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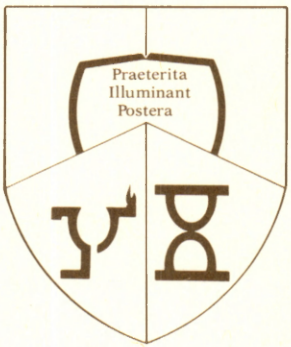

The Accounting Historians Journal

December 1990
Volume 17, Number 2

Research on the Evolution of Accounting Thought and Accounting Practice

The Accounting Historians Journal

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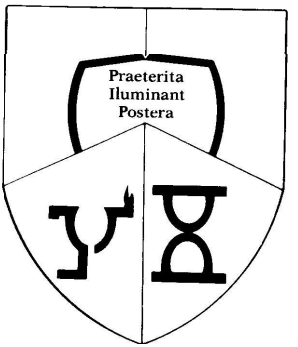

The Accounting Historians Journal

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THE ACCOUNTING HISTORIANS JOURNAL

Semiannual Publication of
The Academy of Accounting Historians

Volume 17, Number 2 **December 1990**

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THE ACCOUNTING HISTORIANS JOURNAL
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2. Authors should develop a statement about the method employed in the research, including a full indication of the extent and the manner in which the methodology is used and the degree to which the research plan is achieved by means of the method. Such a statement should include a specification of the original materials or data collected or employed and a statement of the rationale employed in selecting the source material(s). A description of the evidential data used in conducting the final phases of the evaluation should be clearly stated.

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William D. Samson
The Accounting Historians Journal
Culverhouse School of Accountancy
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Box 870220
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1990 MANUSCRIPT AWARD

Moyra J. M. Kedslie
UNIVERSITY OF HULL

MUTUAL SELF INTEREST — A UNIFYING FORCE; THE DOMINANCE OF SOCIETAL CLOSURE OVER SOCIAL BACKGROUND IN THE EARLY PROFESSIONAL ACCOUNTING BODIES

Abstract: This paper examines the range of activities undertaken in the mid-1850s by the men who formed the early professional accounting bodies. It also highlights the social differences that existed between the founding members of the Edinburgh and Glasgow chartered accountants' societies. In spite of the differences that existed both in the work undertaken by and the social differences between the two groups, they responded jointly to any outside threat to their professional body.

INTRODUCTION

By the mid-1850s, Post Office Directories show that Scotland had at least four hundred men calling themselves accountants. The initial membership of the professional accounting bodies in Edinburgh and Glasgow at that time, however, was just one-third of that number. Indeed, it was not until the 1880s that their joint membership reached four hundred. Only a small part of the discrepancy can be explained by the geographical location of these accountants, for Glasgow and Edinburgh were by far the most dominant commercial centers in Scotland. The main explanatory factor was the exclusivity adopted by the new bodies immediately upon formation and maintained for at least a century thereafter.

The purpose of this paper is to examine the range of activities which were regarded as accounting in the mid-1850s and to explain the factors which brought about the narrowing of that definition in respect of the new professional bodies. These factors were largely social, yet, given that the Edinburgh and Glasgow societies were the forerunners of similar societies in England and Wales and in many countries around the world which were sub-

ject, either directly or indirectly, to British influence, they have assumed an importance which far transcends their initial Scottish confines.

Finally, the paper highlights the continuing concern of the two bodies with professional closure, a further preoccupation which has characterized the activities of the numerous accounting bodies which can trace their existence back to the Scottish societal formation of the 1850s.

EARLY NINETEENTH CENTURY ECONOMIC DEVELOPMENTS

Several industries played a role in the development of accountants in early Scotland. The most prominent are listed below:

Canals and Railways

The development and construction of canals provided a great deal of work for men called accountants who might have been more appropriately called cashiers or book-keepers [Hadfield, 1971]. Apart from bringing together enormous volumes of employees and capital, canal companies also had large numbers of shareholders from diverse backgrounds. This necessitated the monitoring of construction costs often using elaborate systems [Gibb, 1935, pp. 186-7] and the preparation of either printed annual reports or more basic reports to be read to shareholders of smaller companies [Hadfield, 1955, p. 84]. While the role of the book-keeper/cashier/accountant was important to the company, neither as a group nor individually do they appear to have had any impact on the professionalization of accountancy. Only sixteen canals were completed in Scotland and only eight were still operating when the first accounting society was formed [Lindsay, 1968, pp. 210-13]. In addition, no canal accountants appear to have been of sufficient status to be listed in any of the professional or trade directories of that period.

From the 1840s onwards, the essential role of canals as a means of more efficient transportation of goods and passengers was rapidly overtaken by railway companies. Again, the complexities of work, capital and shareholders necessitated the employment of cashiers and accountants during the construction phase as well as the efficient running of railway companies, and parliamentary records show that there was steady employment of approximately thirty cashiers/accountants on Scottish railway lines opened and under construction [BPP 1847-55]. Their employment

had undoubtedly been encouraged by the Railway Clauses Consolidation Act of 1845 which required the preparation of annual accounts of receipts and expenditures and a statement of the balance of the account. The Act also produced another area of work for accountants in that it required these accounts to be audited. All of the Scottish railway lines which listed auditors consistently appointed at least one described as an accountant [Bradshaw's 1848 etc.].

Before 1854, the employment opportunities open to accountants in railway concerns were limited because of the small number of companies. One interesting difference, however, can be observed in those employed as accountants. None of the men who was employed in the internal management accounting of the companies were considered to be of sufficient importance to be listed in any of the city directories — an indication of their relatively low status. On the other hand, many of the accountant-auditors became founder members of the Scottish professional societies — an indication of their higher social status. Perhaps this difference arose from several factors. It was generally the case that auditors were required to hold shares in the company they were auditing. The availability of capital, therefore, was an essential prerequisite for the position. Second, the majority of the shares in such companies were often held by the directors, who would automatically appoint an auditor from their own class.

Banking, Stockbroking and Insurance

From the time of their foundation, all Scottish banks employed people designated as accountants, although it is difficult to establish exactly what was meant by the term. The lack of reference to them in directories of the day and in the first history of Scottish accounting [Brown, 1905] suggests that, although this specialist group was probably quite important in its own area, it was considered insignificant in the development of the accounting profession in Scotland. Banks differed from railways in their attitude toward auditing and generally did not have a system of independent audit since there was a strongly held view that this would interfere with the privacy demanded by the bank's customers [Tyson, 1974, p. 126].

Stock exchanges did not appear in Scotland until the 1840s, although the first recognized stockbrokers began trading in the mid-1820s. The attitude of early accountants toward this work was divided geographically. In Edinburgh, few accountants became in-

volved in this work, which was viewed as being high risk and of low status [Michie, 1981, p. 17]. In Glasgow, which had a mercantile character and consequently closer links between accountants and industry, almost forty percent of the original members of the Glasgow stock exchange became professional accountants [*Records of Glasgow Stock Exchange*, 1927].

In the middle of the nineteenth century, much of the great expansion in Scotland in various kinds of insurance business was attributed to accountants [Brown, 1905, p. 195; Stewart, 1977, p. 18]. By 1854, eighty-one insurance companies were listed in Edinburgh and one hundred and fourteen in Glasgow. The involvement of chartered accountants was much stronger in Glasgow, where at least fifty-two percent of those involved in insurance work became chartered accountants. Even more significant is the fact that sixty-seven percent of the signatories of the application for the Royal Charter for the Glasgow Institute were involved in this type of work. Such employment, however, generally formed only a small part of the work load for any professional accountant of that period. He was more likely to be involved in the audit of insurance companies, which were quicker than banking companies to realize the importance of audit by professional accountants.

Bankruptcy

Men styling themselves as "accountants" had been involved in the settlement of bankrupt estates in Scotland from the latter part of the eighteenth century[1] and by the mid-nineteenth century had grown to be the most important occupational group so involved, being appointed trustees in 55 percent of the total number of cases and earning 78 percent of the total fee income. Sixty-nine percent of the cases dealt with by accountants were undertaken by men who later became members of one of the bodies of Scottish chartered accountants, and it is of note that they administered the most remunerative estates, taking 81 percent of the fees earned by accountants (Table 1).

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[1] *A History of the Chartered Accountants of Scotland*, Edinburgh (1954) p. 11. Advertisement dated 1778 for John Gibson of Glasgow offering to act as accountant on

> "Settling of Copartnery or Other Disputes, Making Out Accounts of the Rankings of Creditors, and the Division of Subjects."

Table 1

Analysis of Cases Awarded and Fee Income Earned on Pre-1851 Sequestrated Estates per Occupational Group

Occupational Group	% Total Cases	% Fee Income
Accountants — later chartered	38	63
Other Accountants	17	15
Total Accountants	55	78
Legal Profession	13	8
Banking	5	3
Miscellaneous (non-professional)	27	11
	100	100

Total Cases = 1,155 Total Fee Income £89,000

Source:
The Alphabetical Compendium of Scotch Mercantile Sequestrations, 1851.

Not only were there differences between the number of trusteeships awarded to the two different groups of accountants, there were also significant differences between the awards in Edinburgh and Glasgow accountants. Although there was no significant difference between the numbers of the two groups of accountants who were involved in such work in the two cities, it is immediately apparent that Glasgow accountants, in both groups, dealt with a much larger proportion of cases than did their counterparts in Edinburgh (Table 2). This fact is not really surprising since the Bankruptcy (Scotland) Act of 1839 gave extensive bankruptcy jurisdiction to the Sheriff Courts which resulted, in most cases, in the trusteeship being awarded in the county where the bankrupt traded. Glasgow was considerably larger as a center of population and trade and therefore gave rise to more bankruptcies.

A comparison of the cases dealt with by the group who later became CAs shows quite clearly that the more lucrative cases were dealt with by the Edinburgh CAs. This might be explained by the fact that complicated cases were often referred to the Court of Session in Edinburgh and such cases were almost always awarded to Edinburgh accountants. There can, however, be no doubt as to the importance of bankruptcy work to the first chartered accountants with 70 and 83 percent of founder members in Edinburgh and Glasgow being so involved.

This analysis of the areas of work undertaken by accountants in the mid-1850s suggests that, with the exception of the bank-

Table 2

Comparison of Pre-1851 Sequestration Work Undertaken by Two Groups of Accountants per Location

	Later CAs			Non CAs		
Location	No. of Accountants	% Cases	% Fees	No. of Accountants	% Cases	% Fees
Edinburgh	32	27	59	21	16	7
Glasgow	36	70	39	25	63	75
Aberdeen	1	<1	2	0	0	0
Dundee	3	3	not disclosed	4	8	7
Others	0	0	0	16	13	11
		100%	100%		100%	100%
Total	72	448 cases	£56,811	66	196 cases	£13,070

Source:
The Alphabetical Compendium of Scotch Mercantile Sequestrations, 1851.

ruptcy work in both cities and insurance and stockbroking in Glasgow, there was a clear distinction between the work undertaken by accountants who became members of the chartered societies and those who were excluded, perhaps reflecting the mid-Victorian view expressed by Trollope's Mrs. Marrable "... that when a man touched trade or commerce in any way he was doing that which was not the work of a gentleman" [Lewis & Maude, 1952, p. 48] and the chartered societies certainly saw themselves as being open only to gentlemen.

FACTORS SIGNIFICANT IN SOCIETAL FORMATION

Edinburgh

Societal formation began successfully in Edinburgh on January 17, 1853 when A. W. Robertson sent a letter to fourteen accountants in practice in the city inviting them to a meeting in his office. The wording of his letter suggests that he was acting as spokesman for a few accountants who had been discussing the possibility of a society for some time. Those approached had an average age of forty-four, but only three of them were over the age of fifty. They had two common areas of professional interest, in that 67 percent were actively involved in insurance work of some description and 87 percent had an involvement in bankruptcy

Table 3

Analysis of Professional Interests of Early Edinburgh Chartered Accountants

Significant Events	No.	Bankruptcy %	Insurance %	Stock Exchange %
January 17, 1853 Recipients of letter and sender	15	87	67	0
January 20, 1853 First meeting	8	88	63	0
January 22, 1853 Discussion of rules and regulations	12	92	58	0
February 4, 1853 Council and office bearers	11	64	82	0
October 23, 1854 Charter Signatories	61	62	66	0

Source:
The Alphabetical Compendium of Scotch Mercantile Sequestrations, 1851; *Edinburgh and Leith Post Office Directory*, 1853-54, pp. i-xlii.

work [*Edinburgh and Leith Post Office Directory* 1853-54, pp. i-xlii].

Six of the men approached, plus one who was presumably approached verbally, attended the meeting in Robertson's office on January 20, 1853 and determined that, although previous attempts to form a society had failed, the time was now ripe for incorporation. Robertson and his unknown group had prepared well since they produced a draft constitution and rules and regulations at this meeting and arranged to discuss these at a further meeting two days later. The meeting on January 22 was attended by eight recipients of the original invitation along with Robertson and three others who had been approached personally. Again the group had a strong interest in insurance, in which 58 percent were involved but, more significantly, 92 percent were active in bankruptcy work [*Edinburgh and Leith Post Office Directory*, 1853-54, pp. i-xlii].

This small group was charged with the task of targeting practicing accountants considered suitable for membership of what was envisaged as a prestigious new society. They were apparently successful in this since 47 men attended the next meeting on Janu-

ary 31. However, since the Edinburgh and Leith Directory for 1853-54 listed 132 accountants, the nucleus formed by Robertson was very selective in extending its invitations. This larger group was unanimous in appointing James Brown to the chair, although he had not previously been involved in the formation activities, and agreed that the society be called the Institute of Accountants in Edinburgh [Institute of Accountants, *Sederunt Book, Council Minutes*, No. 1, p. 5].

At the next meeting on February 4, office bearers and members of Council were appointed. This group of eleven accountants differed from the previous groups in several ways. First, five of them had not been on the list of those originally approached by Robertson and six of them had attended neither of the two formation meetings. In addition, the group's 82 percent involvement in insurance was stronger than any previous group while its involvement in bankruptcy was, at 64 percent, significantly lower. Clearly, the five members of this group who had not been involved in the initial stages of the society had been identified as being important to it. They were, with an average age of 58, a little older than the other founding members, four of them had an involvement in insurance work, but only one had an interest in bankruptcy. It would appear that their selection for office was based on the long experience that they had in accountancy practice in the city. At the date of societal formation, Brown had been in practice for 40 years and appears to have been the doyen of Edinburgh accountants of that period. Three of the others had been in practice for 30 years and the fifth for almost 20. As a group, they brought to the new society long experience and their no doubt well-established respectability in their professional field would reflect on the image of the group they had been invited to join [Brown, 1905, p. 205].

Having settled the most immediate matter of determining entry procedures, qualifications and cost, the Institute of Accountants in Edinburgh moved rapidly, on April 8, 1853, to a discussion on the matter of most concern to them — the proposed changes in bankruptcy law, which would have abolished the office of Interim Factor (which was often undertaken by an accountant) and passed its duties to the Sheriff Clerk, a legal officer. By May 11, a report had been prepared, and the extent of the society's interest evidenced by the claim that five-sixths of all Scottish bankrupt estates were dealt with by accountants — at that time averaging about 250 cases per year. The report was subsequently submitted to the Lord Advocate and clearly had the desired effect, for,

when the Bankruptcy (Scotland) Act was passed on August 4, 1853, the offending clause had been removed and the Act did no damage whatsoever to the work previously undertaken by accountants [Scottish Records Office CS 322/1 etc. *Annual Report of The Accountant of Bankruptcy in Scotland*].

Once the threat of one of their main sources of fee income had been removed, the Council of the Edinburgh Institute met on May 29, 1854, to discuss applying for a Charter. The Charter was dated October 23 and registered December 11, 1854, under the name of the Society of Accountants in Edinburgh. Sixty-one members signed the Charter, 66 percent of whom were involved with insurance work and 62 percent in bankruptcy [*Edinburgh and Leith Post Office Directory*, 1853-54, pp. i-xlii].

Glasgow

The professionalization of Glasgow accountants began from an initiative in September 1853 by 27 accountants already established in practice in the city contacting a further 14 accountants of similar experience. From this group, a steering committee met and discussed and agreed to the proposal that a society of accountants be formed in Glasgow. A President was appointed and a small committee entitled the "Committee of Elder Members" was formed to ensure the rapid transformation of the idea into actuality. Within six weeks, office bearers had been elected and a Constitution agreed upon, and within two months of its formation the members of the society had appointed a committee to examine the proposed changes in Scottish bankruptcy law [Institute of Accountants in Glasgow, *Minute Book*, No. 1, p. 14].

No record survives to indicate which one of the 27 accountants who signed the requisition was responsible for bringing the group together, but the members did share several professional areas of interest. Seven of them were members of the Glasgow stock exchange and, presumably, met from time to time at the exchange. Seventeen of them were actively involved in insurance activities within the city, generally as managers and agents. Most significantly, 23 (85 percent) of them were active in bankruptcy work, which they were no doubt anxious to protect for themselves [*The Alphabetical Compendium of Scotch Mercantile Sequestrations*, 1851].

Although no minutes survive, this group or its representatives must have had at least one meeting to determine a strategy that would result in the successful formation of a society, at which they

Table 4

Analysis of Professional Interests of Early Glasgow Chartered Accountants

Significant Events	No.	Bankruptcy %	Insurance %	Stock Exchange %
September 1853 Signatories of invitation	27	85	63	26
Recipients of invitation	14	64	57	64
October 3, 1853 Steering Committee	9	67	44	67
Committee of Elder Members	3	100	33	100
November 9, 1853 Committee and office bearers	9	56	44	67
November 14-18, 1853 Signatories of Constitution	13	69	62	77
May 16, 1855 Charter Signatories	49	71	67	35

Source:
The Alphabetical Compendium of Scotch Mercantile Sequestrations, 1851; *Glasgow Post Office Directory 1853-54*, pp. 557-561; *Records of the Glasgow Stock Exchange Association 1844-1926*, Appendix I.

prepared a list of accountants who would be targeted for support. The average age of the members of the first group was 36, with several being in their late twenties or early thirties. The group approached for support, and presumably considered essential to the success of any accounting society in the city, had an average age of 48. Of the fourteen recipients of the requisition suggesting the formation of a society, nine were members of the stock exchange, eight were involved in insurance and nine were involved in bankruptcy work. As far as social background is concerned, there was little difference between the two groups with, if anything, a slightly stronger commercial background being found amongst the older of the two groups (See Table 6).

As a result of the requisition and the response to it, one of the signatories, McClelland, called a meeting on October 3, 1853, which was attended by nine of the fourteen accountants ap-

proached, who could be viewed as a steering committee. The strongest link between them was that six had been founding members of the Glasgow stock exchange and could presumably be expected to put this experience to good use in ensuring that efforts to form a society would finally be successful. Since the business center of Glasgow was extremely compact in the 1850s, the nine were probably well known to one another, particularly since four were involved in insurance work and six in bankruptcy. In addition, three of them had trained with McClelland who was also on the committee, who is credited with having been the prime motivator behind the society and who was appointed its first President. The steering committee appointed a small sub-committee of three named the Committee of Elder Members, to progress the detail of the plan. Since the average age of this group was forty, the term "elder" must have referred to experience rather than age. All of them were involved in bankruptcy work, all were founder members of the stock exchange, and two of them had trained with McClelland [Stewart, 1977, pp. 123, 125].

On November 9, 1853, a committee and office bearers were appointed, not one of whom had been a signatory of the original requisition, but all of whom had been recipients. At a general meeting on November 15, 1853, the Constitution was signed by all but one of the 14 accountants approached to form the society. Thus the Glasgow Institute came officially to life, fulfilling the objective of the younger practicing accountants in Glasgow who had recognized that the experience and reputation of the older, established members of the accounting community was essential for the society to achieve its objectives. [Institute of Accountants in Glasgow, *Minute Book*, No. 1, p. 1].

It was not until July 4, 1854, that the Council of the Glasgow Institute resolved to apply for a Royal Charter. The lapse of time between societal formation and the consideration of a charter can be explained by examining the main issues concerning the society in the interim period. Apart from their initial determination of entry barriers such as work experience, acceptability to founding members and entry fees, the members were concerned with only one matter — the proposed changes in bankruptcy legislation, which they were determined to petition against. The first action taken by them on December 2, 1853, was the formation of a committee to monitor these proposals, to suggest changes, and to cooperate with other interested bodies. This committee was the first example of a joint action between the two original groups involved in the Institute's formation and consisted of four established ac-

countants and five younger members. On March 21, 1854, the committee called a Special General Meeting to discuss the proposed changes in the nomination procedure for Interim Factors and the election of trustees on bankrupt estates and determined to discuss a course of action with the Society of Accountants in Edinburgh. This meeting was reported at the reconvened special general meeting on March 29 at which the petition was presented to the members. The argument put forward by the accountants was that it would be "injurious to the interests of the Mercantile Community of Scotland" [Institute of Accountants in Glasgow, *Minute Book*, No. 1, p. 33] to proceed because there was, at the same time, a Commission of Enquiry investigating the improvement of some areas of Mercantile Law including Bankruptcy Law. The Commission had not yet reported and it was argued that it would be better to deal with the changes as a whole rather than on a piece-meal basis. By April 28, 1854, the two societies of accountants had reached agreement on their tactics and submitted their views to the Lord Advocate.

Once this urgent threat had been dealt with, the Institute began to discuss the possibility of applying for a Royal Charter. By July 4, 1854, the membership had increased to almost 50 and the contact that several members had experienced with the Edinburgh accountants perhaps encouraged them to apply for the elevated status assumed to come with a successful charter application. Out of a total population of approximately 150 accountants practicing in Glasgow in 1855, 49 signed the charter application, the first to sign were the recipients of the original requisition proposing the formation of the society. Thirty-five percent of the signatories were also members of the stock exchange but the two strongest common areas of interest were insurance, with 67 percent of membership involvement and bankruptcy, with a 71 percent involvement. Given this last figure, it is little wonder that a charter application was considered of less immediate importance than attempting to prevent financially damaging changes in bankruptcy legislation. The strong involvement with insurance and the undoubted desire to signal to the business community their intention to retain this considerable interest explains the title of the Institute of Accountants and Actuaries in Glasgow.

Society Comparison

The most obvious difference between the work undertaken by the two groups of accountants is the total absence of stockbroking

activities in Edinburgh compared with a significant interest in Glasgow, a reflection of the fact that Glasgow was at the center of a large industrial and commercial area. In addition, the records of the Glasgow society make it clear that it was not uncommon for accountants to be employed by companies [Institute of Accountants in Glasgow, *Minute Book*, No. 1, p. 37] and several of the early accountants are noted as having been involved in the formation and running of railway and utility companies [Stewart, [1977] p. 17].

Both groups were strongly involved in insurance in their respective cities. There were differences, however, in the kind of involvement. In Edinburgh, it was much more likely to be as an auditor or director; whereas in Glasgow, it was often as an agent and less likely as a director.

SOCIAL ORIGINS

The fact that the men who formed and were early members of the first Scottish accounting societies were broadly involved in the same areas of work might lead to the expectation that they would have come from broadly similar family backgrounds. However, this is not the case although the differences became less obvious as the societies developed.

Edinburgh

Table 5 confirms that the early members of the Edinburgh society were predominantly upper to upper-middle class with the most significant group coming, in all cases, from a legal background. It is perhaps not surprising to find this to be the case in Edinburgh which was the center of the Scottish legal system. Different sections of the legal profession, such as advocates and writers to the signet,[2] had long standing professional associates with which the Edinburgh accountants would be familiar. In addition, many early members trained in legal offices and much of the work eventually carried out in accounting offices was previously performed in legal offices. Since the accounting profession in Edinburgh had for many years been viewed as a section of the legal profession, this preponderance of legal parentage is not surprising, particularly in the pre-charter period. The strong legal ties would be significant in establishing the social status of the mem-

[2]An advocate is the Scottish equivalent of a barrister. A writer to the signet is a member of an Ancient Scottish society of law agents similar to an attorney.

bers of the new society since "The real leaders of Edinburgh Society, however, were not to be found among merchants and tradesmen but among professional men: and among the professions there were none, in numbers, wealth or prestige, to equal the lawyers" [Smout, 1969, p. 375].

Table 5

Social Origins of Significant Groups of Early Edinburgh Chartered Accountants

	Original Letter	First Mtg.	Rules and Regs. Mtg.	Council & Officers	Charter Signatories
	%	%	%	%	%
CA	—	—	—	—	1.6
Other Accountants	6.7	12.5	—	—	4.9
	6.7	12.5	—	—	6.5
Legal profession	26.7	25.0	33.3	27.3	18.0
Banking & insurance	6.7	12.5	8.3	18.2	4.9
Church	13.3	—	16.7	18.2	16.4
Government & Armed Service	13.3	12.5	8.3	9.1	9.8
Landowner	13.3	25.0	16.7	9.1	16.4
Other profession	—	—	—	9.1	3.3
	80.0	87.5	83.3	91.0	75.3
Merchant	—	—	—	—	—
	80.0	87.5	83.3	91.0	75.3
Manufacturer	—	—	—	—	1.6
Craftsman/ Tradesman	6.7	12.5	8.3	—	4.9
Miscellaneous	—	—	—	—	—
Unknown	13.3	—	8.3	9.1	18.0
	100%	100%	100%	100%	100%
Number	15	8	12	11	61

Source:

Scottish Records Office: Certificates of Birth, Marriage and Death; *Census of Population Records 1841*, 1851.

Other significant groups among the charter signatories were the Church, landowners and government and armed services. What is also important is that none of the early members came from a commercial background and very few from manufacturing or trade. The social origins of members were such that the Edinburgh society could not fail to gain immediate social status which was then imputed to subsequent members.

Glasgow

It is clear from Table 6 that the social background of the early chartered accountants in Glasgow was significantly different from that of those in Edinburgh. The largest group in all cases in Glasgow came from a mercantile background, reflecting the fact that Glasgow was an industrial city, while the representation of a manufacturing background was negligible in Edinburgh. The legal profession, the Church, and landowners were also represented, but at a lower level than in Edinburgh, and the overall impression that emerges from Glasgow is a society with a lower proportion of upper and upper-middle class members.

SOCIETY CONCERNS

The distinct differences in the social origins of the founder members of the two societies and the different emphasis in the work undertaken by them might lead to an expectation that they would have developed in different directions. As professional bodies, however, their concerns were very similar.

The first area to be tackled by both groups was that of professional closure. Several instruments were utilized to ensure that the societies were elitist and therefore of high professional and social reputation. Entry to the societies was initially limited to those who had been approached personally to join and who were generally in the same social class as the small groups of organizers. Subsequently, membership for practicing accountants depended on their ability to convince existing members of their suitability for admission. For apprentices, the barriers were the necessity to find a member to whom he would be indentured; the cost of paying for his indenture, which amounted to an average of one hundred guineas in 1853; and the ability to pass the informal or formal examinations. Both societies adopted very similar systems of entry as a means of controlling their quality and size.

Because both groups of chartered accountants had an involvement in bankruptcy and insurance work that was higher than the

Table 6

Social Origins of Significant Groups of Early Glasgow Chartered Accountants

	Sigs. of Reqn. %	Recipients of Reqn. %	Steering Committee %	Const. Sigs. %	Charter Sigs. %
CA	—	—	—	—	—
Other Accountants	7.4	14.4	11.1	7.7	8.2
	7.4	14.4	11.1	7.7	8.2
Legal profession	11.1	7.1	11.1	7.7	8.2
Banking & Insurance	3.7	7.1	—	7.7	4.1
Church	7.4	14.4	—	15.4	8.2
Government & Armed Service	—	—	—	—	—
Landowner	18.5	7.1	11.1	7.7	12.2
Other professions	7.4	—	—	—	4.1
	55.5	50.1	33.3	46.2	45.0
Merchant	3.7	35.7	44.5	38.4	16.3
	59.2	85.8	77.8	84.6	61.3
Manufacturer	14.9	7.1	11.1	7.7	8.2
Craftsman/ Tradesman	—	—	—	—	2.0
Miscellaneous	3.7	—	—	—	4.1
Unknown	22.2	7.1	11.1	7.7	24.4
	100%	100%	100%	100%	100%
Number	27	14	9	13	49

Source:
Scottish Records Office: Certificates of Birth, Marriage and Death; *Census of Population Records 1841*, 1851.

average for all accountants in either city, they were anxious to increase their proportion of available work, or at least prevent its decrease. The first example of their activities in this area was in April 1854 after the new Bankruptcy (Scotland) Act came into operation, when both societies provided the Lord Advocate's clerk with a list of members, described as a list of the accountants in the two cities who were experienced to deal with sequestrations from the Court of Session. This obvious attempt to exclude from this work accountants who were not members of the two societies was successful in the long run: by 1900, Edinburgh chartered accountants had a virtual monopoly of Edinburgh bankruptcy work and Glasgow chartered accountants dealt with the majority of cases in their area.

The exclusivity of the new societies led to the formation of rival institutions. Two such institutions emerged in Scotland, the Scottish Institute of Accountants in 1880 and the Corporation of Accountants in 1891. Both were formed by accountants who were not eligible for entry to the chartered societies [Stacey, 1954, p. 33]. The Corporation of Accountants encouraged it members to designate themselves CA — corporate accountants. Since the members of the Edinburgh and Glasgow societies had agreed in 1855 to use the same designatory letters, and had done so with some consistency, they were concerned at the confusion that might be caused by the Corporation's directive. The Corporation, however, refused to desist from using the designation until the chartered bodies raised a successful action against them in the Court of Session.

Similar concern had been raised in 1880 on the formation of the Institute of Chartered Accountants in England and Wales. Some Glasgow accountants who were debarred from membership of the Scottish chartered bodies were admitted to the English Institute and henceforth designated themselves as 'Chartered Accountants' as contained in the Institute's Charter. The Edinburgh and Glasgow societies cooperated on dealing with this problem and took legal advice on the matter. Interestingly, they were advised not to pursue the matter since they were unlikely to succeed [Institute of Accountants in Glasgow, *Minute Book*, No. 2, p. 131].

CONCLUSION

This study has highlighted the social differences that existed between the men responsible for the formation of the Edinburgh and Glasgow chartered accountants' societies, two of the founder

members of the Institute of Chartered Accountants of Scotland. Similarly, it has indicated the difference in the involvement of each group in the main areas of professional work at that time.

The distinct differences in pre-societal formation were of secondary consideration when the new societies faced any outside threat, however, for such threats were often responded to jointly. The matters of joint concern to them were similar to those facing any new professional body. Primarily, they wished to ensure that the new societies had a recognized status in their respective communities, which they accomplished by inviting membership only from men of proven social and professional standing. Once the societies had achieved the desire status, it would be imputed to future members. It was necessary, also, to prevent the societies from overly rapid growth which might have diluted the quality of performance and the amount of work for each member. This was achieved by restricting entry to those who had the proper social background and the money and education that usually accompanied that background.

