **have** + what I **trust** = what I **owe** + what I am **worth** or symbolically written, $H + T = O + X$ " [Sprague, 1880, pp. 2-4]. Previts and Merino [1979] and McMillan [1996] believed that this is the first time that the science of accounts was put into symbolic representation in the U.S.

At the same time, Hopkins wrote "A Treatise on Book-keeping," a series of letters which "fully demonstrated the science as it is practiced by the leading firms and corporations of this country at the present time" [*The Book-keeper*, July 20, 1880, p. 6]. The series ran in seven issues of *The Book-keeper*. These two editors were instrumental in the formation of the IABCNY.

A sample of lectures presented in the IABCNY clearly indicated the educational direction the organization was taking in its early days. As can be seen in the following topics of lectures and discussions, the "science of accounts" was the focus: Charles Sprague, "Documents as Related to Accounts;" Joseph Hardcastle, "The Theory of Life Insurance and its Book-keeping so far as it Relates to Risks;" Edward T. Cockey, "The Scope of the Accountants' Art;" Selden Hopkins, "The Organization and Classification of Accounts;" and Silas Packard, "The Classification of Accounts." (See Appendix B for a more complete list of lecture topics compiled by the authors from the periodicals of that time.)

Sprague's seminal lecture on the "Algebra of Accounts" was presented to the IA in 1889. Even the official journal of the IA, published from April 1897 to September 1900, was called *Accountics*. The first article printed in the periodical was the address of the IA President, Charles Dutton, who explained the organization's role as "unique as an exponent of the element of accounting and the science of accounts for it stands between business and its promoters and transactors, as an interpreter of the elements and principles of economics" [*Accountics*, April 1897, p. 5]. The word "accountics" was credited to Sprague. Responding to the request of the editor, A. O. Kittredge, to explain the meaning of the word "accountics," Sprague replied with the following definition: "The science which treats of accounts and the art of keeping, verifying, examining and classifying them" [*Accountics*, April 1897, p. 19].¹¹

MEETINGS AND MEMBERSHIP

As far as can be determined from existing written evidence, the format of the regular meetings remained relatively unchanged. During the first part of each meeting, routine business

¹¹ See McMillan [1996] for further discussion on the importance of the IA in the development and refinement of the science of accounts and its contribution to the development of modern accounting theory.

was transacted. The second part usually involved a lecture/reading by one of the members or a leading businessman on a business topic, usually dealing with accounting or commerce. As mentioned previously, many of the accounting lectures related to the development of the science of accounts. Discussion and questions were reserved for the end of the meeting. About every third or fourth meeting, there were general discussions on controversial issues. (See Appendix B for a list of lectures and discussions compiled by the authors.)

During 1886 and 1887, "off-nights" sessions included gatherings called Hoot Nights in which entertainment was provided by an informal club (called the Hoot Club) made up of IA members. During these auxiliary meetings, the rooms were decorated, women were invited, poems were recited, trivia games of general knowledge were played, and music was provided.

The members of the organization appreciated the importance of securing a sizeable membership. At the first annual meeting of the IABCNY held in March 1883, a practical goal was set to enroll two percent of the 20,000 bookkeepers in New York, or double the number in the BBAP [*The Book-Keeper*, March 27, 1883, p. 97]. However, actual membership numbers were never reported in press write-ups about annual meetings. To attract membership, in 1883, *The Book-Keeper* provided portraits and biographies of the president and the general officers of the IABCNY [January 30, 1883, pp. 33-34, February 27, 1883, pp. 65-67].

The first regular meeting, held in September 1882, had only 23 of the initial 37 signers of the charter attending. The lecture, delivered at this meeting by Joseph Hardcastle on "The Origin of Calculations as Deduced from Languages," was published in full by Hopkins in *The Book-Keeper*. Hopkins not only published the lecture, but to increase interest in the fledgling organization, questioned whether the application of the principle of balance occurred as far back as Hardcastle had claimed and called on his readers to enter into a discussion on this issue. To increase attendance further, the president of the IABCNY authorized Hopkins to extend an invitation in *The Book-Keeper* to all interested in the Institute, bookkeepers and businessmen. The attendance problem at the monthly meetings occurred again at the following meeting on October 16, 1882. Again the complete lecture and all visual materials were published in *The Book-Keeper* [November 21, 1882, pp. 367-371]. In an attempt to attract greater attendance, a different format was tried; the

IABCNY held a discussion at its December meeting on the issue, "Resolved, that the Capital Account of a Business is a Liability of that Business." This was basically a philosophical debate, relating to the science of accounts, about the contradiction in the term "invested liability," which can exist neither for the business nor the proprietor [*The Book-Keeper*, October 24, 1882, p. 344].

To deal with the difficulty of conducting business with low attendance, an amendment to the by-laws was made at a meeting on April 16, 1883, allowing 12 members to constitute a quorum for the transaction of business. Despite the lower quorum number, there were still meetings at which regular business could not be transacted because of low attendance. Problems with membership attendance continued to plague the Institute, as evidenced by repeated references to this problem throughout the 1880s [*The Office*, August 1886, p. 48]. However, by the 1890s, there were many references to the large number of members and well-attended meetings even though no numbers were disclosed [*Accountics*, September 1899, p. 50, November 1899, p. 89, and April 1900, p. 73].

CLASSES OF MEMBERSHIP

One of the first attempts in this country to raise the prestige of the profession was made by the IA in segmenting its membership into three classes [*The Office*, June 1886, p. 12]:

Class C — Active members who had 5 years of experience either as accountants or double-entry bookkeepers.

Class B — Active members who had 10 years of experience either as accountants or double-entry bookkeepers.

Class A — Active members who had 15 years of experience either as accountants or double-entry bookkeepers.

Each class or grade was eligible to receive a separate certificate. By doing this, the IA tried to emphasize the various stages of competencies required by the profession. These classes were later renamed as Associates, Certified Accountants, and Fellows. Associates (Class C) were members who were admitted upon presentation of satisfactory credentials. However, they were not allowed to vote or hold office. The Certified Accountants (Class B), not to be confused with Certified Public

Accountants, were members with practical experience in bookkeeping and accounting who had passed an examination entitling them to use the initials C.A. after their names. The highest grade, Fellows (Class A), were members who had been Certified Accountants for at least one year and had passed an examination by the Board of Fellows. They were allowed to use the initials F.I.A. (Fellow of the IA) after their names.

U.K. Chartered Accountants used the initials F.C.A. and were opposed to members of the IA and the Corporate Accountants of New York City using the designations F.I.A. and C.A. They felt that this practice was confusing to the public and "undoubtedly a very serious abuse" [*Business*, May 1895, p. 173]. Correspondents from *The Accountant* (London, England) wrote to the Regents of the University of the State of New York, inquiring whether societies whose members were using these initials held any university or college degree conferred by the Regents. Similarly, members of the American Association of Public Accountants (AAPA), although they were also using letters after their names, also complained about these designations. Melvil Dewey, Secretary of the Regents, replied that these initials did not stand for degrees but were only an indication of membership in a society, and that he was working on legislation that would prohibit the use of letters after a name similar to those possessing university degrees [*Business*, May 1895, p. 173].

Much of the negative reaction of the British Chartered Accountants can be explained by the fact that the status of the IA had changed over the years. Accounting and business journals constantly reported on and even published lectures delivered at IA meetings, thereby informing the public of its purpose and objectives. Examinations were frequently mentioned in ads and recruiting materials. The membership included prominent accountants. A certificate of membership or fellowship in the IA had become prestigious.

NEW YORK CPA ACCOUNTANTS' LAW OF 1896

The IA made a significant contribution to the New York CPA Law of 1896. It worked together with the AAPA and Melvil Dewey, Secretary of the Board of Regents, for its passage.¹² The

¹² Miranti [1996] discussed the personal relationship between Melvil Dewey and two prominent members of the Institute, Charles E. Sprague and Charles Waldo Haskins.

bill that was ultimately signed into law was a slightly changed version of the bill drafted by Sprague, a founding member and third president of the IA. The first Board of Examiners appointed by the Regents included two IA members, Charles E. Sprague, F.I.A.¹³ and Charles W. Haskins, as well as Frank Broaker, a member of the AAPA. At the meeting called by Dewey a few days after the passage of the bill, the qualifications necessary for candidates to apply for the CPA examination were discussed. Since there were no schools issuing diplomas or certificates to accountants, the discussion centered on what could be accepted in lieu of such a diploma or certificate. The consensus was that a course of study or credentials equivalent to those acceptable for admission to the bar exam would suffice. Practical experience, membership in the IA, and various other criteria were suggested [*Business*, June 1896, p. 259].

The initial opinion of the Regents, as well as of the Examining Board, was that all public accountants should submit to an examination. This appears to have been the sentiment of the IA as well, as implied by a report made by its President, Henry Harney.¹⁴ This report, published in *Business*, indicated that the IA believed its membership provided the necessary credentials to sit for the examination [*Business*, June 1896, p. 259]. In fact, the IA perceived the CPA exam as a means for drawing a larger membership. IA members were optimistic about the opportunities for their organization [*Business*, August 1896, p. 360].

THE DEMISE OF THE IA

The Institute appears to have had a strong existence only during the 19th century; the decades of the 1880s and 1890s were apparently the most successful. Even though the IA's last two members officially merged with the American Institute of Accountants (predecessor of the AICPA) on March 15, 1940 [Webster, 1954, p. 14], the evidence indicates that the IA had been inactive for many years prior to this date. The last notification of a meeting found in a periodical appeared in the January 1907 issue of *The Journal of Accountancy* [p. 255].

¹³ Although Charles E. Sprague had an honorary Ph.D., as a member of the IA he was constantly using the initials F.I.A. Upon receiving his CPA certificate, he switched to CPA.

¹⁴ Joseph Hardcastle, a prominent leader in the Institute, did not accept a waiver; instead he took the first CPA exam and passed with the highest grade [State Board Examiners of Public Accountants, April 25, 1897].

There were various reasons for the demise of the IA. In its early years, when the organization enjoyed a relative monopoly, the IABCNY failed to heed the call for a national institute. During 1883, the first suggestion for a national organization was recommended in *The Book-Keeper* [May 8, 1883, p. 159]: "Every town should have its Institute." By the end of that year, several similar societies were thriving. The Chicago bookkeepers organized an association, similar to the IA, which basically adapted the by-laws of the New York Institute with very little alteration [*The Book-Keeper*, May 8, 1883, p. 154]. Articles in the *American Counting-Room* [July 1883, p. 38, November 1883, p. 294] strongly recommended a national organization.

When the Institute did formulate a national organization, it was too little, too late. Lacking was an appropriate concept to structure such an organization, as evidenced in the following comment: "The fundamental law of the Institute is so extremely liberal that the several chapters have practically as much liberty of choice concerning the character of their meetings and entertainment as though they had no connection with the central or national body whatever" [*Accountics*, September 1899, p. 46]. Apparently, the IA issued no directives to individual chapters.

The national organization held its first convention on June 3, 1897, and its fifth and last in 1901. The third annual convention, held on May 23, 1899, was attended by only 17 delegates from three chapters (New York, Hartford, and Washington, D.C.).¹⁵ At this time, there were several other competing national organizations [*Accountics*, October 1897, p. 25; *Business*, June 1901, p. 228]. By contrast, the AAPA had a national framework right from the beginning.

Initially, the requirement of an examination seems to have retarded growth in membership. Correspondence in *The Book-Keeper* [1883] between the president of the IABCNY and the Examining Committee was designed to relieve anxiety about the exam. It appears that at first the exam was oral, primarily comprised of "social chats" that had to be conducted in person, thereby limiting membership to those in the New York City vicinity.

In addition, after the passage of the New York CPA Law of 1896, many of the prominent members — Haskins, Hardcastle, and Kittredge — gave their energies to other accounting organi-

¹⁵ The Washington, D.C. Chapter was represented by proxy in the hands of

Anson Kittredge [*Accountics*, June 1899, p. 138].

zations, especially the NYSSCPA. In fact, the NYSSCPA carried on the political agenda of the IA, from which it drew many of its prominent members.¹⁶ It is ironic that the law which IA members had so vigorously supported may ultimately have resulted in the downfall of their organization.

To support this contention, one only has to consider the membership records of the AAPA. It was not until it had reached its seventh year of existence that this organization had a membership greater than 40 [Webster, 1954, p. 37]. We have no official records of how many were in the Institute then, but some of its meetings had more participants than the total membership of the AAPA.¹⁷ Thus, we can assume that the IA had more members than the AAPA until at least the late 1890s. The AAPA's membership increased considerably in 1905 after its merger with the Federation of State Societies of Public Accountants in the United States of America.

The proliferation of accounting societies and organizations in New York and other states after the passage of CPA laws led to fierce competition for membership. The monopolistic position enjoyed by the IA in the 1880s was significantly eroded by the proliferation of numerous state as well as national societies. The IA found itself competing for space in the accounting and business journals. In the 1880s and the early 1890s, pages were devoted to the IA in issues of *The Book-Keeper*, *The Office Accountants*, and *Business*. Full texts of lectures were printed in the journals. The editors in many cases were members of the organization. By the early 20th century, the only articles published on a monthly basis were short briefs reporting the fact that meetings had occurred, the title of the lecture and presenter, and announcements of the next meeting. *The Journal of Accountancy* cited the IA only ten times between 1905 and 1907. Subsequently, citations in accounting periodicals on the activities of the Institute disappeared entirely.

One of the reasons the IA was established was to provide sickness and death benefits for its members, following the model of the BBAP, organized eight years earlier. The IA failed to establish this insurance corporation. If pursued, it might

¹⁶ For further discussion on this topic, see Miranti [1990], chapter three, "The Emergence of the CPA Movement, 1892-1906."

¹⁷ In a speech delivered to the Philadelphia Institute of Accounts on April 24, 1908, George Wilkinson mentioned that the New York Institute of Accounts had approximately 135 accountants at that time.

have been a drawing card for numerous bookkeepers and accountants that would have given the organization a much stronger position in the New York financial community.

VALUE AND CONTRIBUTION OF THE IA

The IA had a much larger effect on the history of accounting in the U.S. than the number of its members suggests. Most importantly, it was the first organization to set a standard for professionalism in the country. By establishing the three grades of membership, the IA elevated the professional accountant, distinguishing him from the bookkeeper.

Members of the IA were instrumental in forming and influencing the passage of the first CPA law. Two of the three members of the first Examining Board were IA members. After the failure of efforts in 1898 to modify the New York Accountants' Law (Wray Bill),¹⁸ all three examiners appointed by the Regents of the University of the State of New York for the year July 1899 to June 1900 were members of the NYSSCPA and the IA (Haskins, Loomis, Kittredge).

The IA was also the first organization of accountants in the U.S. that instituted fitness tests. A test of fitness was specified in the by-laws and remained a necessary requirement for advancement to the rank of Fellow, the highest stage of membership, representing a high degree of professionalism never before experienced by U.S. accountants.

The IA provided an avenue for and a network of intellectual pursuits among accountants during a time when they were undifferentiated from bookkeepers. It initiated the earliest effort to provide educational opportunities for the accounting profes-

¹⁸ One of the objects of the Wray Bill was to have the Board of Regents appoint one examiner from each of the three organizations, the AAPA, the National Society of Certified Public Accountants, and the NYSSCPA. The IA and the New York Society campaigned heavily to defeat this bill, arguing that it was "an unwanted expression of lack of confidence in the highest education body in the State" [*Accountics*, April 1898, p. 21]. Since it would have restricted the choices of the Board of Regents in their appointments and since two of the organizations were national, passage of the Wray Bill could have resulted in the appointment of nonresidents of New York State administering the New York State Accountants' Law.

In addition, the amendment proposed that CPA certificates be granted to all accountants who had worked at least one year prior to the signing of the original law. The NYSSCPA and the IA argued that this licensure would certify incompetent clerks and bookkeepers.

sion in America. The lectures, while opening new avenues of thought and action, gave birth to a new theory — the scientific approach to accounting: “It [was] the only organization in the whole country that [had] for its object the advancement of the science of accounts and the improvement of the art of book-keeping” [*Accountics*, December 1899, p. 107].

In addition, the IA recognized and promoted the benefit of accounting and public accounting. Not only was it an intellectual organization, it was also a pragmatic one. Many of its meetings were general discussions on issues faced by bookkeepers and accountants.

The motto of the IA consisted of three words — knowledge, experience, and integrity. In fact, the IA was probably the first accounting organization to expel a member for ethical reasons, finding him guilty of violation of the IA’s by-laws. Otto Baumann was expelled for embezzlement of the funds of the Union Dime Savings Bank of New York [*The Office*, November 1886, pp. 97, 104].

Besides its usual course of business, the IABCNY was involved in drafting commerce legislation in New York State. In early 1883, the society requested a change in the law to abolish the days of grace.¹⁹ *The Book-Keeper* [February 27, 1883, p. 77] also looked for help from the Institute in relation to future national legislation on bankruptcy laws. The Institute was obviously perceived in a favorable light since it was asked to advise on these political responsibilities relating to business.

CONCLUSION

Members of the IA were instrumental in establishing the professional status that accountants have enjoyed in the 20th century. The IA not only filled a need for a professional organization in the late 19th century, but also provided direction for

¹⁹ The petition had been prepared by Sprague, Field, and Kittredge and signed by its officers and many of its members. From an ancient custom, three days were added to the time expressed in drafts, bills of exchanges, and promissory notes. Thus, any document due in 30 days did not have to be paid for 33 days. The IABCNY petitioned that this outdated custom, which was unsuited to modern businesses, be abolished. This petition was sent to the Senate and Assembly of the State of New York. *The Book-Keeper* [February 13, 1883, p. 50] printed a positive article from *Rhodes’ Journal of Banking* on eliminating the days of grace. The bill was introduced on March 23 by then Assemblyman Theodore Roosevelt [*The Book-Keeper*, March 27, 1883, p. 108] and eventually became law.

other associations and societies being formed throughout this country. The significance of the Institute of Accounts was best expressed by John R. Sparrow [1903, pp. 4-5]:²⁰

The little acorn planted by the Institute of Accountants and Bookkeepers is fast becoming a sturdy oak. The New York State Society of Certified Public Accountants, The American Association of Public Accountants, The Institute of Accounts, your own beloved Association, and the newly formed Federation of Public Accountants in the United States of America, having sat at the feet of this old Gamaliel of Accountancy, are now carrying on the work begun by it. Where there was once a small association fighting almost single handed, there are now a university, special schools and an organized fraternity devoted to accountants.

Much of what the IA achieved has been lost since the notes to the meetings have never been found, and we are forced to reconstruct its history only through the periodicals published during the times. However, when a CPA attends a state society's meeting, featuring not only routine business but a lecture by a prominent member of the business community and ensuing discussion, that professional is experiencing the exact format used by the IA more than 100 years ago.

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²⁰ John R. Sparrow, CPA, was Superintending Accountant and Statistician, Finance Department of the City of New York. These remarks were part of an address delivered at the Third Annual Dinner of the New York Society of Accountants and Bookkeepers, "The Advantages of Your Society to Accountants and Bookkeepers."

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APPENDIX A
Chronology of the Institute of Accounts
1881 to 1940

- 1881 Correspondences in *The Book-Keeper* suggesting an organization of bookkeepers and accountants
- 1882 Apr. First election of officers
- Jul. Certificate of Incorporation filed for "The Institute of Accountants and Book-keepers of the City of New York"
- 1883 Apr. Preliminary meeting of the Institute of Accountants and Book-keepers of Chicago, which decided to adopt with few alterations the by-laws of the New York Institute
- Nov. Article in *The Book-Keeper* first suggested that the IA become a national organization. The IA did not pursue this recommendation until 1897.
- April 1884 -April 1886 Missing records
- 1886 Jul. Change of name to "Institute of Accounts" takes effect.
- Nov. Expulsion of a member for ethics violation
- 1887 Jan. Institute segmented members into two classes, members and fellows, and created a special status for non-members (associates of the Institute).
- 1886-1887 Hoot nights
- 1889 Jan.-Sept. Weekly meetings
- 1891 Jan. Article in *The Office* proposed formation of a national Institute of Accountants on a joint-stock basis.
- Nov. Two series of meetings are begun by the IA: regular meetings and separate lecture meetings.
- Winter 1894-1895 Rough draft of a bill providing for a professional examination and for securing a title prepared by Colonel Henry Harney, President of the IA.
- 1894 Nov. IA committed to a program of segmented membership — Associates, Certified Accountants, and Fellows — and created a status for nonresident members more than 50 miles outside of New York City.
- 1895 Jan. Bill prepared by Charles E. Sprague, a member of a committee of the IA, and introduced in the New York Legislature

- 1895 Mar. Committee of prominent accountants, consisting of members from the IA, AAPA, and outsiders, decides to endorse the IA bill.
- 1897 Apr. Final meeting of the IA in its old form, as a single class or group, was held. The IA becomes a federation of chapters, with its governance lodged in an annual convention. First annual convention of the IA held.
- Bill, approved by Governor Levi P. Morton, becomes law on April 17th. The first Board of Examiners appointed by the Regents composed of two IA members (Sprague and Haskins) and one member from the AAPA (Broaker).
- Jun. Assurances of cooperation between the N.Y. State Society of CPAs and the IA
- 1901 Jun. Last annual national convention of the federation of chapters of the IA. Hereafter, all members will hold certificates directly from the IA.
- Nov. Membership of the IA is larger than at any previous time with an increase in the number of those attending the regular sessions.
- 1902 May Dinner in celebration of the 20th anniversary of the IA
- 1907 Jan. Last mention of IA in accounting periodicals (*The Journal of Accountancy*)
- 1940 Mar. Last two surviving members of the IA merge with the American Institute of Accountants [Webster, 1954, p. 14].

APPENDIX B
Institute of Accounts' Lectures

1882

Sep.	Discussion	Beneficiary Branch Provided for in the Charter
Oct.	J. Hardcastle	The Origin of Calculations as Deduced from Languages
Nov.	C. E. Sprague	Documents as Related to Accounts
Dec.	Discussion	Resolved: That the Capital Account of a Business is a Liability of that Business

1883

Jan.	J. Hardcastle	The Theory of Life Insurance and Its Book-Keeping so Far as it Relates to Risks
Feb.	E. T. Cockey	The Scope of the Accountants' Art
Apr.	S. R. Hopkins	The Organization and Classification of Accounts
May	J. U. Underhill	A Sketch of the Introduction and Use of the Balance Ledger in the Banks of New York
Oct.	H. S. Ogden	Wall Street and Some of Its Customs
Dec.	S. S. Packard	The Classification of Accounts

1884

Jan.	R. W. Judson	Eminent Characters in American History
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April 1884 and June 1886²¹

T. D. Ames	Personal Characteristics of Handwriting and its Scientific Investigation
C. G. Dahlgren	Personal Adventures as Connected With Accounts
J. Hardcastle	That Beats the Dutch! — The Origin and Significance of the Phrase
E. E. Griffith	A Practical Illustration of the Association of Capital and Labor
A. O. Kittredge	The System of Cost Accounts Now in Use by the Hopson and Chapin Manufacturing Co. of New London, CT.
T. D. Ames	Business Writing
J. Hardcastle	A New Method of Computing Interest on Running Accounts
C. E. Sprague	The Books of a Savings Bank
J. Hardcastle	The Calendar
C. Dutton	The Account-Keeping of Telephone Companies
H. Harney	The Conduct of Branch Stores

1886

Jun.	H. Metcalfe	A Mechanical Means for Consolidating Items of Accounts
Sep.	J. Hardcastle	The Installment System

²¹ Twenty-one lectures were listed in *The Office* [November 1886, p. 98]. The following 11 lectures were never mentioned in *The Book-Keeper, American Counting-Room, or The Office*. Thus, they were delivered between April 1884 and June 1886 when none of these periodicals was published.

https://grove.olemiss.edu/aah_journal/vol25/iss1/15

Oct.	A. O. Field	Personal Experiences
Nov.	A. Poindexter	From Granary to Pit
Dec.	C. Taller	French and American Methods of Account-Keeping Contrasted

1887

Feb.	E. T. Cockey	Accounting by Executors and Guardians
May	S. S. Packard	The Unlearned Profession
Jun.	F. W. Child	Cost Accounts
Aug.	C. E. Sprague	Volapuk
Oct.	C. Dutton	Auxiliary Books
Nov.	W. H. Veysey	A Few Points on Book-Keeping
Dec.	J. Hardcastle	Prices and Profits, or a Chapter in Accountics

1888

Jan.	C. Dutton	The Telephone
May	C. E. Cady	Some Methods in Rapid Calculations
Jun.	J. Hardcastle	Calculating Machines
Jul.	W. H. Weston	Mental Work and Worry of Bookkeepers and Accountants
Sep.	C. A. Underhill	Correct Balances — Do We Get Them?
Oct.	J. Hardcastle	Distribution of the Income of Building and Loan Associations
Dec.	A. D. Penfold	Transportation and Its Laws

1889

Jan.	W. Hart	The Development of an Annuity Through a Building and Loan Association
Mar.	T. D. Ames	A Trip to Oregon
Apr.	C. E. Sprague	The Algebra of Accounts
	C. E. Cheney	Cost Accounts in Manufacturing Establishments
May	C. E. Cady	The Use of the Bicycle
	W. B. Jaudon	Executors' and Administrators' Accounts
	E. Glardon	Origin of Languages
Jun.	W. Hart	Distillation of Petroleum
Sep.	J. Hardcastle	Building Associations
Oct.	C. E. Sprague	Outlay and Income
Nov.	A. D. Pentecost	Anarchism as a Social Science

1890

Jan.	A. B. Worl	Accounting of Southern Coal Mines
Feb.	C. Taller	Finances of Mining Companies
	W. A. Hauff	Arithmetic
Mar.	S. S. Packard	Does Education Educate?
Apr.	S. R. Hopkins	Embezzlement: Its Causes and its Cures
May	T. S. Whitbeck	Glassmaking
Oct.	A. O. Kittredge	The Story of an English Syndicate
Dec.	S. R. Hopkins	Business Paper as Money

1891

Feb.	S. R. Hopkins	Banks as Collecting Agents
Mar.	J. L. Hardman	The Accountant and His Calling

May	P. P. Hotchkiss	Banks and Banking
Aug.	C. E. Cady	The Value and Importance of the Institute of Accounts
Oct.	M. J. Crocker	Bookkeeping in a Western Bank
	G. Guton	Social Economics vs. Political Economy
Nov.	H. Harney	A Brief History of Bookkeeping
	C. E. Cady	Equation of Accounts
Dec.	A. O. Kittredge	How Shall We Educate for Business?
	I. W. Sylvester	An Ideal Currency

1892

Feb.	Discussion	How Shall Government Examinations of National Banks Be Made More Effective?
Mar.	S. R. Hopkins	The Past, Present, and Future of the Institute
	Discussion	Should Cash be Ledgerized?
	S. S. Packard	Moral Duties, or the Man at the Other End of the Bargain
Aug.	J. N. Friedleben	Some Special Methods in Accounting
	Discussion	What Constitutes a Proper Audit?
Dec.	F. W. Child	Keeping Accounts of Branch Offices and Their Relation to the Books of Account in the Main Office.

