EMPIRICAL STUDIES ON CONTINUITY AND CHANGE IN ACCOUNTING

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LIST OF THE PUBLISHED WORKS SUBMITTED

1. "Historiography, Causality and Positioning: An Unsystematic View of Accounting History", *The Accounting Historians Journal*, Vol. 26, No. 1, 1999, pp. 83-102.

2. "The Role of Accounting in Public Expenditure and Monetary Policy in the First Century AD Roman Empire", *The Accounting Historians Journal*, Vol 22, No 2, 1995, pp. 117-29.

3. "Accounting in Anglo-Saxon England: Context and Evidence", *Accounting History*, NS Vol. 2, No. 1, 1997, pp. 7-34.

4. "John Johnson's letters: The Accounting Role of Tudor Merchants' Correspondence", *The Accounting Historians Journal*, Vol. 25, No. 1,1998, pp. 57-72.

5. "The Costing Records of George Bowes and the Grand Allies in the North-east Coal Trade in the Eighteenth Century: Their Type and Significance", *Accounting, Business and Financial History*, Vol. 6, No. 1, 1996, pp. 2-22.

6. "Through a Glass Clearly: Management Practice on the Bowes Family Estates c.1700-1770 as Revealed by the Accounts", *Accounting, Business and Financial History*, Vol. 9, No. 2, 1999, pp. 175-201.

7. "Accounting and Marketing Rationale: the Juxtaposition within Brands", *International Marketing Review*, Vol. 11, No. 2, 1994, pp. 33-46.

8. "Formulating an Accounting Standard for Brands in the Market for Excuses", *Journal of Brand Management*, Vol. 5, No. 4, 1998, pp. 263-71.

DOCTORAL STATEMENT

Eight single-authored, refereed articles (1994-1999) are presented for the degree of PhD by published work, all of which relate to distinct topics, but which share a common theme: continuity and change in accounting. The rationale underlying my research is that the role of accounting in society is widening with improved information, communications and surveillance technology, changes in the public sector, and the expansion of the accounting profession into new areas of consulting expertise, and yet the nature of the discipline is inadequately understood. Why is it such a powerful force? Is its main function in society to facilitate the effective allocation of capital in the economy by providing good information to managers, investors and other stake-holders for decision-making? What are the other issues at stake? Arguably the best way of approaching these questions is to examine the components of the world of accounting in an historical context, especially focusing on the factors that have helped determine its present shape. This is the most direct way that accounting historians can contribute to modern practice. It is the old adage revisited, that you cannot see where you are unless you know where you come from. A study of the factors promoting or retarding change is important; and the articles that are presented constitute a series of historical "bore-holes" in different situations where the pressures on existing procedures are likely to have been at their greatest because of changing environmental factors. Examples of these include the transition from Republican to Imperial government in 1st century Rome (Oldroyd, 1995), its subsequent demise in Europe (Oldroyd, 1997), the collapse of the woollen trade in the middle of the 16th century (Oldroyd, 1998b), industrialisation on Tyneside in the 18th century (Oldroyd, 1996, 1999b), the rise of intangibles and upsurge in take-over activity in Britain in the 1990s (Oldroyd, 1994).

The collection reflects the growing importance of historical studies in accounting research since the landmark publication in 1956 of *Studies in the History of Accounting* by A.C. Littleton and B.S. Yamey. This compilation of keynote articles by two such distinguished scholars helped legitimise accounting history as an academic discipline and set the standard for future research (Parker and Yamey, 1994, pp. 4-5). In particular, there has been a surge of interest in accounting history since the 1980s, with the number of authors and outlets multiplying. Parker's (1980, pp. 26-28; 1988, pp. 76-81) accounting history bibliographies provide some indication of scale. In the nine years to 1977, he cited about 170 authors, compared to about 510 in the seven years to 1987. The number of outlets for accounting history articles has also expanded to include most of the generalist accounting journals as well as those specialising in business and accounting history (Anderson, 1998; Parker, 1999, p. 15).

Much of the impetus to accounting history research over the last twenty years has come from "critical" or social based accounting researchers, who have questioned the traditional economic paradigm that has dominated accounting theory since the publication of *The Nature of Capital and Income* by Irving Fisher in 1906 (Mouck, 1995). Miller et al (1991) heralded the more eclectic approach of the so called "new" accounting history which has challenged the hitherto dominant "rule of economics" (Funnell, 1996, p. 39). The economic "traditionalists" have responded by defending their position, and there has been a tendency for the debate to polarise, with researchers from different schools using the past to justify their own perceptions of the intrinsic nature of accounting, be it Economic-rationalist, Marxist, Foucauldian etc. (e.g. Tyson, 1992 and 1998; Bryer, 1994; Hoskin and Macve, 1996).