The other common threat to the chartered societies was that posed by other accounting societies being formed and by the members of one of them adopting the designatory letters 'CA'. Again the societies acted together to repel these problems. Thus, while the societies remained separate for about a century, probably because of the different social characteristics of Edinburgh and Glasgow, in times of adversity the social differences were submerged and common interests successfully pursued.

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Vahé Baladouni
UNIVERSITY OF NEW ORLEANS

CHARLES LAMB: A MAN OF LETTERS AND A CLERK IN THE ACCOUNTANT'S DEPARTMENT OF THE EAST INDIA COMPANY

Abstract: Charles Lamb (1775-1834), English author, who became famous for his informal, personal essays and literary criticism, is presented here in his vocational role as accounting clerk. Lamb's long years of experience in and out of London's counting-houses permitted him to capture the early nineteenth-century business and accounting life in some of his renowned essays and letters to friends. His unique wit, humor, and warm humanity bring to life one of the most interesting periods in accounting history.

INTRODUCTION

A contemporary and lifelong friend with many of the literary figures of the Romantic movement, such as Coleridge, Wordsworth, De Quincey, Southey, Hazlitt, and Hunt, Charles Lamb (1775-1834) is chiefly remembered for his highly individual and penetrating literary criticism and personal essays written under the pen name *Elia*. The essays were later collected and published by their author in two volumes: *Essays of Elia* (1823) and *Last Essays of Elia* (1833). Reputed for their wit, humor, and humanity, these essays reveal the true literary genius of Lamb. Aside from these accomplishments, Lamb also has the distinction of being among the greatest of English letter writers.

But literature was only an avocation for Lamb. To earn a living, he had to join the ranks of hard-working wage earners. Not yet quite fifteen, Lamb left school to become a clerk in the service of Joseph Paice, a London merchant. A year later, he moved to another job in the South Sea House. After six months on this job, Lamb made a final move to become a clerk in the Accountant's

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Department of the East India Company. Here, he was to stay for some thirty-three years until his retirement.[1] Lamb's long years of experience in and out of the counting-houses of London eventually gave birth to some of his greatest essays which, along with his letters to friends, constitute a treasured contribution to accounting history.

LAMB'S EMPLOYMENT WITH THE EAST INDIA COMPANY

Lamb owed his employment with the East India Company to his first employer, Joseph Paice, about whom he later wrote: "He took me under his shelter at an early age, and bestowed some pains upon me. I owe to his precepts and example whatever there is of the man of business (and that is not much) in my composition. It was not his fault that I did not profit more" [Lucas, 1968, pp. 87-8]. To become a clerk in the Accountant's Department, Lamb had to enter into a bond of £500 and find two sponsors who would do the same. This arrangement was meant to serve as a surety for good behavior [Lucas, 1968, p. 92]. Aside from this, a beginning clerk had to serve a probationary period of two or three years before he was paid a salary. While Lamb did not receive salary for two years, he was paid a gratuity of £30 for each of the two years. He started his third year with an annual salary of £40. His salary increased steadily to £240 when in 1815, as a result of an internal reorganization, his salary doubled bringing it up to £480. From that year on, Lamb's salary continued to increase until it reached £700 in 1821 and £730 in 1825, the year of his retirement [Howe, p. 77; Lucas, 1968, pp. 434-5].

It appears that in 1815 not only did his salary double, but his duties were considerably lightened. Until this time, he was responsible among other things for auditing the accounts of the warehouse-keepers. This task he found very fatiguing. Writing to Wordsworth about it, he says: "If I do but get rid of auditing Warehousekeepers Accts and get no worse-harassing task in the

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[1]It was during Charles' early years at the East India Company, when a tragedy struck the family. In 1796, Charles' sister, Mary, who suffered from mental instability, in a fit of madness killed their mother with a knife. From this time on, Charles took upon himself the burden of looking after Mary. Charles' caring for Mary was rewarded by her devotion to him. In 1807, Charles and his sister together brought out *Tales from Shakespear*, a collection of prose adaptations of Shakespeare's plays. This book has proven to be very popular with schoolchildren as well as adults to this very day.

place of it, what a Lord of Liberty I shall be" [Lucas, 1935, II, p. 170]. It may be surmised that his wish came true. The record of his job description for 1821 does not mention this particular task as one of his duties. His duties were essentially the following: monthly, he was to draw up the Buyers' Accounts both for the Company and Private Trade; to enter all deposits on Company and Private Trade goods in the Fair Books, ensuring that the amounts agreed with those entered in the Clearing Books and the Treasury Deposit Books; to keep a ledger of short and over payments, notifying buyers of such errors and settling them; to reconcile the total amount of all Private Trade sales with the amounts actually received in the Treasury; finally, to give "a general attention to the business of the Journals" [*India Office Records*]. It is regrettable that the innumerable folios which Lamb filled with figures and to which he referred as his "works" were later destroyed. Search for even a scrap of his work has been in vain.

LIFE AT THE COUNTING-HOUSE

It is indeed a pity that Lamb did not get to write about life at the East India Company's counting-house in the form of an essay as he did about the South-Sea House where he had barely spent some six months. The reason for this may well have been the closeness in time to his fellow-workers. Whatever the reason, there is enough information about life at the East India House in Lamb's letters to his friends, Elia's essay on "The Superannuated Man," and the memoirs of others, to generate an overall picture of life there. This picture along with that provided by Lamb in his essay on the South-Sea House serve to provide the general atmosphere of life in the counting-houses of London during this period.

Long, Tedious Years of Service

During his thirty-three years of service at the East India House, Lamb never ceased to fret against "the irksome confinement" of office life. He has referred to his employment variously as "captivity," "daylight servitude," and "slavery." Writing to Wordsworth on March 20, 1822, he says: "I grow ominously tired of official confinement. Thirty years have I served the Philistines, and my neck is not subdued to the yoke. You don't know how wearisome it is to breathe the air of four pent walls without relief day after day all the golden hours of the day between 10 and 4 without ease or interposition" [Lucas, 1935, II, p. 319]. Aside from this, he often had to work until late afternoon and on occasion late

at night. As a man of letters, Lamb attributed his periodic literary unproductiveness to overwork at the office. He says: "I can't even put a few thoughts on paper for a newspaper. I 'engross,' when I should pen a paragraph" [Lucas, 1935, II, p. 160]. He then bursts into an impetuous cry: "Confusion blast all mercantile transactions, all traffick, exchange of commodities, intercourse between nations, all the consequent civilization and wealth and amity and link of society, and getting rid of prejudices, and knowledge of the face of the globe — and rot the very firs of the forest that look so romantic live, and die into desks" [Lucas, 1935, II, p. 160].

In a letter to John Chambers, a fellow-clerk, who had been away from the office with "scorbutic" (scurvy), Lamb writes: "I steal a few minutes from a painful and laborious avocation,[2] aggravated by the absence of some that should assist me, to say how extremely happy we should be to see you return clean as the cripple out of the pool of Bethesda." A little later in his letter, he inquires whether he has recovered enough from his disease to come to work at least for a little while every day: "I dare say you would if you could. But don't you think you could do a little work, if you came? as much as D[odwell] does before 12 o'Clock. Hang him, there he sits at that cursed *Times* — and latterly he has had the Berkshire Chronicle sent him every Tuesday and Friday to get at the County news." Apparently, it was a very busy time with auction sales coming up: "There's a sale of Indigo advertised for July, forty thousand lots — 10,000 chests only, but they sell them in quarter chests which makes 40,000" [Lucas, 1935, II, p. 230].

Lamb did not quite reconcile himself to the rigors of office life. One such rigor was the paucity of holidays. He had found the transition "at fourteen from the abundant playtime, and the frequently-intervening vacations of school days, to the eight, nine, and sometimes ten hours' a-day attendance at a counting-house" very difficult to accept [MacDonald, 1903, II, p. 187]. Sundays did not cheer him up. On the contrary, he found them very depressing: "It is true I had my Sundays to myself; but Sundays, admirable as the institution of them is for purposes of worship, are for that very reason the very worst adapted for days of unbending and recreation. In particular, there is a gloom for me attendant upon a city Sunday, a weight in the air. I miss the cheerful cries of London, the music, and the ballad-singers — the buzz and stirring murmur of the streets. Those eternal bells depress me. The closed

[2]The word "avocation" is used here in its archaic sense, meaning regular or customary work.

shops repel me. Prints, pictures, all the glittering and endless succession of knacks and gewgaws, and ostentatiously displayed wares of tradesmen, which make a week-day saunter through the less busy parts of the metropolis so delightful — are shut out. No bookstalls deliciously to idle over — No busy faces to recreate the idle man who contemplates them ever passing by — the very face of business a charm by contrast to his temporary relaxation from it. Nothing to be seen but unhappy countenances — or half-happy at best — of emancipated 'prentices and little tradesfolks, with here and there a servant maid that has got leave to go out, who, slaving all the week, with the habit has lost almost the capacity of enjoying a free hour; and livelily expressing the hollowness of a day's pleasuring. The very strollers in the fields on that day looked anything but comfortable" [MacDonald, 1903, II, pp. 87-8].

But besides Sundays, Lamb had a day off at Easter and a day off at Christmas, "with a full week in the summer to go and air [himself] in [his] native fields of Hertfordshire" [MacDonald, II, p. 88]. But he saw the week's vacation to be a glitter in the distance. And when the week came round, "did the glittering phantom of the distance keep touch with me? or rather was it not a series of seven uneasy days, spent in restless pursuit of pleasure, and a wearisome anxiety to find out how to make the most of them? Where was the quiet, where the promised rest? Before I had a taste of it, it was vanished. I was at the desk again, counting upon the fifty-one tedious weeks that must intervene before such another snatch would come. Still the prospect of its coming threw something of an illumination upon the darker side of my captivity. Without it, as I have said, I could scarcely have sustained my thraldom" [MacDonald, 1903, II, p. 88].

In the previously mentioned letter to John Chambers, Lamb writes about a most recent decision on holidays: "The Committee have formally abolish'd all holydays whatsoever — for which may the Devil, who keeps no holydays, have them in his eternal burning workshop" [Lucas, 1935, II, p. 231]. But at the urging of one named Medly, the Committee "have agreed to a sort of scale by which the Chief has power to give leave of absence, viz.: Those who have been 50 years and upwards to be absent 4 days in the year, but not without leave of the Chief; 35 years and upward, 3 days; 25 years and upward, 2 days; 18 years and upward, 1 day which I think very liberal." Finally, the Committee had also laid down the requirement that all employees should sign in and out; but in order to ensure that they are in the office in between, they also had to sign every quarter of an hour. The latter requirement

annoyed Dodwell, a fellow-clerk, considerably, for he had to sign six or seven times while reading the newspaper [Lucas, 1935, II, p. 232].

But All Was Not Work: Moments of Pleasantries

Despite his incessant complaints about office work, Lamb apparently went to work regularly and at that with an uncommon degree of punctuality. It is said that "one could set one's watch by Lamb's leaving home in the morning" [Howe, 1944, p. 66]. His health was never rugged, but he took good care of himself and had no extended absences because of illness. From another source, however, we learn that "for all Lamb's complaints in his letters, he rarely did what could be called a full day's work at the India House, but came late and generally talked a good deal at the desks of his friends" [Lucas, 1968, p. 672].

Whatever the truth of the matter, the stories told about Lamb by his fellow-clerks bring out some interesting aspects of his character. It appears that Lamb was quite a jovial person and very popular with his fellow-clerks. The reminiscences of one fellow-clerk, Mr. Ogilvie, tell us of his first encounter with Lamb: "When I first entered the India House and was introduced to him, he seized my hand, and exclaimed with an air, "Ah, Lord Ogleby! Welcome, Lord Ogleby! Glad to see you! Proud of the honor!' — and he never called me anything else, and that got to be my name among the clerks, and is yet, when I meet any of the few that are left" [Lucas, 1968, p. 672]. Lamb apparently liked to sport with the names of his co-workers. In his reminiscences, Mr. Ogilvie cites also the following instances. "There was a clerk named Wawd," continues Mr. Ogilvie, "distinguished for his stupidity, whom [Lamb] hit off in his couplet:

> What Wawd knows, God knows;
> But God knows what Wawd knows!

Another, named Dodwell, he celebrated in a charade, of which the first two lines ran thus:

> My first is that which infants call their Maker,
> My second is that which is best let alone —" [Lucas, 1968, p. 672].

Still from another source, we hear that when Lamb wrote official letters to a Mr. Bensusan, he addressed him as "Sir — and Madam." Yet, despite his pleasantries, no one seems to have taken any offense to them. On the contrary, the pleasantries appear only to have increased his popularity among his fellow-clerks in the

counting-house. We are also told that Lamb himself "allowed the same familiarity that he practised, and they all called him 'Charley' " [Lucas, 1968, p. 672-].

Aside from his pleasantries, Lamb also acted whimsically. In his recollections, Chambers tells how Lamb "was observed to enter the office hastily and in an excited manner, assumed no doubt for the occasion, and to leave by an opposite door. He appeared no more that day. He stated the next morning, in explanation, that as he was passing through Leadenhall Market on his way to the office he accidentally trod on a butcher's heel. 'I apologised,' said Lamb, 'to the butcher, but the latter retorted: 'Yes, but your excuses won't cure my broken heel, and — me,' said he, seizing his knife, 'I'll have it out of you.' Lamb fled from the butcher, and in dread of his pursuit dared not remain for the rest of the day at the India House. This story was accepted as a humorous excuse for taking a holiday without leave" [Lucas, 1968, p. 670]. On another occasion, relates Chambers, "An unpopular head of a department came to Lamb one day and inquired, 'Pray, Mr. Lamb, what are you all about?' 'Forty, next birthday,' said Lamb. 'I don't like your answer,' said his chief. 'Nor I your question,' was Lamb's reply" [Lucas, 1968, p. 670].

Two more anecdotes should perhaps be sufficient to round off Lamb's image as a person given to jests and witticisms. One of them is about the six boxes or compartments into which the company's counting-house was divided. Each compartment was occupied by an accounting clerk. Collectively they were referred to as "compounds," Lamb occupying one of them. One day, when he was asked the meaning of the word "compounds," Lamb said that it was "a collection of simples." The other anecdote concerns three mock reviews written by Lamb, in his own handwriting, and appearing on the flyleaf of Booth's *Tables of Simple Interest* (1818) which is today in the custody of the India Office Library (British Library) in London. They read:

> "This is a Book of great interest, but does not much engage our sympathy." Extract from the *Edinburgh Review*, October-December, 1818.
>
> "This is a very interesting publication." *Gentleman's Magazine*, July, 1819.
>
> "The interest of this book, unlike the generality which we are doomed to peruse, rises to the end." *British Critic*, August, 1820.

References to other anecdotes are found in Lucas' *The Life of Charles Lamb.*

Lamb at His Lofty Writing-Desk

It was in the winter of 1804-5 when a young man of nineteen appeared at the East India House. He was Thomas De Quincey. Young De Quincey, who was later to come to appreciate Lamb's genius, had on that day come to meet Charles Lamb. Years later, De Quincey gave an account of this his first meeting with Lamb in his "London Reminiscences." "I was shown into a small room, or else a small section of a large one[3] . . . ," writes De Quincey, "in which was a very lofty writing-desk, separated by a still higher ceiling from that part of the floor on which the profane — the laity, like myself — were allowed to approach the *clerus*, or clerkly rulers of the room" [Lucas, 1968, p. 309]. One wonders what might have been the purpose of his high-altitude office furniture. De Quincey himself conjectures over it and says: "The seat upon which [the occupant] sat was a very high one; so absurdly high, by the way, that I can imagine no possible use or sense in such an altitude, unless it were to restrain the occupant from playing truant at the fire by opposing Alpine difficulties to his descent" [Lucas, 1968, p. 310].

De Quincey then goes on to describe the occupants of these high-altitude seats: "Within the railing sat, to the best of my remembrance, six quill-driving gentlemen; not gentlemen whose duty or profession it was merely to drive the quill, but who were then driving it — *gens de plume*, such in *esse*, as well as *in posse* — in act as well as habit; for, as if they supposed me a spy sent by some superior power to report upon the situation of affairs as surprised by me, they were all too profoundly immersed in their oriental studies to have any sense of my presence" [Lucas, 1968, p. 309]. Under the circumstances, De Quincey had to announce his presence and, of course, the purpose of his visit. "I walked, therefore, into one of the two open doorways of the railing, and stood closely by the high stool of him who occupied the first place within the little aisle. I touched his arm, by way of recalling him from his lofty Leadenhall speculations to this sublunary world; and, presenting my letter, asked if that gentleman (pointing to the address) were really a citizen of the present room; for I had been repeatedly misled, by the directions given me, into wrong rooms.

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[3]De Quincey's second recollection, namely "a small section of a large [room]" appears to be the correct one. William Foster, writing of Lamb's duties, says: ". . . he seems never to have attained the dignity of a separate chamber, but occupied a seat in a large room open to the public" [Lucas, 1968, p. 669].

The gentleman smiled; it was a smile not to be forgotten. This was Lamb" [Lucas, 1968, pp. 309-10].

Now, anyone sitting on such an "aspiring seat" would have been faced with a dilemma when approached by a visitor. Should he descend from his high stool or remain seated? De Quincey then goes on to say that if Lamb remained on his "aerial station" he would have appeared "lofty and assuming;" if he chose to dismount from his seat, he would have appeared ridiculous and ludicrous for no man can execute this act of descent with grace. But anyone who knew Lamb also knew how the dilemma would be resolved: "he began to dismount instantly." " . . . [I]n this situation of Lamb's, the act of descending from his throne, a very elaborate process, with steps and stages analogous to those on horseback — of slipping your right foot out of the stirrup, throwing your leg over the crupper, &c. — was, to all intents and purposes, the same thing as dismounting from a great elephant of a horse" [Lucas, 1968, pp. 310-11]. As he began to descend from his "throne," it so happened that "the very first round of his descent obliged him to turn his back, upon me as if for a sudden purpose of flight, he had an excuse for laughing; which he did heartily — saying, at the same time something to the effect: that I must not judge from first appearances . . . and other facetiae, which challenged a general laugh from the clerical brotherhood" [Lucas, 1968, p. 311].

LAMB'S REFLECTIONS ON THE SOUTH-SEA HOUSE

Before entering in the service of the East India Company, Lamb had taken up a temporary job as junior clerk in the Examiner's Office located at the historic South-Sea House. Brief as Lamb's stay was on this job — a mere five months — this magnificent house of trade and the clerks who worked there had made an indelible impression on the youngster's mind. Some thirty years later, Lamb was to portray the South-Sea House as he had come to know it in his now famous essay by that title.

Relics of Trade

In that essay, the South-Sea House itself, "a melancholy looking, handsome, brick and stone edifice," claims a good part of the author's attention. He writes of his admiration of "its magnificent portals ever gaping wide, and disclosing to view a grave court, with cloisters, and pillars, with few or no traces of goers-in or comers-out — a desolation something like Balcalutha's" [MacDonald, 1903, I, pp. 1-2]. And of this relic, he says: "This was

once a house of trade, — a centre of busy interests. The throng of merchants was here — the quick pulse of gain — and here some forms of business are still kept up, though the soul long since be fled" [MacDonald, 1903, I, p. 2].

He then takes us inside the building for a tour of its past: "Here are still to be seen stately porticos; imposing staircases; offices roomy as the state apartments in palaces — deserted, or thinly peopled with a few straggling clerks; the still more sacred interiors of court and committee rooms, with venerable faces of beadles, door-keepers — directors seated in form on solemn days (to proclaim a dead dividend) at long worm-eaten tables, that have been mahogany, with tarnished gilt-leather coverings, supporting massy silver inkstands long since dry; — the oaken wainscots hung with pictures of deceased governors and sub-governors, of Queen Anne . . . " [MacDonald, 1903, I, p. 2].

With the same reflective mood, Lamb now describes the account-books of the South-Sea Company: " . . . thy great dead tomes, which scarce three degenerate clerks of the present day could lift from their enshrining shelves — with their old fantastic flourishes, and decorative rubric interlacings — their sums in triple columniations, set down with formal superfluity of cyphers — with pious sentences at the beginning, without which our religious ancestors never ventured to open a book of business, or bill of lading — the costly vellum covers of some of them almost persuading us that we are got into some *better library,* — are very agreeable and edifying spectacles" [MacDonald, 1903, I, pp. 3-4].

Elsewhere in his essay, Lamb writes of these account books: "The moths, that were then battening upon [the] obsolete ledgers and day-books, have rested from their depredations, but other light generations have succeeded, making fine fret-work among their single and double entries. Layers of dust have accumulated (a superfoetation of dirt!) upon the old layers, that seldom used to be disturbed, save by some curious finger, now and then, inquisitive to explore the mode of book-keeping in Queen Anne's reign; or, with less hallowed curiosity, seeking to unveil some of the mysteries of that tremendous HOAX . . . Peace to the manes of the BUBBLE!"

The Clerks in the House

As he glances back at the South-Sea House, Lamb also recalls the clerks who "had an air very different from those in the public offices that [he had] had to do with since." Of these clerks, he says:

"They partook of the genius of the place!" Lamb remembers them as "mostly (for the establishment did not admit of superfluous salaries) bachelors" and "generally (for they had not much to do) persons of a curious and speculative turn of mind." And he goes on to note that these clerks "not having been brought together in early life (which has a tendency to assimilate the members of corporate bodies to each other), but, for the most part, placed in this house in ripe or middle age, they necessarily carried into it their separate habits and oddities, unqualified, if I may so speak, as into a common stock. Hence they formed a sort of Noah's ark. Odd fishes" [MacDonald, 1903, I, p. 4].

Lamb characterizes some half dozen of these "odd fishes" — his former associates. Among them are the cashier and the accountant. Here is Lamb's unforgettable description of the cashier: "The cashier at that time was one Evans, a Cambro-Briton. He had something of the choleric complexion of his countrymen stamped on his visage, but was a worthy sensible man at bottom. He wore his hair, to the last, powdered and frizzed out, in the fashion which I remember to have seen in caricatures of what were termed, in my young days, *Maccaronies*. He was the last of that race of beaux. Melancholy as a gib-cat over his counter all the forenoon, I think I see him, making up his cash (as they call it) with tremulous fingers, as if he feared every one about him was a defaulter; in his hypochondry ready to imagine himself one; haunted, at least, with the idea of the possibility of his becoming one . . . " [MacDonald, 1903, I, p. 5].

Equally unforgettable is Lamb's portrayal of the accountant, John Tipp. Of him, Lamb writes: "He neither pretended to high blood, nor in good truth cared one fig about the matter. He 'thought an accountant the greatest character in the world, and himself the greatest accountant in it.' Yet John was not without his hobby. The fiddle relieved his vacant hours. . . . His fine suite of official rooms in Threadneedle-street, which, without anything very substantial appended to them, were enough to enlarge a man's notions of himself that lived in them . . ." [MacDonald, 1903, I, pp. 7-8]. After some further description of John's love for music, Lamb recalls Tipp, the accountant: "But at the desk Tipp was quite another sort of creature. Thence all ideas, that were purely ornamental, were banished. You could not speak of any thing romantic without rebuke. Politics were excluded. A newspaper was thought too refined and abstracted. The whole duty of man consisted in writing off dividend warrants. The striking of the annual balance in the company's books (which, perhaps, differed from the balance

of last year in the sum of 25 l. 1 s. 6 d.) occupied his days and nights for a month previous. Not that Tipp was blind to the deadness of 'things' (as they call them in the city) in his beloved house, or did not sigh for a return of the old stirring days when South Sea hopes were young — (he was indeed equal to the wielding of any of the most intricate accounts of the most flourishing company in these or those days): — but to a genuine accountant the difference of proceeds is as nothing. The fractional farthing is as dear to his heart as the thousands which stand before it. He is the true actor, who, whether his part be a prince or a peasant, must act it with like intensity" [MacDonald, 1903, I, p. 9].

LAMB RECEIVES HIS FREEDOM

The long, tedious years Lamb served in the East India Company's counting-house were not, of course, without their perils. As time went on, the routine of office work wore Lamb down, making him restless. "Independently of the rigours of attendance," writes Lamb, "I have ever been haunted with a sense (perhaps a mere caprice) of incapacity for business. This, during my latter years, had increased to such a degree, that it was visible in all the lines of my countenance. My health and my good spirits flagged. I had perpetually a dread of some crisis, to which I should be found unequal. Besides my daylight servitude, I served over again all night in my sleep, and would awake with terrors of imaginary false entries, errors in my accounts, and the like. I was fifty years of age, and no prospect of emancipation presented itself. I had grown to my desk, as it were; and the wood had entered into my soul" [MacDonald, 1903, II, p. 88]. The sense of office confinement and the pressure of responsibility became increasingly more than he could bear. During the last years at the East India House his health continued to worsen. His friends, in and out of the office, feared the worst: that he may have a collapse of the mind.

In his thirty-third year he was so weary that he wanted out from his job no matter how. In a letter to Barton, Lamb says: "O that I were kicked out of Leadenhall with every mark of indignity, and a competence in my fob" [Lucas, 1935, II, p. 460]. Aside from his weariness, Lamb had for some time now been suffering from poor health. He heartily hoped that his declining physical health would provide the grounds for retirement on a pension. In this regard, he writes the following to Manning: "I saw Tuthill [Lamb's physician and old friend] yesternight, who has done for me what may

To all my nights and days to come,
Give solely sovran sway and masterdom.
But I dare not hope, for fear of disappointment" [Lucas, 1935, II, p. 454].

So it was with great trepidation that Lamb decided to submit his resignation. In a letter dated February 7, 1825, he requested the Board of Directors that he be permitted to retire on account of his ill health [Lucas, 1968, p. 665]. It took over seven weeks before he finally heard of his release. However, the waiting period was one of agonizing anxiety. He feared that the length or the value of his service to the Company would not help him secure a pension. Writing to Barton just a few days before the announcement of the Board's decision, he says: "I am sick of hope deferred. The grand wheel is in agitation that is to turn up my Fortune, but round it rolls and will turn up nothing. I have a glimpse of Freedom, of becoming a Gentleman at large, but I am put off from day to day. I have offered my resignation, and it is neither accepted nor rejected. Eight [?] weeks am I kept in this fearful suspence" [Lucas, 1935, II, p. 463]. The suspense was to be endured for a few days more. On March 29, the Board of Directors resolved that "the resignation of Mr. Charles Lamb of the Accountant General's Office, on account of certified ill health, be accepted, and it appearing that he has served the Company faithfully for 33 years, and is now in the receipt of an income of £730 per annum, he be allowed a pension of £450 . . . per annum . . . to commence from this date" [Lucas, 1968, p. 666].

Thus, Lamb had finally received his freedom. Overjoyed by the Board's decision, on his way out of the counting-house he dropped the following note into the Accountant-General's letter box: "I have left the d----d India House for Ever! Give me great joy" [Lucas, 1968, p. 666]. A week or so after gaining his freedom, Lamb writes to Wordsworth: "Here I am then after 33 years of slavery, sitting in my own room at 11 o'Clock the finest of all April mornings, a freed man. . . ." A little later in that same letter he says: "I came home for ever on Tuesday in last week. The incomprehensibleness of my condition overwhelm'd me. It was like passing from life into Eternity" [Lucas, 1935, II, pp. 466-7]. His exuberance over his newly-gained freedom found other expressions. To Miss Hutchinson he wrote: "I would not go back to my prison for seven years longer for £10,000 a year" [Lucas, 1935, III, p. 3], and to Barton, "I would not serve another 7 years for seven hundred thousand pounds!" [Lucas, 1935, III, p. 1].

THE SUPERANNUATED MAN

It was not long after Lamb had retired or, as he put it, gained his freedom, that he started longing for the old routine and fellow-clerks. Despite the fact that during those long, tedious years at the counting-house he had dreamt of this day, now that his release or emancipation was finally here Lamb was beginning to entertain second thoughts about it. In one of his most celebrated essays, "The Superannuated Man," Lamb writes of his changing view of freedom. "For the first day or two I felt stunned, overwhelmed. I could only apprehend my felicity; I was too confused to taste it sincerely. I wandered about, thinking I was happy, and knowing that I was not. I was in the condition of a prisoner in the Old Bastile, suddenly let loose after a forty years' confinement. I could scarce trust myself with myself." He then goes on to say: "From a poor man, poor in Time, I was suddenly lifted up into a vast revenue; I could see no end of my possessions; I wanted some steward, or judicious bailiff, to manage my estates in Time for me." And here, he has an advice to those who think of retiring: "... let me caution persons grown old in active business, not lightly, nor without weighing their own resources, to forego their customary employment all at once, for there may be danger in it" [MacDonald, 1903, II, p. 90].

With more lines than can be quoted here, Lamb continues to elaborate on Time. Then his thoughts turn to his fellow-clerks "with whom [he] had for so many years, and for so many hours in each day of the year been so closely associated...." And now, "being suddenly removed from them — they seemed as dead to [him]." Lamb finds this feeling well captured in the following lines of Sir Robert Howard:

— 'Twas but just now he went away;
I have not since had time to shed a tear;
And yet the distance does the same appear
As if he had been a thousand years from me.
Time takes no measure in Eternity [MacDonald, 1903, II, p. 94].

"To dissipate this awkward feeling," writes Lamb, "I have been fain to go among them once or twice since: to visit my old desk-fellows — my co-brethren of the quill...." But not even these visits were any solace: "Not all the kindness with which they received me could quite restore to me that pleasant familiarity, which I have heretofore enjoyed among them." During those visits, writes Lamb, "we cracked some of our old jokes, but methought

they went off but faintly. My old desk; the peg where I hung my hat, were appropriated to another. I knew it must be, but I could not take it kindly. D----l take me, if I did not feel some remorse.... Well, it is too late to repent.... But my heart smote me. I had violently broken the bands betwixt us" [MacDonald, 1903, II, p. 94].

It is hard not to quote yet another of his penetrating thoughts on Time: "It was no hyperbole," notes Lamb, "when I ventured to compare the change in my condition to a passing into another world. Time stands still in a manner to me. I have lost all distinction of season. I do not know the day of the week, or of the month. Each day used to be individually felt by me in its reference to the foreign post days; in its distance from, or propinquity to, the next Sunday. I had my Wednesday feelings, my Saturday nights' sensations. The genius of each day was upon me..." [MacDonald, 1903, II, pp. 95-6].