1893

Mar.	W. B. Jaudon	Sundries to Sundries
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1894

Jan.	R.W. Judson	Eminent Characters in American History
Aug.	Discussion	Methods of Journals
Nov.	T. S. Whitbeck	The Money Power in Our Social Condition
Dec.	E. T. Fitzgerald	The Building-Loan Association Movement Up to Date

1895

Jan.	C. Dutton	Some Reasons Why
Feb.	Discussion	Welfare of the Institute
Mar.	G. Soule	Institute of Accounts (Advantages of Membership)
Apr.	A. O. Kittredge	Humanizing Influences of Business
Jul.	Discussion	The Use and Abuse of Short Methods
Dec.	C. E. Sprague	Line by Line Accounts

1896

Jan.	H. Henry	Institute Bookkeeper and the Other Fellow
Feb.	C. Both	Silk Manufacturers' Accounts
Mar.	W. Plant	Account Keeping of Religious Corporations
Jun.	Discussion	The Accountants' Law of New York
Oct.	E.S. Johnston	Progressive and Non-progressive Employers
Nov.	E. Glardon	Law in its Relation to Accounts and Business Transactions
Dec.	A. O. Kittredge	Bookkeeping for the Installment Business

1897

Jan.	F. W. Childs	Inventory Values
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| Feb. | C. Dutton | The Vital Element of Business |
| Mar. | W. B. Jaudon | Surrogate's Practice and the Accountant's Relation Thereto |
| Apr. | A. O. Kittredge | The Ledger — Its Forms and Adaptions |
| May | E.F. Jones | Department-store Bookkeeping |
| Jun. | P.W. Sherwood | The Preparation of Accounts for Legal and Other Purposes |
| Oct. | E.C. Cockey | The Institute, Past and Present (annual dinner) |
| | F. W. Childs | Principles and Purposes of the Institute (annual dinner) |
| | G.H. Shipton | The Necessity of Proper Bookkeeping (annual dinner) |
| Nov. | Discussion | The Balance Sheet Ledger |
| <u>1898</u> | | |
| Jan. | L. C. Barthelemy | The New Negotiable Instrument Law of the State of New York |
| Feb. | W. B. Jaudon | Industrials, Trusts, and Promoters |
| Mar. | C. Dutton | Corporations: Their Importance and Use |
| May | T. S. Whitbeck | An Economic View of Using and Consuming Wealth |
| Dec. | C.W. Rohne | Interest and Discount |
| <u>1899</u> | | |
| Jan. | R.W. Robertson | The Advantages of Bookkeeping in Schools, and How It Should Be Taught to Best Fit the Student for the Practical Requirements of Life |
| Sep. | Dillion | Inventories |
| Nov. | C. Dutton | Industrial Combinations |
| <u>1900</u> | | |
| Jan. | C. W. Haskins | Accountancy: Its Past, its Present |
| Feb. | C. Dutton | Duality of Business |
| Mar. | A. O. Kittredge | Accounting for Cotton Mills |
| May | I. G. Cannon | The Relationship of the Bank to the Merchant |
| Oct. | T. S. Whitbeck | A High Standard —The Best in Money and Wages |
| Dec. | L. C. Barthelemy | Neargold, the Latest Thing in Silver |
| <u>1901</u> | | |
| Feb. | C. Dutton | An Accountant's Quest for Facts |
| Jun. | C. W. Haskins | The Progress of Professional Accountancy |
| Apr. | H. Harney | Subject of Organization |
| Jun. | C. W. Haskins | The Progress of Professional Accountancy |
| Nov. | C. Dutton | (No title listed) |
| Dec. | T. S. Whitbeck | Capital and Ability in Industrial Life |
| <u>1902</u> | | |
| Jan. | S. E. Sargent | How About the Bookkeeper |
| Apr. | J. R. Loomis | Executor's Accounting from Both the Legal and Accounting Standpoints |
| Jun. | C. Dutton | Corporation Formation in Detail |
| Sep. | C. Dutton | Corporation (conclusion of the previous lecture) |

Oct.	T. S. Whitbeck	An Inventory of the Nineteenth Century
Nov.	C. H. Barkley	Labor and Capital
Dec.	Discussion	Business Education

1903

Jan.	Discussion	Authority and Responsibility of Accountants
Feb.	Discussion	Business Education (continuation of the Dec. meeting)
May	S. E. Sargent	Russian Bank Statement
Jun.	E. Spencer	Business College Methods
Nov.	T. S. Whitbeck	Government: Its Income and Disbursements
Dec.	C. Dutton	Relation of the Accountant to the Corporation

1904

Jan.	J. Albers	Marine Insurance
Feb.	C. Dutton	The Accountant's Relation to Industrial Combination
Mar.	S. D. Patterson	Accounts Payable
Apr.	C. H. Barkley	A Phase of Bank Accounting
May	J. N. Friedleben	(No title listed)
Jun.	E. A. Hifton	Modern Department Stores
Oct.	T. S. Whitbeck	Government, Its Income and Disbursements
Nov.	S. E. Sargent	Dividends Out of Real Estate
Dec.	W. B. Jaudon	Surrogates' Accounting

1905

Jan.	W. B. Jaudon	Surrogate Law: Accountant Ought to Know It
Mar.	C. Dutton	The Institute of Accounts, The Exponent of the Principle of Accountics
Apr.	T. S. Whitbeck	For More Wages, the Highest Standard is Preferable
May	J. N. Friedleben	Factory Costs
Jun.	Discussion	The Institute's Relation to the Public
Sep.	J. N. Friebleben	Cash Account Problems
Oct.	Discussion	Business Elections and Social Matters
Nov.	T. S. Whitbeck	Our Protective Tariff
Dec.	C. Dutton	The Profession of Accountancy

1906

Jan.	W. Hauck	A Phase of Political Economy
Feb.	H. Harney	The Principles Underlying and the Details in Operating the Energy Known by the Name of Business
Mar.	S. D. Patterson	Inquiries and Problems (manufacturing costs)
Apr.	Discussion	Continuation of discussion from the prior meeting
May	A. D. Penfold	The Future Certified Public Accountant
Dec.	S. D. Patterson	Mistakes, Their Cause and Remedy

1907

Jan.	Discussion	Number of Problems of Especial Interest
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POINT / COUNTERPOINT

AHJ is pleased to announce this new feature to commence with the December 1998 issue. In the first instance, "point/counterpoint" will provide a forum to challenge the conclusions drawn by authors whose work has appeared in *AHJ*. However, other items of scholarly critique are also welcomed. Contributors may wish to challenge the findings of books that have been reviewed in *AHJ*. Dialogue is encouraged with authors whose work has appeared in other academic journals so long as the subject matter is historical in nature.

"Point/counterpoint" will be edited by Professor Thomas N. Tyson of St. John Fisher College. Submissions will not be evaluated by the double-blind-review process deployed for full-length articles. Critiqued authors will be accorded the opportunity to respond.

In the interest of fair play, a December 1998 "point/counterpoint" offering will be a response by Professor Terry Sheldahl to Fleischman and Tyson, "Archival Researchers: An Endangered Species?" which appeared in the *AHJ* issue of December 1997.

Submissions for the new "point/counterpoint" feature should be addressed to Professor Thomas N. Tyson, Department of Accounting, St. John Fisher College, Rochester, New York 14618, U.S.A.

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JOHN JOHNSON'S LETTERS: THE ACCOUNTING ROLE OF TUDOR MERCHANTS' CORRESPONDENCE

Abstract: This article examines the role that correspondence played in the accounting systems of Tudor merchants. Merchants relied heavily on letters as a means of controlling their businesses at a distance by making agents accountable. Written accountability, as well as information for business decisions, was encouraged by agency relationships in mercantile enterprises. The system could be undermined by the breakdown of communication through the negligence of a factor or the lack of involvement by the principal. The time delays between the sending and the receipt of letters, on the one hand, and the procurement and conveyance of goods, on the other, were additional problems.

This article examines the role that correspondence played in the accounting systems of Tudor merchants, taking John Johnson as an example. It therefore approaches such issues as accountability, control, and decision making from the wider perspective of the total information available to merchants, beyond that contained in their books of account.

In this respect, the article concurs with Miller and Napier [1993, p. 631], who criticized traditional studies for taking too narrow a view about what "counts as accounting." The records of Tudor merchants are a case in point, as previous studies have tended to focus on account books, such as journals and ledgers [Ramsey, 1956; Vanes, 1967; Winjum, 1971, 1972], whereas more portable sources of accounting information were also necessary (i.e., abstracts and the post) because of the dis-

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tances over which merchants operated. Contemporary authors recognized this correspondence as part of the accounting process. Ympyn (1547), Weddington (1567), and Peele (1569) listed the copy letter book among the merchant's other account books [Yamey et al., 1963, pp. 21, 25, 44]. Weddington in particular referred to the need for abstracts and letters from factors in order to manage the merchant's affairs [Yamey et al., 1963, pp. 48, 97]. He said that merchants ought to write on any letters received:

the daie of the receat and from whom, and then the daie of the answeare, that don laie them up in pressus to them apertaininge, and everi yere ons, to sort out al mens leteris severalli, and to binde them up in papers writtinge upon them the yere of owre lorde, and from whom thei have byn receavid &c. and then to laie them upon shelvez in your counttinge hous, or other ther unto apertaininge and as you do this so maie you do with the all other accomptis and writtingis [Yamey et al., 1963, pp. 48-49].

This practice was followed by Johnson, who annotated his correspondence in the manner described. The letters were sometimes numbered in sequence, so that the correspondents would know the order in which they were written, and whether any were missing. Every letter dispatched was copied into a letter book by an apprentice, who sometimes made a third copy in case the original went astray [Winchester, 1955, pp. 233-234]. Merchants therefore exercised systematic control over letters, which they retained with other accounting documents as part of a unified information system. When Johnson went bankrupt in 1553, both account books and letter books were impounded by the courts to prove the interests of his creditors.

The main problem for accounting historians of the period is the lack of documentary evidence, a fact that should be borne in mind when forming general conclusions. Ramsey's [1956] study was based on the accounts of Thomas Howell, John Johnson, Thomas Laurence, and Thomas Gresham. Winjum [1972] added to these the records of John Smythe [pp. 120-125], a Bristol merchant, and Sir William Calley [pp. 147-155], who was trading in the early years of the 16th century. The books of John Isham, a London merchant between 1542 and 1572, are another example [Yamey, 1963, p. 228]. Finally, Hooper [1995] reviewed the Cely shipping accounts relating to a voyage from London to Bordeaux in 1486-1487. The lack of surviving evi-

dence is not surprising given that trade was heavily concentrated through the port of London in the Tudor period [Ramsay, 1982, p. 39], and that many of the records were destroyed in the Great Fire of 1666. Johnson's letters are therefore invaluable, and it is ironic that we owe a debt of gratitude to his bankruptcy for their preservation. Following the conclusion of the legal proceedings, the letters were stored in the Tower of London until they were transferred to the Public Record Office in London some 300 years later [Winchester, 1955, p. 14].

The collection covers the period 1543-1553. As a merchant of the Staple of Calais, Johnson's main concern was the export of raw wool and sheep fells (hides), although he felt impelled to seek a profit wherever he foresaw the opportunity. In 1551, he wrote that he wished:

it had pleased God so to have provided for me that I might with less embracing of business have passed my times in the world. But God having appointed me to be a merchant (and such one as cannot live only to myself or for myself) I am compelled to enter into much business, and to take money and much things in hand [Winchester, 1955, p. 285].

Thus, he traded in a wide range of other items apart from wool, including wine, herring, grain, cloth, and canvas.

The collection has been considered before from a biographical perspective by Winchester [1955], and the present study builds upon her work. Winjum [1972, p. 125] inaccurately described Johnson's correspondence as "some scattered letters," whereas in fact it runs to several hundred documents. Its relative size and completeness make it a particularly useful source for considering the accounting role of Tudor merchants' letters. The article in the following sections reviews Hooper's [1995, p. 114] findings regarding the transition from oral to written accountability in light of Johnson's later practice, before considering the accounting functions performed through correspondence and attendant limitations.

AGENCY RELATIONSHIPS AND THE TRANSITION FROM ORAL TO WRITTEN ACCOUNTABILITY

Hooper [1995, pp. 87-89] said that the diversification of English merchants into overseas markets in the second half of the 15th century prompted a transition from oral to written accountability. The increased scope of operations necessitated

the use of agents and written accounts to control them. Traditional oral procedures "became increasingly inappropriate" [p. 112], whereas written accounts enabled merchants "to exercise more control over distant agents" and permitted greater accountability among partners [p. 93]. Evidence that written accounts were new to merchants at this time was found in the use of English rather than Latin [pp. 91-92], and in the repetition of clauses to emphasize particular transactions [p. 93]. Johnson's letters, for their part, contain a good deal of information about the writing process and network of agents, and, thus, provide an insight into how the formative trends identified by Hooper developed during the intervening 60 years.

The first half of the 16th century witnessed a surge in English exports, particularly woolen cloth. By 1500, woolen cloth already accounted for about two-thirds of total exports [Clay, 1984, p. 104]. Cloth exports rose from an average of approximately 56,000 cloths a year circa 1490 to about 126,000 in the 1540s [Clay, 1984, p. 13]. In 1560, the annual value of cloths passing through the hands of exporting merchants in London was estimated by contemporaries at about £1m, a "gigantic sum" compared to the city and national finances of the age [Ramsay, 1982, p. 53]. It follows that the internationalization of English trade in the 15th century continued apace in the 16th, widening the scope of merchants' operations and increasing their reliance on agents. Johnson traveled frequently between England, Calais, and Antwerp. While away, he corresponded with his brother Otwell in London, Henry Southwick in Calais, and Robert Andrew in Antwerp. His contemporary, Thomas Gresham, managed his affairs through a wide network of factors, including John Elliot and Richard Candeler in London, Richard Clough in Antwerp, and Edward Hogan and John Gerbridge in Spain [Burgon, 1839, pp. 106-108]. The papers of Thomas Sexton (1555-1561), which are also housed in the Public Record Office, London [PRO: SP 46/9], contain correspondence with overseas factors in Danzig, Antwerp, Amsterdam, Lisbon, Cadiz, and elsewhere. These merchants' letters illustrate the distances over which they operated, together with the need for written reports to control their affairs and to make their agents accountable.

The formal account books played a part in this process, and the number of references in Johnson's letters to the account books suggests that the keeping of accounts by English merchants had become commonplace by the 1540s. Johnson him-

self seems to have been highly regarded as a bookkeeper; the letters reference his associates asking him to put their accounts in order [Winchester, 1955, pp. 229-232], confirming Winjum's [1972, pp. 125-130] finding that he maintained his own ledger with great care. The letters, however, were a more flexible and timely information source than the account books, and were more useful to merchants in managing their businesses from a distance. This greater utility is illustrated both by the letters' content, which is discussed in due course, and their frequency. The brothers John and Otwell Johnson occasionally corresponded twice a day or frequently several times a week [Winchester, 1955, p. 232]. In a letter dated May 6, 1547, Otwell referred to three letters from John which had arrived in close succession:

Your long lettre (Brother) from tykeford, & thaddicion therunto in an other & last of all that of the next dayes date, I have received [PRO: SP 46/5, Fo. 200].

This frequency was not atypical; for example, Johnson wrote from Calais to his other partner, Anthony Cave, nine times during the month from April 22 to May 22, 1546.

An important feature of the Cely shipping accounts (1486-1487) was the use of Roman numerals, which made calculations difficult, and probably explains why payments and revenues were simply listed [Hooper, 1995, pp. 91, 113]. It is therefore interesting that the Johnson letters, which contain calculations, made common use of Arabic numerals. Some calculations were presented in columnar format, such as Otwell Johnson's computation of the error in John Johnson's accounts:

Calculation of Moneys Due to John Johnson

<p>... for all the declaration that you have taken paynes to sett fourth in your foresaid writings of your accompt & monneyes due & growen in Andwarpe of your last sales, yett I perceave not but that you have overshotte yourself with over charging of me: And that you may easely perceave in your first deduction / ffor you note thole sales that my brother Richard made for you to Amonte to wherof deduct paid by him at callais et cetera Andwarpe (say you), & that is vntrue attraction be truely made the rest is but is due the 15th of this monneth & in the payemente</p>	<p>945.10. 6 flles that is true <u>149. 0.10</u> / so reste at <u>841. 9. 4</u> / ffor if the subtraction be truely made the rest is but 796. 9. 8 / and of that et cetera, <u>085. 8. 0</u> / which is also true <u>711. 1. 8</u> / Of that was 380.16. 0 / & taken at</p>
<p>So than the Iust rest hier is due the last of the last to Master warden et cetera</p>	

so yourself in lent & dayes of payment past	<u>080.10.0</u> / So your app-
tement than amonteth as it is true in dede	<u>461.6.0</u> / And that de-
ducted owte of 711.1.8 / abouesaid / your rest is	249.15.8 / & therunto let
be added the payementes monney et cetera	<u>085.8.0</u> / so boeth thies
some amontes & that is all that is due of your hole	
	sale 335.3.8

Source: PRO: SP 46/5, Fo. 200

If Hooper [1995, p. 113] was correct that the use of Roman numerals "inhibited accounting development," the regular occurrence of Arabic numerals in the Johnson letters, particularly in association with calculations, implies an advance.

There were two main areas in which Johnson's letters performed an accounting function. First, they were useful for controlling operations at a distance by making agents/associates accountable, and, second, they aided business decisions.

ACCOUNTABILITY AND CONTROL

The letters promoted accountability and control by recording stewardship, conveying instructions, remitting cash, confirming balances, generating prime data for the account books, and providing legal evidence.

Record Stewardship: Absences necessitated the merchant's delegating authority to his factors, which was made possible through the letters acting as stewardship accounts. Johnson instructed Henry Southwick to sell fells and wool at his discretion [PRO: SP 46/5, Fo. 71], while monitoring his progress by post. Thus, the merchant expected to receive a regular account of the factor's transactions, such as sales [PRO: SP 46/5, Fo. 253], receipts and payments [PRO: SP 46/5, Fo. 47-48], bills accepted [PRO: SP 46/6, Fo. 19-19d], etc. Otwell Johnson supplied John with the following list of payments in May 1547:

Details of Payments Made in Antwerp

.... But yet briefly vnderstand
that I have charged Robert Androwe in your name with thies paye-
mentes following, sins your owne being hier; / Videlicet, ffirst
To Robert voytier payable the 19th in April last 225. 0. 0 files /
To William gravener & Richard malory the last in merche payable
at sight 120.10.10
To one lawrence bradshawe & his fellowe seruaut with your cosin
sanders of harington for money hier received of them 006.11. 0
To Jaques prieu of Andwarpe the 22th of April payable
at sight 053.15. 0

To peter bristo the last in April payable at sight 107.10.0
soma of thies parcelles at sight (besides my payement of 513. 6.10
80 libra f to Jehan lobell & compaigny of lylle in the cold maert last)

Source: PRO: SP 46/5, Fo. 205

This was a type of charge and discharge accounting, which Weddington (1567) said was needed by the merchant to "se yf in all thingis they be just" [Yamey et al., 1963, p. 97]. Both of these themes were echoed in the above letter which stated:

So Sir by the promissis you may perceyve my hole charge, & the discharge . . . [and] . . . Thus syr I trust hierby & by my former writing you perceave sufficiently thorder of your buysines.

Convey Instructions: Delegation to factors did not imply a lack of intervention by the merchant; rather, Johnson relied on letters to relay instructions on how he wished his factors to proceed. Thus, he directed Henry Southwick [PRO: SP 46/5, Fo. 75] and Robert Andrew [PRO: SP 46/5, Fo. 78d] in what payments to make. Other instructions dealt with the purchase price to pay for wool [PRO: SP 46/5, Fo. 88], the consignment of goods, and the receipt of money from debtors [PRO: SP 46/5, Fo. 74-74d].

Remit Cash: The transfer of cash from one location to another was hazardous. Apart from the risk of highway robbery, merchants faced the possibility of theft by the carrier. Letters were used to reduce the latter risk by providing evidence of the amount being sent. Otwell Johnson wrote:

This shalbe to declaire vnto you that by this berar your seruant Richard preston I send you according to your writing by him iiiixx libra sterling (I say) 80.0.0 sterling [PRO: SP 46/5, Fo. 205].

The article has already commented on the common use of Arabic numerals in the Johnson letters. They were not used exclusively, however, and it is significant in the above instance that the amount being remitted was written out in both Arabic and Roman notation. Here the carrier of the letter was also bringing the cash, supporting the contention that Roman numerals persisted in accounting to guard against the fraudulent alteration of numbers, as Roman numerals were more difficult to change [Edwards, 1989, p. 47]. Other controls included the merchants writing the letters themselves, handwriting being a *proof of authenticity*, and using their own servants to act as carriers [Winchester, 1955, pp. 233, 236].

Confirm Balances: Because the ledgers were large and cumbersome, merchants relied on slim folios or “abstracts” of accounts, which they could carry with them [Winchester, 1955, p. 229]. Johnson’s abstracts listed transactions in debit and credit form in the manner described by Weddington:

The master or principall servant ought to have alwaies by hym a breffe ballans, or abstract out of his great Boke, or lidger of all the accomptis Debtors and Creditors, containinge in the same withe the dais of payment [Yamey et al., 1963, p. 48].

These abstracts could also be sent by post, making them useful for confirming balances on personal accounts. In May 1546, Johnson sent copies of such abstracts to Robert Andrew before leaving Calais for England [PRO: SP 46/5, Fo. 102], and in August 1547, Andrew reciprocated with some of his own [PRO: SP 46/6, Fo. 19-19d].

Source of Prime Data: Letters and abstracts constituted a source of prime data for a merchant’s account books. In a letter to Anthony Cave enclosing copies of Mr. Smith’s reckonings, Johnson wrote that:

... ye shall perceive by them how Mr. Smith stood the 18th in March anno 1544 at my going to Calais, which I think ye have entered. . . . Ye shall find most of Mr. Smith reckonings entered in my memorial, and until his last abstract sent me in February last [Winchester, 1955, p. 230].

Weddington said that merchants ought to write daily in the memorial which formed the basis of the journal and ledger:

all suche businis, as is don by them, or ther servantis, in ther feattis of marchandize, as recevinge payinge of mony, takinge, and deliveringe of mony by exchange, acceptinge of billis by exchange, byinge and sellinge, invoizes of marchandize recevid [Yamey et al., 1963, p. 24].

It is precisely this kind of information which was contained in the Johnson letters and entered into his account books.

Legal Record: The intent that the accounts should show a complete record of the merchant’s affairs was recognized in contemporary textbooks and by the courts. “False bankrupts and broken merchants” were condemned in Johnson’s bankruptcy

proceedings for keeping incomplete books in order to defraud creditors [Winchester, 1955, p. 302]. Merchants' correspondence formed part of this legal record, as witnessed by the utilization of both letters and account books as evidence in the case against John Johnson.

These findings relating to correspondence amplify the reasons advanced by previous authors about why merchants kept accounts that emphasized accountability and control [Hooper, 1995, p. 113]. Accounts were intended to eliminate errors; to prevent embezzlement; to establish the value of a business for probate or similar purposes [Pollard, 1965, p. 212]; to keep track of credit dealings, inventories, and partners' capital [Winjum, 1972, p. 156; Chatfield, 1977, p. 58]; to serve as a memory aid [Lee, 1990, p. 88]; and to provide evidence in courts of law [Ramsey, 1956, p. 187].

DECISION MAKING

Although both account books and letters were intended to facilitate accountability and control, the scope of the information conveyed in the letters was wider, thereby forming the basis of decisions about what commodities/currencies to buy and sell, when to trade, in what markets, and on what terms. Miller and Napier [1993, p. 638] argued that the concept of decision making is a recent invention and its applicability is "historically localised" to the present. Merchants made choices about how to trade, however, and in that sense at least, the notion of decision making is not anachronistic.

It follows that in addition to submitting stewardship reports, the factor informed the merchant about any significant items that might require his intervention. Thus, news was transferred concerning the arrival or loss of shipments [PRO: SP 46/5, Fo. 245], the condition of the goods [PRO: SP 46/5, Fo. 193-194d], their market price [PRO: SP 46/5, Fo. 174], the general state of the market [PRO: SP 46/6, Fo. 6], slow payment by particular debtors [PRO: SP 46/6, Fo. 105], the rate of exchange [PRO: SP 46/6, Fo. 103], the availability of loans [PRO: SP 46/7, Fo. 17], and any newsworthy political or personal occurrences, such as the shattering blow of the deaths of Otwell Johnson and Henry Southwick in July 1551 through "sweating sickness" [PRO: SP 46/6, Fo. 112d, 182-183].

This process was a reactive one, involving decisions taken by the principal in response to information received. It was

particularly useful for merchants, such as Johnson, who were willing to enter into speculative ventures if they could foresee a profit. In May 1545, for example, Otwell Johnson advised John that Dutch draperies were selling well in London. As a result, John shipped over a further batch. In 1546, a consignment of malt was shipped to Flanders in response to a letter from Henry Garbrand informing Otwell of the good state of the market there [Winchester, 1955, pp. 258, 263].

Authors have commented that the poor state of Tudor merchants' account books potentially impeded decision making. Ramsey [1956, p. 186] said that they often showed a "very elementary technique and slovenly execution," together with a lack of timeliness in their completion [pp. 190-191]. However, despite these defects, he maintained that "the experienced Tudor merchant undoubtedly had a perfectly clear idea of the progress of his affairs" [p. 201]. If this statement is correct, the merchant must have had accurate information in a complex trading environment that involved imports and exports, credit transactions, loans, interest, bills of exchange, and foreign currencies. This information was supplied through the post. Tudor merchants were not in a position to uncover all of the information in person, owing to the international scope of their operations which obliged them to rely on factors to represent them. It follows that if written accountability was the product of agency relationships, so too was information for decision making. Yamey [1981, p. 133] realized the significance of distance in decision making. One might exclude accounting altogether from the decision process where the decision makers themselves witness the economic events. Conversely, where decisions are made at a distance, the decision makers are dependent on information supplied by others.

LIMITATIONS

Johnson's bankruptcy and subsequent imprisonment for debt raises a question mark over the effectiveness of his correspondence as a medium for accountability, control, and decision making. If the communication system was so good, why did he fail? In order to answer this, it is necessary to understand something of the economic crisis of the mid-1500s.

Various authors have described the crisis surrounding the collapse of English exports in 1550-1551 [Ramsey, 1972, pp. 66-68; Clay, 1984, pp. 113-115; Loades, 1992, pp. 90-91]. Exports

were heavily concentrated in woolen cloth traded through Antwerp, the commercial capital of Europe, to markets in northwest, central, and eastern Europe [Clay, 1984, p. 12]. Confidence was riding high in the late 1540s when demand peaked, only to be shattered in 1550-1551 when the market collapsed. This pattern is borne out by analysis of the cloth purchases recorded in the journal of Thomas Gresham, a major cloth exporter, which revealed a sharp increase in the late 1540s, followed by an abrupt decline and total withdrawal from the trade:

Thomas Gresham's Purchases of Woolen Cloth for the
5 Years Ended December 31, 1551

	<u>1547</u>	<u>1548</u>	<u>1549</u>	<u>1550</u>	<u>1551</u>
Total purchases	£7,568	£10,986	£11,149	£3,450	£0

Antwerp became flooded with cloths, some of poorer quality. It was a crisis of overproduction, connected to the English government's vacillating monetary policy. In 1549, the exchange rate of sterling fell as a result of the currency's debasement, only to rise again suddenly in 1551, following a reduction in the face value of the debased coin. The policy of debasement was traced by Challis [1978, pp. 81-112] to a new issue of coins for Ireland in 1536, followed by a series of debasements in England between 1542 and 1546. The confusion in 1551 was exacerbated by the government's giving four-month notice of its intention to devalue the coinage [Challis, 1978, pp. 105-106]. The disruption caused by the crucial cloth trade failing, together with the instability and uncertainty surrounding the value of sterling, produced financial chaos on a national scale. Hundreds of merchants went bankrupt. In Johnson's case, the situation was made worse by the death of his brother Otwell (1551), who seems to have been the driving force of the firm, and by the loss of cargoes through war [Winchester, 1955, pp. 273, 283-284]. It follows that Johnson was affected by circumstances beyond his control, which, coupled with a shortage of capital to fall back upon [Winchester, 1955, p. 277], would probably have caused his business to fail, irrespective of his accounting arrangements.

The information contained in his letters of 1551 followed the usual pattern. There were regular stewardship reports of the state of trade [PRO: SP 46/6, Fo. 100; SP 46/7, Fo. 32-33], supplemented by special information that was relevant to the

crisis. There were references to the bad state of trade [PRO: SP 46/6, Fo. 128-128d, 130d-131], the adverse price of wool, and the problems caused by the currency fluctuations. In November 1550, for example, Richard Johnson supplied details to his brother on the price of wool in Calais, and expressed his reluctance to sell wool there for less than its cost [PRO: SP 46/6, Fo. 26]. In June 1551, Johnson himself wrote to Robert Andrew from Calais concerning the price of wool, commenting that they would be obliged to seek a new trade if prices continued to fall [PRO: SP 46/6, Fo. 109d, 110d-111]. In August 1551, Anthony Cave expressed an opinion to Johnson that there would be no stability in prices until order had been restored in money [PRO: SP 46/7, Fo. 14]. Other symptoms of the crisis included a refusal to hold sterling in case it was devalued, a scarcity of gold, and a reluctance to grant loans or credit in case debtors defaulted. In May 1551, Otwell Johnson informed his brother that he had accepted £200 from Thomas Gresham, intending to change it to gold, but that little was to be had [PRO: SP 46/6, Fo. 103]. Shortly before his death in July 1551, Otwell informed John that he had sent some money to Richard Preston in Calais, and had advised him not to keep it as another devaluation seemed imminent. If he could not distribute it all to John's creditors, he was to use it to buy wool or fells [PRO: SP 46/6, Fo. 181]. Ambrose Saunders, who wrote to Johnson in the same month, observed that people were unwilling to sell for ready money because they feared another devaluation [PRO: SP 46/7, Fo. 7]. Finally, in September 1551, Henry Garbrand wrote to Johnson that loans were unobtainable at Antwerp because of bankruptcies, although he noted the capture by the French of 17 ships laden with merchandise for Spain as another reason [PRO: SP 46/7, Fo. 17].

The crisis of the mid-1500s is significant from an accounting perspective because it sharpened the need for good information. Were there inherent weaknesses in the information network available to Tudor merchants? In the first place, the system depended on the personal involvement of the merchant and the integrity of the factor if it was to function effectively as a control mechanism. Agents were not autonomous, and merchants intervened either through correspondence or personal supervision. One of the difficulties faced by Johnson's business was his desire to spend an increasing amount of time away from business on his country estate in Northamptonshire [Winchester, 1955, pp. 221-222, 273]. As early as May 1547, Otwell

Johnson was writing to John, in response to criticism of his own performance, that if:

... ever ther hadde benn anny, yrkesomes (as you call it) in me towards the performance of your appointementes, I am sure you shuld have made mooviages to london, & longer abrodes ther with larger coste than you have hietherto done, sins I could do anny thing for you [PRO: SP 46/5, Fo. 205].

The breakdown of communication through the negligence of a factor posed another problem. It was through an indirect source that Johnson learned in May 1551 that the Calais business was in a mess, due in part to his brother Richard's mismanagement [PRO: SP 46/6, Fo. 103]. This state of affairs necessitated an immediate journey to Calais to try to sort matters out [Winchester, 1955, p. 276].