These were the findings of the first publication now submitted (Oldroyd, 1999a), which provides a methodological framework for the rest of the articles in the series. The paper reviewed developments in accounting historiography over the last twenty-five years in relation to the underlying positioning of the participants. It found that, as well as becoming more schematic under the impetus of "critical" studies, accounting history has located itself within the tradition of social science, which subsumes events into generalisations and generalisations into theory, an unstable position as far as long-term predictions are concerned, given the unpredictable catalysts of accident and personality that have played a major part in the development of accounting. The articles in the collection contain examples where prominent individuals, such as Augustus in the 1st century (Oldroyd, 1995) and Ethelwold in the 10th (Oldroyd, 1997), or random events, such as wars and monastic reform in Anglo-Saxon England (ibid.), the failure of the woollen trade in the 1550s (Oldroyd, 1998b), or the collapse of Polly Peck International plc (Oldroyd, 1994), have influenced the development of accounting. Other examples include the Black Death, which Harvey (1984, p. 7; 1994, p. 106) linked to changes in manorial accounting in the 14th century, the Napoleonic Wars, which helped precipitate the adoption of discounted cash flow analysis in the coal industry (Brackenborough et al., 2000), or the marketing awareness of Stern Stewart & Co in successfully promoting *Economic Value Added* as a new global standard in the face of doubts about its validity (McLaren, 1999).

Paper one proposed an alternative, non-schematic view of accounting history, that the accounting universe is composed of interlocking causal relationships which cannot necessarily be subsumed within unifying theories, and which can only be teased out through careful historical enquiry where explanations are contingent on evidence. The reality of causal theories of accounting is that several reasons may exist for a particular action, or what applies in one situation may not be valid in another, or the weighting of factors may vary between situations. This was demonstrated by the sixth paper in the series which examined the management arrangements on an 18th century industrial estate, and found Economic-rationalist and Foucauldian explanations of the accounting activities not to be mutually exclusive (Oldroyd, 1999b).

However, this is not to deny that there are advantages to generalising. According to McClelland (1975, p. 86), "the only possible way of arranging facts to yield any causal explanation is to subsume those facts under a generalisation". Likewise, Hoskin and Macve (2000, p. 129) maintained

> that in any significant interpretive history of an accounting event, there should be an implicit, if not explicit, attempt to understand its relationship to events at other times and in other places, a hypothesis at

> least of how it might fit into a broader conception of the history of accounting.

I would agree with both those views, and although the collection of articles now presented eschews generalised causal theories because they tend to be too simplistic, it does highlight certain areas of commonality in the development of accounting practice that help illuminate the current state of the discipline. Lee (1990, pp. 97-98) adopted a similar approach, and was able to identify a number of "constants" as well as changes in the "world of accounting" since earliest times. Four factors in particular emerge from the present study: rights and obligations, continuity and inertia, distance from events, and the reciprocal relationship between accounting information and user needs.

II

Rights and obligations: Baxter (1999, p. 256) summed up the importance of rights and obligations as follows:

> Ruminating on theory, the accounting historian may (rather sourly) reflect that accounting started as a means of keeping track of debtors, creditors and cash; and that this is still its main task, without which business would collapse.

Lee (1990, p. 98) concurred:

> The desire for a permanent memory of transaction exchanges, and resultant possessions and obligations, has been persistent.

An examination of the origins of accounting around 8000 BC in locations as diverse as Israel, Syria, Iraq, Turkey and Iran - the prehistoric token system described by Schmandt-Besserat (1992) - confirms this analysis. The advent of token accounting seems to have been associated with the adoption of farming in these regions. The distinguishing feature of agricultural society, compared to hunter-gatherers, is property in the form of land and surplus, which has a number of ramifications, including the creation of ownership and obligation, and reckoning technology to facilitate economic exchanges (Oldroyd, 2000). It follows that from the beginning, the *raison d'être* for accounting systems was rights and obligations, and the articles in the collection confirm that this has continued to remain true.

Paper two, for instance, argued that the extension of public accounting under Augustus in the 1st century AD into areas of financial planning and control arose out of his public expenditure obligations (Oldroyd, 1995). As emperor, his wealth was immense, and the inadequacy of public revenues obliged him to subsidise the state heavily out of his own funds. The difficulty was compounded by the absence of government borrowings, resulting in short-term deficits. The alternative would have been for the state to default on its obligations, seize large fortunes, or debase the coinage. Increasingly, therefore, the emperor's personal finances became intertwined with those of the state, and he had strong personal motivation to increase control of public spending to reduce his own exposure.