LAMB'S PLACE IN ACCOUNTING HISTORY

To be sure, it was not by choice that Lamb became an accounting clerk. At Christ's Hospital — the blue-coat school founded by Edward the Sixth in 1552 — where young Charles was educated for some seven years, he showed no particular aptitude for mathematics or science. But he did very well in language and literature and was particularly good in Latin composition and adept in translating nursery rhymes into Latin. By the time he left school, he was fairly proficient in Latin and had certainly read a good deal from English literature [Howe, 1944, p. 14; Lucas, 1968, pp. 56-84]. Charles was not yet fifteen when family circumstances necessitated that he leave school to become a wage-earner. This was a very bitter experience for young Lamb, especially in light of the fact that his friends moved on to Oxford and Cambridge. There he stood now, at the threshold of his future, unschooled in any of the practical arts of his time.

It is indeed paradoxical that despite his unlikely educational background, bad penmanship, and no particular appreciation for the art of bookkeeping, Lamb was destined to spend his working-life in the Accountant's Office of the East India Company. How is it that this man of letters, essayist and critic Charles Lamb, has come to occupy a place in accounting history? Precisely because he was who he was: a man of special literary talent. Through his unique wit, humor and warm humanity, Lamb brought to life early nineteenth-century business characters, including that of the

accountant; the human and physical atmosphere of the counting-house; and such relics of earlier times as the South-Sea House; to quote but a few. No reader in accounting history should miss the literary pleasure of imbibing Lamb's individual and penetrating descriptions of that life.

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Richard Vangermeersch
THE UNIVERSITY OF RHODE ISLAND
and
Mark Higgins
THE UNIVERSITY OF RHODE ISLAND

THE NATURAL BUSINESS YEAR: A SHIFT FROM PROACTIVE TO REACTIVE BEHAVIOR BY ACCOUNTANTS

Abstract: There has been a noticeable decline in accounting publications and research on the natural business year since the early 1960's, the same time that the AICPA Committee on Natural Business Year ended. Accountants and accounting institutional bodies up to that date had taken a strongly proactive stance on the topic. Since then, and especially since 1970, almost all of the literature on the natural business year has been reactive to IRS pronouncements. This article traces these changes from proactive to reactive behavior, and from financial/managerial accounting considerations to taxation issues. The article ends with support for accountants to be proactive once again on the natural business year and to regain the vitality of the financial/managerial accounting literature on the topic.

The recent absence of the Natural Business Year (NBY) as a topic in a leading intermediate accounting text indicated to the authors of this article that a lack of theoretical interest existed for this topic.[1] This apparent lack of theoretical interest seemed significant in light of the United States Congress mandating individuals and "flow through" entities to report on a calendar year basis in the Tax Reform Act of 1986 (TRA86). This study was undertaken to ascertain why interest in a once highly-touted financial/managerial accounting topic apparently declined and to try to draw some inferences from this apparent decline to the significant changes caused by TRA86.

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[1]Pinkerton [1930, p. 1056] provides a very good working definition of the NBY:

The natural business year, for any business enterprise, is that period of twelve consecutive calendar months which coincides with the annual cycle of the operations of the enterprise. Generally speaking, the natural business year for

The authors used the following four-step approach in conducting this project. First, 50 articles and reports pertaining to the NBY were selected from *The Accountants' Index* for the period 1920 through 1987. Fifty articles and reports were judged to be sufficient to observe the trend in the NBY literature. Second, various tax sources discussing the impact of the TRA86 and the Omnibus Budget Reconciliation Act of 1987 with respect to the NBY were analyzed. Third, the reported activities of the NBY Committee of the AIA/AICPA (American Institute of Accountants became the American Institute of Certified Public Accountants in 1957) were reviewed as further background for the article.[2] This review led to a search for information on the NBY Council. Finally, evidence was collected on a significant contributor to the early literature on the NBY — Ralph S. Johns.

RESEARCH APPROACH

Table 1 discloses the number of NBY items in *The Accountants' Index* from 1920 through 1987. The authors noted 674 items, which were classified as being either financial/managerial or taxation in orientation. This classification was based on an analysis of the title of the item and the type of publication in which the item

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any enterprise will end when its business activities are at the lowest point in their annual cycle, and when inventories and liabilities have been reduced to their annual minimum. In order that receivables also may be as low as possible at the closing date (the inventory factor having the greater weight), it is customary to consider the natural business year as ending just before the beginning of heavy inventory replenishment rather than just after heavy inventory reduction.

[2]From 1928 through 1950-51, reports from the Committee on NBY were included in the AIA annual reports. Starting with the 1951-52 year, the AIA no longer included committee reports but rather provided only abbreviated coverage in its annual report. Committee reports were in mimeo form only and were never in the AICPA Library. Mrs. Karen Hegge Neloms, Director, Library Services Division of the AICPA, reported that the AICPA published a Natural Business Year Promotion Kit in 1960. Mrs. Neloms was of the opinion that the Committee on NBY lapsed in 1960 or 1961, as stated in a letter to the writers. Newland in 1987 reported that the Committee on NBY became defunct in the 1950's [p. 383]. However, the writers found that the Committee on NBY was included in the AICPA Committee list for 1961-62. The Committee had this description — "Advisory Committee appointed by the president — chairman is member of senior committee on specialized audits [p. 15]. From the description of the status of the Committee, it would appear to have been quite easy for the President of the AICPA to not reappoint it, even though the Committee on NBY had been in existence for 35 years. There was no reference to the Committee on NBY in the 1962-63 list of AICPA Committees in its January, 1963 newsletter [p. 15].

Table 1

Natural Business Year Items

Without duplications and without obvious references to monthly and quarterly reporting issues in the sections "Period," "Natural Business Year," "National Business Year Council," and Taxation — United States — Accounting Period" [*The Accountants' Index* 1920- 1987].

Year(s)	Years Covered	Items	Fin./ Mgr. Items	Tax Items	Items Sampled
1920	400+	1	1	0	1
1921-23	3	1	1	0	0
1923-27	4	22	22	0	7
1928-31	4	32	31	1	1
1932-35	4	24	23	1	3
1936-39	4	105	99	6	6
1940-43	4	49	43	6	7
1944-47	4	8	5	3	0
1948-49	2	18	13	5	1
1950	1	8	4	4	2
1951-52	2	18	10	8	2
1953-54	2	18	13	5	1
1955-56	2	12	7	5	1
1957-58	2	9	3	6	1
1959-60	2	15	11	4	1
1961-62	2	15	5	10	1
1963-64	2	20	12	8	1
1965-66	2	5	2	3	1
1967-68	2	15	6	9	1
1969-70	2	15	3	12	1
1971	1	6	0	6	0
1972	1	9	2	7	0
1973	1	12	2	10	1
1974	1	10	1	9	0
1975	1	3	0	3	1
1976	1	15	2	13	1
1977	1	14	2	12	1
1978	1	7	0	7	0
1979	1	8	1	7	0
1980	1	6	1	5	0
1981	1	12	4	8	0
1982	1	7	1	6	1
1983	1	13	1	12	1
1984	1	14	1	13	1
1985	1	27	0	27	1
1986	1	51	0	51	1
1987	1	50	0	50	2
		674	332	342	50

appeared. The authors sampled 50 items from the NBY literature listed in *The Accountants' Index* and drew conclusions from the review of the sampled items. The authors are of the opinion that a good balance was chosen in the sample both time-wise during the years from 1920 through 1987 and content-wise in terms of the classification into financial/managerial and taxation items.

THE EARLY YEARS

The early ground work for the NBY was conducted in 1915 by the Special Committee on Distribution of Work of the American Association of Public Accountants (AAPA) [later the American Institute of Accountants (AIA) in 1916] chaired by Robert H. Montgomery [AAPA, 1915, p. 6]. His committee report reflected the dilemma facing accountants of being proactive on a topic for which they had a special interest, that is, a better spreading of their workload. Would clients question whether the change to the NBY was more in the auditor's interest than their own? The committee's solution to the dilemma was to recommend that accountants lobby each of the great industries to change its accounting period to better reflect its NBY [p. 3]. Perhaps what is most fascinating was this comment by the committee:

> Primarily, of course, the most important relief to be obtained is an amendment of the income tax law which will enable firms, co-partnerships and individuals to adopt a fiscal year other than the calendar year. At the present time this privilege is offered to corporations and in order to take advantage of it a business must incorporate. In all probability the law will be amended so as to include all businesses whether individual or corporate and when this has been done it will be the duty of every accountant to encourage his clients to take advantage of the privilege under the laws [pp. 3-4].

The report then listed some classic reasons for rationalizing the change to the NBY. They were: in most cases, December 31 is a most illogical time to take inventory; industry statistics are better collected by having all companies within an industry have the same business year; accountants may either have to refuse work or to rush their work in the busy season; the Treasury Department would benefit by spreading its workload; and better people would be attracted to the accounting profession, as full-time employment could be guaranteed [pp. 4-5]. The report gave credit to "great effort in 1913 and vigorous protest" as the reason why Congress

amended the 1909 Excise Tax law and allowed corporations to choose a fiscal year. This report illustrates the very proactive position taken by the AAPA.

In July of 1921, Elijah Watt Sells described the NBY:

> . . . by natural is meant the time when the bulk of the annual business is passed, when the busy season has given its best, when the harvest time of the greatest sales activity is over" [Reprinted in 1924, p. 3].

Within the constraints of a specific business classification, a company should have freedom of determining its NBY [pp. 4-5]. Sells also discussed the broad scope of public accounting:

> . . . Public accountants are called upon not alone for the periodical audits and certification of accounts, but in helping to solve problems connected with annual reports and to bring their knowledge and experience to bear on questions of taxation [p. 9].

It is important to note that John R. Wildman, the editor of Sells' posthumously published book, chose the NBY as both the lead chapter and as the title of the book, *The Natural Business Year and Thirteen Other Themes*. These choices are indicative of the importance of the NBY in the early 1920's.

Several editorials pointed out that it was only blind behavior by businessmen that did not allow (1) more logical timing of taking the year-end inventory and (2) accounting workload issues for being the reasons for adopting the NBY [AIA, 1924, pp. 280-1]. One such editorial was based on a presentation by Cherry at the 1924 annual meeting of the AIA, in which he labeled the calendar year as a "fetish" [AIA, 1924, p. 280]. Cherry, in a subsequent writing, also suggested the following reasons for using an NBY: (1) the most appropriate closing date is "from thirty to sixty days after the heaviest selling period . . . " [p. 126]; (2) the taxpayer can easily change its year end [p. 126]; and (3) bankers are also overburdened in the first two or three months of the year [p. 127]. A second editorial expressing the benefits of using the NBY over a calendar year also provided encouragement for the future of the NBY [AIA, p. 6]. An interesting version of better people being attracted into the accounting profession was this comment in a 1927 editorial. "The man who telephones once in a great while or perhaps even sneaks into the house late at night, only to depart at the break of the next day, is a stranger who seems reminiscent of one who was a father in the summer; but there is no opportunity to identify this fly-by-night person" [AIA, 1927a, p. 33]. The final

editorial examined from the 1920's lamented the failure of the Chamber of Commerce of the United States to support a NBY motion from the Chicago Association of Commerce [AIA 1927b, pp. 450-1]. This aggressive use of editorials again illustrates the proactive position that existed in the profession toward the NBY.

The definitive research project, in the authors' opinion, on the NBY is Bulletin 11 *The Natural Business Year*, published by the Bureau of Business Research of The University of Illinois. The Bulletin was compiled in 1926 under the leadership of A. C. Littleton, then the Assistant Director of the Bureau. This Bulletin was based on a questionnaire and set forth the following advantages of adopting a NBY:

Advantages to Management
—Seasonal activity would be completed.
—Low stocks of goods would remain at closing.
—New contracts, etc., would be discussed between seasons.
—More time would be available for the firm's auditors.
—Statistical data would be collected for a natural period.

Advantages to Bankers
—Work of the Credit Department would be better distributed.
—Congestion in making loans would be relieved.
—Temptation to "dress" financial statements would be reduced.
—Comparisons would be facilitated.

Advantages to Accountants
—More permanent and experienced staff would be possible.
—Long hours at high pressure would be avoided.
—Technical difficulties of "rush seasons" would be minimized.
—Verification would be easier because of low inventories, etc.
—Client's statements would be less delayed.
—More time would be had for consultation with the client.

Advantages to the Bureau of Internal Revenue
—Some of the temporary extra help now required would be eliminated.
—Collections would flow in more evenly. [p. 50]

Other reasons for adopting the NBY were that slow moving inventory is easier to spot and markdown, and "The dull season is

also a logical time to consider plans for the ensuing year" [p. 6]. The Bulletin also discussed the importance of the 1918 law permitting individuals to choose the NBY for tax purposes [p. 13] and provided a long discussion and examples of NBY's by industry type [pp. 18-25].

Bulletin 11 was based on Ralph S. Johns' 1926 thesis at the University of Illinois. Because Johns is a key figure in the history of the NBY (see subsequent references), the authors also reviewed Johns' thesis entitled *The Natural Business Year*. A. C. Littleton was listed as "In charge of thesis, and H. T. Scovill as 'Head of Department'" on the signature page of the thesis. While the body of Johns' thesis and Bulletin 11 are very similar in form and content, certain points were only mentioned in the thesis. In compiling data on the NBY, Johns sent questionnaires to businesses, accounting firms, and bankers. Only 68 replies were received from the 500 public accounting firms, "invariably due to the fact that the questionnaire was sent out during the accountants' busy season" [p. 51]. However, 469 responses were received from about 1,000 questionnaires mailed to businesses in 62 industries. Johns reported that 67 replies were received from 155 credit bankers surveyed from a list provided by Robert Morris Associates. Of the 67 replies, 24 were favorable to the NBY; 33 were favorable to the calendar year; and 10 respondents indicated no preference [p. 17]. Johns concluded that the NBY topic was only in its infancy [p. 85]. He stated:

> It is fairly safe to assume that if all businesses adopted their proper fiscal years, such fiscal years would be pretty well distributed over the year. December would still have about double the number of any other month, June and November would be next in popularity, February would probably have about the fewest number [p. 92].

Johns cited "Perennial Pressure," an editorial in the April, 1916 *Journal of Accountancy*. The editorial noted a ten percent increase in activity for public accountants in the first part of 1916 compared to the first part of 1915 [p. 281]. It also noted that accountants had accomplished the first step of changing the tax law but it was now necessary to take the second step towards the NBY.

> We believe that a large portion of the failure to encourage the distribution of labor is due to accountants themselves. If every accountant would endeavor to induce his clients to adopt a fiscal year that must be suitable to the

> businesses in which they are engaged, it would be found that only a small number of the total clientele would close their books at December 31 [pp. 281-2].

Spurred by Johns' work in Bulletin 11, the Special Committee on NBY was founded by the AIA in 1928.[3] Its first report traced a brief history of the topic, giving much credit to H. T. Scovill, Ralph S. Johns, A. C. Littleton, and Elijah Watt Sells [p. 175]. The Special Committee gave a call for action to each accountant.

> . . . Each accountant must assume the initiative with his clients, while the American Institute as a body should attempt to present the proposition continuously and persistently to bankers and businessmen through timely articles in Banker's magazines and trade periodicals of all sorts [p. 176].

In 1929, the Special Committee disclosed that it had contacted numerous trade and class publications in an effort to spread the word on the advantage of the NBY [p. 184]. It is interesting to note that H. T. Scovill was the Chairman of the Special Committee in 1929 [p. 185].

Pinkerton in 1929 wrote a rehash of Bulletin 11. He did include an interesting example of an improvement in the profits of the fur industry by changing to a March 31 closing, citing that it was no longer necessary to slash prices of stock just at the busiest period of sales in December [p. 1065].

FINANCIAL/MANAGERIAL ACCOUNTING ISSUES IN THE 1930'S

In 1932, the Special Committee on NBY strongly urged that a calendar year closing be chosen only after a company has conducted a study to see if a fiscal year closing would not be more advantageous [p. 244]. In its 1934 report, the Special Committee called for different groups interested in financial accounting to make a concerted nationwide effort to get the NBY adopted [p. 282]. However, Fedde was unhappy with the failure of Bulletin 11 to have the effect it should have had [p. 441]. The cornerstones of the 1936 Report of the Special Committee on NBY were the announcements that a NBY Council had been formed in November of 1935 and that by August of 1936 over 89,375 pamphlets and

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[3]The Special Committee on NBY became the Committee on NBY in 1941.

other material had been distributed by the NBY Council [pp. 466-7]. In addition, the report cited a gale of new activity concerning the NBY [pp. 467-71].

A good description of the composition of the NBY Council was provided in a news item in *The Certified Public Accountant* in October, 1937 [p. 23]. It is important to note the composition of the Council, as it was both broad-based and included top level participants from prestigious organizations.

> A meeting of the Natural Business Year Council was held at New York on September 21st. Henry H. Heinmann, executive manager of the National Association of Credit Men and chairman of the council, presided. Others attending were
>
> John L. Carey, Secretary of the American Institute of Accountants
> Arundel Cotter, *Wall Street Journal*
> Alvin E. Dodd, President American Management Association
> William R. Donaldson, Director-in-charge, National Association of Cost Accountants
> Frank A. Gale, Assistant Secretary of the American Institute of Accountants
> Ralph S. Johns, Chairman of the American Institute of Accountants Special Committee on Natural Business Year
> William Walker Orr, Secretary, New York Credit Men's Association
> Joseph Rubanow, President, New York Credit Men's Association
> William S. Swingle, Comptroller, National Association of Credit Men
> David A. Weir, Assistant Executive Manager, National Association of Credit Men [p. 23].

Local committees were formed in 32 cities [p. 23] and articles on the NBY were clipped from leading newspapers [p. 24]. A press campaign was waged, and Dun & Bradstreet conducted studies on the NBY of selected industries [pp. 24-5]. The NBY Council was administered by the AIA [Carey, p. 15].

The use of editorials was still prevalent. A 1934 AIA editorial, "A Good Time for Reformation," stressed that a change in the legal form of business organization, caused by the dire economic times of the Great Depression, was a good time to choose the NBY. Robert Montgomery claimed in 1936 there was a natural cycle for almost every business enterprise [p. 306]. For instance,

September 30 is the logical year-end for automobile manufacturers, but they use a December 31 closing [p. 308]. Ralph S. Johns became publicly active in the NBY campaign in the mid-1930's, when he was appointed by then AIA President, Robert H. Montgomery, as Chairman of the Committee on NBY for 1937 and 1938 [Zimmerman, 1976, p. 40]. On June 24, 1938, Johns presented a paper at the Regional Chapter Conference of the New York State Society of CPA's. This paper was then published in the *New York Certified Public Accountant* in the following month and was reprinted in *Written Contributions of Selected Practitioners: Volume 1: Ralph S. Johns*. Johns traced a brief history of the topic, focusing on the Revenue Act of 1934. This Act permitted fiscal year taxpayers to file under one Tax Act by deferring tax changes until the start of the new fiscal year [p. 32]. Johns stressed the need for informative statements and called for serious consideration to be given to the NBY concept, in that fewer estimates will be needed to prepare the financial statements [pp. 34-5]. The NBY concept also applied to non-profit organizations [p. 38]. Johns made much of the active cooperation given to the NBY Council by the Treasury Department [p. 41]. He closed his presentation with a plea to each accountant.

> This is a program in which each of us, whether employer or employee, whether associated with a large or small organization, can take part, and every calendar year client large or small, is a prospective convert to an NBY. This is to a great extent a matter of education; we should not hesitate, therefore, to advocate the NBY though the fruits of our efforts may not be apparent until several years hence [p. 51].

It is interesting to note that Zimmerman considered Ralph S. Johns so important a contributor to the accounting literature, that he was chosen for the first volume of the *Written Contributions of Selected Accounting Practitioners* series.[4] "His career as a successful accounting practitioner also generated a written record of his intellectual creativity" [Zimmerman, preface].

The importance of the NBY is again illustrated in the June 1939 issue of *The Journal of Accountancy*, "Testimony of Expert Witnesses at S.E.C. Hearings," which discussed the McKesson & Robbins matter. C. Oliver Wellington felt that the adoption of the

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[4]Volumes on the writings of Paul Grady and Andrew Barr followed in that series.

NBY would lead to a very significant improvement in auditing practices [p. 357]. In a related S.E.C. matter, its Chief Accountant, William W. Werntz, endorsed the NBY in Accounting Series Release No. 17 in 1940. Werntz wrote:

> . . . . . Among the more important advantages there may be mentioned the probability of obtaining more complete and reliable financial statements since at the close of the natural business year incomplete transactions, and such items as inventories, would ordinarily be at a minimum . . . [S.E.C., p. 418].

FINANCIAL/MANAGERIAL ACCOUNTING ISSUES FROM 1940

The first 20 years of this period marked the end of the proactive institutional support of the NBY. The 1940 mid-year report of the Special Committee indicated that over 180,000 pieces of NBY literature had been distributed to companies across the country. However, the Special Committee's 1940 Annual report revealed that Dun & Bradstreet had found publishing the NBY bulletins too costly and would cease publication of them [pp. 249-251]. While 1941 saw the resumption of the NBY bulletins by Dun & Bradstreet, this resumption was short lived as a result of World War II [p. 131] and, apparently, the NBY Council ended in about 1947.[5] In an effort to have broad representation on the Committee on NBY, there was a member from each of the 48 states on it during the 1943-44 fiscal year of the AIA [pp. 11-2]. This grass roots effort illustrated the importance the AIA placed on the NBY. The representatives from each state membership policy ceased in 1947 [p. 10]. A list of suggested fiscal closing dates was given in December 1955 by the Committee on NBY [p. 59]. Harry F. Reiss, Jr., Chairman of the Committee on NBY, cited 1958 figures of the IRS which showed that over the preceding 30 years the number of corporations filing on a fiscal year basis increased from 13% to

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[5]Dun & Bradstreet published 29 Bulletins on the NBY for various industries. Its last one was in January 1943 which was the last listing for the NBY Council in *The Accountants' Index*. The writers have contacted the AICPA, the National Association of Accountants (NAA), the National Association of Credit Management (NACM), Dun & Bradstreet, the American Management Association (AMA) and the *Wall Street Journal* for further information on the NBY Council. The AICPA, NAA, NACM, AMA, and the *Wall Street Journal* responded that there were no files remaining on the NBY Council in their records. The AMA sent one "mimeographed" publication of the NBY Council from 1946.

47% [p. 25]. By the 1962-63 AICPA Annual Report, the Committee on NBY was no longer listed as an AICPA Committee. (Please refer to footnote 2.)

Mitchell, in 1940, urged that a careful analysis be done before adopting an NBY [p. 361]. Cady, in 1941, urged purchasing agents to become advocates for the NBY. For example, he wrote, "At the natural closing period, incomplete transactions within the company may be lowest. The purchasing agent therefore has to do the least guessing about the true immediate position of inventory value" [p. 67]. He provided a list of benefits:

1. The time of least demand for finished goods.
2. The time of least availability of raw materials.
3. The season least suitable for processing.
4. The least availability of seasonal labor.
5. The time when style changes have the greatest influence on markets.
6. The most convenient time for plant overhaul and annual vacations.
7. The time when the most skilled employees will be available for taking inventory.
8. The time when accounting figures will have the greatest usefulness to management.
9. The time when inventory evaluation will be most accurate, and least dependent on estimate or guesswork (p. 68).

Three editorials from the 1940's were reviewed. An editorial in *The Journal of Accountancy* in January 1941 stated "The greatest friend of the unnecessary calendar-year closing is the apathetic auditor" [p. 3]. Another reason for the NBY was that World War II called for more efficient use of time for both the auditors and their clients [AIA, 1942, p. 390]. Concern about a clear statement of the business reasons for choosing a fiscal year was stressed in 1943 and led to one more call for the NBY [AIA, pp. 391-2]. A letter in the Technical and Professional Notes section of *The Journal of Accountancy* used the accountants' exhaustion from Christmas activity as being a reason for avoiding calendar year closings [Rosenthal, 1949, p. 237].

Mezner, in 1950, called for the public accountant and the banker to educate the businessman on the NBY [p. 397]. Gabrielson related in 1950 the success his CPA firm had in flattening out its workload using the NBY concept [p. 35]. Cox made two interesting observations in his 1952 article in the *N.A.C.A. Bulletin:*

1. Many companies are so diversified that it is impossible

to determine a natural business year common to all divisions of the business.

2. Meeting the requirements of the various tax authorities is perhaps one of the most important factors in determining when the books are to be closed [p. 616].

O'Malley wrote a light piece on a dialogue between nine different parties about the NBY [1957, pp. 13-8].

The end of the proactive stage of the NBY movement occurred about 1960. The authors conclude that much was accomplished by the first 45 years of literature on the financial/managerial accounting benefits of the NBY. Much of this was accomplished by the institutional support given by the AIA Committee on NBY and by the NBY Council.

There were two more financial/managerial items reviewed. Chatfield's 1964 piece on "The Natural Business Year and Accounting Theory" is a classical scholarly endeavor. He theorized "A good accounting time period should not be static or arbitrarily chosen; it ought to be determined by the investment and production processes themselves, based on the actual circulation of money and goods within the company" [p. 13]. He attempted to tie together the operating cycle with the NBY. The NBY "incorporates cyclical *flexibility* while preserving calendar *regularity*" [p. 17]. Chatfield then presented a series of financial statements to illustrate his points [pp. 21-3]. If progress is to be made in rejuvenating the NBY concept, Chatfield's work is an excellent theoretical base.

Fogg and Ovadia, in 1982, conducted an empirical study on the NBY by using the COMPUSTAT Industrial Tapes. Their research approach was a "more modern look" at the NBY topic with limited findings. The major finding of the study was that "... most companies select a year-end date that results in the highest amount of sales showing up in the last quarter. This conclusion was consistent across December and non-December year-end firms" [p. 23]. Although individually-owned corporations and partnerships are rarely found on the COMPUSTAT Industrial Tapes, the type of analysis may be quite useful to those concerned about the NBY.

THE IMPACT OF TAXES FROM 1930

Preinreich argued in 1933 that a company which switches to a NBY will enjoy a one-time lump-sum tax savings. He raised the question of whether switching to a NBY is ethical and proper for

the purpose of saving taxes. He concluded that a company switching to a NBY should be treated no differently by the IRS than a company which adopts a NBY upon formation [p. 318]. The Undistributed Profits Tax of the mid-1930's was given by Donaldson as a reason to adopt the NBY [p. 285].

Klanderman, in 1939, pointed out that the failure of companies to understand properly the impact on the NBY of the changes in the 1939 Code can result in increased tax liabilities. He notes that while the 1939 Act now allowed all taxpayers to carryforward net operating losses from a trade or business for two years, a corporation which switches to a NBY during the carryforward period would be required to count the short year tax return as one year [p. 389]. Therefore, companies which have large losses should avoid switching to an NBY since the company might not be able to fully utilize the tax loss carryforward. Hence, a switch to a NBY could dramatically increase a company's tax liability. While this illustrates only one of the many tax issues that Klanderman addressed, it indicates that the emphasis on the tax consequences was of paramount concern.

Holzman in 1942 focused on the tax aspects of switching to a NBY. He refers to a change in philosophy under the Revenue Act of 1940 toward changes in accounting year-ends [p. 213]. Prior to the 1940 Act, the IRS required that taxpayers apply for a change in fiscal years *only* after they closed their books for the "new" year end. The 1940 Tax Act now required IRS approval for a change in fiscal year. This subtle change is the first example the authors found that the IRS might question a company's request to change year-ends.

The IRS appeared to become increasingly concerned that the overriding reason corporations were changing to a NBY was to minimize taxes. In *The Journal of Accountancy*'s February 1952 Tax Clinic, readers were warned of the difficulty that government-regulated industries were having in selecting a year end other than a calendar year. ["Natural Business Year . . . ," p. 214]. Kuhn, in 1953, pointed out that the IRS would not authorize a company to change to a different year-end solely for the convenience of the firm or the accountant [p. 414].

Tax reasons, not business reasons, appeared to be the principal concern of entities. This became the reason exclusively mentioned in a number of articles in the 1960's ["Change of Taxable Year . . . "; "Timely Election . . . "; and "Change of Accounting Period . . . "]. There seemed to be more of a reactive attitude toward IRS pronouncements than the previous proactive behavior of get-

ting entities to adopt the NBY. For instance, a short (three paragraph) item in the Tax Clinic section of *The Journal of Accountancy* discussed an accounting firm's handling of an appeal to the IRS denial of permission to change year ends ["Change of Accounting Period . . . ," p. 66].

The articles reviewed from the 1970's [Schwab, 1970; "Opportunities and Problems," 1973; Hasselback, 1975; "Tax Motives . . . ," 1976; and McMahon and Arias, 1977] continued the trend of 1960's articles with tax avoidance or tax minimization as the overriding objective for choosing the NBY. In an effort to moderate entities from enjoying tax benefits without valid business reasons, the IRS in the late 1960's and early 1970's issued a series of Revenue Procedures and Rulings (i.e., Revenue Procedure 66-6, 1966-1; 74-33, 1974-2; and Revenue Ruling 76-43, 1976-6) which carefully delineated the facts and circumstances under which a taxpayer could change taxable years. The Revenue Rulings now required that the taxpayer provide a substantial business purpose in order to change the year end. While "substantial business purpose" was not defined, the IRS indicated that the business reasons for adopting a NBY would constitute a substantial business purpose.

Since greater manipulation of taxes can be accomplished by "flow through" entities (i.e., partnership and S corporations), the primary emphasis of the Revenue Procedures and Revenue Rulings was in this area. However, as the authors' research indicates, as soon as the IRS issued a pronouncement, editors of accounting journals were publishing "tax planning" techniques to avoid the pronouncement.

In the 1980's, the IRS continued its efforts to reduce the number of taxpayers that could defer income as a result of their interest in "flow through" entities with a different taxable year. Revenue Procedure 83-25, 1983-1, required S corporations, even those which had a substantial business purpose (i.e., NBY) to meet mathematical tests in order to have a taxable year other than December 31. All of the articles reviewed from the mid-1980's represent updates and explanations of the IRS's attempt to have all "flow through" entities on a calendar year ["IRS Indicates How . . . ," 1983; "S Corporations . . . ," 1984; and Robin, 1985].

With the adoption of the TRA86 also came the end of the NBY for individuals and "flow through" entities. A brief history of TRA86 should shed some light on the downfall of the NBY. The origin of TRA86 can be directly traced to Secretary of the Treasury Donald Regan's 1984 proposal entitled *Tax Reform for Fairness,*

Simplicity and Economic Growth (commonly referred to as *Treasury I*). In the Spring of 1985, *Treasury II*, a watered down version of *Treasury I*, was then submitted to Congress and became the foundation for TRA86. As a result of the long political process, the TRA86 does not present itself as being simple or equitable but only revenue neutral. It is in this neutrality, the authors believe that the NBY saw its demise.