Second, information through the post could not guarantee successful decisions, owing to the time delay of the postal system. In March 1546, Johnson informed Mistress Baynam that most of her wool had already been sold before her letter had arrived, instructing him to send it to Calais [PRO: SP 46/5, Fo. 87]. In June 1551, Johnson wrote to Robert Andrew regretting that a shipment of wool could not be stopped, as it had already been loaded [PRO: SP 46/6, Fos. 110d-111]. The implication is, that had they known about the new fall in wool prices sooner, they would not have shipped it. In the case of speculative ventures, where the source of supply had not been organized beforehand, the opportunity described in a letter might vanish before the goods could be dispatched. This scenario was true of the 1546 purchase of malt, referred to above. By the time the grain had been procured and dispatched, the market price had fallen in Flanders, and the partners of the venture were left with surplus malt on their hands [Winchester, 1955, p. 263].

CONCLUSION

English overseas trade developed rapidly in the first half of the 16th century, widening the scope of merchants' operations and increasing their dependence on agents. Tudor merchants relied heavily on letters as a means of controlling their businesses at a distance by making agents accountable. The article supports the contention that written accountability among merchants was encouraged through agency relationships. Letters promoted accountability and control by evincing agents' stew-

ardship, conveying instructions, controlling the remittance of cash, confirming balances on personal accounts, acting as a source of prime data for the account books, and, finally, by providing a legal record of mercantile transactions. They were also useful for business decisions about what commodities/currencies to buy and sell, when to trade, in what markets, and on what terms. Tudor merchants were not in a position to uncover all this information in person, owing to the international scope of their operations. It follows that if written accountability was the product of agency relationships, so too was information for decision making. The system could be undermined by the breakdown of communication through the negligence of a factor or lack of involvement of the principal. The time delay between sending and receiving letters and procuring and conveying goods caused further difficulties.

What are the implications for future research? By examining the accounting role of merchants' correspondence, the article agrees that accounting records can be understood in a wider sense than the account books. Thus, the scope is widened for accounting historians of the period, since there are other collections containing useful material on the types of information available to Tudor merchants. The article referred to the 1551-1561 correspondence of Thomas Sexton [PRO: SP 46/9], housed in the Public Record Office, London. Class SP 46 in the Public Record Office also contains a good deal of material from the early 17th century that may be relevant. It would be interesting to compare the letters of English merchants to those of the Italian merchant community that was resident in London in the 16th century. In this connection, there is the mercantile correspondence, 1558-1601, of Philip and Bartolomew Corsini, Florentine merchants in London. Although the originals have been dispersed to various locations, the London Guildhall Library holds copies of the entire collection.

Finally, the article has discussed the economic crisis of the mid-16th century, an event felt to have been a turning point in economic history as it forced English merchants to seek markets outside Europe. English merchants stood on the threshold of a colonial expansion into new international markets, with the joint-stock company as a new form of commercial organization to share the increased risks [Ramsey, 1972, p. 66; Quinn, 1983, p. xi]. The article has described the information network that was available to English merchants in a European setting.

More work, such as Roy and Spraakman's [1996] study of the

Hudson's Bay Company, tracing how that network developed in response to increased distances and new modes of operation, would be useful.

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THE RISE AND FALL OF DEBIT-CREDIT BOOKKEEPING IN CHINA: HISTORY AND ANALYSIS

Abstract: This paper presents a century-long history of the debit-credit method of double-entry bookkeeping in China. Since introduced to China at the turn of this century, debit-credit bookkeeping has gone through many years of turbulence until 1992, when the Chinese government officially designated it as the standard bookkeeping method. Rather than taking a narrow technical perspective, this paper examines many historical events that shaped bookkeeping methods in China from a broad socioeconomic and political viewpoint. The story of debit-credit bookkeeping in China exemplifies how accounting is intertwined with the political and socioeconomic environment in which it exists.

INTRODUCTION

The history of accounting demonstrates complex relationships among accounting, organizations, and society. Not only does accounting evolve in response to the political and socioeconomic environment, it also plays an active role in shaping and influencing organizational and societal changes, which in turn create possibilities for its own transformation [Hopwood, 1987, p. 207]. As “a product of the Italian Renaissance, the forces that led to the renewal of the human spirit in Europe were the same forces that created accounting” [Hendriksen and Breda, 1992, p. 32]. The convergence of those forces — free expression, private property, credit growth, and capital accumulation in 14th century Italy — created the precondition for the birth of modern accounting. The invention of modern accounting was believed to “provide a framework within which

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private capitalism could develop and generate the wealth which sustained the artist, the musician, the priest, and the writer" [Hendriksen and Breda, 1992, p. 32].

The industrial revolution in the 19th century represented a second milestone in accounting's history. To satisfy the needs of large industrial corporations, accounting was reshaped and changed to reflect the increasing importance of such concepts as depreciation, cost accounting, separation of the investor and the manager, multiple users of financial statements, and the distinction between return on and of investment [Hendriksen and Breda, 1992, p. 47]. These accounting developments helped facilitate the advancement of Western industrial capitalism and the formation of market economies dominated by large, multinational corporations.

The American stock market crash in 1929 and the subsequent depression led to the creation of the Securities and Exchange Commission in 1934, and the start of a regulated environment, which has significantly influenced the contemporary development of accounting in the U.S. With authority bestowed by the SEC, the accounting profession has tried diligently to make the self-regulation model a success. Although being criticized from time to time for not acting swiftly enough to meet the increasing needs of information users, there seems to be no doubt that accounting has contributed significantly to the thriving of "people's capitalism" in the U.S. [Hendriksen and Breda, 1992, p. 83]. As we are continuing to observe today, the stock market and changes in the market have in turn become primary mobilizing forces behind the current development of accounting.

While history suggests that accounting interacts with the political and socioeconomic environment within which it operates, studies of accounting change and history often take a rather technical perspective, viewing accounting as a set of techniques for collecting and processing useful information for organizational improvement [Hopwood, 1987, p. 207]. This narrow technical perspective was directly challenged by Loft [1986, p. 137] and Hopwood [1987, p. 207] in their respective studies of British accounting history. Through a detailed documentation of cost accounting in the U.K. between 1914 to 1925, Loft [1986, p. 138] showed "accounting not as merely a technical process, nor as a technical process with social and political consequences, but as an activity which is both social and political in itself." Based on examining three archaeological cases of

accounting change, Hopwood [1987, p. 207] illustrated "the diversity of factors implicated in accounting change, the constitutive as well as reflective roles of accounting and the ways in which accounting change can shift the preconditions for subsequent organizational changes."

This current paper examines a turbulent history of debit-credit bookkeeping in China during the 20th century to illuminate further the interplay between accounting and the wider society in which it exists.¹ The history of 20th century China has been filled with turmoil and change and, therefore, provides an ideal context for examining how accounting is intertwined with its political and socioeconomic environment. While the ancient Chinese civilization was one of the contributing factors to the birth of modern accounting in 14th century Italy [Hendriksen and Breda, 1992, p. 52], East and West followed different paths in the development of accounting until the early 20th century when Western debit-credit bookkeeping was introduced to China. By that time, Chinese accounting had already enjoyed a long and distinctive history [Zhao, 1987, p. 165]. Subsequent to its introduction through 1993, the debit-credit method underwent a turbulent period of rise and fall in China. Although a purely technical method of accounting, the technique could not escape the influence of historical events and political as well as socioeconomic developments. This paper relates the story of debit-credit bookkeeping in China from a broad historical perspective. If history portends the future, accounting will continue to evolve in response to changes in Chinese society.

The paper is organized as follows. The next section briefly describes bookkeeping methods in China precedent to the 20th century. The process by which debit-credit bookkeeping was introduced to China follows. The three sections before the concluding remarks recount the stormy history of the debit-credit method subsequent to its introduction to China. Finally, the major lessons of this study are summarized in the concluding remarks.

¹Most of the historical events regarding debit-credit bookkeeping in 20th century China are adopted from two sources, Chen [1993] and Liu and Wang [1994], both of which were published in China. The results of their research are synthesized with other sources in this paper to present a comprehensive and coherent analysis of how bookkeeping methods in China interact with the environment.

BOOKKEEPING METHODS BEFORE THE 20TH CENTURY

Recorded Chinese government bookkeeping dates from the Shang Dynasty (1500 to 1000 B.C.). During that period, an emergent slave system brought about agricultural progress which necessitated accounting to track the increasing amount of wealth accumulated by the royal family. Historical records show that a decimal system was mastered and large numbers (30,000) were used in recording. However, the word "accounting" did not appear until the Periods of Spring and Autumn (770-475 B.C.). While Mencius was the earliest to include the word "accounting," it was in *The Rites of Zhou* that accounting activities were extensively described [Zhao, 1987, p. 166].

The Rites of Zhou used two Chinese characters, *ru* (meaning "in") and *chu* (meaning "out"), to describe the increase and decrease of state revenue. These two words were commonly used to describe economic activities in China. During the Warring States period (475-221 B.C.), *ru* and *chu* were formally adopted as bookkeeping labels [Zhao, 1987, p. 170]. A single-entry system was used to record transactions with *ru*, indicating receipts of revenue, and *chu*, payments of expenditure. This single-entry bookkeeping only accounted for changes (either increases or decreases) of state properties. At the end of an accounting period, all entries were summarized and balanced, based on the principle of *Sanzhu Jiesuan* (three-pillar balancing) as follows: *ru* (in) plus *chu* (out) were equal to *yu* (balance) [Lin, 1992, p. 103].

Similar to *ru* and *chu* in government bookkeeping, *shou* (meaning "receipt") and *fu* (meaning "payment") were used primarily in private-sector bookkeeping [Lin, 1992, p. 103]. These designations eventually became dominant in traditional Chinese accounting systems [Zhao, 1987, p. 171]. Bookkeeping progressed very slowly in ancient China due to the low level of commercial activities. Originated from Confucian ideology, commerce was a highly despised activity in ancient China, and merchants were ranked among the lowest in society [Lin et al., 1983, p. 18]. No wonder for centuries after its invention, the single-entry system remained a sufficient bookkeeping method for both governmental and private accounting. During the Tang and Song Dynasties (10th-12th century), *Shizhu Jiesuan* (four-pillar balancing) emerged as a bookkeeping innovation [Guo, 1982, p. 401; Lin, 1992, p. 103]. Different from *Sanzhu Jiesuan*

wherein only the current period's balance was considered, *Shizhu Jiesuan* took both beginning and ending balances into account. To summarize and balance entries for a period, a four-component formula was followed — *jiuguang* (old trust or beginning balance) plus *xinshou* (receipt) is equal to *kaicu* (payment) plus *shizai* (real existence or ending balance). This equation is remarkably similar to the balancing principle of modern Western accounting.

With commercial and economic activities expanding over time, single-entry bookkeeping became inadequate to deal with increasingly complex business transactions. A new, hybrid bookkeeping method called *Sanjiao Zhang* (three-leg bookkeeping) appeared around the middle of the 15th century [Guo, 1988, p. 110; Lin, 1992, p. 103]. Differing from traditional single-entry bookkeeping, *Sanjiao Zhang* recorded transactions involving claims on and transfers of assets in two entries, with one recorded as *shou* (receipt) and the other as *fu* (payment). This is clearly a feature of double-entry bookkeeping. But a single-entry format was retained in recording cash transactions as *shou* or *fu*. While an important innovation in the history of Chinese accounting, *Sanjiao Zhang* was still a primitive method in comparison to modern double-entry bookkeeping.

A full-blown, double-entry bookkeeping method did not surface in China until the mid-17th century at the end of the Ming and the beginning of the Qing Dynasties. Fu Shan of Shanxi Province invented a double-entry bookkeeping system called *Longmen Zhang* (Dragon Gate bookkeeping) [Zhao, 1987, p. 181]. Accounts were classified into four categories — *jin* (to record receipts of revenue), *jiao* (to record payments of expenditures), *cun* (to record stocks of assets), and *gai* (to record claims on assets, including capital and liabilities). It retained *shou* (receipt) and *fu* (payment) as bookkeeping labels, but recorded every transaction in two entries of the same amount. To settle *Longmen Zhang* (to close the Dragon Gate), the balance between *jin* (receipt) and *jiao* (payment) had to equal that between *cun* (stock) and *gai* (claim). After some modifications, *Longmen Zhang* was renamed *Shijiao Zhang* (four-leg bookkeeping) as compared to the hybrid *Sanjiao Zhang* of the 15th century. With so many of its features resembling Western debit-credit bookkeeping, it is truly remarkable that the Chinese invented *Longmen Zhang* independent of the influence of Western accounting.

Although China had numerous accounting innovations during its long history, bookkeeping methods before the 20th century were primarily the products of the small-scale, feudal economy. They were developed in an environment that required record keeping for relatively simple economic activities. The process of accounting change was extremely slow because commercial activities were de-emphasized and the precondition for accounting improvement simply did not exist. No matter how frequent the change of dynasty, China remained a closed society to the outside world with the Emperor as the paramount ruler. The primary purpose of accounting was to keep track of the flows of the Emperor's wealth and the state's properties. Economic efficiency was never a concern to the rulers of China in its thousands of years of history.

Eventually, changes in Chinese society brought about the need for accounting transformation. Starting from the mid-Ming Dynasty (1368-1644), private commercial activities gradually grew in China and led to the emergence of privately owned, handicraft workshops, commercial centers and cities, and foreign trade [Lin et al., 1983, p. 14]. A free employment relationship, different from the feudal system, arose within these newly founded private businesses, which further spurred the development of commercial activities. With the economy growing and business transactions becoming more complicated, traditional Chinese bookkeeping revealed some severe weaknesses, such as the lack of integrated account systems, inconsistent account classifications, irregular account forms, different bookkeeping labels, poor organization of books, ambiguous recording rules, and difficulties in teaching and learning [Lin, 1992, p. 103; Liu and Wang, 1994, p. 43]. By the middle of the 19th century, the need for accounting reform arose, and people began to study Western accounting as an alternative. It was in this environment that Western debit and credit bookkeeping was introduced to China.

INTRODUCTION OF DEBIT-CREDIT BOOKKEEPING TO CHINA

As one of the most important historical events in modern Chinese history, the First Opium War of 1840 changed the course of Chinese life and had a considerable impact on the development of Chinese accounting. Before the war, China was a sovereign, feudal nation where commercial exchanges with

foreign countries were limited and controlled. The Opium War forced the Chinese government to open its doors to Western commercial interests. After the war, business people from the West swarmed to China to open factories, trading companies, and banks. They also obtained direct control of customs, the railroad, the postal service, and other governmental agencies through a series of treaties. These foreign-owned or controlled businesses and agencies were the first to apply Western-style, double-entry bookkeeping in China.

Although debit-credit bookkeeping came to China immediately after the Opium War, it was not until 1905 that Xi Yong Cai wrote the first book in Chinese about Western bookkeeping [Chen, 1993, p. 30; Liu and Wang, 1994, p. 43]. The book, *Interlocking Bookkeeping*, attempted to introduce the Western debit-credit method to China by incorporating it into the traditional *shou* (receipt)/*fu* (payment)-based bookkeeping. Although the book was an important development in the history of Chinese accounting, it did not have a significant impact on the accounting practice at the time because of its attempt to compromise between Western bookkeeping and traditional Chinese methods [Guo, 1988, p. 322].

Lin Xie and Sen Meng co-authored a second but more influential book, *Bank Bookkeeping*, two years later [Liu and Wang, 1994, p. 43]. Not only did the book contain an extensive and systematic description of Western double-entry bookkeeping, it also illustrated the application of the method to the banking industry, including a chart of accounts and sample transactions [Chen, 1993, p. 30]. This book was instrumental in acquainting Chinese accountants with the debit-credit method that was eventually adopted in China's banking industry. Established in 1908, the Bank of Great Qing, the predecessor of the Bank of China, led the way in reforming traditional accounting practice. Relying on the newly published book, the Bank developed a new accounting system based on the debit and credit method and set up training schools in Beijing to assist in the transition [Guo, 1988, p. 334; Liu and Wang, 1994, p. 43]. By 1916, now renamed the Bank of China, it completed the conversion from traditional Chinese bookkeeping to the Western double-entry system. Shortly thereafter, several other banks, such as the Bank of Communications, followed suit as debit-credit bookkeeping gradually expanded into the entire banking industry.

YEARS OF TORTUOUS DEVELOPMENT

Debit-credit bookkeeping gained ground in China in the early 20th century, but the road it traversed thereafter was by no means smooth. It underwent several decades of turbulent development due to various political and socioeconomic reasons. During the 1920s and the 1930s, traditional Chinese bookkeeping coexisted with the Western method. However, debit-credit bookkeeping gained momentum during the period, threatening to prevail over the traditional system. Prospects for the demise of the indigenous method caused great concern among those who felt strongly about national heritage and pride. Instead of completely abandoning traditional Chinese bookkeeping, they advocated accounting reform by preserving the essence of the traditional system while incorporating the merits of the Western method. At the same time, in contrast to what reformers advocated, a group of people held a more radical and revolutionary view, calling for a complete abandonment of the traditional system and a replacement of Chinese bookkeeping with Western-style, debit-credit bookkeeping [Chen, 1993, p. 30; Liu and Wang, 1994, p. 43].

The chief advocate of the reformist school, a well-known Shanghai accountant Yong Zuo Xu, established the *Journal of Accounting* in January 1933 to discuss and promote the reformist agenda. It was believed that Chinese bookkeeping had merits in both form and substance which could not be replaced by Western debit-credit bookkeeping. In December of the same year, he published a book, *Reform of Chinese Bookkeeping*, in which he revealed a complete and detailed reform plan. The reform was based on the notion that the advantages of debit-credit bookkeeping could be incorporated into the traditional Chinese system of *Shijiao Zhang*. *Shou* (receipt) and *fu* (payment) were retained as bookkeeping labels, but the old pattern of vertical writing was replaced by horizontal writing, and a multicolumn account format (including date, transaction, receipt, payment, and balance) was adapted from the Western method [Zhao, 1987, p. 183].

The revolutionist school was led by a U.S.-educated accountant, Xu Lun Pan, who argued forcefully for the need to study and adopt Western debit-credit bookkeeping in China. He founded Li Xin Accounting, a major accounting firm in China, and actively promoted the debit-credit method throughout his practice. The revolutionist school argued that debit-credit

bookkeeping was the most logical and scientific method of bookkeeping that had been ever invented and that its principles were equally applicable in any country around the world. As debit-credit bookkeeping had its genesis in technological advances and socioeconomic changes, they predicted the eventual demise of traditional *shou-fu* bookkeeping in China.

Not only did these two schools engage in public debate about the pros and cons of Chinese versus Western bookkeeping methods, they also competed with each other in practice. The government of the Republic of China took an ambiguous position in this debate. On the one hand, the Uniform Accounting System, promulgated by the government, stipulated the adoption of debit-credit bookkeeping. On the other hand, the government simultaneously allowed the use of the traditional bookkeeping method [Guo, 1988, p. 515]. The continued debate and competition between these two schools positively affected the development of accounting in China. Although both left clear marks on the accounting history of China, the revolutionist school gradually became more influential. By 1949, the debit-credit method had gained wide acceptance in large and medium-sized businesses. In contrast, modified *shou-fu* bookkeeping was primarily used in relatively small businesses.

The founding of the People's Republic of China in 1949 was another significant event in the development of the debit-credit method. After the birth of the new China, accounting scholars reinstigated a nation-wide debate about the national characteristics and the scientific virtues of bookkeeping methods. In the early 1950s, the *Da Gong Daily* published two articles written by Nai Qi Zhang — "A Discussion About Using Our Own Bookkeeping Method" and "A Second Discussion About Using Our Own Bookkeeping Method" [Chen, 1993, p. 30]. These two articles claimed that traditional *shou-fu* bookkeeping was not only more Chinese and popular among the people, but also more scientific than the debit-credit method. The author suggested that the government issue a decree to enforce a nation-wide use of *shou-fu* bookkeeping. Although the ideas were not fully embraced by the government or the accounting community at that time, these two articles initiated the use of ideology as a primary weapon in the debate over bookkeeping methods. This ideology-centered approach eventually degenerated into absurdity during the Cultural Revolution.

As reflected in two accounting regulations stipulated by the Ministry of Finance in 1951, the new Chinese government took

a compromised position in this furious debate [Chen, 1993, p. 30]. Both the "Regulations for Overall Budgetary Accounting" and the "Regulations for Unit Budgetary Accounting" required the use of a double-entry bookkeeping method similar to debit-credit bookkeeping. But, instead of strictly following the rules of the debit and credit method, the regulations specified receipt and payment as bookkeeping labels based on traditional Chinese *shou-fu* bookkeeping.² Consequently, during the following decade, debit-credit bookkeeping coexisted with the increase-decrease method.

RISE OF INCREASE-DECREASE BOOKKEEPING

A 1963 article in *Trends and Developments in Economics* dramatically changed the course of debit-credit bookkeeping in China [Chen, 1993, p. 30]. The article, introducing a new bookkeeping technique called the increase-decrease method, immediately caught the attention of the Ministry of Commerce. The Ministry launched a pilot project in 1964 to experiment with the increase-decrease method. The project lasted two years and led to an official document sponsored by the Ministry, *How to Replace Debit-Credit Bookkeeping by Increase-Decrease Bookkeeping* [Mao and Guo, 1993, p. 504]. The book criticized debit-credit bookkeeping as being obscure and hindering the oversight of economic activities by ordinary people. It explained in great detail the principles and recording rules of increase-decrease bookkeeping. Starting in 1966, debit-credit bookkeeping was abolished and replaced by the newly minted increase-decrease method in the merchandising sector.

Shortly after the birth of the increase-decrease method, the Cultural Revolution quickly swept the country. Debit-credit bookkeeping was attacked in unprecedented fashion, denounced as a sign of capitalism in China. It was asserted that debit-credit bookkeeping was founded upon the economic theory of capitalism and was used as a deceptive tool to cover the realities of exploitation in capitalist society. Those in favor of the debit-credit method were accused of being class enemies who wanted to use bookkeeping as a vehicle to obstruct and suppress the socialist enthusiasm of the people.

²The technical aspects of this method will be described in the next section, together with the increase-decrease method of bookkeeping.

Aided by this kind of rhetoric, the increase-decrease method became the dominant bookkeeping system in China in two and a half years [Mao and Guo, 1993, p. 504]. Although the arguments against the debit-credit method seem ridiculous from today's perspective, they did represent mainstream thought during this particular period of Chinese history. The increase-decrease method quickly spread to other sectors of the economy, such as industry, commodities, and transportation. Debit-credit bookkeeping was no longer in use in China.

Was the increase-decrease method a truly innovative approach that differed fundamentally from debit-credit bookkeeping? As illustrated in Figure 1, these two methods basically employ the same principles embedded in the accounting equation. With accounts classified according to the accounting equation and opposite recording rules for asset accounts and liability/equity accounts, debit-credit bookkeeping is able to maintain a balance between debits and credits in a single transaction, in all transactions together, and in account balances.

Although increase-decrease bookkeeping classifies accounts into fund applications and fund sources, the classification can be easily mapped onto the accounting equation as shown in Panel B of Figure 1. The balance between fund applications and fund sources is simply another application of the expanded accounting equation. However, distinct from the debit-credit method, increase-decrease bookkeeping uses the words "increase" and "decrease" as bookkeeping labels, and records increases in any account on the left side and decreases on the right side. To maintain a balance between fund applications and sources, the following recording rules were developed — (1) if a transaction involves two accounts of the same category, one account is increased and another decreased; and (2) if two accounts belong to different categories, both are either increased or decreased. Using these recording rules will practically lead to the same result as debit-credit bookkeeping except that the two sides of liability and equity accounts are switched. That is, an increase in fund application or a decrease in fund source is the same as a debit, while a decrease in fund application or an increase in fund source is actually a credit (see the Appendix for sample transactions).

The receipt-payment method, modified from traditional *shou-fu* bookkeeping, was created in 1951 as a compromise between the two opposing opinions in the debate over the debit-credit method and traditional Chinese bookkeeping. As shown

FIGURE 1
Comparison of Bookkeeping Methods

Panel A: Debit-Credit Method

Assets		=	Liabilities		+	Owner's Equity										
Assets		=	Liabilities		+	Owner's Capital		-	Owner's Drawing		+	Revenues		-	Expenses	
Dr.	Cr.		Dr.	Cr.		Dr.	Cr.		Dr.	Cr.		Dr.	Cr.		Dr.	Cr.
+	-		-	+		-	+		+	-		-	+		+	-

Panel B: Increase-Decrease Method

Fund Applications				=	Fund Sources											
Assets		+	Expenses		+	Owner's Drawing		=	Liabilities		+	Owner's Capital		+	Revenues	
Inc.	Dec.		Inc.	Dec.		Inc.	Dec.		Inc.	Dec.		Inc.	Dec.		Inc.	Dec.
+	-		+	-		+	-		+	-		+	-		+	-

Panel C: Receipt-Payment Method

Fund Balances				=	Fund Sources				-	Fund Applications							
Assets		=	Liabilities		+	Owner's Capital		+	Revenues		-	Owner's Drawing		-	Expenses		
Rec.	Pay		Rec.	Pay		Rec.	Pay		Rec.	Pay		Rec.	Pay		Rec.	Pay	
+	-		+	-		+	-		+	-		-	+		-	+	

in Panel C of Figure 1, "receipt" and "payment" are used as bookkeeping labels and accounts are classified into three categories. Fund balance accounts are assets, such as cash and equipment, where increases are recorded as receipts and decreases as payments. The same recording rules apply to fund source accounts (liabilities, equities, and revenues). However, fund application accounts (operating expenses and withdrawals by the owner) are processed differently with increases recorded as payments and decreases as receipts. Because of the difference in recording fund balance and application accounts, a set of complicated procedures had to be followed to keep accounts in balance. If a transaction increases the fund

balance, receipts are recorded in a fund balance and a fund source account, while if a transaction decreases the fund balance, payments are recorded in a fund balance and a fund application account. For transactions not affecting the fund balance, a receipt is recorded in one account and a payment in the other.

While not as apparent as increase-decrease bookkeeping, the receipt-payment method can also be effectively reconciled with the debit-credit method. A debit is equivalent to a receipt in a fund balance account or a payment in a fund source or application account, while a credit is the same as a payment in a fund balance account or a receipt in a fund source or application account. Consequently, the fundamental balance between total debits and credits still exists but in an obscured way as follows — total receipts in fund balance accounts plus total payments in fund applications and sources accounts are equal to total payments in fund balance accounts plus total receipts in fund applications and sources accounts (see the Appendix for sample transactions).

It is evident that the attack on and the criticism against debit-credit bookkeeping were both unfounded and misleading. They were based solely on ideological considerations and preferences. Except for their appearance and formality, the increase-decrease and the receipt-payment methods did not change financial statements in any substantive way. They were simply different versions of debit-credit bookkeeping dressed in a Chinese gown. In fact, the unnecessary complications introduced by these two methods seem to serve no purpose except allowing them to be claimed as “native” Chinese inventions.

From the perspective of accounting change, the story of these two bookkeeping methods has interesting implications. Chinese accounting was certainly changed during this period, but it was not changed for the purpose of bettering accounting's traditional role to enhance organizational performance. As illustrated, neither the increase-decrease method nor the receipt-payment method improved bookkeeping in any meaningful way. Technically, they served the same purpose as debit-credit bookkeeping. Therefore, there was no reason for change; rather, the change occurred because accounting was a social activity intertwined with its environment.

During this particular period of Chinese history, political and socioeconomic events converged sufficiently to provide the preconditions for accounting change. After the founding of the

new China in 1949, the political climate was filled with anti-West, anti-capitalism sentiment. This enmity was fueled not only by ideological considerations but also by the international Cold War environment and by the concern that the new government was in danger of subversion by Western-backed forces. To mobilize the country, the government called upon the Chinese people to destroy the old political and socioeconomic establishments and to build a new, socialist China. Originated from the West, debit-credit bookkeeping was a natural target for destruction. Replacing it with some type of indigenous Chinese bookkeeping method was seen as something larger than bookkeeping itself. It carried a symbolic meaning with political, ideological, and cultural implications that Chinese socialist accounting was fundamentally distinct from Western, capitalist accounting. Although based on an examination of totally different historical events, Hopwood's observation [1987, p. 213] seems strikingly applicable: "Indeed, in some senses, accounting, when seen from such a perspective, still has an essence, a mission which mobilises its development."

REVIVAL OF DEBIT-CREDIT BOOKKEEPING

The extremism, misconception, and confusion surrounding the debate over bookkeeping methods in China vanished gradually after the end of the Cultural Revolution in 1976. In 1978 and 1979, two leading Chinese accounting professors, Jia Shu Ge and Nan Xuan He, wrote two articles, entitled "We Must Rehabilitate Debit-Credit Bookkeeping" and "Debit-Credit Method is a Better, More Scientific Bookkeeping Method" respectively [Chen, 1993, p. 30]. These two articles, both fair, objective, and scientific evaluations of bookkeeping methods, led the way to a revival of the debit-credit method in China. Universities started teaching debit-credit bookkeeping again in their business curricula.