Section 806 of TRA86 requires that all S corporations, partnerships, and personal service corporations use a calendar year. This section was passed without debate or hearings ["Fiscal Year Legislation . . . ," 1987, p. 84]. A review of the 1986 legislation reveals that this legislation was designed to raise $725 million dollars over 5 years [U.S. Senate, 1986, p. 167].

Less than six months after TRA86 became law, legislation was introduced and subsequently passed in the Omnibus Budget Reconciliation Act of 1987 which repealed the requirement that partnerships, S corporations and personal service corporations must keep their books and records on a calendar year ["Fiscal Year Legislation . . . ," 1987, p. 84]. This bipartisan legislation allowed individuals and "flow through" entities to maintain a fiscal year, provided they prepay the taxes which result from not having a calendar year. The AICPA utilized its July, 1987, *CPA Letter* to relay an action alert on this issue.

> The Institute encourages all members to contact their senators and congressmen to ask them to cosponsor and vote for the legislation. Letters should explain the serious problems that the current law is creating for small business owners and for CPA firms, . . . [Ibid.].

It is important to note that there continues to be interest in the NBY in the accounting literature. There were reported 78 items on the NBY in *The Accountants' Index: 1988* [pp. 1427-1429]. All were taxation items.

CONCLUSION

Where does the NBY stand today? Ironically, it is back to where it was 70 years ago. While Congress and the Treasury were successful in stripping away the tax advantages associated with having a fiscal year for proprietorships, partnerships and "flow through" entities, the financial/managerial advantages still remain. The advantages of adopting the NBY, while not as instantaneous or permanent as the tax deferral, could, over time, result in a substantial savings to businesses in terms of efficiency and pro-

ductivity. Therefore, accountants should still advocate the need for corporations, partnerships, S corporations, and personal service corporations to adopt a business year that is suitable for them.

The authors have an uneasy feeling that accountants may have contributed significantly to an overall lack of awareness of the NBY. For instance, there is almost a complete absence of financial/managerial items about the NBY during the last 20 years. The composition of NBY items from 1969 through 1988 consists of 336 taxation items and only 21 financial/managerial publications. This significant change in emphasis may have caused the NBY changes in TRA86. The authors believe that this lack of balance can lead legislators and government administrators to take a more cynical view toward accountants and accounting issues than they would if a more balanced approach between financial/managerial accounting and taxation accounting was taken.

Five of the early NBY contributors are members of The Accounting Hall of Fame [Burns and Coffman]. Montgomery, Sells, Scovill, Littleton, and Werntz contributed significantly to the NBY movement. These contributors and others, like Ralph S. Johns, gave the NBY a strong theoretical beginning. The authors believe that a continued renewal of this rich literature would have kept the NBY concept a vital financial/managerial accounting consideration for entities. This lack of continued vitality might also have been a cause for the NBY changes in TRA86. The authors once again want to highlight the excellent theoretical work on the NBY done by Chatfield. Also, the NBY deserves decent coverage in intermediate and financial accounting texts.

Another example of this overall lack of awareness of the NBY is the relatively complete switch from a proactive to a reactive stance taken by the AICPA, by accountants and by accounting academics. The authors are of the opinion that the AICPA and its Committee on NBY grew too content when about one-half of U.S. corporations were filing on a fiscal year basis by 1958, as reported by Reiss. Perhaps this might explain the eventual dropping of the Committee, which with the NBY Council had achieved a great change in accounting. The authors believe that "proactive" will once again become a word that describes accountants' behavior towards the NBY concept, as one can observe in the AICPA lobbying for the Omnibus Budget Reconciliation Act of 1987. This may mean the reconstitution of both the AICPA Committee on NBY and the NBY Council. Since the authors were not able to find any organizations with documentation on the internal workings of either the AIA Committee on NBY or the NBY Council, they urge

that an oral history effort be made while members of the Committee and the Council may still be available.

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H. Peter Holzer
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN
and
Wade Rogers
PRICE WATERHOUSE, CHICAGO

THE ORIGINS AND DEVELOPMENTS OF FRENCH COSTING SYSTEMS (AS REFLECTED IN PUBLISHED LITERATURE)

Abstract: This paper reviews the evolution of French cost accounting from the mid-1500's to the present. As might be expected, the development of costing techniques accelerated in the late nineteenth century Modern French cost accounting probably began with Maurice Lucas' book, *Le Prix de Revient*, and the publications of a special government commission in 1928. The commission recommended detailed costing procedures which are relevant today and are reflected in the requirements of the latest French uniform chart of accounts. The chart provides for the incorporation of imputed costs through a system of contra accounts. Today's cost and management accounting concepts and practices in France seem quite comparable to those in other industrialized countries.

The theoretical evolution of most bodies of knowledge knows no national or cultural boundaries. Our expertise in life sciences, for example, has grown based on the aggregate contributions of worldwide research and study. The theories and practices behind the science of accounting, however, have grown up within the cultural contexts, relating to the particular cultural group which they are serving. Regardless of the efforts toward worldwide harmonization of accounting standards and practices which are currently underway, there remains a great diversity in underlying theory.

One of the more important players in worldwide accounting development has been France. From the Middle Ages onwards, the French have made great contributions to the field, often parallel to, often divergent from the Anglo-American traditions or those of its continental neighbors. Accordingly, the development of French accounting theory is worth investigation.

This paper will consider the French contribution to cost ac-

counting and particularly, the evolution of how the French have worked with *le prix de revient*, roughly translated as "cost of goods sold." The primary emphasis will be on historical development; however, there will also be discussion of how the current French uniform accounting plans incorporate these theories. Before going back in history, it would be helpful to first clarify this nebulous term, *le prix de revient*.

LE PRIX DE REVIENT

This term has been agonized over for two hundred years by theoreticians and practitioners alike. Literally translated, it means "the price at which an object returns," which indicates the final cost to the firm of manufacturing or purchasing the product. This is not to be confused with the product's ultimate selling price (in French, *le prix de vente*). In English, one would use "cost of goods sold," which is a narrower term as it relates only to goods which have been sold. The French term relates to goods at any point in the purchasing or selling process.

The actual meaning of this term, let alone the method of determining its value, has been an enigma for the Frenchman. Eugene Léautey, a leading accounting author around the turn of the century lamented that this accounting term is "the secret, the Ark of the Covenant, the mysterious 'x'" [Léautey, 1897, p. xi]. While probably lacking the metaphor of Léautey, the following historical exposition may afford a better understanding of this otherwise bewildering term.

HISTORICAL EVOLUTION: BEGINNINGS THROUGH THE 19TH CENTURY

While cost accounting as a body of theory did not truly develop until the 19th century, people have been "keeping the books" for hundreds of years. The earliest traces of actual cost or industrial accounting can be seen as far back as the 14th century. The Italians, particularly Luca Pacioli and his fellow Venetians, pioneered these practices; however, with the spread of European trade, Italian accounting techniques were diffused throughout Europe, the Low Countries being a principal destination.

Florence Edler's studies on the accounts of Christopher Plantin, a Frenchman operating a printing concern in Flemish Antwerp using an Italian bookkeeper, illustrate this interplay be-

tween cultural sources. Established in the mid-1500's, Plantin employed an Italian bookkeeper between the years 1563-7. During this period, the journal and ledger of the business were kept in Italian, following the double-entry Venetian form. Plantin himself, however, kept his own subsidiary books in French, following the single-entry form. Aside from the ledger and journal, he kept separate books for wages paid, sales, plant assets and accounts with bookbinders. For each separate book edition printed, he kept a separate record of all direct costs (depreciation and supplies used were not included). Additionally, in his ledger, one could find accounts for raw materials, work in process and finished goods [Edler, 1937, pp. 229-231]. Plantin's accounts were obviously an early example of a cost accounting system and, specifically, attempts at calculating a product cost or *prix de revient*.

Up through the 19th century, however, that was about the extent of cost accounting — individual business owners with their individual, self-devised systems. Cost theory was not yet a discipline. With the onslaught of industrialization and increased capital investment in production processes, cost accounting suddenly became quite relevant. Accountants worked feverishly, but writing about their work was not one of their major activities [Garner, 1954, p. 29]. Although the first writer to go into detail in industrial accounting was an Englishman, one of the earliest was a Frenchman, Anselme Payen, who published in 1817, *Essai sur la tenue des Livres d'une Manufacturie*.

Payen's cost system is best characterized by his use of two sets of records: a journal and ledger "in money" for transactions with third parties and a journal and ledger "in kind." This latter set of records accounted for raw materials, labor and other inputs which had gone into products to be sold as well as construction of new capital assets. With these records, the system reconciled the total cost of goods produced with the total expenses for the period.

Payen made great strides in the treatment of manufacturing overhead. He applied to product cost (*prix de revient*) such items as wear on tools, rent, depreciation and interest. Depreciation was simply charged to manufacturing costs by valuing fixed assets at an amount lower than at the beginning of the period (while no systematic depreciation method was proposed, this does illustrate that Payen integrated double-entry bookkeeping into the manufacturing accounts). Another interesting cost applied to overhead was interest, which was that amount paid to creditors for agreeing to wait for payment until a sale was made [Garner, 1954, p. 43]. Once total overhead was computed, it was applied to each prod-

uct; however, Payen provided us with no basis of allocating the overhead.

Payen made substantial contributions in other areas as well. First, he was able to illustrate the transfer of product costs from one segment of the production cycle to another (from workshop to warehouse, for example). Second, he explained how to compute unit product cost, as well as how to allocate (on a very crude basis) production costs between products. Third, he treated waste and spoilage as an increase in the cost of inventory, rather than as a production cost per se. Finally, he approached the eventual linkage between cost and financial accounting records; in fact, a single entry between the ledger in kind and the ledger in money would have accomplished this [Garner, 1954, p. 50].

Not long after Payen's work, L.F.G. de Cazaux published a text on farm accounting which paralleled somewhat Payen's ideas, but also advanced some of his own. Cazaux, like Payen, illustrated the internal movement of products, but improved on Payen in his ability to assign values and use double-entry bookkeeping to account for each asset type and required an account for each factor of production in order to record gain or loss on each transformation [Garner, 1954, p. 52].

Cazaux was a bit more radical than his contemporaries in his desire to isolate the true profit, not just some conservative underestimation [Edwards, 1937, p. 7]. Examples of this are increasing a fallow field's value by five percent, or adding five percent imputed interest cost for any asset requiring several years to attain full production potential. He also used straight line depreciation rates for each asset, allocating it to each production process deriving benefit from the asset. Unfortunately, he, like Payen, left no clue to a basis for allocating overhead.

Another cost scholar of the early nineteenth century was Godard, who published in 1827, *Traité General et Sommaire de la Comptabilité Commercial*. Godard was a very early proponent of the establishment of cost analyses, such as classifications based on departments and processes as well as statistical cost summaries. He also gave a more thorough explanation as to how costs would flow through the production process, building upon each other. He did have some new ideas relating to raw materials, in that the account should be debited at actual purchase cost but credited at some average cost, given the constant fluctuation of materials prices. Additionally, similar to Cazaux, Godard employed a concept of opportunity cost, an example of his being the foregone yield of a field which has been planted as a vineyard (a vineyard

requires around four years to become productive) [Edwards, 1937, p. 13].

In spite of the fact that Godard never provided a workable method of pricing the final inventory, he was very diligent in isolating the actual costs of that inventory (*prix de revient*). He did recognize that his costing method would portray a "faithful image of the progress of manufacture" and that the total cost of the product as shown in the last stage of work in process would be the factory cost of goods sold for the period [Garner, 1954, p. 53].

While all of the preceding authors alluded to some sort of intermediate manufacturing account, Maurice Jeannin was the first to actually identify, in 1829, a specific work in process account (*d'objets en fabrication*). His modern treatment included raw materials used, direct labor and overhead on the debit side of the account. On the credit side were completed goods to go to finished goods inventory and losses and waste, to go directly to the profit and loss statement. Of course, all of these values would be "at cost." The problem remains, however: what is cost?

Several other 19th century authors also deserve mention for their contributions to the *prix de revient* dilemma. F. N. Simon was the first to recommend that costs such as rent, administrative salaries and taxes be allocated as overhead among the production processes instead of directly to the profit and loss statement. To do so, he employed an arbitrary allocation scheme — 50% to the factory and 50% to the forges, for example. Adolphe Guilbault provided detailed discussion of cost behavior (fixed versus variable) as a tool of evaluation of results. He also advocated that commercial and selling expenses not be allocated to product cost [Garner, 1954, p. 62]. Finally, M. E. Claperon discussed a monthly overhead application, using one twelfth of the estimated total annual cost.

By the end of the 19th century, there was quite an assortment of cost accounting literature in the French language, the trend being towards texts tailored to specific industries such as agriculture, foundries, etc. According to Garner, the French contribution to cost accounting was on the decline by 1890, with the English and the Americans take the lead, especially in the area of overhead application and standard costing. However, the Anglo-American scholars virtually ignored the French traditions, an unfortunate fact since the French and their continental neighbors had, among other things, a superior mastery

of accommodating double entry bookkeeping to cost accounting [Garner, 1954, pp. 62-3].

FROM THE TURN OF THE CENTURY THROUGH 1928

Probably one of the most influential and widely-published accounting authors of the late nineteenth and early twentieth centuries was Eugene Léautey. One of his earlier works, co-written with Adolphe Guilbault, *La Science des Comptes mise à la portée de tous (The Science of Accounts Within the Reach of All)*, gives some very general, but important advice regarding industrial accounting. In it, Léautey and Guilbault criticize the popular practice of the time of opening a single production account and waiting until the end of the year to update it to determine production results. They stress that there must be a constant determination of inventory cost (*prix de revient*) and that waiting for actual figures at year-end or making arbitrary estimations will plunge the firm into a "dangerous obscurity" [Léautey and Guilbault, undated, p. ix].

In his 1881 work, *Questions Actuelles de Comptabilité*, Léautey explains the importance of overhead as a component of product cost and that too many practitioners are simply marking up purchase price or production cost (excluding overhead) by an arbitrary percentage which supposedly approximates overhead [Léautey, 1881, p. 151]. He goes on by delineating between fixed and variable overhead and how manipulating the two can have an effect on fixing selling price and maximizing profit.

Also in his 1881 book, Léautey points out the difference between product cost (*prix de revient*) in a manufacturing versus a merchandising firm. Of course, the former receives the bulk of his attention.

In 1897, Léautey devoted an entire book to inventory, *Traité des Inventaires et des Bilans*. According to Léautey in this work, "every object enters into inventory at a determined cost and must leave it at this same cost" and, following his encouragement of a perpetual inventory system, "the balance (in inventory) must always indicate that existing at its cost (*prix de revient*)" [Léautey, 1897, p. 168]. He also outlines five elements of a product's cost: raw materials; labor; directly attributable expenses; factory and administrative overhead; and waste and spoilage [Léautey, 1897, p. 169]. Here, it seems that cost theory regarding product costing is rapidly approaching modernity. Of course, a basis of allocation is still lacking.

In the preface to his 1897 book, Léautey makes some inter-

esting observations regarding the determination of the *prix de revient*. Here, he introduces a source of conflict between accountants and engineers. To determine this value effectively, he reasons, the accountant must put on a technician's hat, which to the firm's engineers and, in many cases, management, is not a desirable situation. He notes that the overriding practice at the time was to keep the actual product cost a mystery to the bulk of factory personnel, including the accountants, out of fear or "indiscretions of the crew" [Léautey, 1897, pp. xi-xii]. As a result, most companies preferred an arithmetic estimation of costs.

Léautey continued writing well into the twentieth century, often with the assistance of Adolphe Guilbault. In his works, he continued to emphasize the importance of accurate and constant determination of product cost, or *prix de revient*.

Up to the early 1900's, there was not yet much discussion concerning the application of production costs, especially overhead to particular products. Alfred and Henri Croizé's 1907 book, *De l'Inventaire Commercial*, was one of the first to treat this problem in any great detail. First, they broke down overhead into two separate components, selling overhead and manufacturing overhead. The first type is to be treated as a period expense related to the selling function and expensed as incurred. The second type, though, would include those expenses related to the production function and should be allocated as part of the product costs. The Croizés' use an allocation basis which is very familiar to today's student of managerial accounting: direct labor hours.

These authors felt that direct labor hours were the most reliable basis of overhead allocation in that they represented a stable cost of the firm, especially relative to fluctuating materials costs. Also, labor is very often the primary cost of a firm, making it a good indicator of production activity. As an example of their allocation method, assume a company had 400,000FF direct labor cost and 100,000FF in manufacturing overhead. This makes overhead 25% of direct labor cost. Applying this, then, in a separate division of the company, if direct labor costs were 50,000FF, then overhead would be applied to that division at 12,500FF [Croizé and Croizé, 1907, p. 98].

Consistent with their dichotomization of overhead, the Croizés' insist that selling expenses related to the product should not be included in its inventoried cost, a familiar idea to today's practice. They do note that it is important to set selling price of the

product at a sufficient level to cover these expenses [Croizé and Croizé, 1907, p. 92].

One of the most comprehensive texts obtained from this period was *Comptabilité Industrielle*, by Louis Daubresse. While undated, it is known that this was written sometime between 1901 and 1919. It is particularly useful because it treats industrial accounting as an entire discipline, not just a single issue or related to a specific industry.

Daubresse's system is pervaded by a single account entitled "Production," which seems to be parallel to a more familiar work in process account. Under this system, the debits to this account are to synthesize and explain all of the activity of the enterprise. Daubresse lists five possible debits to this account (there is only one credit, to finished goods or stores): raw materials used, salaries, depreciation, maintenance and repairs, and general factory overhead [Daubresse, 1908, p. 7]. He then discusses each of these categories in turn.

Daubresse's consideration of raw materials places direct and indirect materials in the same debit to the production account. In addition, the monthly debit is for the average cost of the materials used. If a physical inventory is conducted on materials, then any differences between recorded inventory and actual inventory should be "plugged" to the production account as a product cost [Daubresse, pp. 13-14].

Depreciation as a product cost is not quite so simple. Daubresse recommends a straight line method, using a salvage value of one franc. He also advocates a shortened useful life, since technological progress is probably occurring more rapidly than wear and tear [Daubresse, p. 11].

Arbitrary estimation is the norm for his maintenance and repairs debit to the production account. The recommended method here considers these costs as wildly fluctuating from month to month; therefore, some smoothing of these costs is necessary. Daubresse makes an estimation of the total cost for the year, divides this by twelve and takes that amount as the monthly repairs and maintenance cost. If there is any difference at year-end between actual and estimated, the production account should be adjusted accordingly [Daubresse, pp. 15-16].

Finally, there is a required debit for overhead. First, the author distinguishes between fixed and variable overhead, but then becomes rather vague by noting that since maintenance and repairs are covered separately, there is not much need to consider variable overhead any further [Daubresse, p. 18]. Again, he pro-

posed using the one-twelfth estimation method as he did with repairs and maintenance or an arbitrary basis such as direct labor hours [Daubresse, p. 19].

While Daubresse contributes very little to the allocation of cost between production processes, he does provide extensive guidance in setting up a costing system. He describes the requirements of a process passing through several intermediate stages, industries with several different product lines and those with different operating divisions. His pervasive recommendation is that the firm be diligent in assigning cost proportionately to each of these stages, products or divisions.

To truly view the state of the art in French product costing around the mid-1920's, Maurice Lucas' short book, *Le Prix de Revient*, would be an excellent guide. The first page of the book presents a complex formula for calculating this figure (reproduced in English in Table 1). In this formula, Lucas breaks product cost down into the successive costs which build upon each other to finally produce the final cost of general production (*prix de revient final d'exploitation génerale*). From this amount, he continues through to a determination of the selling price of the particular product [Lucas, 1926, p. 36].

Again, the primary concern of the author is the adaptation of a firm's accounting system to these cost calculations as a divisional performance evaluation tool. Unfortunately, he devotes most of his discussion to the components of all of the production costs, but very little to an allocation of these costs to particular products or processes.

Two years after Lucas, L. Duboc published a description of the overhead components of product costs. While nothing very original was added, other than detailed explanation of each component such as rent, managers' salaries and cleaning supplies, he did discuss an interesting addition. Duboc, like some of his contemporaries felt that an important part of overhead costs was the opportunity of having working capital tied up in inventory. Accordingly, he charged a 5% rate of interest on inventory to variable overhead costs [Duboc, 1928, p. 16].

POST-1928 COSTING METHODS

By this time, there was great opposition in the French accounting profession to overhead application using some arbitrary allocation base such as materials used or direct labor hours. As a result of this opposition, the C.E.G.O.S. (*Commis-*

Table 1

Lucas' step-by step determination of product cost (from purchase of materials to sale of final product):

Nominal purchase price of material to product
-Purchase discounts or allowances
+Markups or billed expenses
=Cost at site of delivery
+Costs of preparation
=Purchase cost on departing mode of transport
+Shipping Costs
=Purchase cost at arrival point
+Receiving costs
=Purchase cost, stocked inventory
+Increases or decreases in value
=Average cost, existing inventory
+Storage costs
=Cost at entry into fabrication
+Fabrication costs, 1st phase
=Cost from 1st phase workshop
+Fabrication costs, 2nd phase
=Cost from 2nd phase workshop
+Fabrication costs, nth phase
=Final fabrication cost
+Costs of a group of workshops
=Final production cost
+Factory overhead
=Final cost of technical operations
+Administrative overhead
=Final cost of general operations
+Commercial overhead
=Net selling cost
+Financial overhead
+Net profit
=Net selling price
+Sales discounts or allowances
=Nominal selling price

(From Maurice Lucas' *Le Prix de Revient*, 1926, p. 36)

sion Génerale d'Organisation Scientifique du Travail), a government agency involved with research in industrial management, formed an ad-hoc committee in 1927, under the direction of Lieutenant-Colonel Rimailho, charged with investigating the problem. A year later, the committee published a pamphlet describing their results and recommended method, entitled the homogeneous sections method (*la méthode des sections*). This method has become the accepted method in France for inventory valuation after being accepted by the Accounting Normalization Commission and later incorporated into the Uniform Accounting Plans of 1945 through the present.

The committee's report began by defining three types of costs, or *prix de revient*. The first is the accounting cost (determined *a posteriori*), the second is the rational imputation cost (which normalizes the imputation of fixed costs) and the third is the estimated cost (used primarily for billing purposes). For each of these costs, the report directs the user to net the costs at each stage of the production process: purchases of raw materials and their reception at location of delivery; storage of raw materials inventory; the product's transformation in the factory; its storage on the sales floor; and finally, the required activities of the company's commercial and administrative services [Lauzel, 1971, pp. 43-4).

One of the areas in which this method truly made progress is its linkage with the financial accounting system. To accomplish this, the expenses of the entity are recorded for financial purposes in a given set of accounts (today's class 6 of the chart of accounts). From there, they flow through to the cost system via a set of *comptes reflechis*, or contra accounts. These accounts are simply transfer accounts, being credited for the exact amounts found on the debit side of the expense accounts. Once "re-debited" into the cost system, they may or may not be applied at the same amount as in the financial system. An example of this would be the use of a different depreciation method for each system. Any differences would be applied to a special account for application differences.

The C.E.G.O.S. report differentiates between two different kinds of costs, the distinction having a bearing on their application into the cost system. The first type is direct costs which can be easily applied to a single product or process. The other, indirect costs, concerns several different products or processes and must be allocated. The method of applying these costs to production was the major work of Rimailho's committee.

The method proposed and accepted was to divide the operations of the firm into "sections." Each section should correspond to an actual division of the company and, ideally, to a specific manager. Not only will this form of responsibility accounting work for costing purposes, but it will also assist in budgeting, control and performance evaluation [Lauzel, 1971, p. 51]. The primary characteristic of a section is its ability to relate its costs to a single "work unit," thus making it a "homogenous" section. With this common work unit in place as a measurement device, the section's costs can be applied to production costs.

Based on these definitions, sections are often designated functionally, such as administrative (including accounting), purchasing, or distribution. Further, a section may be principal, the costs of which would normally be traceable directly to a product or process, or auxiliary, whose costs would have to flow first through a principal section before being applied directly to production. For example, a foreman's salary could be directly applied to a principal section (such as "Product A"), but the costs of the maintenance crew would probably need to be collected into an auxiliary section, to be distributed under a common work unit to a principal section [Lauzel, 1971, p. 52].

The measurement of a section's contribution to a product cost has been described as a work unit. The unit must be the common denominator of that section's effort. For instance, the trucking section may use kilometers, the maintenance section may use direct labor hours or supplies may use volume of materials [Burlaud and Simon, 1981, p. 41]. Additionally, a per unit cost must also be determined. Finally, when applying section costs, all that is required is to multiply unit cost by the number of work units applied to a single product.

A problem which has been encountered with this system is that it does not show the original breakdown of various cost components. If such information is desired, it must be presented on a supplementary schedule [Fortin, 1986, p. 98].

This costing plan has had a profound effect on and has become the accepted procedure for French accounting practice. Burlaud and Simon hypothesized that the French manner of product costing, embracing the idea of a "complete cost" is an attempt to link scientific precision with practical policies. Their opinion is that while the procedure is rooted in the law, it also has gained popular acceptance due to the Cartesian element of the French psyche [Burlaud and Simon, 1981, p. 22]. They even

go on to enumerate some of Descarte's tenets and how the accountant can follow them through the use of this system.

THE UNIFORM ACCOUNTING PLANS

A distinguishing feature of French accounting is the influence of legal requirements on accounting policy. This is highlighted by the Uniform Accounting Plans (*Plans Comptables Généraux*). These plans represent not only financial accounting procedures and accounts, but also those related to a company's cost accounting system. The first plan was instituted in France in 1942, with revised plans being introduced since then.

Probably influenced by the German occupation of France, the plan of 1942 bears a great resemblance to the 1937 German plan. A difference between the two came in the area of cost accounting. While the German plan used pre-established departmental prices, registering discrepancies with real costs in a separate class, the French allocated real costs to the products via the homogenous sections method, discussed earlier. An important part of this costing system, the contra accounts linking the financial and cost systems were also present [Fortin, 1986, p. 98].

After the war, the French went to work on producing their own uniform accounting plan, the result being the 1947 plan. The role of cost accounting in this plan was threefold: the periodic determination of the cost of manufactured or purchased products; a perpetual inventory record; and the isolation of operating results by branch or subdivision. The plan was quite general in nature, leaving application to specific situations up to supplementary industrial plans. The homogeneous sections method remained intact, as it will through the present [Fortin, 1986, pp. 136-7].

With the 1947 plan still in effect, a study group was formed in 1953, the object of which was to investigate possible revisions to the cost portion of the plan, given the huge advances in cost theory during the 1950's. These studies were part of the impetus toward the 1957 uniform accounting plan.

The 1957 plan signaled a trend away from the post-war national accounting pattern towards a more individual manager-oriented cost accounting system. Provisions were added for budgeting and variance analysis, standard costing and fixed/variable cost behavior. The firm was given the choice of using real or standard costs in its cost analyses; however, real costs via the homogenous sections method were required for inventory pricing [Fortin, 1986, pp. 136-7].

The 1957 plan has basically carried over to the more recent plan revisions, with certain modifications. For instance, the 1979 revisions discusses the effects of data processing [Fortin, 1986, p. 465]. All in all, though, there has been a definite movement towards the needs of the individual manager. Nonetheless, the C.E.G.O.S. plan for determining the *prix de revient* remains. In the French terminology of the current "Plan Comptable Géneral" the term "prix" in the concept of "pix de revient" has been replaced by the term "coût". Depending on the level of cost analysis it may include acquisition cost, production cost or all costs of operations, in which case the expression is "coût de revient". The term "prix" is now used only for transactions with outside parties, (e.g., prix d'achat = purchase price, or prix de vente = sales price).

CONCLUSION

The French system of cost accounting as an integrated portion of the uniform accounting plan and its cost allocation methods are well-regarded from within the country as well as from without. According to the 1957 Plan, "the method of allocation which proceeds from a distribution of expenses over similar cost centers is far more satisfactory than that which proceeds to apply a fixed percentage to the cost of direct materials or direct labor" [Most, 1957, p. 596].

Additionally, the Anglo-American author Kenneth Most has praised the system of contra accounts employed by the French. He notes that by crediting cost transfers to contra accounts instead of to expense accounts, there is a full integration of cost and financial data, while at the same time keeping the two systems autonomous and complete. This avoids the problem of "netting" in accounts, giving greater clarity to and respect for budgets and control [Most, 1957, p. 596].

The French have always viewed cost accounting as something clearly distinct from financial accounting. French writers stress that it is *auxiliaire* and *facultative*, that is, something that is in addition to financial accounting, but not obligatory. Throughout the evolution of costing in France, the emphasis has been on the importance of accurate cost numbers for management purposes, such as product profitability evaluation or pricing policies, and not on the needs of the financial accounting system. A clear example of this separation would be the inclusion of non-manufacturing costs in the definition of a global *prix de revient*. Dating

back to the late 1800's there are frequent references to the usefulness of cost numbers in management decision-making.

The major U.S. influence on French accounting dates back to the early years of the Marshall Plan (early 1950's), when a number of leading French accountants studied management accounting in the United States. Thus we notice in the following years an increased emphasis on budgeting and management control. This is reflected in the writers' terminology. Authors using the term *comptabilité analytique* began using the term *comptabilité de gestion* as a broader concept, roughly equivalent to management accounting and *contrôle de gestion*, comparable to the American notion of controllership.

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Marc Nikitin
TOURS, FRANCE

SETTING UP AN INDUSTRIAL ACCOUNTING SYSTEM AT SAINT-GOBAIN (1820 - 1880)

Abstract: In 1820, the *Manufacture Royale des Glaces*, founded in 1665 and also named *Compagnie de Saint-Gobain*, opted for double entry bookkeeping and cost accounting. At that time, both economic (industrial revolution) and juridical (abolition of the privileges and emergence of competition) events explain that change of accounting methods. From 1820 to 1880, the accounting system was progressively improved; most of today's cost accounting problems were discussed by the Board of Directors and in 1880 the accounting system was already very similar to today's full cost method.

Industrial Accounting: a New Information System. Modern accounting was popularized in 1494 when Luca Pacioli published *The Suma*; it was such an outstanding work that most French accounting historians suppose there has been no prominent theoretical discovery since that time. For J. H. Vlaemminck [1956], every improvement since Pacioli's time was only a minor amendment to the master's work. The emergence of cost accounting was never considered as a significant breakthrough in accounting technique.

The industrial revolution brought new accounting systems. These systems have been studied [Johnson, 1972; McKendrick, 1970; Stevelinck, 1976; Stone, 1973; Jones, 1985; Fleischman & Parker, 1990; and Porter, 1980] as well as the text books [Edwards, 1937] of that period. French authors such as Payen, [1817], de Cazaux, [1824], and Godard, [1827] were among the first to propound that accounting systems integrate the factory accounts into the old double entry bookkeeping system. This was quite surpris-

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ing if one remembers that the Industrial Revolution started in France a few decades after England. But several authors [Levy-Leboyer, 1968; Asselain, 1984; and Keyder & O'Brien, 1978] explain that the French economy always kept up with technological progress in Great-Britain. A massive deceleration in the economy occurred between 1790 and 1810; the French industrial production, which was probably equivalent in volume to the English one in 1790, was reduced to a much lower level in 1810. However, a new start occurred after 1810 and the two countries had parallel industrial growths all through the 19th century.

Cost accounting systems may have appeared around the turn of and after the 15th century in Europe [Garner, 1954]. They actually spread to most firms during the industrial revolution in the 19th century; first in England, then in France, then in the USA, and in Germany.

The aim of the present article is to describe the creation and development of such an industrial accounting system at Cie Saint-Gobain. This paper discusses the development of accounting by this very old company (created in 1665) between 1820, when it abandoned single entry bookkeeping, and 1880, when it achieved a full cost system. When examining the archives, this researcher saw no evidence that the textbooks mentioned above were read by anyone at Saint-Gobain.

HISTORICAL BACKGROUND OF SAINT-GOBAIN: THE ROYAL MANUFACTURE AND THE PRIVILEGE

Instead of continuing to buy glass from Venice, which was too much for the finances of the French kingdom, Colbert encouraged the foundation of a *Manufacture Royale des Glaces*, established in Rue Reuilly in Paris. The creation and development of the Company resulted from privileges granted by the monarch to businessmen successively in 1665, 1683, 1688, 1695, 1702, 1757 and 1785. Those privileges made the

> firm a hybrid one, depending both on public and private laws; on the one hand it had a privilege and on the other hand the legal statutes of a limited Company [Pris, 1973, p. 26].

Having a privilege meant industrial, commercial, fiscal, administrative, juridical and financial advantages such as exemption of taxes, free circulation for goods bought and sold, and a prohibition for anyone to sell the same kind of product. Saint-Gobain was therefore protected from possible rivals and all those years of

privilege were turned to good account; the company gathered strength to face competition which was a real concern from 1810 onwards.

The first competitor appeared in 1770 in England, but the glass that this competitor turned out was not of such quality as to be a threat to Saint-Gobain. Further, the company's products were protected in France and potential competitors were punished by law until the abolition of privileges in 1790. The first legal French competitor appeared in 1804;[1] and the second one in 1823.[2]

THE NEED FOR A NEW INFORMATION SYSTEM

The Accounting System Under the Old Regime

In order to understand, analyze and assess the early accounting system, it must be remembered that relatively few of the company records have survived compared with the innumerable documents that must have been created over a period of 155 years. Pris [1973, pp. 290-8 & 856-64] faithfully described the accounting system under the old regime in his Ph.D. thesis, at the end of which he includes copies of most of the documents that have survived.

The company was nearly in a position of monopoly with regards to the production of glass. The customers belonged to the King's court or were local or foreign noble families. Therefore the accumulation of capital was not an essential aim and the market did not seem to be expandable. These are a few elements which give insights about the quality and relevance of the information system required by such a firm.

Very little is known about what the accounting system looked like before 1702; the statutes were only concerned with the accounting documents necessary to ascertain the dividends payable quarterly. They included "Inventory" or "balance sheet of bills and payments" (statutes of 1667, 6th item), or "statement of receipts and payments" (statutes of 1695, 18th and 20th items). An annual inventory had existed since the beginning of the company, but only those after 1774 have been preserved. The annual inventories were calculated in Paris by putting together all the inventories of every establishment of the company. The accountants do not seem to have worried about lacking consistent accounting methods; for example, land and buildings, tools and raw materials, finished

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[1]The Company of Saint-Quirin, with which Saint-Gobain finally merged in 1858, almost thirty years after the first discussions.

[2]Company of Commentry.

goods and cash are shown sometimes together, sometimes separately.

This inventory may be compared to the assets of modern balance sheets. It was accompanied by a cash statement. There were no liabilities since long-term debts had been forbidden by the statutes since 1702. The Company relied only on the funds contributed by its partners or on profits. After 1785, short-term debts were separated from each corresponding item of receipts. It was not until 1820 when the use of double entry bookkeeping showed liabilities as they are shown at the present time. Those liabilities included short-term debts and estimated liabilities so that the net worth (called "capital net") could be calculated. Inventory was never compared to the receipts and payments statement as a means of verifying the inventory. For example, depreciation was calculated at the end of the 18th century in order to have an accurate inventory, but it was never featured clearly in the calculation of profit.

The 18th item of the statutes of Plastrier's Company[3] mentions that profit is the difference between receipts and payments, and that "they were quarterly calculated after the constitution of a 15000£ (*livres tournois*) reserve." This was the only means the Company had of knowing how much could be paid to the owners.

Such a simplified system was entirely in line with the desire to keep this information confidential. According to Sellon, an important Genevese shareholder of the Company, the simplified accounting system allowed any director, ignorant of accounting, to hold the Ledger *sans confidens*, that is without the help of a qualified accountant, so that secrets of the business could be preserved.

The term "capital" was not used. The statutes only say *fonds* or *effets*, which correspond to the inventory value of all the assets of the Company at a fixed date.

The owners' contributions to capital were made either in-kind (Venetian glass from Pocquelin in 1667) or in cash after 1702. They were considered an advance to the company, rewarded at a 10% rate. However, these advances were never refunded so that they can be considered as capital. The number of partners was fewer than ten before 1695. After that date, through inheritances and the selling of ownership interests, the number of part-

[3]The privilege was granted to businessmen; in 1695, Plastrier obtained the royal privilege and the firm could be called either "Plastrier's Company" or "The Royal Glass Factory."

ners increased (about 50 in 1770 and 204 in 1830). Unlike most firms of that period, it was not a family business.

The Turning Period (1791-1820)

The accounting system used in the 18th century achieved two main tasks: it computed the wealth (inventory) and enrichment (receipts and payments) of the partners, and it kept the internal movements of goods and cash under control with a comprehensive system of vouchers.

However, there does not seem to be any reckoning of costs before 1820. The Company waited for over 150 years before calculating a cost amount for its products. If one wants to prove the importance of that turning point, the quotes below from two managers are evidence. In 1793, i.e. during the French Revolution, the Company delivered to each associate an "Instruction to help the interested parties in the Manufacture of glass with the declaration form they had to fill in about their interest in that trade, according to the Compulsory Loan Act of the 24th of August." Such a document[4] had four aims, the most important of which was providing knowledge of the profit of the year 1793. According to the order-in-council, "the benefit was that which went beyond the interests of the funds invested." The interest was easily known (5% of the net worth) thanks to the inventory. But as regards the evaluation of benefits, the calculation seemed quite impossible from the authors' instruction:

> Things do not go with glass as they do with cloth, for which the cost is known even before we put it on the frame. Glass, on the contrary, never preserves its original value. The flaws entail scraps, that is why the benefit of the glass production is a random result and it is impossible to calculate it.

In 1829, the Baron Roederer, a director of the Company of Saint-Quirin, expressed quite an opposite point of view when he described the problems raised by the possible merger of the two competing companies.[5]

> It seems that in this case, everything could be reduced on both sides to the calculation of a square foot of glass.

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[4]Marked C6-2 in the archives of the Company

[5]Marked AA17 - file 2. *"Procès-verbal historique de la session de la Compagnie de Saint-Quirin. 1^{0} Juin/13 Juillet 1829"*

> Everything is included in such a calculation, everything can be summed up to that result; we find in it the effects of the chemical, mechanical, physical process, the advantages of activity and workforce discipline, and finally the effect of every resource, of all sorts of economic means, particularly that of a lower capital producing as much or more. The evaluation of each Company, that is to say its contribution to the association, will result from that cost, or return, combined with the number of squarefoot produced, and with the effective selling price, including of course the quality or the degree of perfection of products.

What happened meanwhile in the economic field? Which factors were strong enough to lead to such a systematic calculation? The conditions of production had slightly evolved in that period, but the main change came from outside the firm. Between 1793 and 1829, the dates of the two preceding quotations, the Company's Privilege disappeared and something new emerged: competition.

The upheavals resulting from the Industrial Revolution seemed to have led to the widespread acceptance of cost calculations as the only efficient means to compare the activities of competing firms. This is particularly true for firms that did not have any competition before 1790. Moreover, one can observe that industrial accounting and cost accounting books appeared in France from 1817 onwards, and can find several authors of that period saying: "I am the very first to find a new approach to the problem."[6]

THE SETTING UP OF THE NEW ACCOUNTING SYSTEM (1820-1834)

The proceedings of the Board of Director's meetings have been preserved; from these it is apparent that a new accounting system began in 1820. However, the actual accounting records from before 1825 have not survived. From the 1825 accounting records, it is clear that there is a new system of reporting which was long in being developed; a Profit and Loss Account was pre-

[6]A. Payen, in the *'preface'* of his book [1817, p. 2] says" 'I was told to write (such a book) because books dealing with factory bookkeeping did not exist'. L. Mézierès, in the 'avertissement' of his book [1842, p. iii et iv] says: 'we do not know any book in which commercial, industrial and factory accounting are dealt together'. L.F.G. de Cazaux [1824] and E. Degranges fils [1842] both say that they wrote their books at industrialists' request, because of the lack of reliable accounting systems adapted to their field of activity.

sented every year and a set of accounts was finally approved by the Board of Directors in October 1832.

From these accounts came a steady stream of information in the form of reports from the chief accountant to the Board of Directors, including sets of unitary costs at every stage of the manufacturing process. Moreover, the directors frequently visited the branches of the Company.[7] Those three elements combined to create a real Decision Support System.

The Manufacturing Process. Before going into the accounting problems, it is worthwhile to describe briefly the operating process for glass. Glass production can best be described as follows:

> from several raw materials (silica, soda and lime) they produced glass by pouring and flattening it in order to give it its plane shape; the glass was then annealed in order to improve its mechanical qualities. After that "hot process", the "cold process" began, to rectify or get rid of the shortcomings of the flattening; it was divided into two stages: abrasion, called *"douci"*, gave the two faces their parallelism and general flatness; then polishing, called *"poli"*, to improve the quality of the surface; after abrasion, the sheet of glass was translucent but not transparent, because it was still slightly grained, and it only turned perfectly transparent at the end of the polishing [Daviet, 1988].

In accounting for the production of glass, the company made a distinction between the costs of pouring, abrasion and polishing. Charges were not classified according to their nature, but to their place in the manufacturing process. During the 18th Century, the Company had four branches: its Headquarters in Paris, a mirror factory in Saint-Gobain (Aisne), another in Chauny (Aisne), and a soda factory in Chauny. The first document available is a Profit and Loss Account (*Compte de revient*) dated from June 30, 1826.[8] This Profit and Loss Account was organized according to the inventory production and corresponds to the period beginning July 1, 1825 and ending June 30, 1826. Details of this account are shown in Table 1.

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[7]There were three branches in the north of France; one of them, the first, was settled at a small village named Saint-Gobain.

[8]Marked AA42-6, page. 6.

Table 1
Profit and Loss Account for Year Ending June 30, 1826

We have sold 257 000 square foot for	F	2 619 802
the benefit was only	F	407 402
less some expenses, written on the profit & loss account	F –	68 365
Manufacturing benefit on glass	F =	339 036
Interest of loans	F +	85 000
Profit on timber	F +	76 000
Various profits on chemical produces, glass-silvering, etc.	F +	143 430
Total profit of the year	F =	643 466

In all likelihood, the 68,365 F are overhead costs of the Paris office (interests, wages, operating expenses; including, perhaps depreciation). The interest revenue is quite important to the 1825-1826 year's operations. Thanks to a very prudent financial policy, the benefits of the preceding century had been used for hoarding up a treasure invested in debt securities and loans (notes receivable).

In the early period of the Company, Saint-Gobain produced soda and various chemical products in Chauny; the aim was an independent supply of raw materials. The exploitation of timber worked towards the same end for self-sufficient supply of fuel. The profits earned from those ancillary activities were 65% of the profits earned from glass.

For the financial year 1827-1828, the *Copy of the report from the chief accountant to the administration* has survived. Particularly noteworthy is the use of a commercial year, from July 1, 1827 to June 30, 1828, rather than reporting on a calendar year or a year ending on a particular day of the week. The Profit and Loss Account is clearly and definitely separate from the inventory. This report includes ten items:

1) The account for manufacturing raw soda
2) The account of the salt works for manufacturing soda salt
3) The account for the use and sale of the soda salt
4) The account for manufacturing the muriatic acid
5) The account for timber
6) The account for manufacturing and selling glass
7) The comparative chart for the costs of abrasion and polishing for all the branches and the chart for loss and waste in the mirror factories.
8) The account for tin sheets
9) The profit and loss account
10) The trial balance

This report represents a typical example of process costing. The following remarks are indicative of the complexity of this accounting system. For each element, the manufacturing cost per unit is determined and the variations compared to the preceding financial year. The components of each cost per unit are subtly analyzed. For example, the item concerning raw soda is analyzed in the company report as follows:

Raw soda cost in 1827	9F50 for 100 d.
it cost in 1828	9F00 for 100 d.
that is an improvement of	0F50

due to 1) a difference in the price of sulfur
2) a difference in the price of salt
3) a difference in the price of coal
4) a decrease of the costs of maintenance and repair

Those advantages are in fact slightly reduced by increases in other expenses, but we produced this year 448 000 d more than the preceding year, consequently the overhead costs for salaries and interests contribute to the cost per unit in a smaller proportion.

The Accounting Process. From the account for manufacturing glass, it is apparent the way that the costs of production were determined for the period. Each branch was involved in the production of only one product, so that costs were first calculated for each branch. The manufacturing cost included all the expenses for raw material, wages, expenses for maintenance and repair, and all the investments concerning the branch, including the construction of buildings. The manufacturing cost determined the "price" at which the branches sold their production to the Headquarters in Paris, which was the only division of the company that could sell to customers. In Paris, a new cost price was calculated including the operating cost, depreciation, and dividends. For example, the cost of abrasion and polishing was said to include three essential elements:

Expenses	58 454
Wear	21 802
Interests	18 002
TOTAL	98 260

"Wear" means depreciation of buildings and machinery, and "interests" are the profit distributions paid to the partners. Since (1) the statutes of 1702 forbade long-term debts and (2) the part-

ners were asked for contribution every time there was a need for cash, then "interests" paid to partners on their capital balances are comparable to today's interest expense.

The Profit and Loss Account first recorded the gross profit of production. Then came the application of overhead costs of Paris and some unusual expenses, such as bad debts or differences in the calculation of costs due to fictitious expenses. It includes also an equivalent of the modern French "Appropriation Accounts," showing the profit distributions paid to partners.

The Financial Statement of June 30, 1828 shows, on the one hand, the current assets (cash, checks to be cashed, investment loans and receivables) and, on the other hand, the short-term debts (to partners, to suppliers, to various debtors, to the branches of the Company). The difference (working capital) is a respectable amount, due to the prudent financial policy:

Current assets (*Actif realisable et disponible*)	2 875 000
Short-term debts (*Passif exigible*)	237 200
Net current assets (*Net de l'actif financier*)	2 637 800

In 1820 when choosing an information system adapted to the requirements of a modern industrial firm, the Manufacture of Glass developed a set of accounts which ultimately were approved for the Company by a vote of the Board of Directors on October 30, 1832. Meanwhile, in 1830, the Company had become a Limited Company with new statutes. According to the historians of the Company, that date marks the irreversible passage of the firm into the industrial era.

This new set of accounts required that the warehouse keepers had to maintain the accounts for raw materials and finished goods, while the branches' cashiers, in addition to maintaining manufacturing accounts and assets accounts, kept a cash book in which expenses (wages and others) and receipts (payments from the Paris Headquarters for the finished goods) were carefully recorded. The Directors of every branch also were required to send an inventory which listed buildings and machinery to Paris. Then, the central accounting office saw to it that the calculation of depreciation was done.

THE NEW INFORMATION SYSTEM COMES TO MATURITY

The new double entry accounting system allowed the calculation of cost amounts. However, bringing to light new information gives rise to new questions about the quality and relevance of this

information. How do produced quantities influence the costs per unit? How can costs, calculated at different times, be compared? What is the best way to distribute the overheads? etc. . . .

After the setting up of the accounting system, a long process of maturation began. This is evident, on the one hand, from the discussions of the Board of Directors and, on the other hand from the differences between the two sets of accounts approved by the Board of Directors in 1832 and 1872. The structure of the Company evolved considerably between 1832 and 1880: two mergers occurred, the first one in 1858 with Saint-Quirin, a glass manufacturer, and the second one in 1872 with Perret-Olivier, whose fields of activity were mining and chemistry. After the second merger, the sales figures for chemistry outstripped the sales of glass and mirrors and during this time the Company had grown to include 16 branches in France and Germany.

DISCUSSIONS ON INDUSTRIAL ACCOUNTING

All the questions dealing with the setting up of a management accounting system were discussed by the Boards of Directors. In most cases, the solutions were only practical ones. There never seemed any intent or desire by the Company to make any theory or any generalization of those practical solutions.

Direct and indirect costs. The distinction between direct and indirect cost was made first in 1829 with regards to labor charges.[9]

> Salaries, of which a comprehensive list is given above, will be separated into two groups:
> 1) Those concerning directly and specially with the manufacturing process.
> 2) Those concerning administration.
>
> At the end of the year, the former will be divided and included in the suitable items of expenses; then the latter will be included in the overheads.

However, direct labor is likely to have included only the wages of workers having a permanent job, and excluded those of the day laborer, which are by their very nature fluctuating. In the soda factory, the majority of workers were day laborers, thus making it difficult to estimate precisely the ratio between direct and indirect labor charges.

Production level and cost per unit. In the previously quoted chief accountant's report concerning the financial year 1827-1828,

[9]Document marked AA 42-5.

there are remarks about the cost per unit of raw soda. The directors were well aware that production level and cost per unit were in inverse ratio:

> . . . this year we produced 448 000 d: more than the preceding year; therefore, the overheads for salaries and interests contribute to the cost per unit proportionately less.

Allocation of overhead. The allocation of overhead costs was discussed during four meetings of the Board of Directors: March 7 and 13, 1832; August 20, 1833; September 4, 1834.[10] The members of the Board discussed the allocation of overheads between glass and chemical products. At the first meeting, on March 7, 1832, it was reported:

> The Administration (of the Company) has decided that the overheads accounts of every branch will be divided in accordance with the production as shown on the books; each product (*produits speciaux*) will be charged with its own direct expenses (*frais speciaux*).

At the meeting the next week (March 13, 1832), the record indicates that overhead cost allocation was again discussed:

> It has been pointed out to the Board of Directors by one of the members that the preceding decree, dividing overhead expenses in accordance with each factory's production stated by its books, could entail serious drawbacks; for example, in a year of very low sales, it we stop the production and only sell glass in stock, we should be obliged to make the chemical products bear all the overhead expenses, which means a considerable increase in their cost prices and gives us a wrong image of them. He (the member of the B. of D.) thinks it much more convenient to divide the overhead expenses in accordance with the fixed capital involved in each one of the two factories, as shown by the general inventory, capital to which we add the required working capital; with such a manner of distribution, each factory would bear its own part of overheads required by the supervision and administration of its capital. In the above-mentioned case of a factory's producing next to nothing, we would have to state a loss for that factory, which is quite normal.

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[10]Document marked 4B5, p 140.

After a long discussion on the advantages and drawbacks of each method (production or capital), it was decided that the decision would be made during the next meeting. On March 16, 1832, the Board opted for the capital method. However, the debate was revived less than a year later when at the August 20, 1833 meeting the chief accountant was instructed to compare Saint-Gobain's and Chauny's respective efficiencies.

> ... we shall probably be told, with good reason, that if cost prices are charged with the mostly arbitrary distribution of overheads, those cost prices are an unreliable means of comparing the economical efficiency of different methods of manufacturing. That is why we wish to propose a third way in which overhead expenses of the Headquarters are not charged to any production. For the last four months, Saint-Gobain has been costed at OF79 per square foot. At Chauny, both raw materials and labor are worked out at OF51 per square foot. If you add the depreciation of the building and the machinery of that factory, the cost rises to OF71, and if we wish to have figures that could be compared to those of Saint-Gobain, repair expenses for the machinery, the cost for slack periods or flawed glass must be added. The records in our accounts are not yet accurate enough and moreover too recent to allow us to give precise figures for these kinds of expenses. But no doubt they will go over OF80; consequently, the question of economical efficiency is settled.

The overhead expenses to be shared included traveling expenses, tokens, salaries of administrators, a hypothetical rent for the Paris building, and operating expenses, but the fate of dividends paid to shareholders was not sealed. It was raised on September 4, 1834 by the chief accountant:

> It has often been said that we should not include dividends in the cost prices: this is a big mistake; a Limited Company must always be considered as a business which, thanks to its repute, can borrow funds for its activity: those funds produce interests, which amount must be deducted from the profit ... if the interests were not included in the cost prices, we could not know the real profit of the soda factory.

The Continuity of accounting methods. The Board of Directors of Saint-Gobain was also concerned about comparability of accounting data over periods of time and under different variation methods. The following quotation may seem somewhat difficult to

understand without complete information on the way stocks of materials were valued. It shows, however, the desire to obtain inventory data that could be compared even if valuation methods had changed.

> The account for timber shows that the Saint-Gobain's factory consumed this year up to F 353 736 worth. However, the figure in the glass manufacturing account is F 466 388. This is why: the administration of the Company took steps to make the price of timber much lower than it had been in the preceding years; so, it would not have been appropriate to give those existing on June 30, 1828 the value they would have had without that decrease. We estimated them in accordance with the proposed current rates, and the difference in prices makes a difference in the accounts of up to F 112 631; it means that the existing timber in the inventory have been estimated at F 112 631 less than their actual cost and the expense must therefore be increased by the same amount. That fictitious increase on fuel expense has an appreciable influence on the manufacturing cost of glass.

How to motivate employees to be efficient. In 1820, both a new accounting system and a new system of remuneration according to merit were set up. There does not seem to be any clear link between the two events, but the fact is: they were concomitant. From a note, written after 1830,[11] motivating employees was discussed:

> In 1820 the former regular bonuses given every year to every employee were abolished; those bonuses were considered as a part of the wages. After that date, the administration decided to grant bonuses from time to time, as a reward of the ability and efficiency of some employees; the administrators thought it was more convenient to keep those bonuses secret, in order not to cause envy and demands from the employees who did not receive bonuses. From that time, it was decided to create a special cashbook .. supplied by special accounts said to be known only to the administrators.

The 1820 system seems to be only a roughcast, the expression of a desire. It was not until 1833 that a scientifically created system of remuneration was actually implemented,[12] which meant

[11]Marked 1H4. Document N 2.

[12]Information on the rewarding system can be found in the document marked 4B6.

that the expected results of such a system determined the amount of bonuses. In June 1833, the Board of Directors approved the incentive plan which had already been started the previous February. The criteria governing the allocation of bonuses were discussed before the final plan was adopted. The Board of Directors first rejected a system that based the bonuses only on the amount of scrap produced. The Board found this criterion too quantitative and added a second criterion which assessed the quality of glass produced. In January 1834, a first evaluation was presented to the Board of Directors, according to which, the system "succeeded in lowering cost prices." Along with the decrease of cost amounts, the plan aimed at "ensuring the commitment of the workers and the lower supervisory staff to a good quality of glass." According to Daviet

> the bonus system, created by Clement DESORMES in the soda factory, eventually introduced in the wage a variable part of 20 to 30% of the total, which is rather a large amount, and explains the workers' distrust at the beginning.

The system was then extended to the glass factory of Saint-Gobain. From this, it can be concluded that the institution of a new system of remuneration which had been started in 1820 came to fruition in 1834. This occurred at the same time that a cost accounting system was developed. This adds weight to the thesis of a causal link between the emergence of competition and the calculation of costs. In fact, the aim of the new system of remuneration was clearly linked to the desire to reduce costs.

Accounting for Depreciation. As previously pointed out, depreciation had long been calculated. In the 18th century, such a calculation was only used to estimate the actual value of buildings and machinery and draw up the inventory. In his report to the Board of Directors meeting on September 4, 1834 the chief accountant writes:

> COST PRICES OF OUR PRODUCTS. A decision of the administration determined the way depreciation of buildings and machinery would be settled: buildings bear a yearly depreciation of 1/20 and machinery 1/15. When that decision was taken, the consumption of sulfur and the decomposition of sea salt were in a very usual proportion; but now the soda factory has almost doubled its production; so, do you think, dear Sirs, that we must maintain that depreciation rate? I am all the more con-

> vinced that we should not, because I am certain that the lead chambers, considering of the huge quantity of sulfur burned inside, won't last more than 6 years instead of 15, as formerly forecasted. If that fact is confirmed, depreciation is not important enough and the profit of the soda factory is overvalued.

Though the Board of Directors at the September 4, 1834 meeting was not asked for a decision as regards the length of time allowed for depreciation, it was asked to decide whether depreciation should be taken on machinery during the first year's service. In the same report, the chief accountant maintains the fictitious nature of the depreciation taken into account:

> . . . let me remind you of what I told you in my preceding report: there is only one means to have an exact idea of depreciation: it consists, when a building or a piece of machinery is out of use, in appraising its value, and when it is destroyed to take into the Profit and Loss Account the remaining value, less the selling price of materials. By that means we could know exactly the depreciation life of a building or a piece of machinery . . .

The method of calculating depreciation was to be completely reviewed in the 1870's as discussed in a subsequent section.

Transfer pricing among factories. Transfer pricing also became an issue which was considered by the Company in developing its cost accounting system. The issue arose because the soda factory sold its products to the glass factory on the one hand, and to external customers on the other hand. It first seemed correct to use the same price until this price appeared excessive due to approximate methods of valuing the quality of goods sold:

> If that increase in the degrees (measure of quantity for soda) is of little importance for customers delivered to in Paris, it is quite different for the Saint-Gobain's branch which pays for more degrees than it really gets. Consequently, the soda factory makes a profit to the detriment of the glass factory and increases its cost prices.

To conclude, the chief accountant makes some proposals among which:

> 3) Wouldn't it be convenient to choose a uniform way of costing as regards the transfer transactions between our branches? We could use either the cost price or the market price.

The author did not discover how the transfer pricing issue was ultimately resolved.

THE 1872 BRANCH SET OF ACCOUNTS

The slow maturing process that started with the setting up of a cost accounting system in the 1820's and 1830's led, in 1872, to the adoption of branch accounting in which each branch of the Company had its own set of accounts. This development placed the Company very close to a modern day cost accounting system used by French companies today. All the basic principles were present in 1872.

The July 25, 1872 instruction does not attribute a number to each account and does not group accounts into "classes" as is now done in France. Therefore, the following classification is the researcher's and consists of five categories: the balance sheet accounts, expense accounts, activity center accounts, perpetual inventory accounts, and manufacturing accounts.

1 — Balance sheet accounts
   a. "Central administration": looks like a current account of the Paris Headquarters by the branch.
   b. "Industrial buildings, tools and machinery"
   c. "Debts"
   d. "Drafts on Paris"; to be paid by Paris
   e. "Drafts on the factory"; to be paid by the factory
   f. "Cash"

2 — Expenses accounts
   a. "Supply"
   b. "Wages"
   c. "Sundries"

3 — Activity center accounts
   a. "Transport"
   b. "Varied workshops"
   c. "Work of the machinery"
   d. "Works of carriages and horses"
   e. "Overheads"
   f. "Maintenance of buildings"

4 — Perpetual inventory accounts
   a. "Raw materials warehouses"
   b. "General warehouse" for cleaning materials, etc. . . .
   c. "Finished goods warehouse"

5 — Manufacturing accounts; one for each product

The activity center accounts were debited with all indirect charges (wages and sundries). They were credited with the sums apportioned to each type of production. As regards the "work of the machinery" account, the key for sharing the charges among all products is indicated: " . . . the sharing of expenses will be made up to the power consumed in each workshop." As regards "overheads", they were shared "proportionally to the direct labor with which every manufacturing account was debited." Some of these accounts were credited with the products of subsidiary activities; for example, the "work of carriages and horses" account was to be credited. As a contra, a debit to the warehouse account was recorded for the "dung produced." Don't be wasteful!

THE IMPORTANCE OF DEPRECIATION

At Saint-Gobain, depreciation methods barely evolved between 1830 and 1872. From that date, the Directors paid new attention to the problem.[13] There were essentially two reasons for this: on the one hand, the Directors recognized the necessity of investing more and more in machinery, and, on the other hand, they were bound to respect their "no long-term debts" policy. The Company had to preserve the sums of money that were essential for its growth, but it was quite impossible to say this bluntly to shareholders who were numerous and not well aware of management matters. Until then, the Company made a distinction between ordinary depreciation, "calculated according to steady rules", and extraordinary depreciation, "determined by the Board of Directors according to the profit and rectifying the slow progress of the ordinary depreciation as regards the value of some items". Further on, the record shows the directors' concern that "the only drawback of the system is its arbitrary aspect; the shareholders argue that to accuse the Board of Directors of deciding the dividend according to their desires and not to the year's profits."

At this time, there was no radical changes of the depreciation method. There is just evidence of greater scrutiny in valuing the assets, and more concern for keeping the shareholders acquainted with the management of the Company and the problems management faced. Nevertheless, as a result of that discussion, the Board of Directors had to deal with many problems linked to the efficiency of an accounting information system: precise methods for the valuation of fixed assets, definition of the quality and quantity

[13]This passage comes from a file concerning depreciation. It is marked 1H4 and includes documents dated from 1872, 1873, 1879 and 1880.

of the information given to the shareholders, precautions to take for upward appraisal of capital assets, choice of an investment, and dividend policy.

In order to raise enough capital for its business, the Company had to inform a growing number of shareholders, which soon became inconsistent with the managers' freedom to deal with accounting information according to their own needs. The resoultion of this problem led to the distinction between standardized financial accounting for external and management accounting for internal use. As it became more and more efficient and advanced, the accounting system led to its own splitting.