In 1982, the Ministry of Foreign Trade reinstated debit-credit bookkeeping within its jurisdiction [Chen, 1993, p. 30]. During the next few years, other sectors, such as industry, commodities, and supply and marketing cooperatives, started changing their bookkeeping methods. At the same time, the increase-decrease method was still used in the merchandising sector, while receipt-payment was utilized in the banking industry and government. This coexistence of multiple bookkeeping methods continued for almost another decade until the Chinese

government in 1992 issued "Accounting Standards for Business Enterprises" [Ministry of Finance, 1992a], mandating the use of the debit-credit method for all Chinese enterprises.

It was not an isolated event that the Chinese government ended the use of multiple bookkeeping methods and mandated the debit-credit method as the standard bookkeeping practice for all businesses. Political and socioeconomic changes since the end of the Cultural Revolution had accumulated to such a degree that 1992 became a milestone year in the accounting history of China. During that year, the government issued three important accounting regulations which had the cumulative effect of reviving and standardizing the debit-credit method in China. While these regulations dealt with broader issues than bookkeeping methods [Winkle et al., 1994, p. 48; Davidson et al., 1996, p. 58], a brief review of the environment in which they were promulgated provides a revealing conclusion to the story of debit-credit bookkeeping in China.

Before 1978, China had a highly centralized, political-economic system, one which had been isolated for nearly 30 years to preserve a so-called, authentic socialism. It was in this environment that the increase-decrease and the receipt-payment methods were invented to distinguish Chinese from Western accounting. In 1978, the Chinese government initiated economic reforms to revitalize the ailing centralized economy and an "open door" policy to attract much-needed foreign capital. With state enterprises gaining more autonomy and access to foreign investment in terms of joint ventures, the Chinese accounting system was gradually transformed and its function shifted from implementing centralized state planning and safeguarding national assets to decision making by enterprise management and external decision makers, such as foreign investors. An important event during that period was the issuance of "Accounting Regulation for Joint Ventures Using Chinese and Foreign Investment" in 1985 as a part of the Chinese government's efforts to create a favorable environment to attract foreign investment [Ministry of Finance, 1985]. In fact, this was the first official accounting document in China that incorporated many internationally accepted accounting principles and practices.³ Although the regulation specified the use of the

³The phrase, "internationally accepted accounting principles and practices," is broadly used in Chinese accounting literature to refer to conventional Western accounting concepts and practices, such as debit-credit bookkeeping, https://egrove.olemiss.edu/aah_journal/vol25/iss1/15

debit-credit method, the document had little impact on the vast majority of state enterprises since it only applied to joint ventures.

Starting in the mid-1980s, the Chinese government hastened economic reform and adopted more liberal economic policies as it moved the nation towards a market-oriented economy. Two significant changes emerged. First, foreign investment rose dramatically with an increasing number of foreign companies establishing operations in China, both through joint ventures and other forms of direct investment. Distinct from previous policy that required Chinese partners to have a majority equity holding in a joint venture, foreign investors were allowed and were actually encouraged to become majority equity holders or to found wholly-owned businesses in China. A *Fortune* article [Curran, 1994, p. 116] estimated an almost 600% increase of foreign direct investment in China between 1987 and 1993. Second, stock markets reemerged in China with the Shanghai Stock Exchange established at the end of 1990 and the Shengzhen Stock Exchange in early 1991. Initially, only Chinese citizens could participate in the market. But, since the beginning of 1992, both exchanges started listing companies that offered type B shares to foreign investors.⁴

The increase in foreign investment and the emergence of stock markets became a catalyst for the comprehensive accounting reform that took place in 1992. It was well documented that overseas investors encountered numerous difficulties with the Chinese accounting system [Sender, 1992, p. 59; Curran, 1994, p. 116; Winkle et al., 1994, p. 48]. The system was originally designed to provide information for centralized macroeconomic planning and control, as well as for safeguarding state assets. The information need of external investors in

consistency, conservatism, comparative financial statements, full disclosures, LIFO and other inventory valuation methods, the equity method of investment, and consolidated financial statements. These concepts and practices were not followed in traditional Chinese accounting before the 1992 standard. See Winkle et al. [1994, p. 48] for a comparison of traditional Chinese with Western accounting.

⁴Chinese corporations offer two types of common stocks — type A to Chinese investors and type B to foreign investors. Both types of shares are listed on the two Chinese stock exchanges. Although there are Chinese companies that list their shares in overseas stock markets such as Hong Kong and New York to raise capital directly from foreign investors, the number is still very small at this point.

evaluating a company's operating performance and financial position was never an objective under the Chinese accounting system. In addition, the system contained various technical features that differed from international practice, and there were many variations between regions and sectors in applying the old standard [Winkle et al., 1994, p. 48].⁵ Consequently, foreign investors had difficulty analyzing financial statements and assessing the financial health of Chinese companies. Clearly, accounting standards left over from the pre-reform era became a serious obstacle to foreign investors interested in either investing in China directly or entering the emerging Chinese stock market.

To respond to these problems, the Chinese government undertook an ambitious project of promulgating a set of accounting standards accepted by international norms for different types of business entities operating in China. With the help of the World Bank and some international accounting firms [Winkle et al., 1994, p. 48], the Chinese Ministry of Finance issued two regulations in May and June 1992 respectively — “Accounting Regulations for Experimental Corporations” [Ministry of Finance, 1992b] and “Accounting Regulations for Enterprises with Foreign Investment” [Ministry of Finance, 1992c]. The former standard applied to Chinese companies with stocks listed on either the Shanghai or the Shengzhen stock exchange, while the latter replaced the 1985 regulation for joint ventures and was applicable to any enterprise in China funded by foreign investment. Both regulations are generally in conformity with internationally accepted accounting practices. The debit-credit method was stipulated in both. Following these two documents, a landmark accounting regulation, “Accounting Standards for Business Enterprises” [Ministry of Finance, 1992a] was issued in November 1992. This regulation had much broader applicability as its intent was to bring accounting practices in all Chinese enterprises in line with international norms. As specified in Clause 8 of Chapter 1 [Ministry of Finance, 1992a, p. 16], effective on July 1, 1993, “all enterprises must adopt the debit-credit method.” The revival of debit-credit bookkeeping in China was thus completed.

⁵The use of different bookkeeping methods was a typical example in this

CONCLUDING REMARKS

This paper has presented a century-long history of debit-credit bookkeeping in China. Since its introduction to China from the West at the turn of this century, debit-credit bookkeeping has undergone years of tortuous development until 1992, when the Chinese government officially designated it as the standard bookkeeping method.

The history of debit-credit bookkeeping in China is a powerful story about how accounting is intertwined with the socio-economic changes and political events in a society. First, the introduction of debit-credit bookkeeping to China occurred at a time when a traditional, small-scale peasant economy began to disintegrate and a new commercial economy began to emerge. Second, the 1949 revolution changed the course of China and resulted in a socialist society with a highly centralized economy. Having originated in the West, debit-credit bookkeeping was harshly criticized and eventually replaced by the increase-decrease method, a bookkeeping system that was erroneously believed to be both politically correct and practically better for serving the needs of the planned economy.

Finally, the revolutionary change of 1992 in Chinese accounting was a direct result of the economic reform that the Chinese government had initiated in 1978. The movement toward an open-market economy demanded a complete transformation of Chinese accounting from a system based on a planned economy to a market-oriented one in harmony with internationally accepted practices. As a part of this change, debit-credit bookkeeping has finally gained complete and deserved recognition in China.

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APPENDIX

Sample Transactions

- 1) Owner investment totaled \$5,000.
- 2) Borrow \$5,000 from the bank signing a note.
- 3) Receive \$3,000 cash revenue
- 4) Make a cash payment of \$2,000 for expenses.

Panel A: Debit-Credit Method

Cash			N/P			Capital		Revenues		Expenses		
Dr.	Cr.	=	Dr.	Cr.	+	Dr.	Cr.	+	Dr.	Cr.	-	
¹ 5,000	2,000 ⁴			5,000 ²			5,000 ¹			3,000 ³		⁴ 2,000
² 5,000												
³ 3,000												
<u>11,000</u>				<u>5,000</u>			<u>5,000</u>			<u>3,000</u>		<u>2,000</u>

11,000 = 5,000 + 5,000 + 3,000 - 2,000

Total Debit Balances = Total Credit Balances

Panel B: Increase-Decrease Method

Cash			Expenses			N/P		Capital		Revenues		
Inc.	Dec.	+	Inc.	Dec.	=	Inc.	Dec.	+	Inc.	Dec.	+	
¹ 5,000	2,000 ⁴		² 2,000			² 5,000			¹ 5,000			³ 3,000
² 5,000												
³ 3,000												
<u>11,000</u>			<u>2,000</u>			<u>5,000</u>			<u>5,000</u>			<u>3,000</u>

11,000 + 2,000 = 5,000 + 5,000 + 3,000

Total Increase Balances of Fund Application Accounts = Total Increase Balances of Fund Source Accounts

Panel C: Receipt-Payment Method

Cash			N/P			Capital		Revenues		Expenses		
Rec.	Pay	=	Rec.	Pay	+	Rec.	Pay	+	Rec.	Pay	-	
¹ 5,000	2,000 ⁴		² 5,000			¹ 5,000			³ 3,000			⁴ 2,000
² 5,000												
³ 3,000												
<u>11,000</u>			<u>5,000</u>			<u>5,000</u>			<u>3,000</u>			<u>2,000</u>

11,000 = 5,000 + 5,000 + 3,000 - 2,000

Total receipt balances of fund balance accounts = Total receipt balances of fund source accounts - Total payment balances of fund application accounts

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A LABOR-BASED EXPLANATION FOR ACCOUNTING INNOVATION IN A LATE NINETEENTH CENTURY AMERICAN CORPORATION

Abstract: In 1888, the Quincy Mining Company changed its payroll accounting practices. Although efficiency was almost certainly a contributing factor, the nature and timing of this accounting innovation cannot be fully explained by efficiency alone. Instead, this paper attributes the new procedures to the transformation of American labor that characterized the last part of the 19th century. It is argued that the accounting changes reflect a realignment of the organizational relationship between management and labor. Through a contextual examination of a 19th century accounting innovation, this paper provides insights to the social and cultural influences upon accounting processes.

In January 1888, the Quincy Mining Company (QMC) changed the way it recorded labor costs. It could be argued that the firm was simply attempting to reduce posting costs and streamline its record keeping. However, our premise is that when QMC made the accounting changes in 1888 and eliminated a service that had traditionally been provided for its labor force, QMC also formalized a new concept of the significance of labor.

This study, a contextual examination of a 19th century accounting innovation, has two primary implications for accounting practice. First, it contributes to an extensive body of literature that interprets accounting activities within the context of social and cultural processes [Burchell et al., 1980; Meyer,

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1986; Hopper et al., 1987; Hopwood, 1987; Hines, 1988; Miller and O'Leary, 1990; Tyson, 1990; Fleischman and Tyson, 1996; to name a few]. Although the viewpoints within this literature are diverse, a common theme is that accounting can be viewed as more than a one-dimensional activity driven by efficiency.

Second, this study provides firm-specific evidence to support a "labour process approach to economic and industrial history" as articulated by Hopper and Armstrong [1991, p. 406]. In contrast to Johnson and Kaplan [1987], who attributed 19th century accounting innovations to management's search for efficiency, Hopper and Armstrong [1991, p. 406] advocated labor-based explanations stressing:

... crisis rather than continuity; contradiction rather than internal consistency; social and political conflict rather than harmony; the monopoly power of corporations rather than self-equilibrating competitive markets.¹

This paper argues that the accounting innovation of 1888 is attributable to QMC's labor processes in two ways. First, the bitter conflicts between management and labor at the Quincy Mine in the late 19th century eradicated any remnants of benevolent paternalism. One result was the elimination of an employee benefit in the form of a free "banking" service.

Second, the timing of the accounting change coincides with the reduction of labor's ability to constrain management's actions. In the developmental years of the Michigan copper range, the supply of skilled miners was limited. Mine managers that trod too heavily upon the miners faced strikes and the migration of skilled workers to other mines.² The ability of miners to

¹See Fleischman et al. [1996] for a discussion of the labor-process perspective and Fleischman and Tyson [1996] for a labor-process interpretation of practices within another 19th century American firm.

²Lankton [1991, p. 30] provided the following example of the power wielded by the miners during the early 19th century: "In the Copper Country, the term 'miner' did not apply to all underground workers, but was reserved for shaft-sinkers, drifters, and stopers who drilled and blasted rock. The skilled Cornish miners who arrived early at Lake Superior carved out a special niche for their occupation in the hierarchy of underground work. They wanted miners to be seen as superior to other underground workers. In the late 1850's, Quincy's Cornishmen suddenly walked off the job one day. The perplexed mine agent first assumed they had struck for higher wages, but later discovered that they had struck over the issue of status. The Cornishmen protested that they had been demeaned when the company had handed drills and explosives to inexperienced men from another ethnic group and had called them 'miners'."

disrupt operations was a powerful constraint upon management practices. However, the transformation of American labor processes in the late 19th century weakened the power of the miners and made it possible for management to impose both technological and administrative changes. By 1888, labor homogenization and standardization virtually eliminated the value of a skilled individual. Consequently, miners were no longer accorded the privileged status they had enjoyed in the early years of the mining district.

The remainder of this paper will first define QMC's payroll accounting practices in 1887 and describe the changes made in 1888. Next, an overview of American labor processes in the late 19th century is provided as a backdrop for the events that occurred at QMC. This discussion focuses upon the transformation of labor processes that occurred in America and the resultant growth of organized labor. Finally, correspondence from the years surrounding the accounting innovation is used to link QMC's management practices to contemporary, anti-labor sentiments.

LABOR ACCOUNTING PRACTICES

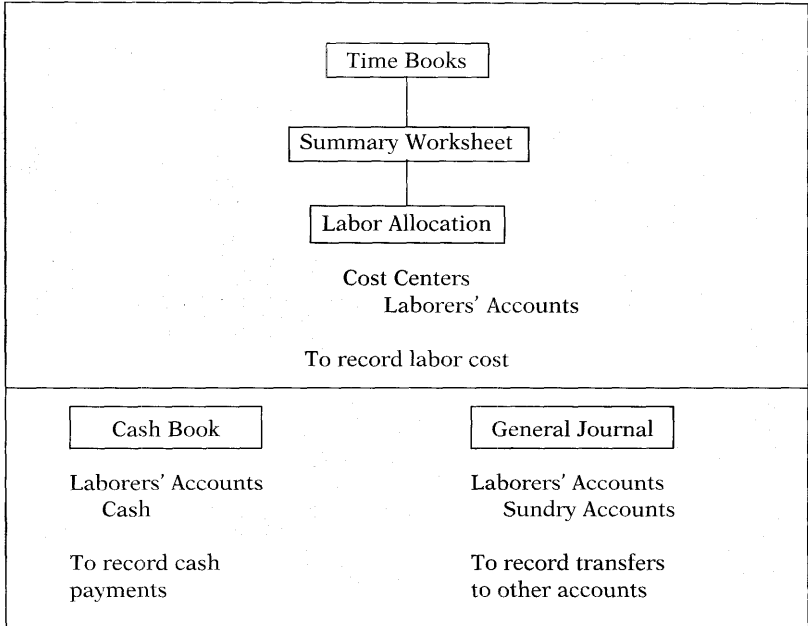
The labor accounting practices used by QMC in 1887 were neither unique nor particularly creative. The methods and documents were, in general, consistent with contemporary practices. The following paragraphs first define these practices as they existed in 1887, precedent to describing the changes made in 1888.

Time Books: As shown by Figure 1, payroll information was initially accumulated in a time book prepared by the supervisors for each major activity within the mine's operation (mining, surface activities, stamp mill, etc.).³ Since they were informal documents and were kept on-site, only a few of the time books have survived. Although the formats of the extant time

³The documents described in this section are part of the historical collection of the Robert Van Pelt Library at Michigan Technological University. At the time of writing, the letters and other similar artifacts were not catalogued. Although only limited examples of the key accounting documents (time books and summary worksheets) have survived, enough information is available to compile a reasonably complete interpretation of the payroll procedures used by the firm.

books vary considerably, the information provided is fairly consistent.

FIGURE 1
Payroll Information Flows, December 1887



Note: Both cash payments and transfers between accounts were made at the option of the individual laborer prior to 1888.

For example, the time book of the Rock House from January 1888 shows the number of days worked, the daily or monthly wage, and the total amount due each laborer. Similarly, the time book from the Stamp Mill for January 1893 lists the individual worker (identified with a number), the days worked, the individual's pay rate, and the total amount due. A summary schedule entitled "distribution of time" was used to recharge costs to the various operating areas.⁴

⁴QMC used interdepartmental cost allocations as early as 1862 to portray more accurately the costs of the various operating areas at the mine. Michael and Lankton [1994] related this procedure to the overall ability of the firm to control its operating costs during a time of economic distress following the Civil War.

Summary Worksheets: The second document in the labor accounting process was a worksheet that consolidated the time books and organized information for the preparation of journal entries. One representative summary worksheet, dated July 1893, contains the gross amount due each laborer, deductions for items provided by the company (such as rent, medical care, and mining supplies), and the net amount due. Column totals were calculated for each of these categories on the last page of the schedule and a summary statement was prepared.

Individual Accounts: A key component of QMC's payroll procedure between 1846 and 1887 was the use of an individual ledger account for each laborer. A worker received a credit to his account in exchange for his labor. He could then "save" the balance, take payment in cash, or "transfer" the credit to settle personal debts to local stores, his landlord, or other individuals.

This "banking" service was particularly beneficial during the early years of the firm when the mine site was isolated and undeveloped. Banks, stores, and other conveniences did not exist in the primitive mining community. Cash transactions were often difficult due to currency shortages and the danger of carrying cash in the rough frontier environment. Therefore, by allowing its workers to transfer amounts between accounts, the company provided a convenient means of conducting business and personal financial transactions. It could be argued that the firm's accounting system was a vital part of the economic structure of the community.

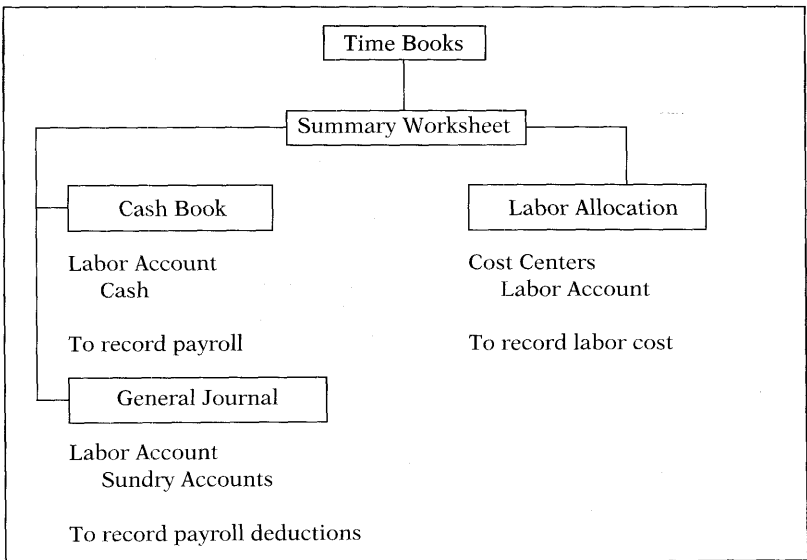
Providing free "banking" services was consistent with QMC's other developmental activities, including the funding of a hospital, schools, churches, and housing for its employees. QMC's management considered these activities and many others as a normal part of conducting business in the Michigan copper range.⁵ Given the diverse and costly nature of the other developmental activities undertaken by the firm, the costs of providing an accounting-based, economic service to the community were inconsequential.

⁵Michael and Lankton [1994, pp. 77-81] discussed the paternalistic practices of QMC and contended that "paternalism and social control were as integral to operations as the extracting, milling and smelting of copper. Companies that came to a remote wilderness to start high-risk mining ventures had to serve as community builders. While developing underground operations, they also had to hasten the establishment of stable, livable mine villages."

The labor accounting procedures used in 1887 appear to reflect a balance between the firm's need to accumulate and control costs, on the one hand, and the economic needs of its employees and the community in general, on the other. This mesh could be interpreted as a relic of the firm's developmental period when the interests of labor overlapped with those of management. In contrast, the accounting innovation introduced in 1888 reflects a different relationship between management and labor.

Accounting Innovation: When QMC changed its system for recording wage payments to laborers in 1888 (Figure 2), the most visible effect was the elimination of general ledger accounts for individual workers. Instead, the aggregate total was posted to a new account called "Labor." The time-book total from the summary worksheet can be found on the credit side of the Labor account, while the offsetting debits to the Labor account represent cash payments to the laborers and recharges to various accounts for payroll deductions.

FIGURE 2
Payroll Information Flows, January 1888



Note: All of the entries shown above were standardized and prepared on a regular basis. There were no discretionary activities under the new payroll process.

The journal entries shown in Figure 2 were made each pay period and reflected a standardized format. Consequently, the choices available to the individual laborer in 1887 were eliminated. All amounts due were paid in cash each payday and account transfers for personal transactions were no longer possible. In short, the company eliminated the “banking” service that it had traditionally provided to its workers.

The elimination of workers’ accounts reduced the cost of labor information via reduced posting time. This savings may have been particularly important given the increases in the size of the work force that began two years later. However, there are two reasons why cost reductions may not have been the determining factor for the elimination of workers’ accounts.

First, since clerical help could be obtained for less than \$50 a month, the cost savings were immaterial within the context of the firm’s profitability at the time. Second, if cost reductions were the controlling factor, the changes would probably have been made much sooner. For example, Michael and Lankton [1994] discussed the extensive cost-control measures implemented when QMC was struggling to survive after the Civil War. In short, the changes could have been made earlier, but they were not. This timetable suggests that something within QMC’s organizational environment changed to make the accounting innovation possible.

There are at least two reasons to believe that the elimination of individual accounts may have reflected a significant change in the way that management perceived labor. First, modern accounting systems use their account structures to classify and group various types of assets, liabilities, revenues, expenses, and capital items. But QMC’s pre-1888 system reflected a different underlying logic.

The Quincy accounts were used, with limited exceptions, either to monitor the debtor/creditor relationships among the various stakeholders or to record business costs. Between 1846 and 1887, QMC recognized the individual miner as a stakeholder, who was either a debtor or a creditor of the firm.⁶ However, after the accounts for individual workers were replaced with the Labor account, the general ledger reflected only the aggregate wages paid to the labor force. Therefore, it could be

⁶Michael and Lankton [1994] found that, in 1867, there was a consistent pattern of credit balances (representing funds left “on deposit” with the company).

argued that labor was transformed from a collection of individual stakeholders to a highly aggregated cost of production.

Second, the cost-control potential of the accounting process for labor was no longer consistent with the methods used to control the other costs of production. For example, Michael and Lankton [1994] described QMC's general-ledger practice of isolating costs for specific projects, or for segments of the firm, in individual ledger accounts. In other words, it was the disaggregation of costs (and the resultant increase in accounting visibility) that enhanced management control. In contrast, the aggregation of costs in the Labor account appears to reduce the visibility of the individual laborer.⁷ Although this practice would seem to reduce management's ability to control labor, we contend that, by 1888, accounting control via the general ledger was no longer necessary. Deskilling, mechanization, and widespread anti-labor sentiments had rendered the individual miner virtually irrelevant. Labor had been transformed into a highly aggregated component of the production process. The accounting innovation merely formalized this new reality.

The transformation of labor was not unique to QMC. The following section argues that labor transformation was common in 19th century America.

AMERICAN LABOR PROCESSES IN THE LATE 19TH CENTURY

Gordon et al. [1982, p. 100] described a late 19th century homogenization of labor, characterized by "a spreading tendency toward the reduction of jobs in the economy to a common, semiskilled denominator." The restructured labor processes that followed homogenization displayed three dominant characteristics [Gordon et al., 1982, p. 128]:

... (1) a reorganization of work, facilitated by both mechanization and job restructuring, which produced

⁷Gordon et al. [1982, pp. 135-137] described a tendency of American businesses in the early 20th century to rely upon foremen and supervisors to control the labor process. Hopper and Armstrong [1991, p. 418] pointed out that the expansion of the "foreman's empire" created two problems. First, the foremen needed to control the labor force. Second, upper management needed to control the foremen. Each need created new administrative tools and procedures. QMC's shift from centralized surveillance of the labor force, via the general ledger, to decentralized control by the operational managers and supervisors may reflect the emergence of the "foremen's empire."

increasingly homogeneous employment for production workers; (2) a rapid increase in plant size, particularly among the larger corporations, which reinforced the spreading impersonality of wage labor; and (3) a continuing expansion of the foreman's role, which added an insistent supervisory impetus to the new system of employer control.

Each of these characteristics was evident in American firms in the late 19th century.

Bendix [1956, pp. 203-204] explained that industrialization had different requirements than did craftsmanship:

Traditionally, skilled work was performed at a leisurely pace or in spurts of great intensity, but always at the discretion of the individual worker. In modern industry work must be performed above all with regular intensity. Traditionally, the skilled worker was trained to work accurately on individual designs; in modern industry he must adapt his sense of accuracy to the requirements of standardization. In handicraft production, each individual owned his own tools and was responsible for their care; by and large this is not true in modern industry, so that the care of tools and machinery is divorced from the price of ownership. Traditionally, skills were handed down from generation to generation and, consequently, were subject to individual variations. In industry the effort has been to standardize the steps of work performance as much as possible.

Not all scholars accept the homogenization of labor as a natural consequence of the mechanization of industry. Braverman [1974] advanced the boldest formulation of the homogenization of labor thesis by labelling it as "deskilling," the inexorable separation of conception and execution. From this perspective, Braverman [1974, p. 127] described the impact of deskilling on the labor force:

... the organization of labor according to simplified tasks, conceived and controlled elsewhere, in place of the previous craft forms of labor, have a clearly degrading effect upon the technical capacity of the workers.

Within a Marxian framework, Braverman [1974, p. 170] developed the argument that this deskilling enables management to gain exclusive possession of technical expertise and to tighten control over labor:

... in the capitalist mode of production, new methods and new machinery are incorporated within a management effort to dissolve the labor process as a process conducted by the worker and reconstitute it as a process conducted by management.

This deskilling of labor involved reducing worker discretion, routinizing work activities, and accustoming the worker to a mindless role. To carry out this deskilling, industry needed to foster the development of engineers, managers, and personnel directors to appropriate the workers' knowledge and to prevent it from being passed to the other workers [Smith, 1994]. The significance of deskilling to Braverman's [1974, p. 126] perspective is aptly expressed in his statement that the "... separation of hand and brain is the most decisive single step in the division of labor taken by the capitalist mode of production." Whether one accepts homogenization as a necessary consequence of mechanization and large-scale enterprise or as a sinister consequence of capitalistic greed, there is little doubt that it did occur.

Within QMC, the homogenization of labor resulted in both standardized production processes and a reduction of labor's ability to constrain management's actions. The following sections illustrate that at the same time labor's power was diminished, management's interaction with labor became more acrimonious. Confrontation and conflicting interests were the norm rather than the exception. Cooperation and the pursuit of mutual interests all but disappeared from American labor processes.

THE GROWTH OF ORGANIZED LABOR

Between 1880 and 1909, an enormous wave of immigration from Southern and Eastern Europe occurred. The bulk of these immigrants came from agrarian backgrounds and possessed few industrial skills. Moreover, they often came with few possessions; many were unable to speak English. Consequently, at least until they established themselves, the immigrants were largely dependent upon urban factories for employment.

One negative ramification of the homogenization of labor was the growth of ethnic and cultural conflicts between the recent immigrants and the primarily Anglo-Saxon managerial elite [Gies, 1993]. Managers, particularly first-line supervisors or foremen, viewed themselves as "persons of quality," while

immigrant workers were often viewed as socially and intellectually inferior.

The ethnic and cultural conflicts, which were intensified by the poor economic conditions during the 1880s and the changing nature of the labor market, contributed to the growth of labor organizations and an increasingly hostile relationship between labor and management. For example, Rayback [1967, p. 161] described a:

... great wave of strikes that swept through the nation early in 1884. For the most part intended to maintain wage levels, the strikes involved all elements; skilled and unskilled, native and foreign, organized, unorganized, and disorganized. Like the strikes of the seventies they met with bitter opposition.

Rayback [1967, pp. 158-159] provided the following general description of American labor organizations:

When the year 1884 began, labor ... was not a united force. On the left were the socialists; the middle road was held by the Knights [of Labor]; the right was shared by the F.O.O.T.A.L.U. [Federation of Organized Trades and Labor Unions of the United States and Canada] and the independent trade unions. ... There was no unity of aim.

As the labor movement grew, it began to achieve some successes. For example, Pelling [1965, p. 70] described 1885 as:

... a year of rapid growth for both the unions and the Knights — a fact which was to lead them into serious conflict. ... In the spring of 1885 they [Knights] seemed to have real success at last with strike action. Members of the Order working three lines of the Gould railroad system ... launched an unpremeditated strike against wage reductions, and Gould, taken by surprise, at once gave way.

The successes achieved by the Knights of Labor and the growing divergence of interests among the various labor factions led to organizational rivalry and competition. Although each of the labor factions sought its own goals and advocated different methods to attain those goals, a common issue emerged in 1886 — the eight-hour day.