CONCLUSION

Compared to most of the firms, Saint-Gobain had to face very early (in the first half of the 19th century) the problems raised by the setting up of a management accounting system. However, it was not until 1820, 155 years after its creation, that it adopted double entry bookkeeping which included the calculation of costs. This evolution is mainly due to the spreading of the Industrial Revolution in France, which was responsible for the abolition of privileges and the growth of competition in the field of glass production.

During the period 1820-1880, the cost accounting system had been gradually improved, without any regular outside coercion, according to the needs of the management alone. This leads to two conclusions and two research questions.

In 1880, the accounting system facilitated the reckoning of full costs with methods and procedures that are still in use (allocation of the overhead with the use of activity center accounts, up-to-date transfer pricing methods, analysis of the relationship between depreciation, dividends and investments, etc. . . .). This full cost method is now over one hundred years old. The development and the mastering of that cost accounting system were absolutely necessary to start the next stage, that is to say the use of those costs to prepare estimates of costs and investments. That stage took place over four decades (1890 to 1930) and led to real budget control towards the end of the Second World War.

It should be recognized that the accounting systems of a given period can be very different from one another, which is particularly true in the 19th century, therefore research should look at the variables on which the accounting system of each firm depends. Among the internal ones, the size of the firm, the culture of its

management, and its type of production seem important. Among the external ones, the legal environment, the level of technology used, the scarcity (or abundance) of capital, etc.... For future research in this area, there remains plenty of work on hand and the firms' archives have not divulged all of their secrets.

The double entry bookkeeping system has been established since the time (14th and 15th century) when it was indispensable to the merchants; the industrial cost accounting system became established at the same time as the Industrial Revolution, the beginning of the 19th century in France. The regulation of accounting standards developed gradually with the growing intervention of governments in the capital accumulation process (between the two World Wars). Future research should consider the relationship between the dominating capital accumulation procedures (commercial, industrial or social) and the dominating accounting systems of a period. Perhaps dominating capital accumulation procedures determine the way firms compete, which in turn determines their need for information, and therefore their accounting system.

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A. G. Coenenberg
UNIVERSITY OF AUGSBURG
and
H. M. W. Schoenfeld
UNIVERSITY OF ILLINOIS

THE DEVELOPMENT OF MANAGERIAL ACCOUNTING IN GERMANY: A HISTORICAL ANALYSIS

Abstract: During the second half of the nineteenth century, managerial accounting development in Germany was based on micro-economic theory. In the twentieth century, the emphasis shifted to techniques and later to determination of "true cost", resulting in a highly developed system that had a major impact on other European countries. The major difference between the German developments and those in the USA is the separation of cost (consumption/utilization of physical resources) from expenses. After WWII, interest centered on cost theory based on limitational rather than substitutional production functions. Gutenberg demonstrated various cost adaptation patterns as managements responded to output changes and created a sophisticated theory using indirect rather than direct output/cost relationships. This theory is little know in the USA and might stimulate theory research, particularly in the area of activity costing.

Managerial accounting as a tool for management decision making in Germany is closely tied to the development of accounting in general. In analyzing its development, it will be necessary to refer to financial accounting occasionally. To show distinctive steps in managerial accounting development, several periods will be analyzed: these include (1) the time before 1900, (2) the period of early academic efforts until the mid-1930s, (3) the period of government standardization and control until 1945, and (4) the period after WWII leading up to today's decision-oriented management accounting. Since this paper addresses an audience familiar with USA managerial accounting practice, only a survey is given and differences rather than common ground will be emphasized to show the developments in Germany, which are independent — at least to a certain extent — of USA approaches.

MANAGEMENT ACCOUNTING BEFORE 1900

Cost Behavior Analysis

As long as merchants have kept records, their concern has been to relate expenses to certain activities and to determine how much profit has been made with each transaction. Initially, this was regarded as a secret procedure and carefully guarded. Early on, it was realized that expenses might decline with growing quantities. As Schneider [1981] points out, these ideas can be found as early as 1613 in the writings of Antonio Serra, and later Adam Smith and others. In the German accounting literature, May [1770] mentions "disproportionate" overhead (*disproportionirte Unkosten*) and Leuchs [1804] divided acquisition expenses into sales-related and independent (presumably "fixed") costs. On the other hand, economists concerned with agriculture, such as Turgot, Thuenen, and others, pointed out that increasing efforts do not necessarily yield larger returns, thus laying the foundation for increasing marginal cost as a cost behavior pattern. It is, therefore, safe to assume that the distinction between different classes of costs has been used much earlier than most nineteenth century authors claim.

Differentiation of Internal and External Accounting

The differentiation between financial and factory accounting records has been traced to the end of the fourteenth century by Penndorf [1930][1]; it becomes more frequently mentioned as the result of industrialization in the late eighteenth century [Klipstein, 1781; Jung 1786; and Fredersdorff 1802]. At this time, the terms "*Fabrickbuchhaltung*" (factory accounting) and "*Handlungsbuchhaltung*" (financial accounting) were being introduced. Factory accounting consisted of determining how much was spent on the merchandise or product and for how much it had to be sold to make a profit. Practical examples, however, remain rare because the attitude of secrecy still prevailed. The first comprehensive description of a price determination system (*Kalkulation*) is attributed to Ballewski [1877], who also deals with the issue of cost behavior at different output levels. This is soon reinforced by Tolkmitt's [1894] discussion of the central role of costing for all

[1]Penndorf reports on an Italian approach from 1395, which parallels closely today's manufacturing account. This is based on material at least one century older than Luca Pacioli's treatment of accounting, although he does not mention such approaches.

forward looking management decisions. Dorn [1976] describes all these attempts as a preliminary stage of cost accounting; most publications contain substantial details and give technical advice on how to handle certain procedures, but none systematizes the material nor attempts to critically evaluate procedures found in various businesses.

MANAGEMENT ACCOUNTING DURING THE PERIOD 1900-1933

General Trends

Increasing industrialization along with the recognition of business as an academic subject (business schools were founded in Leipzig and Cologne in 1898) focused interest on the issue of cost determination. The first major systematic analysis was published by Leitner in 1905. A complete description of the system used by a well known company appeared in 1907 [Lilienthal]; the Association of German Equipment Manufacturers (*VDMA*) surveyed procedures of an entire industry and published these results in 1908. All these publications concentrated on procedural and technical aspects. In addition, the causation principle, the recommended bases for allocation of overhead among departments, and the redistribution of costs to products were discussed. It is interesting to note that already at this time the viability of labor cost as an allocation basis was questioned [Bruinier, 1908].

Initially, internal and external accounting were viewed as a continuous flow through the company and thus a unified system. Much of the material published was not very different from cost accounting procedures still discussed in modern text books.

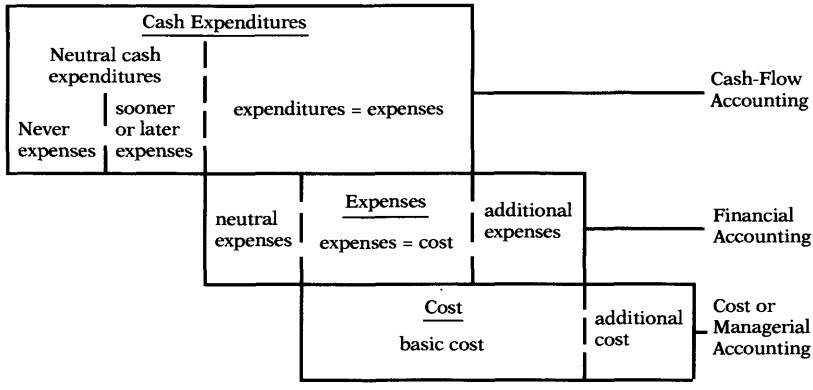
Separation of Expenses and Cost

It was Schmalenbach, then a dominant figure in academia who made several suggestions that later had a major impact on practical accounting. His major conceptual contribution was the argument to clearly distinguish between *cash expenditures*, *expenses*, and *costs*. He observed that accountants should not only observe the well known distinction between cash flows and expenses by allocating expenses according to the matching concept, but that cost should represent a summary of real resource input quantities (rather than money) into the production process. By not separating cost from expenses, traditional accounting — particularly under inflationary circumstances — is unable to establish a basis for pricing of products. If, however, consumption of goods

are represented in the internal accounting process, values (prices) for cost may be introduced at a later date (e.g., at the time of sale). Under such circumstances, financial accounting expenses and costs will differ. The relationship of Schmalenbach's three categories is shown in Exhibit 1.

Exhibit 1

Relationship Between Expenditures, Expenses and Costs [Schoenfeld, 1974]



He sees the discrepancies between expenses and costs as caused by (1) temporal differences and (2) material differences. Temporal differences are introduced by different usage assumptions underlying depreciation (frequently linear in financial accounting, but preferably usage-based in costing and thus potentially chargeable to other time periods; both will eventually result in the same total, if calculated from acquisition cost). Other temporal differences are triggered by delayed repairs and overhauls; if not recorded in the period when they were caused, then cost may be understated for a time and overstated when these items lead to chargeable expenses (resulting in cost fluctuation in spite of the fact that 'real' costs remained the same and were only delayed). Obviously, such ideas will raise objections from U.S. accountants, because they may create a possibility for income smoothing. Nevertheless, if assessed strictly in terms of actual resources consumed for manufacturing and classified as a necessary part of prices for cost recovery, such items should be allocated to periods in which they were caused.

Even more important are material differences, which may fall into two classifications: (a) expenses which will never become cost or vice versa, and (b) costs that are different from expenses due to

different accounting (valuation) bases. These require some illustration. There are business activities not connected with manufacturing, such as speculation, financing and other activities, which are not part of the company's usual business purpose. Although nobody would dispute their nature as business expenses, these items do not represent purpose-oriented consumption of resources — thus they should never become costs of a specific product and should be recovered separately from gross profits. These items are Schmalenbach's "(cost) neutral expenses". Conversely, there is the possibility of resource consumption — such as the use of equity capital — not reflected in financial accounting expenses. He recommends to record such items as "imputed cost" and be added to total cost to measure 'true' resources used for manufacturing. Other examples are self-insurance "premiums" and management efforts by owner(s) in private enterprises for which no salaries are paid. Schmalenbach insists on the need to adjust expenses before these will represent actual input consumption and can be regarded as cost [Schmalenbach, 1925].

Uniform Systems of Accounts

It is again Schmalenbach [1927] who contributes to the development of managerial accounting in his work concerning uniform systems of accounts. He views managerial accounting as representing internal transfers and transformations which are imbedded into the external transactions of an enterprise: consequently, all internal transactions should be shown as an integral — but separate — part of the accounting system. Based on this concept, he recommends a set of accounts, which at the same time provide for internal control and external reporting. Such a system has to account for any adjustments needed to properly measure expenses and cost as defined above. This view prevailed in the following period and became an integral part of government imposed accounting requirements (details discussed below).

Other Issues

During this same period several other issues emerged, such as attempts to improve the accuracy of the costing system by standardizing terminology, improving the definition of cost centers and breaking these down into their smallest units (*Platzkostenrechnung* = accounting for work stations). Even early developments of standard costing (*Plankostenrechnung*) emerged. At the same time hyper-inflationary developments triggered de-

mands for "up-to-date valuation" of costs (easily accomplished, if original data are simply regarded as quantity measurements, to which new prices assuring the maintenance of the physical substance are attached). It is by-and-large the work of Schmidt [1923], which brings out these aspects (eventually resulting in the Dutch use of reproduction values). Schmalenbach's imputed cost procedures facilitated the integration of such adjustments in the regular accounting system. It should be noted, though, that Schmalenbach himself never agreed to the use of reproduction cost — he rather settled for indexing, because he regarded inflation as an abnormal rather than a normal development.

MANAGEMENT ACCOUNTING DURING THE PERIOD 1933-1945

Accounting and Pricing Regulations

This period with its disastrous political developments had a strong effect on accounting, because rather than nationalization of industry, the German government chose indirect control of industry as the route towards a government controlled economy. This resulted in a codification of prior ideas to develop measurement procedures and thus assured comparable data for controlling all segments of the economy. The major regulatory measures (passed as decrees) were the following:

(1) *Wirtschaftlichkeitserlass* (efficiency decree) of November 11, 1936;
(2) *Buchfuehrungsrichtlinien* (accounting guidelines) of November 11, 1937;[2]
(3) *Leitsaetze fuer die Preisermittlung aufgrund der Selbstkosten bei oeffentlichen Auftraegen [LSÖ]* (pricing guidelines for all public contracts) of November 15, 1938;
(4) *Kostenrechnungsgrundsaetze [KRG]* [Fischer et al., 1939] (cost accounting guidelines) of January 16, 1939.

The Decree of November 11,1937 prescribed the organization of accounting systems, made the adoption of the *Uniform Charts*

[2]*Grundsaetze zur Organisation der Buchfuehrung im Rahmen eines einheitlichen Rechnungswesens* regulated accounting procedures for companies by size. All accounting records had to be based on the mandatory Uniform System of Accounts (*Kontenrahmen*) prescribed for each 'Group of Industry' to which a company was assigned. Standard Uniform charts of accounts could be enlarged by adding accounts through extension of digits in the numbering system; this provision kept the system flexible.

of Accounts mandatory, and specified a fourfold purpose, which had to be met by every accounting system:

(1) accounting and financial statements (accounting for period results),
(2) cost accounting (accounting for pricing and per unit valuation),
(3) business statistics (for internal and external comparison), and
(4) planning (projection for future periods).

Requirements #2 particularly, introduced major changes into German accounting practice by mandating the use of imputed cost items and tying financial and managerial accounting together into one system.

The Impact of Government Regulations on Cost Accounting

The new system was designed to accomplish measurement at the individual business and the overall economic level at the same time. It adopted a strict input resource consumption definition for costing, as proposed by Schmalenbach. For example, interest expenses paid to third parties were no longer regarded as sufficient to measure cost. Instead capital utilization — regardless of source — for a certain process became the accepted definition because it measured efficient input factor utilization in a single firm as well as in an overall economic context. These requirements were regarded as minimal comparative information, to provide "true" performance-based guidance for entrepreneurial and governmental decisions. Comparative data required that the standardization of all cost measures which might cause differences similar to those in financing (borrowed versus equity capital), legal organization (corporation v. sole proprietorship), asset utilization patterns (systematic balance sheet depreciation v. machine-usage-based consumption), and specific — often uninsurable — risks. Four new groups of imputed cost were introduced to assure this standardization:

(1) imputed management salaries,
(2) imputed interest,
(3) imputed depreciation, and
(4) imputed risk charges [Fischer et al., 1942, pp. 266-304].

Uniformly all actual expenses requiring adjustments were debited to "neutral" expense accounts in class 2. At the same time,

these items (often with different values) were debited to imputed cost accounts in class 4 and credited to separate accounts in class 2. Since the accounts of classes 4 and 2 — after some intermediate steps — were closed out to the income statement, original and adjusted entries remained traceable, neutralizing each other before financial accounting profits were calculated. By routing manufacturing cost including imputed cost through a special *"Betriebsergebnis"* (operations) account, the procedure remained transparent (for details of the procedures used see Schoenfeld, 1974, p. 31).

The principle of a single write down to zero was maintained for depreciation in financial accounting, using (largely tax based) guideline lives, whereas for costing purposes other procedures (such as output related depreciation or a valuation basis different from financial records) were admissible; inflationary developments in some or all cost items could easily be accommodated — as well as delayed repairs and similar events. Over- or underestimation of actual life spans were treated as a special depreciation risk.

Separation of Specific Cost Items

The system attempted to measure "normal" manufacturing cost, and to separate cost items occurring only in connection with specific orders [*Sondereinzelkosten und Sonderkosten*; Funk, 1937, pp. 50-5]. Normal cost were defined in relationship to capacity utilization and corresponded to practical capacity. However, the system was geared towards actual rather than standard costing. It also prescribed specific steps for overhead cost allocation and distribution (at normal capacity).

In determining the admissible capital usage charge, the notion of "required capital" (*betriebsnotwendiges Kapital*) was developed, which assumed the possibility of assessing capital needs for certain types of production (established by comparison on an industry-wide basis). This idea may even today offer some interesting possibilities to compare actual capitalization with a "most efficient" procedure, although it is admittedly difficult to determine optimal levels.

In addition to accounting standardization, the system provided pricing guidelines for all government orders (*LSÖ — Leitsaetze fuer die Preisbildung bei oeffentlichen Auftraegen*). For this purpose a general costing scheme shown in Exhibit 2 was adopted.

Exhibit 2

Cost Accumulation Steps for Pricing [Schoenfeld, 1974]

Materials (*Stoffkosten*)
Direct Material
+Material Overhead
+Processing Cost (*Fertigungskosten*)
+Direct Wages
+Overhead (percentage of wages, preferably separate for all participating production departments)
+Specific Processing Cost (only if costs exist which are related to individual products or orders)
+Research and Development Cost (*Forschungs- und Entwicklungskosten*)

=Total Manufacturing Cost (*Herstellkosten*)

+Administrative Cost (*Verwaltungskosten*)
+Marketing Cost (*Vertriebskosten*)
+Special Marketing Costs (such as taxes and commissions)

=Total Cost to Company (*Selbstkosten*)

In order to keep records at a comparable level reflecting all typical cost, special cost items (*Sondereinzelkosten*) were not routed through regular accounts but treated as items chargeable directly to the special orders or products. The *LSÖ* also represented improvements with respect to the separation of materials overhead from general production overhead.

Systematization of Cost Accounting

The application of all requirements incorporated in the decrees resulted in a systematic partitioning of the managerial accounting into three major parts, namely

(1) cost accumulation (*Kostenartenrechnung*), for purposes of cost classification and adjustments,
(2) cost distribution to consuming departments according to the causation principle or established distribution ratios (*Kostenstellenrechnung*), which can be seen as the major departmental control procedure, and
(3) cost allocation to products, jobs, or output batches (*Kostentraegerrechnung*) for purposes of pricing.

This approach is still maintained in all textbooks and costing regulations. It can also be found in most other European and in East Bloc countries (with the modifications required by political doctrine).

MANAGEMENT ACCOUNTING AFTER 1945

Voluntary Continuation of Costing System

After the end of the war invalidated all previous government measure, the Association of German Manufacturers (*Bundesverband der Deutschen Industrie*) reissued its own voluntary recommendations between 1949 and 1951 (*Grundsaetze*), which retained the same rules; however, instead of acquisition cost, the new system permits revaluation at market price levels. Practically all German companies use this system or some variation. Such widespread voluntary usage by industry of systematical cost accounting can be taken as an indication that the underlying concepts of the system are regarded as theoretically sound and not merely the results of government control.

The only challenge to the strict resource consumption definition of cost emerged after WWII. The so-called "pagatoric cost view", that is, a payment-based cost definition which would not classify inputs as cost if these had been acquired for free or are priced different from the actual payments (such as inflation adjustments), was propagated by Koch. The "pagatoric" view objects to the hypothesis, that "resources are acquired at the day of consumption" rather than at the real acquisition date and, therefore, defines costs similar to financial accounting expenses. This view was never accepted by German business practice.

With the re-introduction of a market economy, two distinct trends developed in managerial accounting. First, the research emphasis changed from measuring "true cost" for purposes of a cost-plus pricing to the development of decision tools. During the following 40 years, the emphasis on decision-making tools was gradually shifted from short-term to long-term strategic decision-making. Second, management accounting followed the prevailing trend in business administration theory from a mere interpretation of government rules towards a science of 'optimal' behavior of business entities in a free market. As a consequence, managerial accounting turned towards the empirical and theoretical study of cost behavior and the analysis of specific cost items to guide firms towards profit maximization. However, the German development focused specifically on theory rather than practical procedures.

Trends Emerging from Decision Making Emphasis

Initially, traditional absorption costing was replaced with a direct costing view. As it turns out, that did not constitute a real innovation because Schmalenbach [1899] had already suggested

the use of direct cost in 1899. His idea was strongly reinforced by the assimilation of direct costing concepts from the USA which were somewhat changed by introducing multiple levels of cost influencing factors (rather than assuming that variable cost were exclusively output dependent) by Riebel [1961]. He developed the distinction between direct and indirect cost by introducing a hierarchy of allocation bases, for which contribution margins should be measured. This required the definition of direct cost at several levels; direct costs are measured with respect to output, departments, lot size, time consumption etc. Depending on the allocation basis used, some cost items change from direct to indirect. This approach enables management to define and utilize more than one 'contribution' margin to analyze its decisions, thus gaining deeper insights into the behavior of all indirect cost.

Another development — often overlooked — is the work of Schnutenhaus [1948]; he suggests that certain types of fixed cost are not allocable, because these are only related to (caused by) future products and activities ("survival cost" such as R&D and similar items). He, therefore, recommends as the only logically possible basis for their distribution short-term (specific activity) or long-term (present volume or profit) survival contributions of existing products or activities. This method is currently practiced by many high-tech manufacturers. Earlier and more widespread recognition of this classification would have made decades of futile discussions about overhead allocation partially unnecessary.

Another development is the incorporation of standard costing. Initially standard costing was adopted as it existed in the USA. Subsequently, attempts were made to develop this system into what is known today as "double" or "multiple" flexible standard costing. Instead of tracing cost behavior to volume as the only independent variable, systems emerged which incorporated additional independent cost influencing factors such as lot size, production program, processing techniques, routing, input factor quality, processing speed, and other technological criteria. This produces a substantial number of new variances, which require analysis of their significance before being included into practical systems [Kilger, 1981].

Since the end of the 1970s, it was recognized, that overly emphasizing a short-term orientation might create misinformation for strategic purposes, especially as far as pricing is concerned. Particularly, capital-intensive technologies render the traditional managerial accounting system inadequate and required new approaches. Indirect cost had to be remeasured and allocated

to various activities encompassing more than one cost center. This approach permits not only a separate efficiency measurement for activities but also the definition of typical 'activity cost' for the allocation of cost to products [Berkhoff et al., 1983; Waescher, 1987]. These new procedures eventually lead to the identification of cost drivers — as presently discussed in the U.S. literature. The process/activity costing approach has been applied by many German firms since the 1970s. It was facilitated by Riebel's "relative" direct costing approach (mentioned above), and the development of multiple flexible standards in standard costing. These changes were partially caused by the in-depth analysis of production and cost theory resulting from Gutenberg's contributions.

The rediscovery of market prices gave rise to the question whether such market mechanism could also be applied for global optimization purposes in firms with decentralized decision making. Again, it was the pioneering work of Schmalenbach on transfer pricing which led to the adoption of procedures utilizing alternatively market prices, variable cost and shadow prices.

DEVELOPMENTS IN COST THEORY

On the conceptual level — referred to as "cost theory" in the German literature — several major post-war developments should be noted. Traditionally, scholars recognized the "law of diminishing returns" (*Ertragsgesetz*) and derived their cost hypotheses from these ideas, resulting in the assumption of an S-shaped cost curve (as used in microeconomics). Due to lack of empirical evidence, the accounting literature frequently replaced this notion with the simplifying assumption of straight line break-even point analysis. In 1950, Gutenberg [1983] re-examined this approach. He coined the term "production function of type A" for traditional S-shaped approaches and explained different — empirically observed — types of cost behavior. His analysis was based on the earlier observation by J. Deans, which were not pursued any further in the USA. He called his approach "production function of type B."

Production Function of Type B

Gutenberg dispenses with the assumption of peripheral substitution of production factors and replaces it with the observation that in real life 'limitational' production conditions prevail. Under these circumstances, a direct cost-output relationship does not exist. Therefore, no singular production cost or cost function can be defined. The analysis of cost behavior is possible only by studying

the consumption of production (that is, input) factors, which in turn are governed by the technology employed, such as existing equipment or processes. To summarize his approach in non-mathematical terms, Gutenberg elaborates on a multi-stage production function from which appropriate cost functions may be derived. He classifies input factors as consumable (traditional variable cost such as material which is directly output dependent) and "potential" factors (machines, processes, or production cells which were treated as a combination of fixed, semi-fixed and variable overhead). In addition he recognizes a "dispositive" factor, that is management actions. According to him, the output of a single "aggregate" (e.g. machine or self-contained production unit) basically depends on three variables:

(a) the economic consumption function for all input factors related (that is influenced) by this aggregate;
(b) the economic performance in a given time period (by-and-large operating speed called "intensity");
(c) the utilization time of a given "aggregate".

Cost Adaptation to Changing Output Demands

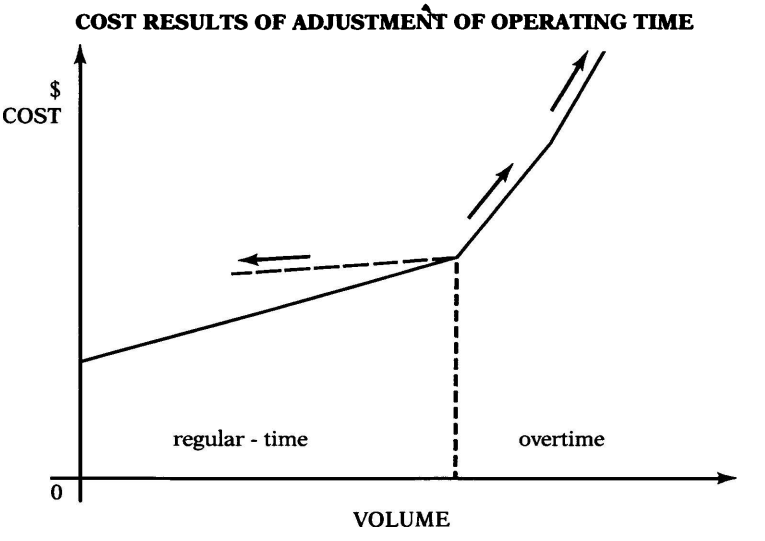
These conditions are the starting point of his hypothesis. The basic idea is that costs do not vary automatically with output levels, but are influenced by management's decisions responding to different demands for output. It is evident that the following options are available for such a response: (1) adaptation of operating time, (2) adaptation of operating intensity, and (3) adaptation of the quantity of input factors.

(1) If the quality and quantity of input factors (so-called potential factors) is assumed to be fixed for the period of observation, then the company is able to respond by adjusting usage time (overtime, reduced shifts etc.) or by changing intensity of usage (faster or slower machine runs). This will lead to progressive cost, once normal capacity is exhausted. The types of cost behavior resulting from these adaptations are shown in Exhibit 3.

(2) A quantitative adaptation occurs, when the quantity of aggregates (machines, employees) is adjusted. This may be done either on a short-term or a long-term basis. Total cost will increase/decrease following these actions; resulting per unit cost in case of capacity increases will depend on whether new aggregates will be fully used or remain partially idle. In case of capacity reductions, costs depend on whether aggregates will remain or will be sold (Exhibit 4).

Exhibit 3

Cost Behavior Resulting from Adaptations to Different Output Levels (Gutenberg's Theory)



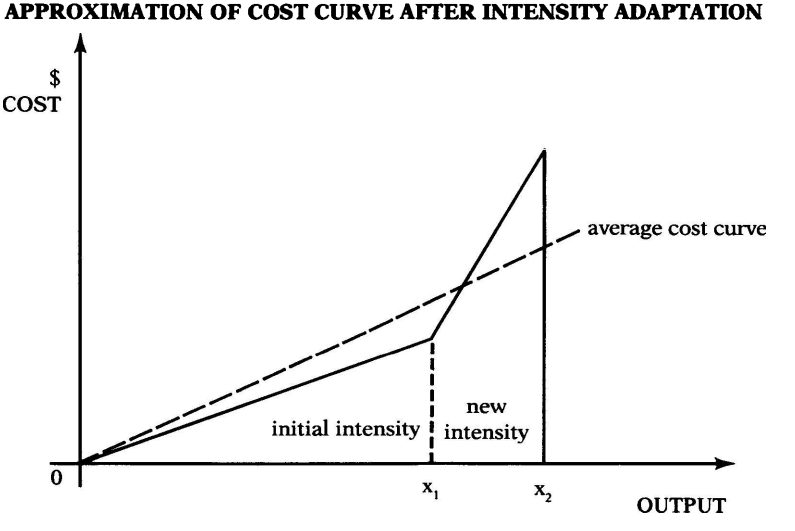
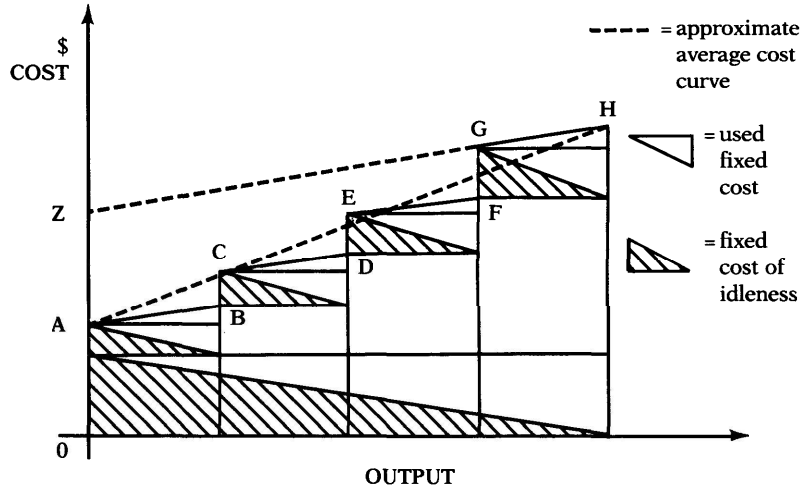


Exhibit 4

COST DEVELOPMENT IN CASE OF QUANTITATIVE (CAPACITY) ADAPTATION



(3) Other forms of adaptation result whenever there is a change in the qualitative combination of input factors. Since lower quality of input factors (which are utilized last, because management prefers to use its best available resources first) results in higher cost, the emerging cost curve tends to be progressive in case of output increases. In case of decreases, it should reduce quickly, whenever there is a possibility to reduce utilization of low quality input factors.

If there is a permanent increase of capacity, usually new technologies and improved (or different) qualities of input factors will be employed. This will result in a so-called mutative adaptation, which establishes an entirely new cost level.

Gutenberg's theory obviously explains reality much better than earlier hypotheses, because it accounts for the fact that a given output does not necessarily result in a single cost function, but can be accomplished by several different input combinations. It also shows how and to what extent management is able to influence cost. However, it also has to be admitted that it may not always be possible to make an accurate prediction of cost levels, because of remaining practical measurement problems.

Production Function of Type C

Gutenberg's approach was utilized by practically all German scholars in the following decades, resulting in further sophistication by Heinen [1965] and others, who extended his analysis. Heinen — calling his "production function type C" — wants to go beyond Gutenberg's approach by using so-called "elementary input factor combinations" which measure basic segments of the production process in substantial detail by empirical observation. Once their costs and all cost determining factors (which today are called cost drivers) are known, the cost function for a combination of processing steps selected by management can be determined. The emerging total costs then depend on the number of times, such combinations need to be repeated to achieve the desired output quantity.

SUMMARY

In summary, it can be said that German production-function-based cost theory went beyond the prevailing direct cost-volume relationship. It replaced the traditional approach with an in-depth cost behavior analysis thus relating cost more closely to input rather than output; it seems to succeed in explaining the impact of management's actions, especially the fact that the same output can be obtained with various cost levels. In this respect, it can be classified as a more comprehensive theory (or at least hypothesis) which — for a given task — provides for several different cost projections which are verifiable in the real world. It may not be going too far to conclude that in today's international competitive environment an enhanced understanding of cost behavior will contribute substantially to improve management's ability to reach a minimal cost combination in its decision making process. With a more detailed knowledge of cost behavior patterns, the ability to control cost, and to provide and monitor relevant data will be enhanced. This will permit improved analytic attempts to isolate, identify, and monitor cost drivers.

The German cost accounting developments may provide additional impulses for managerial accounting developments. Johnson and Kaplan [1987] argue that managerial accounting has lost its' relevance by largely stagnating in procedural approaches and not taking into account changes in production technologies and economies of scope. As a result, traditional overhead allocation procedures are providing insufficient information for cost management — particularly in view of the growth of fixed cost, short-

ened product life cycles and the need to identify strategic strength and weaknesses in cost. To rescue management from this situation it appears necessary to fully understand cost behavior and enable management to perform cost analysis, which allows projection of cost for changing production programs. For this, there seems to be little material available in the literature. Combining statistical analysis techniques with the conceptual approaches found in the German literature may contribute towards better understanding of the problems. This appears to be true even if one assumes that available conceptual/theoretical approaches are still incomplete. They at least will provide additional paradigms for further research and prevent repeats of past incidents in which existing research in other countries has been ignored - thus leading to repeats of analytic work which had already been done elsewhere.

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LuAnn Bean
WICHITA STATE UNIVERSITY
and
Deborah W. Thomas
UNIVERSITY OF ARKANSAS

THE DEVELOPMENT OF THE JUDICIAL DEFINITION OF MATERIALITY

Abstract: Determining what should be considered a material item has been a problem for both the accounting profession and the courts. By reviewing the court cases involving the issue of materiality, the authors have determined where differences in the materiality standard as applied by the courts exist. The judicial definition of materiality has developed over time, and current trends with important variations are observed. Based upon the authors' analysis, the following judicial definition of materiality, with its possible variations, is suggested: Would the reasonable (or speculative) investor (or layman) consider important (or be influenced by) this information in determining his course of action?

Finding a general definition for materiality has been difficult for both the accounting profession and the courts of the United States. The courts have been criticized for not developing a concise definition of materiality. [Reckers, et. al., 1985; Jeffries, 1981]. However, the accounting profession itself has not been able to precisely define what is or is not material. Without an all-purpose definition of materiality, the courts have grappled with its meaning on a case-by-case basis. The result has been confusion over some elements of the definition. This paper will review the cases involving materiality and the evolution of the definition of materiality in the courts. Based upon an analysis of the court opinions, the varying standards which have been applied by the courts will be explained.

THE ACCOUNTANT'S VIEW OF MATERIALITY

Accountants have recognized that the profession would benefit if a general definition of materiality could be developed. In 1973, the issue of materiality was one of the original items for consideration by the newly-formed Financial Accounting Stan-

dards Board (FASB). The Board's conclusions on materiality criteria were issued in 1980 in its Statement of Financial Accounting Concepts (SFAC) No. 2, "Qualitative Characteristics of Accounting Information." The FASB announced that it would not attempt to codify basic rules for materiality, stating, "The Board's present position is that no general standards of materiality can be formulated to take into account all the considerations that enter into an experienced human judgment" [FASB, 1980, p. xiii]. The Board instead issued this general definition of materiality:

> The magnitude of an omission or misstatement of accounting information that, in the light of surrounding circumstances, makes it probable that the judgment of a reasonable person relying on the information would have been changed or influenced by the omission or misstatement [FASB, 1980, p. xv].

Even though the FASB gives a subjective definition, accountants tend to quantify the concept of materiality. According to SFAC No. 2, "Materiality judgments are primarily quantitative in nature. They pose the question: Is this item large enough for users of the information to be influenced by it?" Research has established that most accountants view materiality in terms of net income, usually 5 to 10 percent [Pattillo and Siebel, 1974; Slipp, 1983].

Objective accounting standards for material items have been established for a few limited issues. For example, Accounting Principles Board Opinion (APB) No. 15 states that a reduction in earnings per share of less than three percent will not be material, such that the computation of diluted earnings per share will not be required.

MATERIALITY IN THE COURTS

If accountants have had difficulty in formulating a general definition for materiality, it should not be surprising that the courts of the United States have applied varying standards for materiality. Like the profession, the courts have been required to determine what is material in each situation that is brought before a tribunal.

Common Law

The application of a legal standard of materiality to accountants is drawn from the common law of torts. Accountants have been sued for supplying misleading information under the com-

mon law remedies for misrepresentation and fraud. The Restatement of Torts 2d (1988) defines materiality in cases of fraudulent misrepresentation as follows:

> § 538(2) The matter is material if (a) a reasonable man would attach importance to its existence or nonexistence in determining his choice of action in the transaction in question; or (b) the maker of the representation knows or has reason to know that its recipient regards or is likely to regard the matter as important in determining his choice of action, although a reasonable man would not so regard it.

Comments to this section of the Restatement provide that the materiality decision is a question of fact which is a "matter of judgment." Like the accounting profession, the common law recognizes that materiality must be determined on a case-by-case basis. An item is material under common law if "a reasonable man would have regarded the fact misrepresented to be important in determining his course of action" [Restatement § 538, Comment (e)].

Securities Laws

The Security Exchange Acts of 1933 and 1934 created criminal and civil liability for certain actions and omissions. The Acts use the term "material" to describe the offenses involving misleading information, but never define what is material. Security regulations have attempted to give some guidance, stating

> The term 'material' when used to qualify a requirement for the furnishing of information as to any subject, limits the information required to those matters which an average prudent investor ought reasonably to be informed before purchasing the security registered [17 C.F.R. § 230.405(1) and 240.12b-2, 1984].

It is under the securities acts that the courts have most often been asked to interpret the materiality of financial information. The courts' definition of materiality has varied depending upon the particular statute or regulation involved and the facts of each case.

Evolution of Materiality in Case Law

Cases in which materiality has been an issue fall into three main categories, (1) trading on insider information, (2) omissions from financial or registration statements, and (3) omissions from

proxy materials. While not all of these cases have involved accountants, each has contributed to the definition of materiality in the courts.

Insider Trading. An early case involving trading on insider information is *Kardon v. National Gypsum Co.*, [73 F.Supp. 798 (E.D.Pa. 1947)]. In this case, a corporation was owned equally by four shareholders, two of whom served as officers. The two officers purchased the stock holdings of the other two shareholders without informing them that negotiations for the sale of the company had begun. Whether the pending sale was a material fact was an important issue in the case. The court stated that information was material if it would "affect the judgment of the other party to the transaction."

List v. Fashion Park, Inc., [340 F.2d 457 (Cir. 2, 1965), cert. den. 382 U.S. 811], involved a similar insider trading allegation, with insiders purchasing the shares of a minority shareholder after information concerning a possible sale of the corporation became available. The court further developed the definition of materiality, stating,

> The proper test is whether the plaintiff would have been influenced to act differently than he did act if the defendant had disclosed to him the undisclosed fact. To put the matter conversely, insiders 'are not required to search out details that presumably would not influence the person's judgment with whom they are dealing.' *Kohler v. Kohler Co.*, 319 F.2d 634, 642 (Cir. 7, 1963).

Financial or registration statements. Accountants are most often defendants in cases which involve omissions from financial statements. An important case in this area is *Escott v. Barchris Construction Corp.*, [283 F.Supp. 643 (S.D.N.Y. 1968)]. In this case, a number of items were found to have been misstated in the financial statements of the corporation. These items included an overstatement of sales and income, an understatement of liabilities, and the omission of information concerning officer loans and delinquent customer accounts. In a controversial decision, the court found that some of the omissions were material, while others of similar magnitude were not. Overstatement of earnings per share by about 15% was found not be material. At the same time, balance sheet errors which resulted in a current ration of 1.9:1, which if correctly stated would have been 1.6:1 were held to be material.[1] In making the materiality determination, the court de-

[1]For a critical discussion of the result see Briloff (1972), pp. 53-54.

fined "materiality" as those matters which

> an investor needs to know before he can make an intelligent, informed decision. . . . The average prudent investor is not concerned with minor inaccuracies or with errors as to matters which are not of interest to him. The facts which tend to deter him from purchasing a security are facts which have an important bearing upon the nature or condition of the issuing corporation or its business.

Proxy Statements. The Supreme Court of the United States has most often considered materiality under the Securities Acts in determining the validity of proxy solicitations. Important examples of the Supreme Court decisions involving proxies include: *J. I. Case Co. v. Borak*, [377 U.S. 426 (1964)]; *Mills v. Electric Auto-Lite Co.*, [396 U.S. 375 (1970)]; *TSC Industries, Inc. v. Northway, Inc.*, [426 U.S. 438 (1976)]. The facts of these proxy cases are similar, with a proposed corporate merger or acquisition as the subject of the controversy. In the *Mills* case, the Supreme Court, in *dicta*, made the following statement defining materiality:

> Where the misstatement or omission in a proxy statement has been shown to be 'material,' as it was found to be here, that determination itself indubitably embodies a conclusion that the defect was of such a character that it *might* have been considered important by a reasonable shareholder who was in the process of deciding how to vote [Emphasis added.] [396 U.S. 375, 384.]

This statement caused confusion in the lower courts when applying the materiality standard.[2] In *TSC Industries v. Northway*, the Supreme Court clarified the definition of materiality in proxy statement cases. The standard of disclosure is not those items which *might* be considered important to a shareholder. Instead, the Supreme Court defined materiality under this securities regulation as follows:

> An omitted fact is material if there is a substantial likelihood that a reasonable shareholder *would* consider it important in deciding how to vote. . . . It does not require proof of a substantial likelihood that disclosure of the omitted fact would have caused the reasonable investor to change his vote [Emphasis added.] [426 U.S. 406, 409.]

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[2]In *Smallwood v. Pearl Brewing Co.*, 489 F.2d 597 (Cir. 5, 1974), the lower court discusses the problems with the *Mills* definition.

JUDICIAL DEFINITION OF MATERIALITY

There remain differences in the definition of materiality as applied by the courts. These differences can be summarized as follows:

1) Would the information have actually *influenced* the actions of another or would the information only be considered *important* to another?
2) Who must be affected by the error or omission, the average *investor* or the reasonable *layman*?
3) Who must be affected by the error or omission, the *prudent* investor or the *speculative* investor?

In Table 1, the variations in the elements of the definition, as interpreted by the courts in selected cases, are presented.

An analysis of past court cases reveals that these differences depend, for the most part, on the subject matter of the litigation and the particular section or regulation under the securities laws involved. However, trends which have developed over time can also be seen.

Analysis of the Court-Derived Materiality Standard

"Influence" or "Important". In determining the standard for materiality decisions, the courts have sometimes required that material information be significant enough that it would affect the decision of the recipient of the information. Examples of these cases include *Kardon v. National Gypsum Co.*, supra; *Kohler v. Kohler Co.*, supra; *List v. Fashion Park*, supra; *Crane Co. v. Westinghouse Air Brake Company*, [419 F.2d 787 (Cir. 2, 1969)].

In other cases, information has been held to be material if it were important to the recipient in making his decision, regardless of whether it would have caused him to act differently. Examples of these cases include *SEC v. Texas Gulf Sulfur*, [401 F.2d 833 (Cir. 2, 1967), cert. den. 394 U.S. 976]; *Affiliated Ute Citizens of Utah v. United States*, [406 U.S. 89 (1972)], *Mills v. Electric Auto-Lite*, supra; *TSC Industries v. Northway*, supra. This "important" threshold test requires that additional information be revealed and places a higher standard on accountants. While some controversy has existed over whether information which "might" be considered important or which "would" be considered important should be revealed, the Supreme Court clarified the standard in *TSC Industries v. Northway*. In that case, the Court declared that only the information which *would* be considered important should be required.

Table 1

Opinions on the Elements of Materiality

	"Influence" v. "Important"	"Layman" v. "Investor"	"Speculative" v. "Prudent"
Accounting Profession			
SFAC No. 2	Influence or Important	Layman	Prudent
Common Law			
Restatement of Torts	Important	Layman	Prudent
*Court Cases Under Securities Laws**			
Kohler v. Kohler Co., Cir. 7, 1963 (131)	Influence	Layman	Prudent
List v. Fashion Park, Cir. 2, 1965 (266)	Influence	Layman	Prudent
Escott v. Barchris Construction Corp., S.D.N.Y., 1968 (61)	Influence	Investor	Prudent
SEC v. Texas Gulf Sulphur, S.Ct., 1968 (565)	Important	Investor	Speculative
Mills v. Electric Auto-Lite, S.Ct., 1970 (827)	Important	Investor	Prudent
Gerstle v. Gamble-Skogmo, Cir. 2, 1973 (143)	Influence	Investor	Prudent
Smallwood v. Pearl Brewing Co., Cir. 5, 1974 (147)	Important	Layman	Prudent
TSC Industries v. Northway, S.Ct., 1976 (597)	Important	Investor	Prudent

* This list of cases is not intended to be inclusive, but to provide a representative sample only. The number in parenthesis indicates the number of cases which have cited each case, as determined by LEXIS search. These high numbers of citations are indicative of the importance of these cases.

Table 1, which summarizes the positions of the courts, reveals a trend over time. The courts appear to be moving away from the standard that information must influence another's actions in order to be material. Instead, the more recent decisions have required that any important information be considered material. While this places a higher burden on the accounting profession, at least the Supreme Court has refused to apply an even higher standard which would require disclosure of all information which *might* be considered important.[3]

"Investor" or "Layman". The common law standard for misrepresentation is that of the hypothetical "reasonable man." This standard has sometimes been adopted by the courts in applying the definition of materiality to financial information.[4] As stated by the court in *Smallwood v. Pearl Brewing Co.*,

> . . . the test of materiality is 'whether a reasonable man would attach importance to the fact misrepresented in determining his course of action.' This definition, born of the Restatement of Torts, § 538(2)(a), has a rich history of application to the securities laws. [Citations omitted.] It has not been and should not be discarded as a standard. [489 F.2d 579, 604 (Cir. 5, 1974), cert. den. 419 U.S. 873].

The courts have also applied the standard of the "average prudent investor." Under this standard, the user of financial information can be assumed to have some basic knowledge of investment activities.[5] Whether this is a higher or lower standard than that of the "reasonable man" depends on the facts. In some situations, a layman might require a more thorough explanation of the activities of a company. At other times, a knowledgeable investor might demand that more information be disseminated.

Again, a trend over time appears to have developed under the securities laws. Recent cases tend to apply the standard of the "average prudent investor."

"Prudent" or "Speculative". In some special situations, an even higher standard of materiality may be required. In *SEC v. Texas Gulf Sulphur Co.*, supra, the materiality of reports on mining explorations which were not disclosed to the public prior to in-

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[3]Note that the Supreme Court cases which have recently ruled in the area of materiality have all considered misinformation or omissions in proxy statements under Rule 14a-9 of the securities regulations. It is possible that a different standard could apply if another topic were considered.

[4]For a discussion of the layman and the securities acts, see Kripke (1973).

[5]Jennings, et. al. (1985) discuss this difference in the application of the rule.

sider purchases was in dispute. Relying upon the legislative history of the securities acts, the court stated that this information "would certainly have been an important fact to a reasonable, if speculative, investor in deciding whether he should buy, sell, or hold." [401 F.2d 833, 850 (1968)].

While the definition of materiality applied by the court in *Texas Gulf Sulphur* is unusual, it should not be ignored.[6] Because materiality decisions are made on a case-by-case basis, all the facts and circumstances of a company must be considered. As stated by the court,

> whether facts are material ... will depend at any given time upon a balancing of both the indicated probability that the event will occur and the anticipated magnitude of the event in light of the totality of the company activity. [401 F.2d 833, 849 (1968)].

Summary of the Judicial Definition of Materiality

From an analysis of judicial decisions, the best general definition of materiality which can be developed is that items will be material if the average prudent investor would consider the information important in evaluating his course of action. However, variations of this definition can occur, depending on the facts and circumstances of each case and the issue involved. Accountants should keep in mind these possible variations of the materiality standard in the courts. Taking these less often applied variations into consideration, the judicial test for materiality is better stated as follows: Would the average reasonable [or speculative] investor [or layman] consider important [or be influenced by] this information in determining his course of action.

CONCLUSIONS AND COMMENTS

The accounting profession and the judicial system have had difficulty in formulating a general definition of materiality. Both recognize that decisions must be made on a case-by-case basis. However, accountants and the courts approach the problem differently. Accountants tend to evaluate information quantitatively. Decisions as to materiality are made in terms of the comparative magnitude of the information. The courts apply a qualitative stan-

[6]For a critical discussion of the result, see Kripke (1971).

dard, looking at the use of the information by the readers of financial statements. For the courts, the magnitude of the item may be one factor to consider in determining materiality, but it is not a controlling factor.

Accountants may be unsettled by what appears to be a lack of uniformity in the courts when defining materiality. However, the U.S. judicial system causes some of the differences evident in the court cases. When courts in various jurisdictions are approached to determine issues of materiality, different precedents are set. Only the standards set in the decisions of the Supreme Court are applied universally. Another factor which creates differences in court cases is that materiality has been an issue in many types of cases. In making materiality determinations, the courts have scrutinized various statutes and regulations within the body of the securities laws. This paper has concentrated on the definition of materiality in the courts and has not investigated the varying nuances evident in different sections of the securities act and regulations. Thus, the problem with the varying standards of materiality may lie within the regulations and not with the evaluation by the courts.

Because materiality is determined based upon the facts and circumstances of each case, differences in its application can be expected to continue. The courts might be more likely to apply a universal standard if the accounting profession could first develop a specific definition to be applied. As stated by the court in *U.S. v. Simon*, [425 F.2d 796, 807 (Cir. 2, 1969)]:

> We do not think the jury was also required to accept the accountants' evaluation whether a given fact was material, at least not when the accountants' testimony was not based on specific rules or prohibitions to which they could point, but only on the need for the auditor to make an honest judgment . . . [Emphasis added.]

As long materiality decisions are made on a case-by-case basis under different common and statutory law standards, differences in the application of the rule by the courts will continue.

Even though the accounting profession has developed its own view of materiality, the judicial definition cannot be ignored. In today's litigious society, if an accountant's judgment is questioned, the ultimate determination of proper treatment is often made by the courts. To avoid legal liability, accountants must comply with the common law definition of materiality as it has evolved. Therefore, accountants are compelled to adopt the judicial definition of

materiality, though it may not always agree with the profession's conceptual framework of accounting.

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1990 ACCOUNTING HALL OF FAME INDUCTION: CHARLES T. HORNGREN

INTRODUCTION

by
Sidney Davidson
Accounting Hall of Fame Member
Arthur Young Distinguished Service
Professor Emeritus of Accounting
and former Dean,
University of Chicago Graduate School of Business

It is my great personal pleasure to present the citation for "Chuck" Horngren on his induction to the Accounting Hall of Fame. We all know "Chuck" as an excellent teacher, a dedicated contributor to the effective working of the accounting profession, and a truly outstanding author. But as a friend for three decades and as a colleague in various endeavors for much of that time, I can testify to more than that. "Chuck" is a warm, friendly soul, always willing to help, doing more than his share of the work without claiming credit for it. There is not a single malicious bone in his body. My life has been enriched by knowing him, working with him, and enjoying his company and that of Joan for these many years. With memory of this lifetime of friendship, I am proud to read this citation.

INDUCTION CITATION

by
Thomas J. Burns
Professor and Chairman
Committee on Accounting Hall of Fame
Faculty of Accounting & Management Information Systems
The Ohio State University College of Business

Among the few most influential teachers of his generation, he has been a dominant force in changing the traditional courses in internal accounting from cost accounting's overemphasis on accumulation and calculation of product costs, to managerial accounting, which explores the uses of costs for various purposes. A chief

vehicle for this change has been his text, *Cost Accounting: A Managerial Emphasis*, first published in 1962. in writing this text, he was heavily affected by the paperback published earlier at the University of Chicago, by his mentor William J. Vatter. In turn, Vatter had been much influenced by earlier, University of Chicago faculty, Billy Goetz, James O. McKinsey, and certainly J. M. Clark.[1]

As a student, he has always responded to demanding and motivating teaching, starting with his mother who gently corrected his language at mealtime; the nun, Sister Olive, in 7th and 8th grades; especially stern Inez Strohm in high school, who taught him English (his best subject) and literature; his first accounting instructor at Marquette, Herman Loebl; those at Harvard who taught management and control (and from which he received an MBA); and, of course, Bill Vatter at the University of Chicago (where in order, to teach, he entered the doctoral program), who showed him what a stimulating educational environment can be.

This patrician professor was born into a blue collar Milwaukee neighborhood of what was then called a mixed marriage. There were two children; his sister is a decade younger. His mother was Irish Catholic and his father was Swedish Lutheran. The father worked for over 40 years as a mail clerk on the Milwaukee Road. The son grew up within sight of a major set of railroad tracks and a large A. O. Smith factory.

When he was seven, he wanted to be pope but became discouraged over how Pope "Chuck" would sound. When he was eight, he decided to become a major league baseball player (after his father, an avid sports fan, took him to Sunday double-headers with the Brewers). His hero was Lou Gehrig (whom his father teasingly called a "bum"). He still remembers his ecstasy at his first big league baseball game with the Yankees and the White Sox, Gehrig hit *two* home runs in his first two times at bat, singled and walked. At nine, he reluctantly gave up this goal when he found he didn't play well enough. Thereafter, he lacked a goal until his junior year at Marquette; where, after tutoring accounting to basketball players and disabled veterans, he discovered that teaching was what he wanted.

After high school, he went immediately into the Army (during WW II). Because of a shortage of engineers, the Army sent him to

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[1]Each of these faculty members made memorable contributions to the literature especially J. M. Clark in his *Studies in the Economics of Overhead Costs*, first published by the University of Chicago Press in 1923 and reprinted in 1971.

take pre-engineering at Ripon College and then on to engineering at Texas A&M. After leaving the military and graduating from Marquette University and a period of working many twelve-hour days at a Big Eight firm, he took a teaching job of 30 classroom hours a week with Spencerian College, a for-profit business college. Always a cautious person, he thought if he could like teaching with such a schedule, he would have found his calling. And, of course, he had.

In 1955, he earned his Chicago doctorate with a dissertation on the uses of financial statements;[2] however, there was one delay. His wife, Joan, upstaged him by giving birth to their first child, their only son, Scott, on the very same morning his oral defense was scheduled.

Despite the fictional advice of Thomas Wolfe, he went home again, first with Marquette University and then with the University of Wisconsin-Milwaukee. He taught a wide variety of courses to a wide variety of students and worked with a wide variety of colleagues, including the stimulating Jim March[3] and the co-author of his first text, Jerry Leer. He even conducted a small CPA practice.

But in 1959 he was lured back to a tenured post with the University of Chicago. His many challenging colleagues included Sid Davidson — the leader, Nicholas Dopuch, David Green and, of course, George Sorter.[4] In 1965, he joined the Stanford Faculty.

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[2]His doctoral thesis, *Implications for Accountants of the Uses of Financial Statements by Security Analysts*, written in 1955, was published by the Arno Press in 1975. His first text was *CPA Problems and Approaches to Solutions*, in two volumes, co- authored with Jerry Leer. Since 1978, he has been the consulting editor for the Prentice-Hall series in accounting. For this publisher, he is the now author of four texts: *Cost Accounting: A Managerial Emphasis*, Seventh Edition, 1991 (with George Foster); *Introduction to Financial Accounting*, Fourth Edition, 1990 (with Gary L. Sundem), *Introduction to Management Accounting*, Eighth Edition 1990 (with Gary L. Sundem), and *Accounting*, 1989 (with Walter T. Harrison, Jr.).

[3]March had five children, Horngren comments about two in his "Response."

[4]He had taught Sorter his first accounting course in 1953. He remembers him as a stimulating student. Sorter is currently the Vincent C. Ross Professor of Accounting at New York University. Green is currently a Vice President of the City University of New York and Professor of Accounting at the Bauch College of the same institution. Both Green and Sorter earned the Ph.D. degree from the University of Chicago also. Dopuch, a University of Illinois Ph.D., is currently the Herbert and Dorothy R. Moog Professor of Accounting, Olin School of Business, Washington University, and was on the University of Chicago faculty from 1961 to 1983. Davidson, a Hall of Fame member, is the Arthur Young Distinguished Service Professor Emeritus of Accounting (the first Arthur Young Professorship

After twenty-five years at the Stanford Business School, during which time their MBA program has achieved the top ranking, this professor has led the world in developing managerial accounting not only in his classes but especially with his writing. Moreover, with the help of his senior colleagues, particularly Bob Jaedicke and Bob Sprouse, he has also fostered two generations of academics who have achieved much eminence in their own right, first Chicago-bred, Joel Demski, his former student, and Bill Beaver; and later, George Foster, Jim Patell and Mark Wolfson.[5]

He analyzes himself as a teacher as follows: "My strengths include: tight organization, full preparation, patience, avoidance of sidetracks, enthusiasm for subject, starting and stopping classes on time, no browbeating of students, and knowing names of students." He goes on to include his self-assessed weaknesses: "little flexibility, erratic abilities to listen to student comments, relatively little time spent reading papers and providing feedback, and little time devoted to getting acquainted with students personally." He reports he is not a "Mr. Chips" possibly because his class size is about sixty and other professional obligations mount.

He has further been a national leader in such organizations as the American Accounting Association (a member since 1957 and a past president), the American Institute of Certified Public Accountants (on the Accounting Principles Board from Opinion 13 through 31) and the National Association of Accountants (espe-

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at any university) and a former Business School Dean at the University of Chicago. Along with Horngren, Davidson, Dopuch and Sorter have received the American Accounting Association's Outstanding Accounting Educator Award.

[5]Jaedicke, who retired this summer as Dean of the Business School, continues as the William R. Kimball Professor of Accounting. Sprouse, who left Stanford to join the Financial Accounting Standards Board when it was founded (becoming the Board's Vice Chairman), is now the Distinguished Accounting Research Professor at San Diego State University, his alma mater. Both Jaedicke and Sprouse earned Ph.D. degrees at the University of Minnesota. Leaving Stanford in 1985, Demski is now the Milton Steinbach Professor of Information and Accounting Systems at the Yale University's School of Organization and Management. Beaver is the Joan E. Horngren Professor of Accounting at Stanford. Both Beaver and Demski earned their Ph.D. degrees at the University of Chicago and have received the American Accounting Association's Outstanding Educator Award. Foster, who earned his Ph.D. degree at Stanford, is currently the Paul L. and Phyllis Wattis Professor of Accounting there. Patell, who earned his Ph.D. degree at Carnegie Mellon University, is the Walter Kenneth Kilpatrick Professor of Accounting at Stanford. Wolfson, a University of Texas Ph.D., is the Joseph McDonald Professor of Accounting at Stanford.

cially its CMA program)[6]. Widely honored, he usually wins awards the first time they are offered; he also holds two honorary doctorates.[7]

He is devoted to his family: wife, four children, three grandchildren, and his sister. All live on the west coast. He calls his wife, Joan, his "balance wheel." In a unique gesture, he funded a Stanford accounting professorship in her name, even if she didn't ever remember what the initials "APB" stood for.

He is a fan of Bay area sports teams. However, his interest in the Giants and the Athletics has never been what his father's would have been.

Always the consummate academic, always the model for each of us, he is a most worthy successor to that line of inspirational professors who have been inducted into the Hall. He unsmilingly believes that teaching is a noble profession and the harder you work, the luckier you get. He is the 50th inductee into the Accounting Hall of Fame.

CHARLES THOMAS HORNGREN

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[6]A CPA, Horngren served on the Accounting Principles Board for six years, the Financial Accounting Standards Board Advisory Council for five years, and the Council of the American Institute of Certified Public Accountants for three years. For six years, he served as a trustee of the Financial Accounting Foundation, which oversees the Financial Accounting Standards Board and the Government Accounting Standards Board. In addition to being a member and past president of the American Accounting Association, Horngren has also served as Director of Research and currently serves on the Accounting Education Change Commission. Horngren is also a member of the National Association of Accountants, where he was on its research planning commission for three years. He was a member of the Board of Regents, Institute of Management Accounting, which administers the Certified Management Accountant examination.

[7]He received the American Accounting Association's Outstanding Accounting Educator Award in 1973 when the Association initiated an annual series of such awards. In 1985 the American Institute of Certified Public Accountants presented its first Outstanding Educator Award to Horngren. The California Certified Public Accountants Foundation gave Horngren its Faculty Excellence Award in 1975 and its Distinguished Professor Award in 1983. He is the first person to have received both awards. He received an honorary DBA from Marquette University in 1976 and an honorary Doctor of Humane Letters from DePaul University in 1985.

RESPONSE

by
Charles T. Horngren
1990 Accounting Hall of Fame Inductee
Edmund W. Littlefield Professor of Accounting
Stanford University Graduate School of Business

Occasionally I give an after-dinner speech. This is the first time that I have given a before-breakfast speech. I know which audience wants a shorter speech, so I shall behave accordingly. Moreover, at this early hour, I do not intend to dwell on controversial accounting issues.

Obviously, I am overwhelmed and overjoyed to receive this lofty honor. I deeply appreciate being included in a roster of such distinguished accountants.

Learning and Gratitude

A professor's career is heavily affected by his or her teachers, colleagues, and students. Mine is no exception. No matter where I have worked, I have always benefitted from the stimulation of those around me. Because I might carelessly overlook mentioning some deserving names, today I will not name specific individuals who have earned my gratitude. For the most part, they know their influence. I am indebted to each of them.

An academic career has been very satisfying for me. In particular, helping others to learn is a gratifying endeavor.

The teaching of accounting has provided concrete self-satisfaction. Compared to many subjects, the body of knowledge in accounting courses is relatively well-defined. So a teacher can obtain quick feedback on the amount learned by students, even on a day-to-day basis.

All in all, in over forty years of teaching, I have had at least 12,000 students in various classes. Because I habitually invite comments and questions, I invariably obtain useful knowledge and insights from students. As you can plainly see, I was not born yesterday. However, I am convinced that students have kept me younger than I would be otherwise.