Terence Powderly [1889, pp. 471-525], who was the leader of the Knights of Labor, traced the development of the eight-

hour movement in America and provided a first-hand description of the events that would eventually weaken the American labor movement. Powderly [1889, p. 482] claimed that the Knights had been among the original advocates of the eight-hour work day, having taken the official position in 1878 "to shorten the hours of labor by a general refusal to work for more than eight hours." The issue grew more prominent over the next few years until [Powderly, 1889, p. 492]:

The Federation of Trades, at its annual session in 1885, named May 1, 1886 as the day on which to put the eight hour system into operation, but the convention made no provision for the enforcement of the order. It was left to the discretion of each subordinate union to adopt its own plan of operations.

Although the national leadership of the Knights of Labor opted to take no action to promote general strikes on May 1, 1886, support for the movement grew in its local organizations. Both the trade unions and the more radical elements of the labor movement increased the agitation for an eight-hour work day, and tensions increased as the May 1 deadline approached. When the day finally arrived [Pelling, 1965, p. 710]:

It was calculated at the time that some 340,000 workers took part in the movement: of these no less than 150,000 secured shorter hours without striking, and 190,000 actually had to quit their jobs when the day came. Forty-two thousand of the strikers also secured concessions from their employers. The center of the strike was Chicago, where altogether 80,000 took part.

Although interpretations of the events that occurred in Chicago vary, it is generally agreed that the anarchist movement became involved in a general strike at the McCormick Harvester Works. A labor rally degenerated into a riot between strikers and strikebreakers, resulting in police intervention and the death of four men. A protest rally at Haymarket Square on the evening of May 4, 1886 turned violent when someone threw a bomb, killing a police officer. The police then opened fire and killed 50 people and injured numerous others. Eight leaders of the labor movement, including one member of the Knights of Labor, were summarily convicted of murder. Four were hung in November 1887.

Rayback [1967, p. 168] provided the following description of the aftermath:

In the public mind the Haymarket affair was a climax to ten years of labor violence. The Molly Maguire Riots and the Railway Strike of 1877 had produced the impression that the nation's labor elements were inherently criminal in character: inclined to riot, arson, pillage, assault and murder. . . . A violent antilabor campaign followed.

In short, the public's perception of labor was altered by a long series of events culminating in the Haymarket affair and the subsequent execution of labor leaders in late 1887. Antilabor activities were widespread in the following years as American businesses responded to the perceived threat to their interests and property. The next section shows that this atmosphere of hostility and confrontation, which was prevalent at the national level, also existed at the Quincy Mine.

LABOR PROCESSES AT QMC

Between its formation in 1846 and the emergence of large-scale operations in 1860, QMC's activities were limited to the exploration and development of mining properties. During this developmental period the remote location of the mine, combined with the harsh winters of Michigan's Keweenaw Peninsula, enabled both the site manager, or mine agent, and mine labor to function autonomously for most of the year. Consequently, the relationship between corporate management, located in New York, and labor appears to reflect mutual trust, or at least a high level of codependency.

In 1860, QMC began large-scale copper production that resulted in substantial profits. As the scale of mining operations expanded, professional managers were introduced and the owners were further insulated from direct involvement with the work force. During this second phase of the firm's labor history, the appearance of benevolent coexistence disappeared. Instead, the survival of the firm depended, in part, upon its ability to manage the aggregate cost of labor.⁸ A paternalistic social process emerged that enabled the owners and managers of the

⁸After the Civil War economic necessity forced the Quincy management to implement cost-control measures, including severe reductions in wages. For example, the annual reports of QMC disclose that the average monthly wage for a miner in 1864 was about \$65, dropping to about \$50 in 1868 and approximately \$46 by 1870. Michael and Lankton [1994] provided a comprehensive analysis of the post-war cost-reduction measures implemented by the firm.

various local mines to influence, if not control, virtually every aspect of both the employment market and the mining community in general.⁹

As QMC approached economic maturity in the last two decades of the 19th century, its relationship with the labor force entered a third phase, characterized by a growing antagonism between management and labor as workers began to resist widespread changes in the labor market. By 1890, QMC exhibited most of the physical characteristics of production processes that were prevalent at the national level, including rapid growth, altered production processes, and labor homogenization.¹⁰ But more importantly, as shown in the letters discussed in the following section, the class conflicts, ethnic friction, and adversarial relationships common to the late 19th century can be linked directly to the QMC.¹¹

LETTERS FROM THE COMPANY OFFICERS TO THE MINE AGENT

Between 1884 and 1900, the President of QMC, Thomas F. Mason, and the Secretary/Treasurer, William Rodgers Todd,

⁹Lankton [1991] and Michael and Lankton [1994] provided a comprehensive discussion of the system of paternalism that existed in the Michigan copper range. In addition to employment, the large copper companies provided housing, medical assistance, churches, and schools. In return, the companies expected loyalty and obedience from their work force.

¹⁰Lankton and Hyde [1982, p. 50] discussed the QMC's growth and development between 1870 and 1905 and stated that "no other period in the mine's history witnessed such widespread alterations in the way work was done. Quincy mechanized several key operations for the first time: machine drills replaced hand drills; electric tramping with locomotives largely supplanted hand tramping; and rock breakers on the surface substituted for calcining. In areas previously mechanized, such as hoisting and stamp milling, Quincy brought in much more modern equipment to take the place of old. The new machines, plus new supplies like dynamite, profoundly affected Quincy's economic performance, its growth potential, and the size and organization of its labor force."

¹¹Lankton and Hyde [1982, p. 50] related the growth of the Michigan copper range between 1870 and 1905 to the "waves of immigrants from new regions of Europe, most notably Italy and Finland. The new arrivals were unskilled at mining and generally became trammers and laborers. The work force began to divide along ethnic lines, with sharp distinctions between the older established national groups and the newcomers. These developments contributed to growing labor unrest throughout the district, beginning in the 1890s."

wrote a series of letters to the Mine Agent, S. B. Harris. Although the purpose of the letters was never explicitly stated by Mason or Todd, their frequency and the nature of their content suggest that they provided a major communication link between the Michigan mine and corporate headquarters in New York.

Although the insights gained from an individual letter, written between 1884 and 1900, cannot be indiscriminately applied to other time periods, it may be reasonable to infer a continuity of thought. For example, with the exception of a three-year period between 1873 and 1875, Mason was president of QMC from 1858 until his death in 1899. During this period Mason, who held large interests in QMC as well as other Michigan mines, actively participated in long-range planning, capital-spending decisions, and even routine staffing and compensation decisions.

W.R. Todd was appointed secretary of the firm in 1870 and became the corporate treasurer four years later. Todd assumed the presidency of the firm in 1902, serving in that capacity until his death in 1924. S. B. Harris, the recipient of the letters, became the mine agent in 1884, a position he held until 1902. In short, since all three were "company men," their opinions expressed in the letters were seldom extreme in nature and were almost certainly deeply ingrained. It is assumed that the attitudes expressed consistently between 1884 and 1900 were also applicable in 1888, the year of the accounting change.

The financial information published by QMC indicates that the aggregate cost of labor was effectively managed for most of the last half of the 19th century. For example, in the following letter from Thomas Mason dated December 18, 1884, the company unilaterally imposed wage cuts:

The Directors of this Company have been forced to the conclusion that upon entering the coming year we must reduce the expenditures even if the production is made less — in fact as far as we are concerned we think a restriction in production generally would be best for all engaged in mining copper. As preliminary on our part I have to advise that from and after January 1st 1885 we must request you to reduce the rate of wages and salaries of all employees of the company 10% of the amount now being paid.

Mason did not question the ability of the mine agent to enforce a pay reduction; he merely defined the amount and the

timing of the cut. Although the reduction appeared to apply to both miners' wages and management salaries, in a letter dated January 10, 1885, Mason's business partner, William Hart Smith, assured Harris that:

I have submitted the '10% reduction' to Mr. Mason and he expects that it will be enforced in every case without exception — but he will recommend to the Board, and I think you may rely on favorable action, that the amount taken off of your salary on the mine books shall be made up to you by check from the home office.

The company was able to control labor costs in the long run, but market conditions may have temporarily diminished the firm's ability to dictate wages. For example, in a letter dated April 6, 1886, Mason counseled Harris:

I don't know that anything can be done in advance in reference to impending labour difficulties, or that it would be politic to advance wages with a view to counteract a movement of that kind, as if it is contemplated it would be just as likely to come *after* such an act on our part as *before*; so we may just as well reserve our strength and have so much more to concede when necessary. Of course would it come you will have to bear the brunt of it in the first instance and will have to use your judgment in meeting it and be governed by conditions at the time existing — I hope however that no such trouble will occur and certainly the condition of business and the situation of our operations do not warrant any dissatisfaction on their part.¹²

In addition to illustrating Mason's willingness to concede higher wages if forced to do so, the preceding letter also depicted the level of authority delegated to the mine agent.

Mason's willingness to bow to the demands of labor was of short duration. On May 14, 1886, Mason instructed Harris to recoup previous concessions:

Now that the labour craze has partly subsided you might very properly do something in the way of advancing a little to enable you to put in or keep such as

¹²This letter apparently refers to widespread labor unrest that occurred in 1886. "That year was also known as the 'Great Upheaval'....The U.S. Bureau of Labor Statistics recorded 1,432 strikes and 140 lockouts, involving over 600,000 American workers" [Lankton, 1991, p. 205].

you desire to in place of 'vags and cripples' pays your money and take your choice and do it in your own way. It looks as if the question of dictation to employers was pretty well abandoned for the present. I am very glad you did not lose your head — in either way and there is no doubt but that the conditions are such that there will be a surplus of labor floating around.¹³

Time did not alter Mason's concept of labor negotiations. In a letter dated April 14, 1890, he inquired of Harris:

It has occurred to me whether you are going to have any disturbance in the labour market this spring. Do you notice any indications? If so better perhaps anticipate to some extent, and perhaps it might be well to make the announcement that a slight increase would be made on May 1st.

Later in the same letter, Mason reiterated his strategy by saying:

In reference to the labour question; you must try to meet it as cheaply as you can. We can't afford to shut down now, but rather bend to the storm if it comes and put on more sail, that is reduce again when the *elements* are more propitious. Cut down when it is more [illegible word] and they want winter quarters.

Evidence of collusion among the agents of the local mines to resolve labor problems is provided by a letter written by Mason on April 22, 1890, in which he advised Harris:

... also reference to the Labor Trouble: I think in view of the agitation all around upon that matter it would, perhaps be well to anticipate something of the kind by announcing some time this month, that an advance would be made from and after May 1st of 10% or such an advance as you think would meet the occasion, not exceeding that amt. but I desire that you use your own judgment and act in the matter as the circumstances

¹³The Quincy management may have used this labor dispute as an excuse to prune activists from the labor force. Anti-union activities by local mines was commonplace in the Michigan copper range. For example, Gates [1951] and Lankton [1991] described the efforts by the Calumet & Hecla Mine in 1891 to get rid of labor activists. The mine superintendent was instructed to "discharge these men as fast as any breach of our regulations or their contracts or duties gives the occasion....If this is too slow then use express reason of joining K. of Ls. [Knights of Labor]" [Lankton, 1991, p. 206].

seem to require. I take it for granted that you will confer with some of the other agents and obtain their view in relation to the subject. The object of course is to disarm the tendency, if any, to their getting up of any demonstration leading to a strike.

The attempts to prevent a strike were apparently unsuccessful. On August 4, 1890, Mason instructed Harris to make concessions, but to recoup them later:

I note what you say regarding the strike at the new mill, of course you can yeild [sic] a little for the time being but don't forget it but make them pay for it when the opportunity comes, as it surely will some time.

Labor problems erupted once again in 1900 and resulted in predictable instructions to Harris to concede wage increases, but to cut them as soon as conditions permitted. Although the strategy is the same, the tone of the letters appears to be more acrimonious. For example, on May 10, 1900, W. R. Todd confided to Harris:

It is unpleasant and somewhat humiliating to have your men act as bosses, but just at present labor seems to have the upper hand, and it may be for the Company's interests to submit for a while, at least until men get more plenty, or matters take a turn the other way, and then wages can be gradually reduced until they get to their normal state again.

Harris was further advised that "labor troubles have become epidemic in all sections and we could hardly expect to entirely escape on Lake Superior from this disease."

In a letter dated May 13, 1900, Todd congratulated Harris on the acceptance by the miners of the "terms offered." Todd went on to state that the demands of the trammers were "unreasonable" and told Harris to "get along best you can until others can be employed." This suggests that the various labor classifications, at least miners and trammers, were not unified in their demands since the miners apparently returned to work even though the trammers remained on strike.¹⁴

¹⁴The apparent lack of unity among the laborers at the mine may represent a natural hierarchy based upon historical distinctions between miners, trammers, and surface labor. Hopper and Armstrong [1991] and Gordon et al. [1982] presented an alternative explanation. Both works described labor segmentation as a management strategy to strengthen control of the labor force.

On May 15, 1900, Todd told Harris that QMC would not exceed the wages and "privileges" offered by other mines in the area. Harris was instructed to "pay the men off [fire them] and resume work as soon as possible." The apparent harshness of this policy was reflected in the sentiments expressed by Todd in a letter dated May 16, 1900:

... have notified strikers resume work Thursday morning or get settlement. This is sensible and we think right course. If the fellows don't want to work at increased wages equal to what paid at other mines sooner they get out of the way the better, and give room for others. Parties here that have had trouble with the ignorant foreigners have determined to employ no men who do not speak the English language. Why is this not a good rule? When trouble comes it is hard to reason with a man that does not understand what you say.

In a letter dated May 17, 1900, Todd congratulated Harris for the successful resolution of the strike and instructed him to begin finding ways to eliminate the jobs of the trammers.

From these selected examples, it is apparent that Mason and Todd consistently viewed their relationship with labor as one of confrontation and conflicting interests. They made every effort to reduce the aggregate cost of labor and showed little interest in the welfare of the individual worker. This viewpoint, along with the replacement of skilled labor with an interchangeable labor force, represents the very essence of the homogenization of labor.

Given the perspectives expressed by Mason and Todd, the continuation of labor accounting practices that both recognized and provided benefits to the individual laborer appears philosophically inconsistent. Therefore, the accounting innovation in

By emphasizing natural distinctions within the labor force and creating artificial job classifications and promotional hierarchies, management can reduce the potential for unified action by the labor force. Hopper and Armstrong [1991, p. 420] stated, "From the perspective of labour process theory, the key feature of Scientific Management was not the increases in technical efficiency, but the creation of deskilled and fragmented labour dependent upon the production engineering and control now incorporated into management." From this perspective, the apparent willingness of Quincy management to negotiate separate terms with miners and trammers would serve to strengthen the fragmentation of the work force and foster divisive attitudes between miners and trammers.

1888 is consistent with both the concept of labor homogenization and the values expressed by Mason and Todd.

CONCLUDING COMMENTS

There are, of course, numerous potential explanations for the occurrence of the accounting innovation discussed in this paper. For example, it could be argued that prior to 1888 QMC's management was not concerned with efficiency and cost control. This contention, however, was not the case. Michael and Lankton [1994] showed that QMC implemented comprehensive, cost-control practices shortly after the Civil War. Clearly, QMC's management was concerned with cost control and astute enough to implement comprehensive changes.

It might also be argued that the accounting changes were originated at the mine and reflect only the preference of the site accountant [mine clerk]. However, this scenario is unlikely. In 1888, QMC's central management consisted of a president and a secretary/treasurer. Site management consisted of a mine agent, a mine clerk, and various supervisors. As shown earlier in this paper, top management was deeply involved in the routine activities and operating decisions at the mine. As the ultimate authority at the mine, the mine agent [who was also a QMC stockholder] was involved in every facet of mine operations and planning. Within this structure QMC's top management and the mine agent worked closely together on even routine operating decisions. It is unlikely that the mine agent or the mine clerk would have implemented accounting changes without consulting their superiors.

The argument could also be made that the accounting innovations in 1888 merely reflected contemporary notions of "good" accounting practice. Although the Michigan mine site was remote, the wealth generated by the mines provided ready access to both transportation and communication. Therefore, it is entirely conceivable that mine managers were influenced by new ideas relative to accounting and information processes. However, extensive archival research did not provide evidence either to support or refute this hypothesis. A comprehensive examination of surviving accounting records, letters, and other documents from the QMC did not provide a single artifact addressing the motivations for *any* accounting practices.

The arguments presented in this paper are admittedly conjectural. However, we have followed the premise that an histori-

cal interpretation is legitimate if it “coheres well with the evidence” and provides a “fair representation of the subject” [McCullagh, 1984, pp. 33-34]. The accounting change implemented by QMC is consistent with the overall concept of labor homogenization, contemporaneous anti-labor sentiments, and attitudes expressed by QMC’s top management. Therefore, in this particular instance, an accounting innovation appears to reflect not only the movement towards more efficient accounting systems, but also the social and cultural influences of turbulent labor processes.

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TOWARDS AN INSTITUTIONAL ANALYSIS OF ACCOUNTING CHANGE IN THE ROYAL TOBACCO FACTORY OF SEVILLE

Abstract: This paper is initially informed by an institutional sociological framework to analyze changes in accounting practices that took place in the Royal Tobacco Factory (RTF) of Seville during the period 1760-1790. We argue that the significantly greater development and use of accounting practices during that period can be linked to the move to the much larger and more purposefully built new factories, the decline in total tobacco consumption, and the pressure to increase revenue for the Spanish Crown while reducing production cost and maintaining high product quality to deter entry. These new accounting practices were developed in part with the intent of improving factory efficiency, but importantly, they enhanced the external legitimacy of the RTF in the face of the events mentioned above and contributed to the long survival of the RTF as a monopolist.

Although all movements ebb and flow, the interest in institutions has, during the past two decades, swelled into a sizeable flood of work, both theoretical

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and empirical. And there is no sign of diminishing interest [Scott, 1995, p. 133].

The above quote, taken from a recent book written by a leading sociologist, neatly expresses the increasing interest shown by academics in utilizing institutional theory to gain an informed understanding of organizational practices. This increased interest in the institutional approach has spread across disciplines such as sociology, economics, political science, strategy, and international management [Scott, 1995, p. 134]. Accounting academics have been quick to adapt institutional frameworks to their research agendas. While some accounting researchers have focused on institutional economics [e.g., Scapens, 1994], many others have been keen to explore the relevance of institutional sociology to their analyses [for some recent examples, see Covalleski and Dirsmith, 1988; Covalleski et al., 1993; Hunt and Hogler, 1993; Carruthers, 1995; Edwards et al., 1996].

Several reasons account for this recent popularity of institutional sociology [see Fligstein, 1993 and Scott, 1995 for more detailed discussions]. First, institutional sociology focuses attention on knowledge and rule systems (such as accounting practices) constructed within organizations *in addition to* cultural and normative frameworks in organizational environments, rather than privileges the latter as earlier frameworks (such as resource dependence and contingency theory) have done. Second, institutional theory offers a bridge which links various disciplines that could benefit from focusing upon institutions; for example, economics, political science, and, indeed, accounting [see Fligstein and Freeland, 1995]. Third, institutional analysis permits an examination of interactions among the organizations belonging to a particular field (to be defined later), which is said to yield a better understanding of organizational action than previously [e.g., Fligstein, 1993]. These arguments led Scott [1995, p.136] to contend that:

All organizations are institutionalized organizations. This is true both in the narrower sense that all organizations are subject to important regulative processes and operate under the control of both local and more general governance structures, as well as in the broader sense that all organizations are socially constituted and are the subject of institutional processes that define what forms they can assume and how they may operate legitimately.

Also, more critically for this paper, interest in institutional analysis has engendered a greater awareness among organization theorists of the importance of history. Zald [1990] has argued that in considering interest in history from the perspective of institutional analysis, time matters for two reasons. First, historical analysis contributes to an understanding of institutional context by focusing on changes in organizational context over time which affect what organizations do and how they behave. Second, historical analysis yields an informed understanding of how each organization in its own right develops over time and how such developments impact upon the organization's specific structural arrangements and scope for action.

This paper uses an institutional theory framework to contextualize and interpret the changes in financial and cost accounting practices that took place in the Royal Tobacco Factory (RTF) of Seville, Spain, during the period 1760 to 1790. The historical material used in this paper has been drawn from the original archives (*Archivo de Tabacalera, S.A.*) which are currently located in the more modern building of the tobacco factory in the city of Seville. As explained later, this period witnessed a number of events (variations) that were accompanied by the development of new accounting practices. The main aim of the paper is to gain an informed understanding of the context within which the emergence of these new accounting practices became possible. The nature of the archival material we draw upon makes it possible to contextualize the emergence of new accounting practices in the institutional and cultural settings specific to the RTF over three decades. We focus on changes in the institutional context within which the RTF operated and on developments within the RTF itself over that period that impacted its structure. Another aim of this paper is to assess the claims made by many writers concerning the analytical power of institutional sociology, particularly in the case of longitudinal, historical material. Our subsequent analysis suggests that institutional sociology has much to offer in explaining specific patterns of organizational actions and the emergence of new organizational practices such as accounting. We conclude, however, that the institutional sociology framework is in need of further revision if its analytical power is to be enhanced significantly.

The remainder of the paper is organized as follows. In the next section we provide a brief overview of the institutional

sociology framework used in the paper. There follows a description of the tobacco industry in Spain and a chronology of tobacco production in the RTF during the late 17th century and the 18th century. In a separate section, we document and analyze the emergence of new accounting (financial and costing) practices in the RTF during the period 1760-1790 using the institutionalist framework. We then discuss the implications of the use of institutional sociological theory to analyze changes in accounting practice and summarize our main conclusions.

AN INSTITUTIONAL SOCIOLOGY FRAMEWORK

There are several strands of institutional theory emphasizing different aspects of institutions [see the comprehensive reviews by DiMaggio and Powell, 1983, 1991; Scott, 1987, 1995; Zucker, 1987]. Despite this diversity, there are a number of common themes that are fundamental to an institutional approach to the study of organizations. In particular, the concept of institution is not reducible to that of an organization. As DiMaggio and Powell [1991, p. 9] have noted, an institution refers to the conventions that assume a rule-like status as they operate within and between organizations. The formal structure of organizations is assumed to "dramatically reflect the myths of their institutional environments instead of the demands of their work activities" [Meyer and Rowan, 1977, p. 341]. These myths are "highly institutionalized, rationalized and impersonal prescriptions" that specify in a rule-like manner ways of pursuing social purposes which are then identified rationally as technical purposes [Meyer and Rowan, 1977, pp. 343-344].

Institutional theory emphasizes the role of cultural elements, such as symbols, cognitive systems, and normative beliefs, in the functioning of organizations. Managerial action is embedded in specific cultural and historical frameworks that impact the organization and, hence, choices are not exclusively framed as the outcome of the conventional axioms of rational analysis. Each organization is a member of an organizational field which may be defined in terms of such characteristics as product line, industry, or firm size [DiMaggio and Powell, 1983; Fligstein, 1993], and comprises a large group of organizations including competitors, suppliers, distributors, and owners. Through the concept of organizational field, central attention is drawn to the impact of social knowledge and cultural rule

systems (i.e., the institutional environment) upon organizational practices over and above the impact of the technical environment (resources and technical know-how) that has already been identified by open systems theory [Fligstein, 1987; Scott, 1995]. Moreover, organizational action is constrained by rules set by the state that define the limits of what is deemed legitimate, legal behavior. Finally, organizational behavior is constrained further by strategies, structures, and technologies deployed by the organization in addition to the organization's own physical limits (assumed to constitute the organization's own internal environment). An organizational field is presumed to promote stability and survival (the status quo) for its members; organizational fields are "the basic mechanism of control of the external environment available to managers and entrepreneurs" [Fligstein, 1993, p. 6]. Managers are presumed to act on the basis of specific conceptions of control they form based on assumptions concerning how the world should be analyzed.

Institutional theory places less emphasis upon the process of institutionalization and instead focuses upon organizational conformity to institutionalized myths/beliefs. An organization that conforms to such myths is presumed to gain greater legitimacy in society and rewards through enhanced resources and chances for survival. The theory seeks to explain observed structural similarities between organizations (i.e., institutional isomorphism). DiMaggio and Powell [1983] identified three mechanisms of isomorphism — coercive, normative, and mimetic. Coercive isomorphism refers to changes in organizational practices brought about by formal and informal pressures by the organizational field, society, and the state. Much of coercive isomorphism is legally sanctioned through rules, regulations, and laws. Normative isomorphism is born out of social obligation, and its basis of legitimacy is morally grounded, as in the case of professionalization, through training, certification, and accreditation. Mimetic isomorphism refers to replicating the practices of other organizations which become taken for granted on the assumption that such practices are culturally supported and conceptually correct [Scott, 1995].

More recent literature in the field has attempted to highlight, and to some extent address, a number of limitations which have been raised against institutional sociology. One limitation concerns the presumption that practices aimed at attaining/enhancing external legitimacy are decoupled from internal operating systems [Mezias, 1990; Covalski et al., 1993].

Institutional theory has also been criticized for its failure to accommodate issues of power and interest [Covaleski et al., 1993]. Few institutional sociologists, for example Fligstein, have stressed explicitly the role of power and taken note of those in whose interest power is being exercised. For Fligstein [1993, p. 6], organizational fields "are set up to benefit their most powerful members." Also, other institutional sociologists are increasingly conceptualizing organizational actors as being proactive rather than passive [e.g., Scott, 1991, 1995]. A third criticism of institutional sociology is that it provides little insight into the institutionalization/deinstitutionalization process [DiMaggio, 1988; Zucker, 1988; Oliver, 1992]. Understanding organizational change requires an appreciation of how new values develop and how they become accepted as the preferred norms of practice in a particular organizational setting. As Scott [1995, p. 79] has suggested, "the stability or persistence of social behaviors require explanation."

Accounting as an Institutionalized Practice: Accounting has long been viewed as a neutral technology that presents objective measures of economic reality. By contrast, researchers have more recently begun to view accounting in a different light by suggesting that the information it generates is susceptible to different interpretations and that in the construction of accounting numbers, reality is not mirrored but created [Carruthers, 1995]. In this sense, accounting is part and parcel of the organization's institutionalized practices and cultural elements. Accounting practices are myths that partially form and sustain societal beliefs concerning ideas such as rationality, efficiency, etc. As Meyer [1983, p. 235] has pointed out, "Accounting structures are myths . . . they describe the organization as bounded and unified, as rational in technology, as well controlled and as attaining clear purposes."

Accounting is a technology of calculation; its practices convert activities into quantities and partition the organization into centers of calculation. What is made calculable is also rendered visible [Ezzamel et al., 1997]. Hence, systems of control and accountability can operate by utilizing accounting measures of human performance. But equally, what accounting measures fail to quantify can remain less visible and may therefore escape accountability [Morgan and Willmott, 1993]. Adherence by an organization to accounting practices that reflect societal beliefs (e.g., rationality) helps enhance the organization's legiti-

macy in society which is associated with higher rewards. In the context of a longitudinal, historical study, such as the present paper, an institutional perspective would suggest shifts in accounting practices over time to reflect changes that may have occurred in societal-held beliefs. As we demonstrate later in our analysis, this seems to be born out by significant changes in accounting practices in the RTF as the state made insistent demands on the tobacco industry for greater efficiency and higher revenues. But we first provide a brief discussion of the tobacco industry in Spain.

THE TOBACCO INDUSTRY IN SPAIN

During the 16th and early 17th centuries, the tobacco industry in Spain was organized in small, family-run workshops until it became a state monopoly later in the 17th century. A royal decree granted Seville the privilege of producing tobacco. In 1684, cigar and snuff production was located in the *Fábrica de San Pedro* (Factory of San Pedro) in downtown Seville. Although a small factory producing only cigars was built in Cádiz, this factory was insignificant and fully dependent upon the Seville factory, effectively the sole tobacco producer in Spain.