Of course, there are cost and benefits from almost everything we do. Having had so many students, I always try to be on my best behavior. Big brother may not be watching, but a student may be looking — especially in airports. You can judge whether such a phenomenon is a cost or a benefit.

Every once in awhile, I get a note or a letter from a grateful

student. Such kind words lighten my spirits enormously. Have you ever written an appreciative note to a former teacher? I remember, as an 18-year old army private, writing a thank-you letter to my stern, demanding, motivating high-school English teacher. It made me feel good that I took the time to recognize superb teaching. I especially urge the younger members of this audience to write at least one similar letter to a special teacher of theirs — not next year, but next week. Just do it.

Through the years, I have learned much from steadily interacting with practitioners in public accounting, financial officers, and managers of all kinds here and abroad. Almost without exception, they have been generous with their time, their information, and their thinking. I am a strong supporter of having more professors exploring all three sides of the triangle of teaching, research, and practice. The more who do so, the stronger all three sides will become.

An efficient way to learn from professors about accounting research and teaching is to join the American Accounting Association and attend its meetings. Similarly, an efficient way to learn about practice is to join, attend meetings, and be as active as possible in such organizations as the American Institute of CPAs and the National Association of Accountants. I wish that more professors did so. The triangle would be stronger and tighter.

Convoluted Paths Through Time

Earlier I aimed some words at the younger members of this audience. What follows will probably be of more interest to older than younger members. I'll be mentioning some familiar names, not in the sense of gratitude, but in the sense of how relationships sometimes intertwine over many years.

1. For many summers I have been teaching in the Stanford Executive Program, which meets for eight weeks, five days a week, including July 4. On July 4, 1988, I happened to be teaching one of the three scheduled classes. The other two classes were taught by Hal Leavitt, the managerial psychologist, and Ezra Solomon, well-known in finance and economics. We had been colleagues at the University of Chicago in 1953, thirty-five years before. What is the probability of such an event? Careers, like all of life, take unexpected twists and turns.

2. Two of my four children have taken accounting courses. One incident seems worth noting. My oldest daughter has a degree from Stanford, 1980. When she was a sophomore, she was ran-

domly assigned a dorm room. Her roommate turned out to be the granddaughter of H. A. Finney and the daughter of Steve Finney, partner of Touche Ross, Chicago office. (For those of you too young to know, H. A. Finney was a profilic author of accounting textbooks for Prentice-Hall for nearly half a century). Moreover, these two young women had independently enrolled in an undergraduate elementary accounting courses. Their textbook was *Financial Accounting* by Davidson, Stickney and Weil. Their teacher was Stan Baiman, a Visiting Professor.

3. When I was teaching at the University of Wisconsin-Milwaukee, the senior member of the accounting faculty was Jim March. Incidentally, he wrote a book on cost accounting. Jim had several children with special talents. A son, John, rose to the top management at Arthur Anderson & Co. before departing to become a member of the FASB. Another son, Jim Jr., is my colleague at Stanford. He is a world-renowned researcher in organization theory. Jim Jr.'s son was as student in two of my classes at Stanford. So I have known three generations of Marches. The world sometimes seems small.

Non-Comments on Current Issues

Please note that I have said nothing yet today about recent developments in management accounting, financial accounting, and accounting education. Especially at this hour, I suspect that nobody here is disappointed.

Twenty years ago I gave a speech, "The Accounting Discipline in 1999", at the annual meeting of the American Accounting Association. Not surprisingly, when one offers a flock of predictions, some of the predictions in that paper have held up well; others have not. I was a member of the APB in 1970, then the Czars of U. S. Accounting. I stand before you as a used czar. Although it was not a prediction, I commented that most of the time the APB feels like a lone tree in the midst of 1,000 dogs. Now, twenty years later, I'll update that comment. Most of the time the FASB feels like a lone tree in the midst of 1,000 dogs. We live in times of turbulent change, but many things stay the same. This completes my commentary on current issues.

Conclusion

The greatest satisfaction of my professional life is that given the job to be done, and given the time available to do it, I have given my best. I have stressed to my children to try hard, do your

best. That's all we should ask of ourselves and others.

The least satisfaction has come from lack of time. With more time, my output would have had better quality. With more time, I would have been able to keep up with the bursting literature that overwhelms me increasingly each year.

During World War II, Winston Churchill was informed by one of his ministers of a noteworthy fact: "If all the brandy you have consumed in your lifetime were poured here, this spacious room would be filled to the top of your desk." Gazing at the ceiling, Churchill replied, "So little done, so far to go." That is my major message today — to my colleagues in accounting education, to accountants, to managers, and to students.

Given the history of our world, the arts of accounting and management are in their infancy. Developing our knowledge, skills, and attitudes begins in our universities. The foundations are laid there. As accounting educators, if we are to err in balancing between general concepts and specific techniques and descriptions, I favor erring toward the general. Moreover, our teaching should alert our students that their education here is primarily aimed at equipping them to learn for themselves throughout their professional lives.

Accounting and management education have advanced considerably since I was a student, but it has far to go. It merits serious efforts by all of us.

THE ACCOUNTING HALL OF FAME MEMBERSHIP

Year	*Member*
1950	George Oliver May*
	Robert Hiester Montgomery*
	William Andrew Paton
1951	Arthur Lowes Dickinson*
	Henry Rand Hatfield*
1952	Elijah Watt Sells*
	Victor Hermann Stempf*
1953	Arthur Edward Andersen*
	Thomas Coleman Andrews*
	Charles Ezra Sprague*
	Joseph Edmund Sterrett*

*Deceased

Continued on next page

THE ACCOUNTING HALL OF FAME — *(Continued)*

Year	*Member*
1954	Carman George Blough*
	Samuel John Broad*
	Thomas Henry Sanders*
	Hiram Thompson Scovill*
1955	Percival Flack Brundage*
1956	Ananias Charles Littleton*
1957	Roy Bernard Kester*
	Hermann Clinton Miller*
1958	Harry Anson Finney*
	Arthur Bevins Foye*
	Donald Putman Perry*
1959	Marquis George Eaton*
1960	Maurice Hubert Stans
1961	Eric Louis Kohler*
1963	Andrew Barr
	Lloyd Morey*
1964	Paul Franklin Grady*
	Perry Empey Mason*
1965	James Loring Peirce
1968	George Davis Bailey*
	John Lansing Carey*
	William Welling Werntz*
1974	Robert Martin Trueblood*
1975	Leonard Paul Spacek
1976	John William Queenan
1977	Howard Irwin Ross*
1978	Robert Kuhn Mautz
1979	Maurice Moonitz
1980	Marshall Smith Armstrong
1981	Elmer Boyd Staats
1982	Herbert Elmer Miller
1983	Sidney Davidson
1984	Henry Alexander Benson
1985	Oscar Strand Gellein
1986	Robert Newton Anthony
1987	Philip Leroy Defliese
1988	Norton Moore Bedford
1989	Yuji Ijiri
1990	Charles Thomas Horngren

*Deceased

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REVIEWS

PATTI A. MILLS, EDITOR
Indiana State University

REVIEWS OF BOOKS AND OTHER PUBLICATIONS

Philip D. Bougen, *Accounting and Industrial Relations: Some Historical Evidence on Their Interaction* (New York: Garland Publishing, Inc., 1988, 342 pp., $40)

Reviewed by
Roxanne T. Johnson
University of Baltimore

Philip Bougen has successfully described the complex interaction between an accounting system and the organizational components dependent on the information resulting from such a system. Bougen evaluates in exhaustive detail the interaction between an accounting system and the management and labor constituencies within the Hans Renold Company of Manchester, England, as reflected in a profit sharing plan. In the process, Bougen has constructed a complex picture of the interaction between company management, employee populations and the accounting numbers that were used to tie the two constituent groups together.

In the course of his research, Bougen wanted to consider:

(i) some of the factors which led to the *emergence* of accounting in the structure and practices of industrial relations in one particular company over a substantial period of time.
(ii) the roles accounting numbers and systems were called upon to play in the conduct of industrial reactions.
(iii) the *consequences* of the interweaving of accounting and industrial relations [p. 1].

Bougen's study explores these three themes by analyzing the complex environmental and institutional circumstances within which the Hans Renold Company attempted to introduce the profit sharing plan. Thus, he evaluates events internal to the firm within the context of the economic and societal conditions affecting the country as a whole. In the process, he accomplishes his goals and objectives quite effectively.

In Chapter Two, Bougen traces the general history of the company, and introduced the primary participants in the profit sharing scheme. The founder of the firm, Hans Renold, believed firmly in the advantages of accounting information, and had introduced cost accounting techniques early in the firm's existence. He and his son, C. G., managing director from 1919, also espoused scientific management techniques. Bougen describes the elder Renold's management style as a combination of "autocracy, paternalism and a search for organizational efficiency" [p. 13], techniques adopted by his son as well. These factors were extremely important in the relationship between management and labor that evolved while the profit sharing plan was in operation. The plan was introduced in 1920 as a response to a complex set of management concerns with respect to the employee population. Bougen traces the development, growth and denouement of the plan over the following ten-year period.

Chapters Three through Six track in detail the evolution of the plan using as a primary source the minutes of the Profit Sharing Committee composed of employee and management representatives. Of particular interest in these chapters is the interaction between management and labor during discussions in the Committee concerning the accounting numbers presented as part of the profit sharing scheme. Foremost in these discussions was the continued effort on the part of management to "educate" the employees using accounting information. Not only did management want to garner labor support for their decisions using accounting information, but the accounting information was also used to encourage employees to increase efficiency and productive output. This effort to imply a "cooperative venture between Labor and Capital" [p. 101] was not successful. It rapidly became evident that the profit sharing scheme maintained the status quo between management and labor. The scheme was devised, introduced and maintained by firm management. Although masquerading as a cooperative effort, labor was still excluded from company decision making despite opportunities to comment on and question the accounting information presented to justify the profit sharing or, as was more frequently the case, the lack thereof. Over time, the numbers lost credibility with the employee representatives as the perception of management prerogative regarding company performance, profit sharing distributions and the accounting information presented as justification grew. Management concerns were also growing "in that an exercise which was designed to

promote mutual trust and agreement in the conduct of industrial relations, could have the very opposite effect" [p. 185].

Chapter Seven details the efforts to alter the scheme and make it more acceptable to all concerned. In an effort to circumvent labor's increasing interest in company decision making, less accounting information was made available to the Profit Sharing Committee and fewer and fewer committee meetings were called. Even though the accounting information was withheld, however, employee representatives still questioned managerial prerogatives and actions. The questioning may have disturbed management, but it did not interfere with the maintenance of the managerial prerogative. This is evident in the decision to merge with a competitor, a decision which excluded the employee population although of significant importance to the profit sharing scheme. At the end of this period, the scheme was terminated. This sketch of the events, concerns and changing attitudes of participants in this scheme cannot possibly impart the rich texture of this research. The interaction between company management and employees generated by the extensive use of accounting information in a situation of extreme interest to both parties cannot be minimized. Bougen has written an extremely well researched, documented and interpreted volume which transcends the mere chronicling of events. In the process, he has most effectively explored the three themes he identified at the outset.

The only slight drawback to this work occurs in the writing style of the author. In many cases, he has incorporated three or four different ideas into one sentence when three or four separate sentences would serve the reader more favorably. This is not a fatal flaw by any means and certainly does not diminish the value of the work. Further, additional editorial review would have identified the typographical and grammatical errors which again are not fatal flaws but unfortunately detract from the undeniable value of the research.

Robert H. Frank, *Passions Within Reason: The Strategic Role of the Emotions* (New York: W.W. Norton & Co., 1988, 304 pp., $19.95)

Reviewed by
Eric W. Noreen
University of Washington

In this book, Robert H. Frank, who is a professor of economics at Cornell University, persuasively argues that passions (or

emotions) play a strategically important role in human affairs. Paradoxically, our passions, by leading us to forgo tactical material advantages, may actually result in strategic material advantages. This notion is strange enough that I think it is best to discuss it within the context of an example drawn from behavioral laboratory studies cited in the book. The experiments were conducted using pairs of subjects who did not know one another and each subject participated in only one trial. Subject 1 was given a sum of money and was asked to propose a division between himself and subject 2. Subject 2 then had the option to accept or refuse the division. If the offer was refused, neither subject got any money at all. The "rational" strategy for subject 2 is to accept any division that leaves him with some cash since the alternative is zero. Knowing this, the "rational" strategy for subject 1 is to propose a division in which he gets nearly everything. In fact, in about a quarter of the trials, subject 1 proposed a 50-50 division and the average percentage demand by subject 1 was 67% — a far cry from the 99+% predicted by the theory of rational economic man. Moreover, in about 22% of the trials the divisions proposed by subject 1 were rejected by subject 2 — even though in all cases subject 2 would have been better off accepting the offer. And, quite clearly, there was a relationship between the "unfairness" of the proposed division and the tendency for the division to be rejected.

This single experiment, which is only one of many cited in the book, raises all sorts of interesting issues. First, the results are clearly at odds with what we would ordinarily think of as rational behavior. These were all one-shot games between subjects who did not know each other, so there were no strategic advantages, within the context of the experiment, for subject 1 to be magnanimous or for subject 2 to reject an offer — however small. And yet such behavior was regularly observed. Emotions are involved in this experiment and the fundamental point made by Frank is that such emotions are useful — not in every situation necessarily, but in enough situations that they confer advantages on those who have them.

Why did subject 1 so often propose a 50-50 split instead of a 99-1 split as "rational" theory would seem to predict? A rationalist might respond that subject 1 was afraid that subject 2 would reject a lop-sided division; but of course this could only happen if subject 2 were himself irrational. Indeed, the fear that subject 2 is irrational may motivate subject 1 to give subject 2 a greater share! However, another force is at work that also mitigates against the

predicted 99-1 division. Namely, most of us feel bad if we take unfair advantage of others. Now what possible advantage can such guilt feelings have?

An indirect (and unintended) lesson of agency theory is that opportunistic behavior generates enormous deadweight losses. Markets fail, sub-optimal decisions are made, monitoring costs are incurred, etc. A sense of guilt can act to counter opportunistic behavior and thereby reduce deadweight losses due to agency costs. Moreover, if there are statistically reliable signs concerning who feels guilt and who does not (such as certain facial expressions), those who feel guilt will be sought after in ventures that require mutual trust. The capacity to feel shame and guilt therefore conveys important material advantages; in the economists' jargon, it enlarges an individual's opportunity set.

An important insight is that, by their very nature, emotions are involuntary and it is this aspect that solves a variety of problems in economics and relationships. If I could turn my feelings of guilt off and on at will, you would not trust me to feel shame if I were to cheat you. Hence you would be reluctant to enter into any venture with me that presents me with opportunities for exploiting you. Unfortunately, since emotions are involuntary, they may be activated at times that are inappropriate as well as when they are in our long-run interests; on balance, however, Frank argues that they are useful. Due to natural selection, the very existence of emotions provides *prima facia* evidence of their usefulness.

Returning to the experiment, why is it in subject 2's interests to reject a division that would leave him with something — however small. Clearly, it is not rational for subject 2 to reject even a token payment — and yet he does. The theory of rational economic man simply does not correctly predict behavior in this situation. Frank argues that subject 2 refuses the offer out of anger over an "unfair" division. Of what possible use is such an emotion of anger? Strategically, an individual can gain in the long run if he can convince others (via a reputation or involuntary signals) that he will act irrationally and refuse advantageous, but "unfair", offers. The adversary of such an irrational opponent is forced into making a "fair" offer. Once again, this emotion has to be involuntary to be credible. In the context of the experiment, the emotion triggers a response that is clearly not in the interests of the individual. However, if the individual had the ability to turn off the emotion in situations in which it would be to his immediate material advantage to do so, the emotion would not have a deterrent effect. The emotion must

have the power to override the "rational" response in order to be strategically useful.

A last example from the book brings this point home. In a world populated by rational men as modeled by economists, Mutually Assured Destruction would not be a credible nuclear defense. The victim of a first strike has nothing to gain by retaliating. Indeed, retaliation would likely result in the total destruction of all life. Hence, no rational being would retaliate. Knowing this, a rational being would strike first. Thankfully, our leaders are irrational and can be trusted to become angry and push the button in retaliation. The emotion of anger makes the threat credible and thus prevents the first strike.

In this review, I have just scratched the surface; there are many fascinating insights in the book backed up by impressive empirical evidence. *Passions Within Reason* should be required reading for all social scientists — particularly those of us who have been influenced by the rational economic man paradigm.

Axel Grandell, *Historiska studier i folkliv, handelsteknik och redovisning* (Abo, Finland: Abo Academy Press, 1989, 149 pp., $16).

Reviewed by
Sten Jönsson
School of Economics and Commercial Law
University of Gothenburg

The Tally Stick Epoch in the History of Man

This collection of articles by Axel Grandell, Scandinavia's grand old man of accounting history, is interesting. They teach us how illiterates managed their bookkeeping from the earliest (5th century) time of the Vikings. When traders from Birka, the trading capital of the Svea vikings, went up the Russian rivers on their tours they bought furs on their way up on credit. Having sold their goods, they paid against IOUs on their way back. (Trust and goodwill were obviously built over the years.) To issue the IOU, a split tally stick was used. Two sticks with a flat surface fitting together were notched across both sticks indicating how many furs had been received. Debtor kept one and creditor the other. The proof of the claim was that the notches fitted together. Fascinating! The word for tally stick in Russian, the Baltic languages, and Finnish is "birka", the name of the place most of these traders came from.

Another use of the split tally stick was as promissory notes by the English Crown when it borrowed money from private persons. Richard, Bishop of London and Chancellor of the Exchequer, left precise instructions for the form of tally sticks dated 1186. The depth and length of the notches indicated the currency and amount. This use of the tally stick lasted for over 600 years. When the last outstanding stick was cashed-in in 1834, it was decided to use them in heating the Houses of Parliament. Grandell tells us that the potential of the tally stick was underestimated — the chimneys of Parliament were overheated and the buildings burnt to the ground.

There were other users of the tally stick: Marco Polo mentions that the merchants of Venice used it, other users include the Hansean merchants, tax collectors in the 16th century and onwards, traders with the Lapps of the North and, of course, industrial users, from the inception of ironworks in the 13th up to the end of the 19th century. The Hammersmith Order of December 27, 1703, reads, "those who can neither read nor write shall keep two tallies, cut in daler and ore, one at his place of work and the other among his possessions and money."

The book contains 13 articles — two of them are written in English, the others have short English summaries — on different aspects of the history of the tally stick: notch writing, from the 4th-century Ogham writing, through the runic writing of the Viking time (and the secret writing of that time in code) to the symbols for the figures used in recording days of work and charcoal deliveries to iron works. There are also accounts of how wolf hunting was organized and tallied in Finland.

This reviewer, admittedly, has not paid much attention to the history of accounting before literacy, but Grandell opens one's eyes. The tally stick is an ingenious invention. The split stick allows two parties to record a transaction together and both can bring objective evidence with them. The Emperor of China (200 B.C.) used a split tiger, he keeping one part and the general Yangling the other, to be able to prove that the messenger carried genuine imperial orders to the army. Reading about it stimulates your fantasy. Just think how the tally stick solved a data security problem, and how it functioned in the building of business networks in less organized times than ours. (This collection is a complement to Grandell's earlier book from 1982 *The Tally Stick. A neglected bearer of cultural tradition*, in Swedish, published by Abo Akademi).

Thomas M. Porter, *The Rise of Statistical Thinking, 1820-1900.* (Princeton, N.J.: Princeton University Press, 1986, 333 pp., $12.50).

Reviewed by
James J. Tucker, III
Widener University

This book is the product of dissertation research efforts initiated by Thomas M. Porter in 1979. One is initially impressed with the depth and breadth of the research which is truly exceptional. There are over 700 footnote citations many of which are from French and German literature. Porter has skillfully synthesized a number of major themes including the role of the natural and social sciences in the evolution of statistics, and the impact of statistics on society as a whole as evidenced by the influence of statistics on the formulation of policy in both the public and private sectors. These major themes are also examined and analyzed in relation to the philosophy of science.

The book is divided into four "Parts" with each Part containing two or three chapters for a total of nine chapters. Although the title of the book indicates that the period examined is 1820 to 1900, the first chapter begins with a substantive discussion of the development of "Statistics as a Social Science" beginning in the 1660s. Similarly, the last chapter and the conclusion contain a number of references to twentieth-century literature.

Porter has successfully increased the book's comprehensibility by very limited use of mathematical formulas and notation; however it is not an "easy read." It would be beneficial to the reader to have a general familiarity with the various European and American intellectual movements circa 1750-1900 regarding the political economy and the role of science in societal development.

Porter presents the evolution of statistics from the "... systematic study of social numbers ..." during the 1660s, known as "political arithmetic", to the concept of "statistical law" first proposed about 1830, to the laying of the foundations of mathematical statistics which occurred between 1890 and 1930. He describes in detail the debates that invariably ensue when paradigmatic change is proposed, and the interdisciplinary consequences of change. A major topic examined by Porter which should have broad appeal is the evolution of the probability distribution that is referred to by Galton as the "supreme law of unreason." Porter carefully traces the origins and related debates of this "law", which is now referred to as the Gaussian or normal distribution. He

concludes that the normal distribution "... is practically coextensive with the history of statistical mathematics during the nineteenth century, and its reinterpretation as a law of genuine variation, rather than of mere error, was the central achievement of nineteenth-century statistical thought."

Since this reviewer is more inclined to associate mathematical statistics with applied empirical research, one facet of this book which was particularly interesting is the significant impact that the development of mathematical statistics had on social philosophers of this era. For instance, one philosophical question which arose was, if probabilistic models can be developed to predict crime rates, suicide rates, etc., does man, in fact, have a free will, individually or collectively?

Since both statistics and accounting attempt to measure and depict attributes of some underlying phenomenon, accounting researchers would benefit by studying Porter's painstaking approach and methods in attempting to reveal the intellectual evolution of an academic discipline and the resulting societal impact. This book would especially benefit those accounting researchers who study the effects of accounting and information systems on organizations and society. Persons who have a strong interest in the development of mathematical statistics will find Porter's work to be fascinating. Lastly, the reviewer highly recommends this book to those who have a high regard for the interdisciplinary approach to the philosophy of science as manifested by Thomas S. Kuhn in his classic, *The Structure of Scientific Revolutions* [1970].

REFERENCE

Kuhn, T. S., *The Structure of Scientific Revolutions*, 2nd edition. Chicago: University of Chicago Press, 1970.

Rasoul H. Tondkar and Edward N. Coffman, Editors, *Working Paper Series Volume 4 (Working Papers 61-80)* (The Academy of Accounting Historians, 1989, 352 pp., $15).

Reviewed by
Marilynn Collins
John Carroll University

Volume 4 of the *Working Paper Series*, contains papers on a variety of topics. Papers 61, 62, and 63 deal with cost accounting. *WP No. 63*, "The Wisdom of A. Hamilton Church," by Vangermeersch [pp. 35-55] provides excellent analysis of Church's

contributions to cost accounting and identifies the relevance of Church's ideas for today's manufacturing firms.

Papers 68 and 72 are concerned with individuals. *WP No. 72*, "Luca Pacioli and Piero Della Francesca," by Stevelinck [pp. 170-184] is a well-written and well-translated inquiry into the lives of the two men that logically refutes the accusation of plagiarism against Pacioli.

Papers 76, 62, and 79 discuss regulation. *WP No. 76*, "The Capitalization of Fixed Assets in the Birth, Life, and Death of U.S. Steel, 1901-1986," by Vangermeersch [pp. 264-293] analyzes the impact of overvalued assets and the effects of government regulation and intervention, offering an excellent historical perspective to the topics by their discussion in the context of the social, economic, and political environment and the accounting standard-setting process. *WP No. 62*, Dusenbury's "The Effect of ICC Regulation on the Accounting Practices of Railroads Since 1887" [pp. 23-34], is a thorough, in-depth review that includes an excellent statement of the reason for this historical study [p. 23].

WP No. 69, "Women in Accounting," by Becker [pp. 134-150] reviews the century-long struggle of women to attain professional status as CPAs. By analyzing the struggle within the context of economic changes such as war, Becker provides a basis for additional research to analyze the nature of current sexual discrimination and to identify ways for its elimination.

WP No. 71, "The Development of Letters and Numbers as Tools for Accounting," by Costouros and Stull [pp. 160-169] mainly traces the evolution of alphabetic symbols and Arabic numerals, contending, but not proving, that alphabetic and numeric writing were invented primarily as tools of accounting [p. 161]. This paper may be of interest to Foucauldian researchers. (See Hoskin and Macve [1986].)

Working papers 70, 73, 74, 75, and 78 deal with accounting standards. *WP No. 70*, "The Development of the Recurring-Nonrecurring Earnings Presentation" by Stewart [pp. 151-159] concludes that empirical research is needed to determine which presentation better assesses cash flows and illustrates the usefulness of historical research for contemporary standard setting. *WP No. 74*, "The History of the Accounting Research Bulletins: 1939 to 1946," and *WP No. 75*, "The History of the Accounting Research Bulletins: 1947 to 1959," by Becker [198-263] are excellent resources for adding historical perspective and economic consequences to discussions of any of the subject matters of the bulletins that are covered in financial accounting courses. *WP No. 78*, "An Historical Devel-

opment of Statement of Financial Accounting Standards Number 95: A New Era of Solvency Reporting?" by O'Bryan [pp. 312-326] is a thorough history of the funds statement useful for including the history and economic consequences of cash-flow reporting in financial accounting courses.

Working papers 65 and 67 survey the application of standards. *WP No. 65*, "A Comparative Analysis of the Financial Statements' Content in Annual Reports of American Telephone and Telegraph Company and General Electric Company From 1900-1940," by Carpenter and Tondkar [pp. 82-94] identifies causes for changes in financial reporting due to general developments in accounting, showing the response to official standards and illustrating the evolution of improvements in the quality of financial reporting. The paper demonstrates the difficulty of comparing time periods.

Papers 66 and 80 propose a theory of accounting history. *WP No. 66*, "A Paradigm for the Analysis of Accounting History" by Baladouni [pp. 95-109] should be evaluated in terms of its potential for achieving the objective of accounting history research: "possession of a viable perspective for the conceptualization and analysis of its object of consideration" [p. 95]. Baladouni's paradigm is useful for ascribing value to historical research that may be implicit but not clearly stated in the writings of accounting historians.

REFERENCE

Hoskin, K. and Macve, R., "Accounting and the Examination: A Genealogy of Disciplinary Power," *Accounting, Organizations and Society* (1986), pp. 105-36.

Stephen P. Walker, *The Society of Accountants in Edinburgh 1854-1914* (New York: Garland Publishing, Inc., 1988, 416 pp., $48).

Reviewed by
Richard K. Fleischman
John Carroll University

Stephen Walker has undertaken an extensive study of the Society of Accountants in Edinburgh (SAE), the earliest prominent Scottish society to promote and maintain the standing of chartered accountancy as a profession, during its inaugural sixty years. Walker compiled a data base of 1146 SAE members and prospective members who failed to qualify, 1854-1914. Having scoured a

variety of primary sources, the author has tabulated and presented this biographical information in numerous interesting ways. The inclusion of ninety-four tables and fifteen illustrations, mostly graphical, bears testimony to the extent of his analysis. The author achieves an excellent mesh of narrative with these statistical compilations while focusing on a number of dominant issues from early SAE history. Major themes include the changing nature of accounting practice over time (from a preponderance of bankruptcy work to company auditing); factors involved in recruiting accountants into the profession (class, residential, educational); the evolution of an examination system to quality new professionals; and the impact of social class origins on recruitment, apprenticeship, and certification.

The organization of this mass of statistical data is an outstanding feature of this book. It reads much like the econometric history inaugurated almost twenty years ago with Fogel and Engerman's *Time on the Cross* [1974]. Most innovative was the demographic model that Walker constructed to test the hypothesis that the early membership of the SAE could generate sufficient progeny for a self-recruiting profession. However, Walker employed celibacy, age of marriage, and fertility data to demonstrate that only limited numbers of later SAE members followed in their fathers' footsteps. The author might have tried to do more with mortality, particularly survival rates of SAE children in an era when life expectancy was still precarious in younger age categories. Likewise, the author's utilization of mean ages of marriage and death was not the best statistic for smallish samples where several outliers could produce distortions.

Another statistical feature of the analysis was the attempt to link entry into the profession with the occupational background of the families of prospective members. This social standing was demonstrated to be a leading career-choice determinant. The author also divides family origins into nine "social status groups," which became the basis for SSG-specific fertility rates, indenture exemptions, examination failures, and other comparisons.

The statistical tables so prominent in this work are most imaginative with regard to subject matter and well-designed in their presentation. However, several compilations seemed a bit far afield. For example, the spatial distance between SAE members with no apparent accounting origins and CAs over a continuum of house addresses [p. 103] has some antiquarian interest, but added little to the recruitment analysis. The same might be said of tables linking non-qualification to place of residency during indenture

[pp. 184-185] and numerous comparisons reflecting a preoccupation with similar developments in the legal profession. The author might have been more consistent in revealing the sources for his statistical tables.

Walker, throughout the book, makes judgments about the significance or non-significance of explanatory variables, i.e., apprenticeship firm size and examination pass rates, paternal social status and qualification, and residential/spatial factors in SAE recruitment. While the data are perhaps too qualitative to permit regression analysis, the author might have discussed the potentialities, or lack thereof, for more mathematical determinations of significance.

While this history does provide extensive coverage of this vital professional organization, more background material would have embellished the important historical context of the SAE. What unique circumstances existed in Edinburgh in the mid-nineteenth century to explain these developments? What contributions did the SAE make to the evolution of other professional accounting societies in Scotland and England? What was the quality of life for Edinburgh's accounting community before and after the formation of the SAE?

The only omission of consequence regarding SAE events was a shortage of information about its social and political activities. It may have been that the organization did little at its meetings, but it seemed the SAE minutes were underutilized. The appendix contained many interesting documents gleaned from this source. The reprinting of an actual examination, as distinct from the several lists of topics contained, would have been interesting.

On balance, Walker's effort is excellent and valuable for what it does achieve. The book is highly readable, mechanically clean, and attractively published. The interface between narrative text and well-designed statistical tables is worthy of remention. The Society of Accountants in Edinburgh has now been deeply and imaginatively researched. This book makes a major contribution to our understanding of the early history of the accounting profession in Scotland.

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Fogel, R.W. and Engerman, S.L., *Time on the Cross: The Economics of American Negro Slavery*, Boston: Little, Brown, 1974.

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