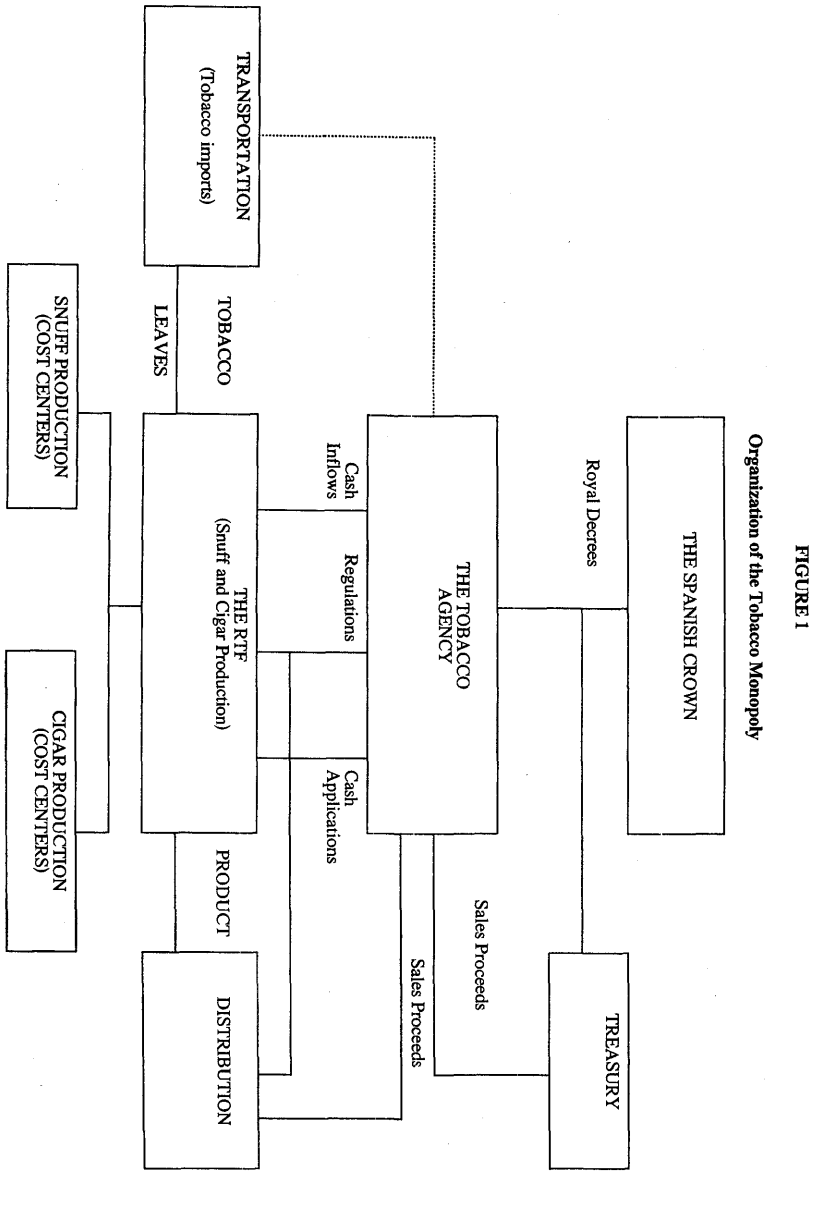
All Spanish state monopolies (e.g., chocolate, salt, sugar, and tobacco) were managed by the *Dirección General de las Rentas Estancadas*, a Department of the Finance Ministry located in Madrid. That department was organized into a number of agencies, each dealing with one or more of the state monopolies; consequently, tobacco was entrusted to the Tobacco Agency. From 1726 onwards, the Tobacco Agency had a *Junta del Tabaco* (Management Board) whose membership consisted of six representatives of the various Finance Councils, three managing directors from the tobacco industry (each dealing with a separate geographical area), one general attorney, and one secretary. The Board met three times a week in order for the three managing directors to deal with emerging problems in the tobacco monopoly.

Over time, tobacco consumption in Spain became very popular as tobacco sales volume rose from 1.1 million pounds in 1701 to 3.2 million pounds in 1740. This increase was accompanied by a growth in the production capacity of the San Pedro Factory through the purchasing and renting of additional buildings close to the Factory. Factory space, however, remained at a premium given the sharp increase in tobacco sales. Aggregate

tobacco consumption (both snuff and cigars) had been steadily on the rise from the late 17th century through the early decades of the 18th century, and the number of mills producing tobacco increased from 23 in 1687 to 46 in 1726. There was no obvious reason for either the Tobacco Agency or RTF management to presume that the demand for tobacco, and in particular snuff, would be close to its peak by the 1720s, as proved to be the case. Moreover, there was a strong desire on the part of RTF management and the Tobacco Agency to minimize the scope for tobacco theft that was widespread in the San Pedro Factory and to improve overall manufacturing discipline [Morales Sánchez, 1991; Rodríguez Gordillo, 1994; Carmona et al., 1997]. An October 1721 memo by Juan de Casafonda, an accountant in the RTF, detailed the reasons for the need to build new factory premises, including savings in transportation costs occasioned by the long journey between the river and the premises of the downtown San Pedro Factory, savings in the wages of operators and supervisors working night shifts to meet higher demand, and reduced risks of fire as night shifts were illuminated using candles (*Archivo General de Simancas, Dirección General de las Rentas, 2ª Remesa*). These factors culminated in the announcement in 1724 of the decision to build new factory premises outside the city walls. The *Nuevas Fábricas* (New Factories), with a capacity two and one-half times that of the old San Pedro Factory, started operations in 1758, with full production there well under way by the 1760s. It is worth noting that the 46 tobacco mills in operation in 1724, when the decision was made to build the New Factories, had increased in number to 104 mills by 1758.

Figure 1 shows how the tobacco industry was organized as a state monopoly and the role played by the RTF within that industry. Tobacco leaves were imported into Spain from the Americas by a Transportation Company, and the Havana Company (partially owned by the Spanish crown) was granted permission to transport tobacco leaves for some period during the second half of the 18th century, prior to their transfer to the RTF for manufacturing into snuff and cigars.¹ Once completed,

¹Because of the lucrative business associated with tobacco transportation, the Tobacco Agency played a dominant role in controlling the activities of tobacco transportation.



snuff and cigar products were sent from the RTF for distribution by regional administrations which were coordinated by the *Junta del Tabaco*. Tobacco revenue was then transferred by the Tobacco Agency to the Crown Treasury. Hence, within the overall organization of the Spanish tobacco monopoly, the RTF was

the manufacturing link, internally organized into two sets of more detailed cost centers, one for snuff production and the other for cigar production (see the next section), with each set of cost centers referred to internally as a separate factory.

As the manner in which production was organized in the New Factories has, we argue, important implications for our analysis, we provide a brief description of it below [see Townsend, 1792; Rodríguez Gordillo, 1975, 1993]. In the jargon of the tobacco monopoly, the different phases of the production process were known as *beneficios* (profits, benefits). The term *beneficio* seems to designate those phases of the production process which added value to the tobacco production. The first *beneficio* was known as *Azotea*. This term refers to the factory terrace where the tobacco leaves were dried. Before being dried, the tobacco leaves had to be properly prepared. Bundles of tobacco leaves were separated into individual pieces which were then classified into piles according to tobacco class and season of year. The second *beneficio* was known as *Monte*. According to *Archivo Histórico de la Fábrica de Tabacos de Sevilla, Legajos generales, 1734, Number 1*, "the second *beneficio* consisted of grinding and sifting the tobacco leaves in *Monte*." It required the milling of leaves in horse-driven mills until the leaves were turned into snuff. This snuff was then sifted through different kinds of cloth depending on the particular class of tobacco (fine and exquisite). The third *beneficio* was called *Moja*. It consisted of toilet-watering the snuff and mixing it with other ingredients (e.g., fruit) to obtain different flavors. Its aim was both to make smooth the use of snuff in subsequent stages and to differentiate each class of snuff according to its color and smell. The fourth *beneficio* was called *Entresuelos*. Tobacco was dried again after the *Moja* and then placed on the *Entresuelos'* floor in order to be plowed and turned until it became fully dried.² The fifth *beneficio* was known as *Repaso*. The tobacco was milled and sifted again using special jasper stones to make the snuff finer. There were two more phases, *Fermentación* and *Distribución*. These phases were not considered as *beneficios* since the *Repaso* phase concluded with the

²The *Moja* and *Entresuelo* *beneficios* were managed by a single supervisor. From the point of view of the management of the RTF, these two production phases were grouped under a single department. The same applied in the case of *Monte* and *Repaso* due to the similarities of their production processes (in short, milling and sifting).

transformation of tobacco leaves into finished goods. The *Fermentación* phase was performed in large warehouses with wooden parquet flooring. Tobacco sacks were half-opened and kept in the warehouses from one to three days (higher quality tobacco was kept for longer periods). The warehouses had tall windows in order to allow ventilation while preventing the exposure of tobacco to direct sunlight. Once the sacks were closed, higher quality tobacco was kept for 25 days in the warehouses while lower quality tobacco was kept for only 15-20 days. Before entering into the *Distribución* (finished goods) warehouses, tobacco was rolled.

Invoking institutional analysis, we can now identify the organizational field within which the RTF operated and which impacted the scope for action by its management. First, as we discuss in more detail below, the Spanish Crown had a major impact upon the activities and actions available to the RTF; state intervention in the main took the form of numerous royal decrees that determined legitimacy and legal behavior. The Tobacco Agency was entrusted by the Crown to oversee the strict implementation by the RTF of these royal decrees. Second, the vertical integration of the tobacco monopoly created dependency relationships within the monopoly. In the case of the RTF, its activities were partly dependent upon the timely delivery of the right quantity and quality of tobacco leaves from the transportation agents, be it the Havana Company or another transportation company. Equally, the success of the regional administrations (dealing with tobacco distribution) in marketing tobacco products had an important impact on the ability of the management of the RTF to utilize the larger capacity of the New Factories. The institutional environment of the RTF was complicated further by two additional factors. On the one hand, there was the thriving illegal smuggling and production of tobacco; on the other hand, the Tobacco Agency had the power to open new factories elsewhere in Spain should that be deemed necessary. Third, the actions available to the management of the RTF were constrained further by its organizational structure (a clear example of coercive isomorphism by the state), its strategy, its production capacity, and its technology. As we argue later in the paper, these institutional elements had a major impact on the functioning of the RTF. However, we will first discuss briefly some of the historical shifts that occurred both in the institutional context of the RTF and in the way the RTF itself developed over time.

The earliest year for which we have an individual breakdown of statistics on the consumption of snuff and cigars is 1740. Table 1 show some interesting variations both in terms of the relative consumption of the two products and the consumption of both products combined over time.

TABLE 1
Annual Tobacco Consumption (1740-1798)
(In Pounds of Tobacco Weight)

Year	Snuff		Cigars		Total (A + B)	Difference (A-B)
	Volume (A)	%	Volume (B)	%		
1740	2158241	67.4	1042048	32.6	3200289	1116193
1750	171-736	63.9	963586	36.1	2674322	847150
1760	1850754	59.1	1276182	40.9	3126936	574572
1770	1849045	53.0	1637093	47.0	3486138	211952
1780	1478057	48.6	1563943	51.4	3042000	-85885
1790	1450337	46.6	1656106	53.4	3106443	-205769
1798	1015392	37.8	1661706	62.2	2667098	-646314

Source: Rodríguez Gordillo, 1975, p. 74

Table 1 reveals a number of changes in the pattern of tobacco consumption. First, annual snuff consumption as a proportion of total tobacco consumption declined over the period from 67.4% in 1740 to only 37.8% in 1798 in comparison to a corresponding rise in cigar consumption. Given that the design of the New Factories was premised on providing a much larger production capacity for snuff compared to cigars (which was the pattern of consumption in the decades preceding the building of the New Factories), the management of the New Factories had to adapt the snuff production facilities to produce more cigars. A second and more serious problem was the steady decline in total tobacco consumption (measured in pounds of tobacco weight) during the period 1770-1780. Taking 1770 as a base year, this decline amounted to nearly 15% in 1780 and reached 24% by 1798. To make matters worse for RTF management, these lower levels of demand on tobacco products could have been easily met by the old San Pedro Factory; hence, the New Factories were left with large idle capacity. These developments paradoxically rendered the new, much larger, and more expensive factories almost obsolete. The management of the

RTF was under strong pressure to demonstrate its competence by taking the necessary steps to engineer ways of improving the overall utilization of factory production capacity.

Two additional arguments added to the complexity of the situation faced by the management of the New Factories. First, in order to protect and strengthen further the monopolistic power of the RTF, management needed to reduce production costs in order to effect price reductions while maintaining high product quality and market-entry barriers. Strong barriers to entry were deemed necessary given the real scope for producing tobacco illegally outside the monopoly and the high profit margins that could be achieved by smugglers. Also, as indicated earlier, the Tobacco Agency had the power to launch new tobacco factories elsewhere in Spain if it believed that the RTF was a high-cost producer. Second, RTF management had to maximize the Crown's intake of tobacco revenue. Over the years the Crown became increasingly more dependent upon tobacco revenue. During the 1730-1775 period, tobacco income as a proportion of total peninsular (i.e., excluding Latin America) Crown income from its monopolies increased from 13% to 28% [Artola, 1982]. The dependence of the Spanish Crown on tobacco income can be illustrated further by reference to a royal decree issued on July 11, 1741 stating, "two *Reales* from [the sales revenue of] each pound [of tobacco] sold will be used to finance the construction of the [Royal] Palace" [Tobacco Archives]. These arguments suggest that the RTF management had to pursue various means to improve production efficiency and minimize production cost in order to be able to reduce tobacco prices while securing at least a minimum level of income for the Crown. Taken together, these developments amount to significant dynamics both in the institutional context of the RTF and in the RTF itself as an organization.

This brief chronology of the development of tobacco production in the RTF makes it possible to identify three main events (or discontinuities) which we seek to link to the emergence of new financial and cost accounting practices: (i) the move to the New Factories in the 1760s; (ii) the decline in the overall consumption of total tobacco which became particularly pronounced after the 1770s; and (iii) the pressure to keep tobacco prices down as a deterrent against entry while at the same time increasing tobacco revenue for the Crown (to be achieved through reducing production cost but without sacrificing quality).

THE EMERGENCE OF NEW ACCOUNTING PROCEDURES IN THE RTF

It will be recalled (see Figure 1) that within the overall organization of the tobacco monopoly, the RTF was essentially an aggregation of cost centers responsible for the conversion of raw materials into finished products of snuff and cigars. As a production facility, the RTF received cash inflows from the Tobacco Agency in order to undertake its activities. In return, the RTF was required to report to the Tobacco Agency on its manufacturing activities through the *cargo* and *data* (charge and discharge) method of bookkeeping which made possible the strict monitoring of the application of cash inflows within the RTF.³ The RTF therefore enjoyed little autonomy in its relationship with the Tobacco Agency. Our aim in this section is to examine the extent to which the emergence of new financial and cost accounting practices in the RTF can be linked to the shifts in its institutional context and organization-specific factors, namely: (i) the move to the New Factories; (ii) the pressure to switch production facilities to reflect changes in product mix; and (iii) the desire to increase the overall utilization of factory capacity, coupled with the incentive to maximize tobacco revenue for the Crown.

The design of the *cargo* and *data* (charge and discharge) bookkeeping system made it possible to split cash inflows, as a general accounting series, into a number of applications (or detailed accounting series), with each particular application in turn comprising a number of sub-applications.⁴ In addition to this financial reporting series, there were accounting series con-

³During the 18th century, the *cargo* and *data* system was used by the Spanish public administration as well as by private companies. The public administration implemented the so-called *libro del pliego horadado* (holed-page book) which consisted of two separate sections, one for the charge and the other for the discharge. The main purpose of the system was to ensure the accountability of those entrusted with funds. In contrast, private companies and individual entrepreneurs used the *libro común* (common book) system, which was not always divided into two sections [Hernández-Esteve, 1985, pp. 209-210].

⁴An accounting series is a "set of documents issued by a particular individual in relation to the development of a particular task. The series will refer to a homogeneous task, and a specific procedure will determine the reporting activities of each particular series" [Conde Villaverde, 1992]. Hence, if the job of a given person entails several tasks, several accounting series would have been required to cover that job.

cerning raw materials, work-in-progress, and finished goods (i.e., accounting procedures for controlling inventory), as well as other factory-based activities, such as the accounting series dealing with payrolls, consumption of horse fodder, etc. Below we trace the emergence of these new accounting series (summarized in Table 2), identifying new accounting procedures (practices) that may be linked to the events identified above.

TABLE 2
Accounting Series Used in the RTF
(Pre-1760-1790)

Number of Accounting Series Operating Before 1760	Number of Accounting Series Eliminated During the Period 1760-1768	Number of New Accounting Series Launched During the Period 1760-1769	Number of Accounting Series Eliminated During the Period 1770-1790	Number of New Accounting Series Launched During the Period 1770-1790	Total of Accounting Series Operating After 1790
33	4	31	2	13	71

Source: The Tobacco Archives

Accounting Practices Before 1760: As the first major discontinuity we are concerned with here starts with the move to the New Factories in the 1760s, we contrast the development of new accounting practices from that period onwards to the accounting procedures used in the RTF prior to the 1760s. As Table 2 shows, there were 33 accounting series in operation in the old San Pedro Factory until 1760. A detailed breakdown of these series in the archives shows that they were classified into two main groups; the first (27) related to those prepared in the *Contaduría*, or Accounting Office, intended for use in various parts of the factories, and the second (6) related to those prepared in the Factories.

The series prepared in the *Contaduría* contained accounting practices that dealt with general tobacco matters, including some aggregate accounting information which reported on the performance of the Factories. Thus, eight series dealt with inflows and outflows from and to the warehouse and reports submitted to the Tobacco Agency, including consolidated inflows and outflows from tobacco reports for the snuff and cigar factories. There were also nine series detailing the accounting practices concerning the inflow and outflow of cash for rents

collected, salary and wage payments, etc. Three more series dealt with *cargo* and *data* entries for the snuff and cigar factories; two series dealt with factory bills paid; one series dealt with snuff tobacco delivered from the factory; one series covered practices documenting tobacco leaves imported from Havana and awaiting processing; and three series dealt with sundry items. The series for use in the factories covered items such as bills, payrolls, and sundry materials (e.g., horse fodder, oil, tins, etc.) which were detailed for the snuff and cigar factories individually.

An example is Series 3.1.1 *Legajo* 2786 (Figure 2). The series refers to the *cargo* of raw materials and the *data* of finished products from and to the Superintendent of the San Pedro Factory, José Losada. Figure 2, dealing with a *cargo* of 2,437 pounds of tobacco, states: "Firstly it is a cargo from Mr. José Losada; this being the inflow of tobacco (in the factories) during January 1758." It is evident from this figure that *cargo* and *data* reports were produced on a monthly basis and were fairly simple. Moreover, the General Manager was primarily responsible for the tobacco leaves delivered to the RTF as he was personally charged for these deliveries. The flow of tobacco through the different productions stages did not have a strong accounting emphasis.

These accounting series, which were developed over several years, continued to operate in their totality as the accounting system for the RTF while production was located in the old San Pedro Factory. The emphasis of control during that period was manufacturing-based, and the accounting practices contained in these 33 series were the only ones used for the measurement and reporting of snuff and cigar activities. Once introduced, these practices became embedded and institutionalized in the activities of the San Pedro Factory.

Changes in Accounting Practices (1760-1769): As Table 2 demonstrates, the move to the New Factories, the dynamics of demand for tobacco, and the changes in product mix mark a significant change in accounting practices as reflected in the number of new accounting series issued and those discontinued. During the decade immediately following the move to the New Factories (1760-1769), 31 new series were launched and four old ones were discarded. The sheer *number* of changes is impressive in its own right since the total number of series used during that decade was nearly twice that used in the old

Factory, but a detailed analysis of these dynamics reveals even more interesting insights. Of the four discontinued series, one relating to tobacco leaves imported from Havana had become redundant because of the reorganization of tobacco imports, while the three others were related to general accounting practices that were revised and updated. A further new series was developed for use in the *Contaduría* (Accounting Office) specifically to provide monthly and weekly cash statements. Five more new series were concerned with cash, the aim of which was to provide more detailed cash inflows. More detailed accounting for payrolls included items such as daily payments to operators in the snuff factory, loans advanced to white-collar personnel, and deductions from their salaries to account for interest on loans and social security benefits. Two series dealt with personnel and were kept in the office of the General Manager.

In contrast to the above, the remaining 21 series related indirectly or directly to the snuff and cigar factories, a staggering increase in factory-based accounting given that only 12 of the 33 series used in the old San Pedro Factory were directly devoted to manufacturing. This statistic suggests that the increase in factory accounting series during the 1760s was linked to the increased emphasis on manufacturing, particularly the change in factory premises; the shift in product mix; and the focus on low-cost, high-quality products and improved utilization of manufacturing capacity. Thus, the accounting series for the snuff factory used before 1760, which simply focused on receipts and distribution, were augmented to deal with *beneficios* (general tobacco processing) and *fermentación* (sweating). Eight new series, launched to improve accounting for that factory, were classified under General Accounting (two each for receipts, general tobacco processing, packaging, and distribution). These series also dealt with *cargo* and *data* of tobacco materials, weekly production, monthly payments, etc. The bookkeeping related to these series was performed by the foremen of the newly organized production stages described earlier; indeed, some of these posts were created after the move to the New Factories. Three more series, dealing with factory accounts but also classified for use in the *Contaduría*, were concerned with improving warehouse management and monitoring and controlling the number of cigars made by each operator in the cigar factory.

Ten new series intended for use in the factories were directly related to manufacturing, dealing further with receipts,

tobacco processing, packaging, and distribution, particularly in the snuff factory. They emphasized *cargo* and *data* of tobacco materials and the control of tobacco processed in every production stage not only on a monthly basis, as in the San Pedro Factory, but also on a daily basis.

A Breakdown of Accounting Series by Factory: A further breakdown of the new accounting series by factory reveals another interesting dimension of the 31 new series issued during the 1760s — six related to warehouses and only one to the cigar factory, in contrast to 24 dealing with the snuff factory. We can offer two explanations for this major concentration on snuff manufacturing.

First, the manufacturing technology of cigars was based on handiwork; production was highly individualized with very skilled operators each carrying out the entire job of rolling the tobacco leaves into finished cigars. Each cigar operator was paid on the basis of a strict piece-rate system. A given quantity of tobacco leaves was delivered to each operator on a weekly basis, and the operator was required to make a certain number of cigars of a pre-specified quality. An operator earned a bonus if he was able to make more cigars than the target set as long as he matched the pre-specified quality. In contrast, an operator who failed to meet the targets set for either quantity or quality received no payment; thus, for the operator to earn base pay both quantity *and* quality targets had to be met. Operators who failed persistently in meeting either quantity or quality targets were fired. Control was therefore internalized into the production process itself and in the operation of the reward system. As cigar production could not be easily routinized (due to the high individual skills required) and segmented into a series of sequential production processes, minimal accounting practices were used to monitor production. The reward system of piece rate, in addition to the physical inspection of cigars produced, were deemed sufficient to monitor cigar production.

In sharp contrast, snuff operators were paid a fixed daily wage as snuff was produced through the distinct stages described earlier. Moreover, the skill levels required in snuff production were far more modest than those required in cigar production. Because the premises of the old San Pedro Factory were developed in a rather haphazard way, these production stages were not finely tuned and clarified sufficiently. Once

production moved to the purpose-built New Factories, the now clearer production stages lent themselves readily to greater accounting monitoring as tasks in each production stage became gradually more routinized. This improvement in monitoring was made possible by the larger, better-organized space in the New Factories. It was difficult to monitor the flow of materials within different production stages because of the lack of sufficient space in the San Pedro Factory and the previously noted increase in the number of tobacco mills (from 46 to 104), scattered in different locations. Also, with the payment of fixed wages daily, the absence of a payment incentive for snuff operators was compensated for through increased accounting-based monitoring.

Second, annual consumption of snuff declined constantly over the 1740-1798 period so that by 1798, snuff consumption was less than half its level in 1740 (see Table 1). Given this downward trend and the decline in total tobacco consumption during the 1770-1798 period, there was much greater pressure on the RTF to cut the cost of snuff production in order to reduce snuff prices, boost demand, and increase the profit margin per pound of snuff. This pressure was much less obvious in the case of cigar production given the significant increase in cigar consumption over the same period.

Changes in Accounting Practices (1770-1790): It is of interest to note that in 1773 a costing system, as distinct from the financial accounting system that had been in operation for some time, was designed for the RTF by the then Assistant Accountant, Manuel Vallarín. Under this costing system, the cost of snuff production was traced to eight *Casillas* (cost centers) which covered the cost of personnel in various production stages (six centers) and the cost of indirect materials (two centers). Similarly, the cost of cigar production was traced to four *Casillas*, three covering the cost of personnel of different functions and one dealing with the cost of indirect materials.⁵ During the period 1770-1790, two accounting series used in the 1760s were discontinued; one relating to general processing in the snuff factory and one relating to the *Contaduría* (Account-

⁵The product-costing practices developed in the RTF at that time which did not include the cost of direct raw materials (tobacco leaves) were more akin to what is now known in modern terminology as "value-added" [see Carmona et al., 1997].

ing Office). However, 13 new series were launched; four for use in the Accounting Office and nine for use in the factories. The new series developed for the Accounting Office dealt with the inflow and outflow (movement) of tobacco, payrolls, social security benefits for white-collar employees, and matters relating to the General Manager's Office. The new series developed for use at the factory level dealt with *cargo* and *data* for warehouses (yielding more detailed calculations than previously), wages of operators in charge of horses, and the inflow and outflow of tobacco in the snuff factory. A new snuff product *rapé* was introduced in 1786 to achieve faster production diversification and to utilize the larger capacity of the New Factory.

The new accounting practices also placed greater emphasis upon manufacturing activities. Figure (3) shows entries relating to deliveries of *Polvomonte de Indias* from the *Monte* production phase to the *Moja y entresuelos* phase (1364 *Legajo*), which also shows a production volume of 34,733 pounds. Here, the accounting practices are aimed at tracing and monitoring the flow of work-in-progress between different production phases.

DISCUSSION

The main purpose of this section is to explore the extent to which our archival evidence can be interpreted from the perspective of institutional sociological theory as an example of accounting change, and then to reflect on the contribution of that theory to studies of accounting change in general.

An Institutional Explanation of Accounting Change in RTF: In terms of institutional sociology, we can locate the three institutional contexts of the RTF that constrained its actions — the organizational field, the state rules, and organization-specific constraints. The organizational field of the RTF comprised the *Compañía de la Habana* which monopolized the transportation of raw materials from America between 1740 to 1760; the various regional administrations of the tobacco monopoly which received and distributed snuff and cigars to *estancos* (tobacco shops); the Tobacco Agency; and also a large number of external producers and distributors of tobacco operating illegally outside the monopoly [Goodman, 1994]. The actions of these members of the organizational field had immediate implications for the scope for action available to the RTF in terms of the supply of raw materials, the quantity and quality of tobacco

FIGURE 3

Deliveries of Milled Tobacco from Monte to Moja and Entresuelos

Poica de los Suadros para y los Entresuelos y	de los montes	Ramos ^o	Ramos ^o	Comis ^o	Tomas ^o
	de Andimar	Coaguirica	Tino	Falco	de Tabaco

Remocion de van Dacca 1269170 lb
 de Tabaco law 349733 de amonca de Andimar
 112289 de la clave de Coaguirica sellada
 law 34622 de R. y G. mixta de 10972.
 de E. 1228.5 de E. y law 79890 reuam
 tes, de H. C. M. L. P. P. 152587 de las D
 Fong, de ellas law 518 de Bollo de Brazil,
 1431 de Bollo de Brazil de 108 de Tab^o
 de Apuros, y de amonca de Orose
 quadras, y law de 1894 de Cauenas de
 Cauenas, y Rama mixta de 1570 lb
 de Tabaco law 639 de Tino regular, y
 331 de Falco, law mixtas, que envia
 enca mer se han veneficiado en la D
 Suadros de Monte, y law subieron a
 los Amarcos de la Moja y En
 tresuelos enca primer mudo, y Ca
 milo

349733... 112289... 152587... 1570... 1269170...

De buelto de los Antecad

Item remocion de van 32763 libras
 de Tabaco law 12001 de las clave de
 de Fong, de ellas law 639 de Perparade
 sus de la Tama de Tino, para la clave
 de Tino, y Falco, 92 de Franca de
 Bollo de Brazil, 666 de Ramonca
 de los Suadros de Monte de Tino, y
 law 187 reuamtes reuado de los buelto
 en los de Rama de Tino de Monte,
 1627 libras de amonca de la clave de
 Coaguirica, de ellas law 639 de Rama
 de las, de Coaguirica de Monte, 333
 de Franca de la misma clave de
 Monte, 172 reuato de la clave de la
 clave de Tino, y Falco de ellas 137
 de Franca de buelto de la Suadros
 de la clave de la clave, law mixtas
 que envia enca mer, law subieron
 alca Amarcos de Camp de van Tino

349733... 112289... 152587... 1570... 1269170...

production, and the distribution of finished products. State rules, detailing the constraints desired by the Spanish Crown, were formally issued in the form of royal decrees which were subsequently entrusted to the Tobacco Agency for strict implementation (see Figure 1). These decrees impacted directly on the range of product lines (e.g., snuff, *rapé*) that the RTF could produce and also on the way the RTF organized its administrative structure and its production technology. Finally, the RTF had its own production plans, organization structure, production technologies, and physical space which imposed important limitations on the RTF's ability to pursue specific courses of action.

While, with minor exceptions, the RTF was the only legitimate producer of snuff and cigars in Spain by virtue of its monopolistic privileges, the actions of RTF's management were strongly influenced by its relationships with the transportation companies (as suppliers of tobacco leaves); the distribution administrations (as the units within the monopoly responsible for the sale of finished snuff, cigars, and *rapé* for a short period); and illegal tobacco smugglers and manufacturers in the black market. Although long-term production plans and levels of capacity utilization in the factories depended to a large extent upon tobacco demand, the RTF had to deal with the transportation companies through the Tobacco Agency to secure regular supplies of high-quality tobacco leaves and with the regional administrations of the Tobacco Agency to distribute snuff and cigars to the tobacco shops. Such dependency relationships were managed through membership of the *Junta del Tabaco* (the Management Board) during its meetings three times a week. Moreover, the presence of a substantial illegal trade in tobacco outside the monopoly despite severe state sanctions meant that the RTF management had to pursue alternative strategies to contain and, hopefully, marginalize such illegal activities. This strategy involved an increased focus on improving product quality and, at the same time, driving down the cost of production in order to differentiate the products of the RTF from those traded illegally. Hence, the strategy was aimed at creating a perception of high efficiency in the RTF in order to minimize the chances of new entry, legally through the creation of additional production factories by the Tobacco Agency and/or illegally through smuggling and production in the black market.

Royal decrees and regulations defined the scope for action

by stipulating the rules according to which the RTF was to function as the sole legitimate producer of snuff and cigars and by promoting expectations of high levels of production efficiency from the RTF. The Spanish Crown maintained a regular interest in important developments, including the receipt of reports on the findings of significant experiments aimed at improving production efficiency and the appointment and rewarding of key personnel [Carmona et al., 1997]. Moreover, many of the accounting series discussed earlier, particularly those concerned with financial reporting, were developed and imposed by the Tobacco Agency acting on behalf of the Spanish Crown.

Over the period of investigation (1760-1790), the organization-specific constraints shifted very noticeably. While operating in the old San Pedro Factory, the RTF had its production activities spread over several buildings, rendering ambiguous the production stages, particularly for snuff, and thereby posing serious problems for coordination and control. Also, the Old Factory imposed severe limits on production levels given the difficulty of expanding physical facilities. The move to the New Factories marked a relaxation of these restrictions. Production capacity was enlarged significantly, and all production stages for snuff were located in one large and compact space. The organization of production space in the New Factories made the production stages much clearer and also rendered them readily susceptible to direct monitoring. But as the constraints associated with the San Pedro Factory were relaxed, new ones emerged; e.g., the pressure to utilize fully the now much larger production capacity, the difficulty posed by the decline in total tobacco consumption after 1770, and the desire to reorganize production facilities given the significant change in consumption patterns away from snuff and towards cigars.

Throughout the period 1760-1790, there was much concern with manufacturing activities. Designed by the state as a monopoly, tobacco activities were all concentrated within the Tobacco Agency and organized through both horizontal and vertical integration. The various small, family-based workshops that operated before the monopoly was established were now horizontally integrated within the RTF. Further, the supply of raw materials (mainly tobacco leaves) and the distribution channels became vertically integrated with the manufacturing of snuff and cigars within the broader umbrella of the Tobacco Agency (see Figure 1). Quite simply, the strategy of the RTF within this overall structure was production-dominated. The monopolistic

privilege enjoyed by the RTF was sustained through a manufacturing strategy that aimed to establish unambiguously the superiority of tobacco production within the RTF, both in terms of quality and cost, compared with alternative possibilities, whether illegal such as the black market or legitimate through the establishment of new factories. As long as the RTF could demonstrate to the Tobacco Agency the superior quality of its products and their favorable cost attributes, the possibility of new entry was preempted. This observation is born out by the survival of the RTF as a monopolist for a long time, for it was not until the first decade of the 19th century that its virtual monopoly on cigar production was broken through the establishment of new factories in Alicante, Madrid, and La Coruña, in addition to the significant expansion in the production capacity and autonomy of the Cádiz factory.

The above discussion suggests that an institutional theory framework can illuminate our understanding of the contexts within which specific organizational actions are constituted, become institutionalized, and are given meaning. This framework can also shed interesting light upon the role of accounting as a form of organizational practice, myth, or belief system in change situations in organizations. One can link the emergence of new accounting series and the elimination of old series in the RTF to the changes in factory location, design, capacity, and structure. For example, one can point to the emergence of accounting practices seeking to improve the monitoring of production activities in the snuff factory by capitalizing on the clearer and more logical sequential production stages made possible by the design of production facilities in the New Factories. Similarly, it is possible to explain the development of new accounting practices, emphasizing the measurement of quality and the containment of production cost as a means of stimulating greater demand for tobacco products and increasing the flow of tobacco revenue to the Spanish Treasury. Such physical and structural constraints in the factory could have had an impact on the type of accounting practices that emerged in the RTF.

Moreover, under institutional sociology we can extend further our understanding of the emergence and functioning of accounting practices. Thus, taking the position that organizations strive to sustain their legitimacy in society and to demonstrate their strict adherence to widely held norms and beliefs, it is possible to argue that the Tobacco Agency as well as the RTF

had a vested interest in creating an external visibility that reflected the superior performance and high levels of efficiency in the RTF. As new discontinuities emerged, such as the move to the New Factories, new accounting series were developed to demonstrate unequivocally to outside parties (the Crown) that new measures had been taken by the Tobacco Agency and the RTF to improve quality and enhance efficiency.

But the invention of new accounting practices in themselves is insufficient to create/sustain the myth of high levels of efficiency over time. These new practices (accounting series) had to be shown to be put to use; hence, the creation of new accounting books both in the *Contaduría* (Accounting Office) and the factories. For those inside and outside the RTF, the use of these new accounting practices was evidence for the quest (whether apparent or real) for greater legitimacy by demonstrating better-quality products and higher production efficiency. Viewing accounting as a means of organizational legitimation opens up the possibility for accounting practices to be viewed not only as imported rationalized myths, but also to recognize them as developed, shaped, and promoted by the very organizations that use them to demonstrate their own legitimacy in society. The above interpretation implies that many of the new accounting series used by the RTF to signal externally its concern for quality and efficiency were developed in the first instance by the RTF itself. Hence, in this particular case, the medium (the new accounting practices) becomes the message (concern for quality and efficiency).

Evaluation: The preceding discussion suggests that institutional sociological theory is capable of offering interesting explanations of accounting as a set of institutionalized practices. Moreover, when deployed to trace accounting practices over time, institutional theory promotes an examination of the emergence and functioning of accounting practices in situations where both the institutional context of an organization and the organization itself undergo change. This contributes significantly to understanding the role of accounting in organizations in different contexts and over time. As Scott [1995, p. 146] has observed: "It is difficult if not impossible to discern the effects of institutions on social structures and behavior if all our cases are embedded in the same or very similar contexts." In the case of the RTF, we witness more intensified focus upon manufacturing activities which sought to enhance the legitimacy of the

RTF as a cost-effective, high-quality manufacturer of tobacco products. Several steps were taken to promote this myth/belief, including the move to larger, better-organized premises supported by better machinery and more transparent and logically organized production activities. Such physical and structural developments were also underpinned by more elaborate and more timely accounting calculations, including the emergence of a costing system to add to the financial accounting system that was already in operation in the old San Pedro Factory. In contrast to accounting practices in the San Pedro Factory, the accounting series developed for the New Factories were far more focused on manufacturing. They also tracked the flow of tobacco across the various stages of production on a daily basis, with aggregate figures accumulated every month. Hence, physical *and* accounting developments were jointly mobilized to promote the image of the RTF as the only legitimate tobacco producer in Spain.

In summary, the above analysis reveals that in a situation characterized by significant shifts in its institutional context as well as in its own structure, location, and production technology, the RTF engaged in multiple scenarios of control in which there was increased focus on manufacturing and also more extensive use of accounting calculations. The observation of the multiplicity and complexity of control scenarios is, we contend, a crucial one, for it destabilizes those attempts made by researchers to generate typologies that postulate clear-cut, transitional stages of control that organizations are presumed to follow over time. One such example is the typology developed by the institutional theorist Fligstein [1985, 1987, 1993].

Although Fligstein's typology was developed for a different context (the largest U.S. firms) and over a different period (1880-1979) than the RTF, the archival evidence drawn upon here can still be used to raise concern over the adequacy of organizational typologies. Fligstein's analysis leads him to identify four conceptions of control in the U.S. — direct control of competitors, manufacturing control, sales and marketing control, and finance control. At any point in time, an organization is presumed to focus on that one conception of control most appropriate for the problems encountered by its management. According to Fligstein [1993, p. 16], the use of accounting practices becomes pronounced only during the finance control phase, "the basic insight of the finance conception was that such a firm could be more tightly controlled by strict account-

ing." This, he argued, would be manifest in a focus on quantifying short-term performance and assessing the profitability rates of bundles of assets.

But as we have just demonstrated, such statements may be an oversimplification for they appear to be at odds with the archival evidence we have consulted. As we have argued earlier, the conception of control that emerged during the 1760s-1790s was primarily manufacturing-based. As far as we can discern from the evidence, the intensified use of accounting-based controls after the 1760s seemed to be linked to the occurrence of a new set of events relating to the move to the New Factories, the decline in the consumption patterns of aggregate tobacco products, and the significant change in product mix from snuff to cigars. During these three decades, emphasis remained focused, as previously, on manufacturing. Whether a shift in control conception towards finance would have resulted in an even greater reliance on the use of accounting controls is an issue that is beyond our evidence. Nevertheless, there was a *significant* increase in the number of accounting practices during the 1760-1790 period, the majority of which were directly concerned with monitoring human performance. Fligstein's framework offers no compelling explicit explanation of such developments.

This argument differentiates our position from that of other scholars. Rather than viewing the emergence of accounting practices purely as the natural response to specific shifts in the conception of organizational control, we see accounting as an important mode of monitoring performance in a variety of organizational settings [Carmona et al., 1997]. In this respect, our views are significantly different not only from those of Fligstein but also from the views of the academic orthodoxy concerned with accounting history. Thus, Pollard [1965] found little evidence on the use of cost accounting to guide decision making in British firms during the Industrial Revolution and has surmised that this was due to the prevalence of high profit margins and the absence of competition. Following in his footsteps, Edwards and Newell [1991] and Fleischman and Parker [1991] have suggested that intensive competition provides the stimulus for the use of cost calculations in order to improve firm efficiency and to strengthen its competitive position. The arguments of these authors are parallel to the view advanced by Fligstein; specific competitive settings give rise to a significantly greater use of cost accounting calculations.

The evidence we have drawn from the archives of the RTF clearly departs from the above contention. First, we have clear evidence of the regular use of accounting calculations in a monopolistic setting, thereby suggesting that the extensive use of accounting in organizations is not necessarily restricted to competitive settings. Second, we observe much greater intensification in the use of cost accounting in the RTF post-1760 which we can link to the occurrence of specific events, such as the move to the New Factories, etc. While it is plausible to argue that these events gave rise to the emergence and use of new accounting practices to improve overall factory performance (and this may have indeed been the case in many instances), we propose that an explanation of these new accounting practices needs to extend beyond this restrictive view. Institutional sociological theory has offered one such possible extension; new accounting practices may emerge purely as a means of enhancing the external legitimacy of the organization. Our discussion above suggests that such need for external legitimacy is not necessarily restricted to organizations operating in highly competitive settings but could be extended to monopolistic situations. Indeed, it is more likely that monopolistic organizations, such as the RTF, are under much greater pressure to demonstrate to powerful external constituencies (such as the state) the legitimacy *and* rationality of their actions given the potent privileges such monopolies normally enjoy.

CONCLUSIONS

This paper traced the emergence of a significant number of new accounting practices over the period 1760-1790 in the Royal Tobacco Factory (RTF), Seville, which was set up as the sole legitimate tobacco producer in Spain from the late 17th century. During the period under study, three sets of events occurred. First, tobacco production was moved from the old San Pedro Factory to the New Factories, which were purpose-built and had much larger production capacity than the San Pedro Factory. Second, there was a decline in the total consumption of tobacco, which became particularly sharp after the 1770s, occasioned by a significant decrease in snuff consumption. Third, there was pressure to increase tobacco revenue to please the Crown while keeping prices down and product quality high to deter entry. This paper uses institutional sociological

theory to examine the extent to which the emergence of new accounting practices can be linked to these events.

While acknowledging the possibility that the new accounting practices were developed with the intent of improving the efficiency and effectiveness of the RTF, the paper suggests that they may have been aimed equally at enhancing the external legitimacy of the RTF and protecting its monopolistic hold over tobacco production in Spain. Moreover, during the period examined in this paper, there was much emphasis placed upon manufacturing but also simultaneously upon the proliferation of newly developed, more intensified, and far more elaborate accounting calculations. In Fligstein's framework, such increase in the use of detailed accounting calculations is premised to occur only beyond the sales and marketing conception of control which, according to him, emerges *after* the manufacturing conception of control. Hence, at the very least, the archival evidence cited in this paper would suggest that Fligstein's framework does not have direct import for the particular organization (the RTF) and period we studied. More radically, this paper argues that there is a serious danger that lurks in typologies such as the one proposed by Fligstein, in conceptualizing organizational practices, including accounting. Such typologies tend to be restrictive by imposing specific matchings between a particular typology and *expected* organizational action (e.g., accounting practices) which may be difficult to sustain in practice. It may be that, contrary to Fligstein's argument, the intensity with which accounting practices are used and/or the magnitude of new and emerging accounting practices have less to do with the dominance of specific conceptions of control.

In common with research informed by institutional sociological theory, the present paper has limitations that could be addressed by future researchers [see Scott, 1995]. First, the period examined here is relatively short compared to the life span of many organizations. Future researchers may be able in certain instances to examine the life span of organizations in order to gain a better understanding of the extent to which specific practices, such as accounting, persist over much longer periods of time. Second, the archival evidence examined here does not capture fully the relation between institutional and organizational processes, an area that future researchers may be more capable of illuminating. Finally, this study is

concerned with a specific institutional setting where the RTF operated as a monopoly in contrast to the competitive settings which typically characterize Anglo-Saxon historical evidence. There is need for comparative studies dealing with differing institutional contexts to enhance our understanding of the extent to which certain accounting practices are embedded in, but also strongly shape, the institutional settings of organizations.

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ACCOUNTING HALL OF FAME 1997 INDUCTION

August 18, 1997
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Remarks, Citation, and Response

**JOHN
CAMPBELL
BURTON**



REMARKS

by

Donald J. Kirk
Columbia University

I am indeed honored to have been asked to read the citation for John C. (Sandy) Burton. But before I do, I must tell two short stories about this very special man.

I have known Sandy since his days as Chief Accountant of the SEC during the formative years of the FASB. In those days — and actually for the entire 14 years I was at the FASB — Sandy was a frequent critic of the Board. He might describe himself as a “loving” critic of the Board. I am sure I wasn’t always convinced that “loving” was the right adjective, but his wit and humor always made him a “lovable” critic.

Sandy just did not trust the FASB to reach the “right” answers. That was understandable because he had a distinct advantage over the seven Board members. Sandy disclosed this advantage when questioned by an irate financial officer as to how he could ever have come up with the idea for some particular “outrageous” SEC proposal or rule. Sandy revealed his secret when he replied, “It must have been divine revelation.”

When the SEC, that is, Sandy, was considering requiring current cost accounting, the FASB floated a competing

proposal for accounting in terms of units of purchasing power. Sandy quickly labeled the FASB's proposal as "Pu-Pu" accounting and that put a quick end to the competition.

Ten years ago, my shortcomings at the FASB were overlooked when Sandy asked me to join him at Columbia Business School where I have benefitted from his counsel and friendship. A man of ample girth, Sandy is as big-hearted as he is big-waisted.

There are many other stories that could be told about his quick wit, sense of humor, strong intellect, and moral courage, but it is time to read the citation which captures the essence of the man.

CITATION

written by

Daniel L. Jensen

The Ohio State University

read by

Donald J. Kirk

Columbia University

His distinguished career spans accounting practice, academe, and government. Combining wisdom and wit, he rejuvenated accounting regulation, helped rescue a city from financial crisis, led one of the nation's best business schools, and even was a statistician for the Brooklyn Dodgers.

This consummate New Yorker was born in 1932, the son of an early partner in Arthur Young & Company and the grandson of a minister in the Church of Scotland. Although his parents did not pressure him into an accounting career, he grew up with a keen interest in accounting and its problems of control and measurement. After graduation from Haverford College in 1954, with a major in political science, he entered the MBA program at Columbia University where he majored in accounting and took top honors. Graduating in 1956, he joined Arthur Young & Company in New York where he became a CPA and a senior accountant with responsibility for the audit of several major listed corporations. In 1960, he returned to Columbia University as a Ford Foundation Fellow, receiving the Ph.D. degree in 1962. During his college days, he worked as an assistant statistician for the Brooklyn Dodgers; when the team moved west, Walter O'Malley offered him a job as Chief Accountant of

the Dodgers. Although seriously tempted by the offer, he decided to remain in New York where he was and is firmly attached.

Upon completion of his Ph.D., he joined the faculty of the Graduate School of Business at Columbia University, where he taught courses in corporate finance, security analysis, and accounting to MBA and Ph.D. students for over a decade. An award-winning teacher, he has produced seven books and over 50 articles.

In 1972, he was appointed Chief Accountant of the Securities and Exchange Commission, succeeding Hall of Fame Member Andrew Barr. Shortly thereafter, he received a letter from Walter O'Malley congratulating him on finally taking a chief accountant's job. Beginning his work on June 19, 1972 — the day of the Watergate break-in, he is fond of noting — he remained at the Commission for nearly five years, where he quickly earned a reputation for being an activist and an articulate spokesman for the Commission. He was deeply involved in increasing financial disclosure requirements, the development of enforcement activities, the creation of a relationship with the Financial Accounting Standards Board, and the task of communicating SEC principles and philosophy to the accounting profession. During a period of double-digit inflation, he initiated the first requirements for companies to disclose the impact of current costs on their financial reports, and he prodded the accounting profession in the development of a comprehensive self-regulatory structure that included peer review.

Upon completion of his term as Chief Accountant in 1976, he was appointed Deputy Mayor for Finance for the City of New York in a time of financial crisis for the city. As the senior appointed financial officer of the city, he had responsibility for long-term financial planning, financial management of operations, and relations with other governmental bodies. He participated in leading the city out of its short-term financial crisis by implementing the city's first integrated financial management system and by building tax structures conducive to the economic development of the city.

In 1978, he returned to Columbia University as the Ernst & Young Professor of Accounting and Finance. He became Dean of the Graduate School of Business in 1982 and held that position until 1988. From 1988 to 1991, he was co-editor of *Accounting Horizons*, a quarterly journal of the American Accounting Association.

His many honors and awards include Hofstra University's Distinguished Scholar Award and the SEC's Distinguished Service Award. He has served on advisory boards and committees for many organizations including the Council of the American Institute of Certified Public Accountants, the Financial Accounting Standards Advisory Council, the National Association of Securities Dealers as a Public Governor, the Office of the U.S. Comptroller General as a member of the Consultants' Panel, and the American Accounting Association as a Vice-President. In addition, he has served and continues to serve on the governance boards of many financial institutions and corporations.

An avid reader and sports fan, he has two children, Bruce and Eve, and lives with his wife, Jane, in New York City. He is the 59th member of the Accounting Hall of Fame, John C. (Sandy) Burton.

RESPONSE

by

John C. Burton

Columbia University

The Hall of Fame is an unusual phenomenon. The best known of such organizations are associated with athletic prowess: the Baseball Hall of Fame in Cooperstown, NY, the Pro Football Hall of Fame in Canton, Ohio, and the Basketball Hall of Fame in Springfield, Massachusetts. It is therefore not surprising that those who know me would think of me as only a remote candidate for Hall of Famedom. Indeed, were it not for the efforts of Tom Burns of the Ohio State University faculty who played a major role in the revitalization and maintenance of the Accounting Hall of Fame, I doubt very much that such an organization would exist today. I am therefore particularly pleased to share this ceremony with Tom and I am honored to be recognized at the same time as he. I only wish that he could be present in person.

While athletic achievement of a physical kind has not been my long suit, I have spent many hours of commitment to sports and I have, from time to time, considered a professional off-the-field sports career as a part or full-time activity. When I was in college, I worked for the Brooklyn Dodgers as Assistant Statistician (three pennants and one world championship in four years), and after graduation, I received an offer from Walter

O'Malley to go to Los Angeles as Chief Accountant of the Dodgers. Turning this down was difficult, since it offered the opportunity to combine my two foremost passions, sports and measurement, into a professional sports career. After much soul searching, I opted to devote myself to business measurement, regulation, and disclosure where success is not measured solely by games won and lost.

As I attended the American Accounting Association meeting this summer in Dallas instead of the baseball meetings at Cooperstown, I am confident that I made the right choice in not being enticed by the romanticism of major league baseball, despite the joys it might have brought me. I can still recall no greater thrill than that of visiting the winning clubhouse of the 1955 world champion Dodgers where they celebrated their first world series victory. But even if these events were to be replicated, I would have missed out on the many elements of a diversified forty-year career that has included accountancy, academia, and government. In addition, I would have been deprived the recognition of my peer group, as evidenced by this flattering ceremony, the great satisfaction of directing the learning process of generations of students, and the platform for communicating the principles and philosophy of the SEC to the accounting profession. There is no better "Bully Pulpit" for an accountant, particularly one seeking change.

While I take pride in these achievements, they arise out of the efforts of many persons who played significant roles in any accomplishments which I modestly identify with my own activities. It is essential to recognize that many different persons played integral parts in any individual's accomplishments. In my case, I was particularly fortunate to have the support and fine judgment of a large number of those whose wisdom helped to direct me in productive ways. One must start any such group with my family.

This involves four generations of professionals. My paternal grandfather was a minister of the Church of Scotland, my father an accountant, and my uncle a surgeon at the Royal Infirmary of Glasgow. On my mother's side, her father was a physician with a general practice in Winchester, Massachusetts, prior to his premature death at the age of 42. The women of these generations faced an environment in which women played a limited role in professional activities. Were the environment different, I believe that my mother's interests would have led her to an active professional role. I knew neither of my

grandfathers personally, but they had a significant impact on their children and hence on succeeding generations. My father, who was one of the early partners of Arthur Young & Co., came to the United States around the turn of the century and was successful in an accounting career. On many occasions, he would tell me how his preaching father expressed some doubt about accounting as a way of life, but he would also emphasize that different career paths could be mutually enriching. I have always been grateful that my father followed a similar approach when I chose a career different from the practice of accountancy, and took pleasure in debating the issues of ethics and measurement on which we could happily disagree. His judgment was fundamentally sound, and I found him a continuing source of wisdom.

My wife Jane found a commitment to service equivalent to that achieved by the members of the family even though it was less standard than those performing direct services. Her support combined a substantial commitment to our children together with an investment in my career. This resulted in a family unit which allowed for the evolution of her own vision to enhance the lives of very young children and parents by introducing them to reading and ownership of books. Her project "Reach Out and Read" is now an integral part to the development of children both in hospitals in New York and elsewhere. In addition, the family unit to which she contributes so significantly has allowed our children to become effective business and professional persons, following the traditions of service established by previous generations.

I am pleased that my son, Bruce, a representative of the fourth generation, could be here today. He keeps my pontifications under control. In addition, as Vice President of Marketing and Production of the Dole Fruit Company, he helps feed the customers (and shareholders!). My daughter, Eve, is Assistant General Counsel for the *New York Daily News*. She keeps the paper within the bounds of acceptable publishing. Both these professionals are continuing the tradition of service to the next generation. We watch with pleasure the growth of our grandchildren who seem willing and able to carry the baton.

Beyond the family, the impact of professional associates has played an important role in my development. In this connection I must initially call attention to my many colleagues at Columbia Business School who stimulated my intellectual curiosity. My first direct involvement came from David Dodd who

asked me, while in my first year as an MBA student, if I would teach a graduate class in Basic Finance. I enthusiastically agreed, and despite the churning in my stomach, managed to meet Dave's expectations for me. I was doubly surprised when Dave gave me a check for \$50, which was the first evidence I had ever had that I could be paid for teaching. In the second year of the MBA program, I worked systematically with Dave and learned the philosophy of Graham and Dodd. Additionally, I was exposed to Roger Murray for the first time, whose wisdom and insights directed me to the possibility of a doctoral program. Dean Courtney Brown also urged me to think in these terms and pressed me to consider an academic career, notwithstanding my expressed desire to enter the public accounting profession. Two years after graduation, while I was working in public accounting, the Dean offered me a full-term one course teaching assignment in basic accounting. I found this an exciting opportunity which sustained my previous discovery that the best way to learn a subject was to teach it. In the fall of 1960, the Dean offered to nominate me for a Ford Foundation Fellowship. I now found myself receptive to his urgings. In two years under Roger Murray's deft and supportive chairmanship, I completed the doctoral program in Finance. Since we had not yet learned the dangers of drinking one's own wine, I received and accepted an invitation to join the Columbia faculty in accounting and finance. While many colleagues have contributed toward my intellectual development in the years that have followed, I must specially mention Gordon Shillinglaw and Carl Nelson who provided the day-to-day stimulation so important in an academic career.

In 1972, after ten years on the Faculty, I received an invitation from Bill Casey to join the staff of the Securities and Exchange Commission as Chief Accountant. In my initial interview with Bill, I pointed out that I lacked SEC experience and he responded that this was one thing in substantial supply at the Commission and that he was looking for something different. After three months of looking, he offered me the job, which I accepted after three minutes of thinking. In June 1972, I arrived at the Commission to become its fifth Chief Accountant. To this day, I have no idea how I was selected although I have had many people take credit or blame depending on their point of view.

My five years with the Commission were enormously challenging and rewarding. During my tenure, there were a number

of particularly exciting projects which the Chief Accountant was deeply involved in. They included broad expansion of disclosure requirements in income tax expense; leasing; liquidity and the management's discussion and analysis of income; the impact of "big bath" accounting; and the development of new approaches to enforcement of public accountants, such as peer review.

These years were also ones in which inflation was an increasing problem, and accountants were faced with substantial pressure to do something to reflect the impact of changing prices on financial reporting. I remember Chairman Ray Garrett returning from a Thanksgiving meeting at the White House and calling me in to tell me that President Ford wanted us to take some steps to deal with this problem. He asked what we could do that would be effective immediately. Even I, with a zeal for promptness and a skepticism about the costs of delay, felt we could not reasonably require registrants to put a new approach into effect in 30 days. We compromised by issuing a release (Accounting Series Release No. 151 — Disclosure of Inventory Profits) encouraging companies (on a voluntary basis) to make disclosure of the impact of rising prices on financial reporting. This could be called an approach which had limited success. Our survey of registrants found one out of 1,500 made any form of quantitative disclosure, so the staff set to work on what a year later became Accounting Series Release No. 190 which required disclosure of the impact of changing prices on large companies. While the problems of accounting for changing prices continued for a number of years, the gradual decrease in the rate of inflation has decreased calls for accounting change. We can only hope that we will not have to face a new inflationary environment with no time to develop a new solution. The elimination of mandatory disclosure and the urging of a voluntary approach has not been more successful than it was in the past.

Perhaps the most significant accomplishment of the Chief Accountant's Office in my time at the Commission was the establishment of a long-term relationship with the Financial Accounting Standards Board (FASB). In the early 1970s, there was a general feeling in the corporate and accounting communities that the standard-setting process under the direction of the Accounting Research Division of the AICPA and its senior technical committee, the Accounting Principles Board, was not doing a satisfactory job. The corporate world felt that it was

underrepresented on the APB and that its judgments did not reflect business reality. The problem of accounting for business combinations was the most subject to criticism, but there was a general feeling that the Board was not producing practical results and that in addition, the relation between the SEC and the APB was too "cozy." In 1970, the AICPA appointed a committee under the leadership of a well-known securities lawyer and former SEC Commissioner Frank Wheat to study the structure currently in use and recommend a new institutional setting. The Committee reported in 1971, suggesting a more representative standard-setting body, a full-time group of seven board members and a research arm funded by contributions from the accounting profession, the business community (represented by the Financial Executives Institute and the Institute of Management Accountants), and small contributions from the users of statements and the academic accounting community. An additional two entities were created, the Financial Accounting Foundation to select the board members and otherwise govern the business side of the process, and the Financial Accounting Standards Advisory Council to provide independent technical advice and counsel.

One of the first steps to be taken by the Securities and Exchange Commission was a decision as to the acceptability of the proposed structure. This was not a small step since the Congress, when it passed the Securities Acts in the 1930s, gave the authority to the Commission to establish accounting principles. The SEC, at the urging of its first Chief Accountant, Carman Blough, elected to put aside this authority and allow the accounting profession to take responsibility for determining acceptable accounting under the Commission's oversight. The vote was 3 to 2. In the years since, the Commission has generally affirmed this judgment although in a few cases issues have gone the other way.

The first problem to be considered was the way in which the FASB board members and staff would relate to the SEC commissioners and staff. Initially, the FASB took the position that it would exercise primary responsibility for accounting rules. The SEC felt that it could not meet its statutory obligation in this manner. After several meetings, a compromise was reached and recorded (Accounting Series Release No. 150) under which the traditional responsibilities were sustained. This was essentially the acceptance of the Wheat Committee's report by the SEC and by the AICPA. The structure put in place has

largely survived for more than 25 years, and while few would endorse every step taken, on balance the record is favorable.

The structure as adopted in Accounting Series Release No. 150 has evolved to utilize the talents of the Commission's staff and the professional accountants who have worked with the many day-to-day problems faced by registrants dealing with clients. The success of this process is the result of the excellence of the people who devoted themselves to it and the ability to marshal their talents. The only significant subsequent structural change has been the creation of the Emerging Issues Task Force which allows accounting issues to be brought to the FASB and Commission's staff on a timely basis.

Marshall Armstrong, Don Kirk, Dennis Beresford, and recently Ed Jenkins have served as FASB Chairmen, while Bill Casey, Ray Garrett, Harold Williams, and Arthur Levitt, Jr. were effective SEC Chairmen with accounting interests. A. A. Sommer, Stan Sporkin, Phil Loomis, Irving Pollack, Clarence Sampson, and many others were top professionals who were outstanding to work with.

We hope that the activities of these challenging persons and their successors will be continued. The recently adopted statement on stock compensation is an example of a case where a particular standard was accepted as a result of pressure on the board overcoming sound accounting reasoning. This significant failure cannot be replicated if the FASB is to sustain its credibility. At the present time, there are once again threats to the maintenance of a dispassionate, accounting standard-setting process. The pressure now being brought on the board is of serious concern. The newly appointed chairman, Ed Jenkins, is a qualified and determined professional who recently completed an innovative report on financial reporting. The efforts of the corporate community whose narrow self-interest may seek artificial solutions to business problems such as derivative securities are of concern. It would be unfortunate indeed if we start a new approach of a new chairman by chopping off his knuckles. The excellence of financial reporting and its importance in keeping our financial markets the best in the world leads us to require a more progressive solution. Let us hope that a sound foundation solidly supported will emerge.

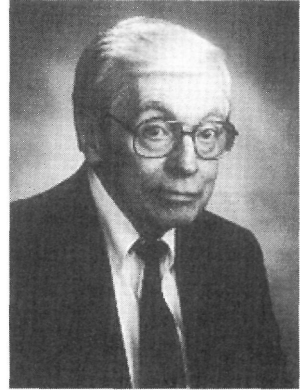
I appreciate this great honor of being inducted into the Accounting Hall of Fame and I and my family thank you.

ACCOUNTING HALL OF FAME 1997 INDUCTION

August 18, 1997
Dallas, Texas

Citation

**THOMAS
JUNIOR
BURNS**



CITATION

written by

Daniel L. Jensen

The Ohio State University

read by

Andrew D. Bailey, Jr.

University of Illinois at Urbana-Champaign

This dedicated teacher of accounting was a mentor to countless undergraduate and graduate students and creatively shaped the university and organizations in which he worked.

He was born in Arena, Wisconsin in 1923, and grew up in a small town near Madison. He played football in high school and graduated at the top of his class. Following high school, he enrolled as a part-time student at the University of Wisconsin working full-time for Gisholt Machine Company to assist financially his sister in attending college. In March 1943, he entered military service and served as a staff sergeant with the U.S. Army in Europe during World War II. He returned to the University of Wisconsin in December 1945, where he completed a degree in accounting and American history at the University of Wisconsin. Following graduation in 1948 and a brief stint with the Wisconsin Department of Taxation, he became controller for Lawrence University in Appleton, Wisconsin and, in 1952,

became a CPA. In addition to the responsibilities of controller, the post included an opportunity to teach the beginning accounting course. Teaching in this small liberal arts school kindled his interest in teaching and, in 1955, he entered the University of Michigan to pursue graduate work. He received an MBA degree in 1957. Following a year on the accounting faculty at Southern Illinois University, he entered the University of Minnesota where he earned a Ph.D. in accounting under the direction of Carl L. Nelson.

In 1963, he accepted a position at The Ohio State University as Associate Professor of Accounting. Except for brief visiting appointments at Stanford University, Harvard University, the University of Chicago, and the University of California — Berkeley, he spent the remainder of his academic career at Ohio State, where he was promoted to professor of accounting in 1967 and served as department chair from 1977 to 1981.

He was totally dedicated to Ohio State's accounting students and programs. He founded the Accounting Honors Program in the late 1960s and served as its director until his retirement in 1994. Working with the Honors Program and the Omicron Chapter of Beta Alpha Psi, he molded an extraordinary educational experience for hundreds of accounting students. That experience included the Beta Alpha Psi National Student Seminar which he founded and which was named in his honor. He also served as director of Ohio State's accounting Ph.D. program for over 20 years and mentored dozens of new entrants to accounting academe who remember him as an insightful and tough-minded adviser. In the early 1970s, he revitalized The Ohio State Accounting Hall of Fame and served as its chair until his death in 1996.

In addition to papers in academic and professional journals, his scholarly publishing included several books and many edited conference proceedings. Several of these proceedings were instrumental in raising the importance of behavioral and social phenomena in accounting research. He was a strong proponent of innovation in accounting education, and for nearly 30 years McGraw-Hill published his *Accounting Trends*, an annual collection of innovative course outlines.

He served as national president of Beta Alpha Psi, director of education for the American Accounting Association, and president of the Academy of Accounting Historians. He made lasting contributions to the programs of all these organizations and received honors and awards from virtually every organiza-

tion in which he became involved. These many honors include the Outstanding Accounting Educator Awards from both the American Institute of CPAs (1989) and the American Accounting Association (1992). He was also the first recipient of the Ohio Outstanding Accounting Educator Award.

He retired from Ohio State as Deloitte & Touche Professor of Accounting in 1994. Despite the limitations imposed by severe arthritis, he continued to advise students and colleagues and to work on matters related to Beta Alpha Psi and The Accounting Hall of Fame. He died on January 10, 1996. He is the 60th member of the Accounting Hall of Fame, Thomas Junior Burns.

U.S. Accounting History and Historiography

Call for Papers

Critical and traditionalist historians have written extensively on U.S. accounting themes and topics during the past quarter century. It is in an effort to enrich and expand this outpouring that a special issue of *Accounting, Business & Financial History* will be dedicated. Papers are invited from authors of all nationalities, although topics should focus either specifically on U.S. developments or on comparative studies between the U.S. and other countries. The following listing of suggested subject areas is not intended to be all-inclusive.

- critical interpretations/reevaluations of U.S. accounting events/practices
- professionalization movements and institutions
- findings from research into U.S. business records
- biographies of figures in U.S. accounting history
- gender studies on U.S. accounting practice
- the development of ethical standards in the U.S.
- distinctive aspects of U.S. accounting theory and methodology
- standard-setting processes
- themes from U.S. accounting education
- comparative studies, U.S. and abroad
- profession-state interfaces in the U.S.
- the role of technology in U.S. accounting history
- funding issues in U.S. accounting historiography
- paradigmatic themes in U.S. accounting historiography

This special issue will be co-edited by Richard K. Fleischman and Thomas N. Tyson. Anticipated publication date is Spring, 2000. Submissions should be made by 31 March 1999 to: Thomas N. Tyson, Department of Accounting, St. John Fisher College, 3690 East Avenue, Rochester, NY 14618, U.S.A.

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BOOK REVIEWS

Rafael Donoso-Anes, *Una Contribución a la Historia de la Contabilidad. Análisis de las Prácticas Contables Desarrolladas por la Tesorería de la Casa de la Contratación de las Indias en Sevilla, 1503-1717* (Seville: Universidad de Sevilla, 1996, 491 pp., \$?)

Reviewed by
Esteban Hernández-Esteve
Presidente de la Comisión de Historia de la
Contabilidad de AECA

This book is an abridged version of research presented by Professor Donoso-Anes prerequisite to obtaining the chair of Financial Economics and Accounting at the University of Seville. It constitutes an important work; the product of a patient, thorough, and effective trawling through the files. The facts discovered have been submitted to a rigorous analysis, interpretation, and contextualization. In sum, this investigation represents a good example of how modern research in accounting history should be conducted. The author has taken into account the most relevant bibliography both on the *Casa de la Contratación* (Trade House) and on accounting practices and thought of that time in order to contextualize the research properly. The investigation is basically supported by manuscripts personally found by the author at the General Archive of Indies in Seville. These documentary foundations, formed by new sources which had not been studied until now, are precisely what gives the investigation its true rank and importance.

The *Casa de la Contratación* was the official body established by Ferdinand and Isabella in Seville in 1503 to centralize trade between Spain and the newly discovered West Indies. No harbor other than Seville was allowed to ship or receive goods to or from the Indies, and no vessels from nations other than Castile were allowed in the Spanish New World. All persons and goods going to or coming from the Indies had to be registered in the books of the *Casa de la Contratación*. Although national and foreign merchants evaded these strict monopolistic measures in many ways and on frequent occasions, the extensive apparatus

set up to control trade with the Indies was both impressive and formidable. The great amount of wealth involved in this trade was not comparable to any previous period in history. An institution such as the *Casa de la Contratación*, able to organize, control, and channel this trade, inevitably required an unprecedented organizational and bureaucratic apparatus. Within this administrative and bureaucratic complex, the accounting organization had necessarily to play a fundamental role.

In the first part of the book, the historical context is established. The first chapter deals with the *Casa de la Contratación* in Seville, its structure and administrative organization. The second chapter is devoted to the study of then current accounting theory and practice.

The second part of the book also contains two chapters. The first explains broadly the accounting systems and practices followed by the treasurer of the *Casa de la Contratación*. This explanation is illustrated by examples corresponding to different periods and centuries. Taking into account that the recorded transactions had mainly to do with collections and payments, it is not surprising that bookkeeping was entrusted to the treasurer. From the moment the Council of Indies was created in 1524, the treasurer of the *Casa de la Contratación* had to report to the Account Office of this Council. Before 1524, he had to settle the accounts with specific commissions appointed by the king himself for this purpose.

The books were kept by the charge and discharge method (*cargo y data*); i.e., by the system traditionally used in public administration not only in Spain but in practically all European countries at that time. The charge and discharge method was also commonly known in Spain by its alternative name *libro de pliego horadado* (perforated-leaf book) because the accounts were commonly kept in loose leaves with a hole through which a sufficiently long ribbon or string was passed and tied at the ends. As Donoso-Anes remarks, a distinctive feature of the charge and discharge accounting at the *Casa de la Contratación* was precisely that, against the common rule, account books were to be bound because of the need to guarantee the authenticity and inviolability of public accounting records.

The charge and discharge accounting method had very limited possibilities because it was primarily directed at recording the financial position of a person (a factor or agent) with regard to his principal. At the *Casa de la Contratación*, these limitations led to the use of double-entry bookkeeping as an auxiliary

method so that some aspects of its activity could be recorded in a more complete and integrated way. Of course, the use of double-entry was favored by the private merchants who had to work with the *Casa de la Contratación* because of its suitability for the type of operations performed.

The final chapter is wholly devoted to the study of the accounting records developed to administer and control the goods and properties left by deceased and missing people; that is to say, people who had travelled to the Indies and had disappeared or died during the journey. Properly speaking, this task had little to do with the original functions of the *Casa de la Contratación*, but taking into account that the people involved were registered at the Trade House and had in some way started their adventure under its auspices, the administration and control of properties and goods of deceased and missing people were formally entrusted to it. Originally, a special administrator and accountant were appointed to perform this task, but, after some vicissitudes, the duty fell to the treasurer.

The accounting applied to record and control the goods and properties of deceased and missing persons constitutes a paradigmatic example of the mixed and complementary use of charge and discharge and double-entry methods in order to obtain more complete information of recorded facts and relations. In this respect, the author analyzes the composition and structure of the different systems and sets of books used to fulfill this accounting purpose and identifies the several stages of their evolution. At the same time, he studies the audit processes performed in different periods and their influence on the evolution and development of the accounting procedures and rationale of the *Casa de la Contratación*.

In conclusion, Donoso-Anes' book constitutes a worthy contribution to Spanish accounting history and especially to the history of public accounting. He describes and analyzes in a clear, meticulous, and accurate way the accounting systems and books used in one of the most important and representative public bodies in Spanish economic history in the 16th and 17th centuries. Donoso makes a serious effort to clarify the meaning, reasons, and effects of the changes, inserting all of them into the pertinent context; i.e., trying to establish the relationships among them and their social and cultural setting. The accounting systems and practices studied served to administer and control no less than all the trade and traffic of precious metals between Spain and its overseas possessions.

Far beyond its utility and significance for the knowledge of accounting history, Donoso's book is a most valuable contribution for all those who are interested in the domestic history of the *Casa de la Contratación*, the functioning of its administrative and organizational mechanisms and the real contents of its operations.

New York State Society of CPAs: Celebrating a Century of Integrity
(New York: New York State Society of CPAs, 1997, 135 pp., \$25)

Reviewed by

Julia Grant

Case Western Reserve University

This volume commemorates the centennial celebration of the New York State Society of CPAs, an appropriate celebration since this state's society has been so historically influential in the profession of accountancy. The work provides descriptive summaries of the Society and the profession. While brief, these writings will likely be useful in future attempts to place the late 20th century New York State Society into historical perspective.

The primary historical work consists of four essays. The first (by Edward Mendlowitz) provides a concise, entertaining summary of the profession from the earliest record keeping to today. This essay condenses a great deal of historical information into a narrative format, including examples of the practice of accounting from cuneiform to 20th century standard setting, and examples of the roles played by the profession over the years, from the first American accountant arriving on the ships with Christopher Columbus to the contemporary auditing of Academy Award votes.

A second essay (by Gary J. Previts, Dale L. Flesher, and Tonya K. Flesher) relates the accomplishments of Charles Waldo Haskins, the founding president of the New York State Society, the first president of the Board of Examiners in New York State, and the first dean of the New York University School of Commerce, Accounts, and Finance (these three positions are just the most readily listed among his many achievements). The essay elaborates on Haskins' biography and his contributions to the early stature of the profession. The authors present a convincing argument for his induction into the Accounting Hall of Fame by describing his accomplishments (despite early death curtailing

his contributions), contrasting them to those of others previously inducted. Given Haskins' prominent positions in the accountancy profession in New York, this book provides an appropriate forum for this detailed essay in commemoration of the contributions of Charles Waldo Haskins.

The history of the New York State Society itself is presented in the third essay (by James L. Craig, Jr.). He recounts the formation of the Society, its contributions, and those of its members throughout the last 100 years. For example, the Society assisted with the preparation of New York's income tax regulations, and several of its prominent members had already assisted in similar tasks at the national level. A brief discussion of diversity in the organization and a summary of the Society's advancement into the information age provide a snapshot of where the Society finds itself with respect to these very current concerns. Also covered are brief summaries of the Society's publications, its involvement in continuing professional education, and its concern for professional self-regulation.

The fourth essay is a note (by Frank Pagani) to the members of the NYSSCPA at the bicentennial celebration in 2007. This missive provides many interesting statistics about the Society in 1997, so that its late 21st century members will have a convenient basis for comparison. A breakdown of the membership composition, dues charged, and benefits and services offered are some of the facts presented. This summary will surely serve the future purpose that its writer envisions because it provides a succinct picture of the basic organizational structure and its functions in 1997.

This volume will be useful for historians interested in the profession and its state at the end of the 20th century. In addition to the essays, at the bottom of 100 pages of the volume runs a chronology, with each year of the Society's existence and a mention of important financial and/or accountancy events of that year on each page. For example, the year 1914 features the following item: "The NYS Education Department suggests that it might be appropriate to require professional training before being able to sit for the CPA exam" [p. 30]; and it is noted for 1942, "Alimony concept introduced" [p. 58]. Also pictured throughout the pages are all the past presidents of the Society. The book contains a number of pages of ads, but even these provide a snapshot of various professional firms and other state societies currently active in 1997. An additional tabulation that may be of future interest is a listing of Society award winners. The volume

is introduced by letters from the 1996-1997 and 1997-1998 presidents of the New York State Society, Francis T. Nusspickel and Barry B. Seidel, and from Robert L. Gray, the Society's longtime Executive Director.

This book lacks an index, an unfortunate situation for the future researcher who may be interested in whether Chaucer's *Canterbury Tales* deserved a mention in a history of accountancy (it did, page 13), or who may want to learn more detail about some person who contributed to the profession (many are mentioned herein). Nevertheless, the brief histories included provide an appropriate and potentially useful commemoration of this noteworthy centennial.

Michael Power, (ed.), *Accounting and Science: Natural Inquiry and Commercial Reason* (Cambridge: Cambridge University Press, 1996, 288 pp., \$54.95 hardback, \$19.95 paper)

Reviewed by
Paul F. Williams
North Carolina State University

Ten — the number of digits on our hands and feet; ten — the basis of our number system, which forms the metric system of the scientific laboratory and also the way most of us count money; ten — the number of commandments that order many of us about what is right and wrong; ten — the perfect Olympian score. Ten papers, originally published in 1994 as a special issue of *Science in Context*, comprise this superb book which explores the relationships between accounting and science. Michael Power has brought together a multidisciplinary group consisting of persons from the fields of sociology, anthropology, history, law, philosophy, economics, and accounting to produce an excellent prepositional treatment of accounting and science. The book contains essays about accounting as science, science as accounting, accounting by science, accounting for science, etc. These essays explore the richness that results from the intermingling of accounting and science both as practices and as metaphors. Regardless of your particular interest in how science and accounting may appear in the same sentence, this collection of essays will contain something of special interest to you.

The essays in the book are all excellent, each worthy of extensive discussion. Obviously, in the short space of a

book review I cannot do them justice. I can provide only a sketch that I hope will inform just a bit while avoiding any injustice.

Michael Power provides the introductory essay ("Introduction: From the Science of Accounts to the Financial Accountability of Science") in which he provides "... a schematic guide to an emergent field of inquiry: science and accounting" [p. 3]. All of us domiciled at universities with significant research missions are well aware of the changes that are occurring in how science is funded, what it is expected to do, and how its success is determined. "Science" is undergoing reconstruction through economic calculation just as economic calculation is reconstructed via "science." The first essay provides the historical context of the emergence of the new relationships between science and accounting and reviews the varied issues pertaining to it that are the themes of the remaining papers in the book.

"Making Things Quantitative," essay two by Theodore M. Porter, provides a brief history of quantification, followed by a discussion of the relationship between power and quantification. Porter notes that quantification can destroy meanings but also plays a constructive role because of its transformative possibilities. Our practical quantifying impulses have "... contributed in several important ways to the pervasiveness of numerical reasoning even in physics. Everywhere it assists the enforcement of a certain discipline and hence is active on the level of power as well as knowledge" [p. 51].

The next two essays are historical examinations of specific episodes in the relationship between accounting and science. Myles W. Jackson ("Natural and Artificial Budgets: Accounting for Goethe's Economy of Nature") recounts Johann Goethe's attempts to utilize his concept of "budgets of nature" as a guide to developing budgets of administration. For Goethe, the concept of the budget represented the unifying link between nature and culture — a story which is unfamiliar to many accountants, ably told by Jackson.

Timothy L. Alborn ("A Calculating Profession: Victorian Actuaries among the Statisticians") applies Andrew Abbott's [1988] thesis to chronicle the development of the actuarial profession. The tale focuses on the uneasy relationship between statistical science and insurance statisticians, and how exploitation of that relationship over time produced a group that, by the end of the 19th century, had produced its own realm of knowledge over which it exercised jurisdiction.

Peter Miller and Ted O'Leary ("The Factory as Laboratory") bring us to the mid-point of the book with their case study of how Caterpillar, Inc. redesigned the floor of one of its manufacturing plants. They provide an analysis of how, in this one factory, the grander transformations embedded in Deming's idea of worker as scientist were effectuated. Through particular "regimes of practices," Caterpillar made the Japanese "threat" visible and, thus, was able to construct new forms of discipline (the Assembly Highway) in the plant.

The next three papers deal explicitly with the changes in science occurring as a result of mainly political attempts to make science more economically accountable. Keith Robson ("Connecting Science to the Economic: Accounting Calculation and the Visibility of Research and Development") describes the shift in the U.K. during the 1980s to connect university research more closely to commercial applications (paralleling developments in the U.S.). Robson analyzes how accounting for R&D became a mechanism through which agencies promoting R&D "acted at a distance" to guide corporate managers into undertaking R&D activities.

Brad Sherman ("Governing Science: Patents and Public Sector Research") discusses another aspect of the increasing pressure for the economic accountability of public-sector science. Patents are becoming an increasingly more significant means through which science is governed. Sherman notes a significant ramification of this growing juridification of science is the shifting of its direction from asserting knowledge claims to developing property claims. John Law and Madeleine Akrich ("On Customers and Costs: A Story from Public Sector Science") complete the triad with a case study of Daresbury Science and Engineering Research Council Laboratory and how it was altered in response to the marketplace rhetoric of the 1980s. This story will resonate with accountants; it is the tale of restructuring through redefining mission in terms of developing "good customers" and reconfiguring through the creation of "cost centers." This paper would make an excellent reading for any advanced cost/managerial accounting class, particularly for disabusing accounting students of the notion that accounting is a neutral, calculative technology.

The penultimate essay is by Philip Mirowski ("A Visible Hand in the Marketplace of Ideas: Precision Measurement as Arbitrage"). Noting the increasing fascination of sociologists of science with economic analogies, Mirowski treats the basic issue

of measurement of physical constants with the analogy of price inconsistencies and their stabilization through the action of arbitrage. Mirowski takes issue with the methodological individualism of both the Neyman-Pearson and Bayesian accounts of the treatment of measurement error. He recounts the history of quantitative error up to the work of Raymond Birge, who made explicit "the ineluctable social character of error and thus precision" [p. 233].

The final word goes to Steve Fuller ("Toward a Philosophy of Science Accounting: A Critical Rendering of Instrumental Rationality"), whose essay is devoted to the issue of giving accounts of science. He notes that "deconstructive" and "constructive" are the two kinds of science accounting. He develops a case for and provides a historical illustration of a kind of constructive science accounting he labels critico-instrumental rationality. This is defined in terms of four accountability conditions — discernibility, transcendence, responsibility, and revisability. Sorry, but you will have to read the paper to find out what each of these conditions means.

REFERENCE

Abbott, A. (1988), *The System of Professions* (Chicago: University of Chicago Press).

George J. Staubus, *Economic Influences on the Development of Accounting in Firms* (New York: Garland Publishing, Inc., 1996, 176 pp., \$40)

Reviewed by
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In this book, George Staubus (Professor Emeritus, University of California at Berkeley) sets out to explore the influences of firm characteristics and economic environments on the development of the firm's accounting and financial reporting. The book is written as an essay that logically attempts to link theoretical concepts with firm accounting. It is, by the author's admission, "soft" in the sense that it relies neither on a structured, empirical set of data or results nor on a single, unified model or theory. Instead, the author describes 18 theoretical concepts, narratively discusses the influences that these concepts could be

expected to have on a firm's accounting and financial reporting, and derives a set of 72 propositions.

Economic Influences is reminiscent of classical, income theorist literature. Typical of that literature, it uses a rich set of basic concepts, narrative and classically deductive arguments relating these concepts to accounting, and a set of derived propositions. Chapter 7, which returns the reader to the perennial issue of cost versus market valuation of assets and liabilities, reinforces this impression.

Staubus' general approach is to identify an "influence" in the form of a concept or idea. He then discusses related literature broadening and defining the scope of the concept. In doing so, he is quite eclectic in drawing from the literatures of other fields. Despite the title, this book actually recognizes influences derived from a variety of disciplines other than economics. In this regard, Staubus is noticeably influenced by the works of Chandler and Williamson. Despite numerous references to Chandler, Staubus' arguments are more logical than historical. Surprisingly, there are few references to agency literature (either in economics or accounting) and particularly to positive accounting literature or modern organizational theory. Following discussion of the literature related to each concept, Staubus discusses its application to the development of accounting in firms. He concludes each section with a set of propositions about each concept/influence.

Chapter 1 consists of a review of "The Nature of The Firm" in which Staubus summarizes several pertinent theories and models, including most of the classic ones (Coase, Jensen and Meckling, Williamson, and Alchian and Demsetz, among others), followed by his own synthesized view of the nature of the firm. This is followed by a set of nine propositions of the influences of firm characteristics on the development of firm accounting that Staubus argues emerges from his synthesis.

Chapter 2 lists and discusses the "Tier I Influences," six concepts that are "psychological and economic." He argues that these tier-one influences underlie other influences on firm accounting, which he discusses in later chapters. They are bounded rationality, self-interested behavior, firm uniqueness, externalities, information losses, and economies of scale. Staubus considers each one in turn and the influence of each on firm accounting. Additional propositions are identified for each concept. For example, two propositions related to bounded rationality are developed: "Bounded rationality has led to the

development of accounting systems that augment the limited capacity of the human mind. . . . [and] Bounded rationality has led to the use of a materiality screen to keep the quantity of financial data reported to users within bounds" [p. 25].

Chapter 3 contains a discussion of "Tier II Influences" which are derived from the first two chapters. The three tier-two influences are cost of information (accounting is not costless), asset uniqueness (each firm has a unique set of assets), and performance evaluation and incentive plans. A fourth tier-two influence, conflicts of interests, is addressed in Chapter 4. Again, in Chapter 3, each concept is discussed and a set of 39 propositions is developed related to these concepts.

Chapter 4, conflicts of interests, points out that the phenomenon of opportunistic behavior by firm constituents is not a 20th century discovery by one individual, but was generally recognized by owners, managers, lenders, and lawmakers over a long period of accounting history. Twenty propositions related to conflicts of interests are presented. Staubus links the issue of conflicts of interests to the earlier concept of self-interested behavior and to basic contractual relationships involving labor, management, and owners. He argues for a tendency towards biased financial reporting based upon "the general desire of individuals to make a favorable impression on others" and identifies ego and self-interest as the bases for this desire [p. 69]. Staubus explains management of earnings from the perspectives of "liberal reporting" and "smoothing" [p. 70]. This chapter also discusses conservatism, about which Staubus writes "the motivations for conservative financial reporting are complex and extend beyond self-bias by reporters. Perhaps conservatism is an innate human tendency that is not always offset by the bias towards reporting one's own performance in a favorable light" [p. 73]. Staubus concludes the chapter with the assertion that "the prevalence of conflicts of interests among firm constituents has been a major influence shaping the development of accounting in firms. The view here is that insufficient attention has been paid in the accounting literature . . ." [p. 77].

Chapters 5 and 6 address four "Tier III" influences — firm size, vertical integration, diversification, and form of organization. Firm size focuses on economics and diseconomies of scale, about which Staubus writes, "To the extent that developments in accounting have mitigated such general constraints as bounded rationality, opportunism, information losses, control loss, and incentive dilution, it may have pushed out the upper bound on

firm size, and thus brought economics of scale within reach" [p. 90].

Chapter 7 stands apart from the remainder of the book and gives away the author's interest in income theory. Staubus writes, "[The previous chapters] have not, however, specifically addressed the most persistent controversy in that accounting: Should the originally recorded, transaction-based prices of assets and liabilities be updated for reporting in a set of financial statements" [p. 119]?

In the concluding chapter, Staubus turns back to his original theme to bring closure to the relationships between firm characteristics and economic conditions on the development of accounting within firms. Staubus summarizes the points of earlier chapters, identifies some matters not addressed, but chooses not to attempt to provide some overarching perspective of the influences on the development of firm accounting.

This book makes worthwhile reading for those tolerant of the richness and breadth of its themes. It is not tightly organized around any central theories or models, and Staubus is quite willing to draw in materials from a variety of sources and fields. The overall effect is rather like a lecture that covers much ground, with no one particular theme and with numerous digressions, but nevertheless has interesting insights and ideas. In the final reckoning then, what Staubus has provided is an essay of his thoughts on how accounting develops in firms. These thoughts raise some interesting questions for the reader. While this may not be quite what Staubus intended, all in all it is a pretty good thing to accomplish.

Donald E. Tidrick, (ed.), *Leonard M. Savoie: Words from the Past, Thoughts for Today* (New York: Garland Publishing, Inc., 1995, 288 pp., \$55)

Reviewed by
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This collection of 26 previously unpublished speeches by Leonard M. Savoie gives a clear picture of the issues confronting the accounting profession during the 1960s and 1970s from the perspective of a thoughtful and principled accounting professional. A 1946 graduate of the University of Illinois, Leonard

Savoie became a partner in Price Waterhouse in 1960. He was partner-in-charge of accounting research and education when, in 1967, he left the firm to become the executive vice-president of the American Institute of CPAs, succeeding John L. Carey in a position later retitled president. In 1972, Savoie left the Institute to become controller and vice-president of Clark Equipment Company, a position he held until 1980. In that year, he became a professor of accountancy at Notre Dame University where, from 1983 to 1990, he served as chair of the Department of Accountancy. He died in 1991.

Leonard Savoie was a widely respected and most effective spokesperson on accounting issues. He delivered over 160 speeches and published approximately 50 articles during a career that spanned accounting practice, accounting regulation, and accounting academe. A career of such breadth and visibility was rare for its time and is even rarer today, a fact that is documented by testimonials from several of his well-known associates which are published with these speeches. This collection is divided into three sections — Reports to the Council of the AICPA, General Professional Issues, and Accounting Standard Setting. In addition, the appendices present lists of his speeches and publications.

Savoie spoke his mind on general professional issues, including the value of auditors as “hard-nosed,” third-party observers and “whistle-blowers,” the importance of auditor independence, and the compatibility of auditing with other forms of service to clients. He was also a staunch advocate of tough-minded financial reporting standards, and his addresses to the AICPA Council present thoughtful analyses of the political process surrounding the development of reporting standards. Several of his papers address issues of accounting education. He supported professional schools of accounting and believed in curricula that emphasize a common body of accounting knowledge as the basis for entry into all aspects of the accounting profession, leaving specialized training for continuing education programs or on-the-job experience: “The real education we are seeking is more a way of thinking which will enable us to solve problems, to learn new techniques and practices, and to approach future problems with creativity and imagination” [p. 88].

The editor should be complimented for bringing together this set of unpublished manuscripts. Taken as a whole, the speeches chronicle and clarify the issues confronted and choices made during an important era in the development of account-

ing, an era in which many present-day developments have their roots. They deserve a careful reading by anyone interested in building a perspective on the development of accounting in recent decades.

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