Paper three examined the accounting arrangements on large estates in England and Gaul in the post Roman period (Oldroyd, 1997). These enforced the rights of the lord in two main ways. First, estate surveys were compiled periodically to determine what he possessed and how much it was worth, including the obligations in money and kind of the tenants. Second, the size of the estates necessitated using stewards, and accounts to hold them responsible for the discharge of their responsibilities. Both these forms of accounting were apparent in a series of written instructions issued by Charlemagne at the end of the 8th century to correct abuses that had crept into the administration of the royal estates in the Frankish Empire. They were still both being practised one thousand years later on estates in England, as was confirmed by paper six, which examined the management practices employed on the Bowes estates c.1700-1770 (Oldroyd, 1999b). Compared to the earlier period, the major difference was in the complexity of the contractual arrangements that required a range of supplementary accounts, if the proprietor's interests were to be safeguarded effectively. The need to enforce rights and obligations meant there was a close linkage between the form of the accounts and the mode of organisational control. This was most clearly illustrated in relation to coal mining, where different methods of organisational control were used by the Bowes at different times - leasing, subcontracting, direct mining, and partnerships - and the estate accounts were adapted accordingly. Another key feature of the management procedures on the Bowes estates is that the contractual obligations of third parties were underpinned by written agreements. This legal underpinning of the business arrangements, combined with the use of accounts to monitor compliance, extended beyond the estates to the family's other business activities, such as the Grand Allies. The Grand Allies were a combination of landed families on Tyneside - George Bowes was a founder member - which aimed to concentrate capital for the purpose of joint-stock mining and to raise the price of coal by blocking entry to the industry. Here too, accounting was the mechanism adopted to enforce the terms of the partnership agreement, as in the right of the respective parties to inspect each other's books weekly (Oldroyd, 1996).

The importance of estate accounting to the development of financial reporting practice is widely acknowledged. Chatfield (1977, ch. 2), for example, argued that medieval agency accounting laid the foundations for the modern doctrines of stewardship and conservatism. Estate practice also provided a ready model for new enterprise in the Industrial Revolution, and may even have retarded its progress (Pollard, 1965, pp. 25, 29-30; Napier, 1997). However, mercantile practice was probably just as important a formative influence - the universal application of double-entry today bears witness - and here too the desire to safeguard rights and obligations was paramount. Paper four examined the role that correspondence played in the accounting systems of English Tudor merchants (Oldroyd, 1998b). It concurred with the findings of previous authors, that the main purpose of a merchant's accounts was to act as a complete record of his transactions, enforceable in law. Accounts were intended to eliminate errors, to prevent embezzlement, to establish the value of a business for probate or similar purposes, to keep track of credit dealings, inventories, and partners' capital, and to provide evidence in courts of law. Letters played an important part in this by evincing agents' stewardship, confirming the balances on personal accounts, generating prime data for the account books, and constituting legal evidence, as shown in the utilisation of both letters and account books in the bankruptcy case against the merchant John Johnson.

If accounting has traditionally been about tracking rights and obligations, what of the future? At one level, Baxter (1999, p. 256) is correct that this situation is bound to continue or else business would cease to operate. At the overall level of assessing the effectiveness of directors' stewardship of companies, it is not so certain. Papers seven and eight in the series highlighted the difficulties in tracking assets caused by the growth in intangibles since the 1970s (Oldroyd, 1994 and 1998a). Intangible fixed assets comprise a wide range of "dematerialised products", such as goodwill, computer and biological software, patents, telecommunications, agricultural quotas, trademarks, research and development, brands etc. (Tollington and Kleyman, 1997). They now play a central role in company policy formation, as evidenced by the huge increase that has occurred since 1970 in the relative size of goodwill for UK and US companies (Bryer, 1995; McCarthy and Schneider 1995). As paper seven illustrated, the problem for accountants lies in the very nebulosity of these assets, which makes identifying, measuring and recognising them in the financial accounts so difficult. Paper eight, for example, noted that most companies seek synergy gains from their acquisitions, causing purchased goodwill to quickly lose its separate identity as the acquired business is integrated within the group. The matching approach to income measurement, whereby income is viewed as the product of matched costs and revenues in the profit and loss account, is traditionally most closely associated with stewardship because of its emphasis on past performance and realised gains. Here the main accounting problem for intangibles is segregating the expenditure involved in creating them, which is not necessarily insoluble given that many issues in accounting involve the jointness of costs, and attempts are made to deal with them (Oldroyd, 1994). However, accounting standard setters in the UK and internationally have moved away from this matching view of income to a balance sheet one, which measures income as the increase in net worth of a company, or the increase in its ability to generate future revenues. The logic behind this approach is that it provides more relevant information to decision makers. The main differences with the matching view are that assets are valued rather than included at historical cost, and income is augmented by unrealised holding gains. But, the cost of intangibles is hard enough to quantify, let alone the future economic benefits that constitute their value. In order to reduce subjectivity in the accounts there will be a tendency to leave these assets out. Given the importance of intangibles to modern business, allied to the inherent uncertainties of these assets, there is inevitable conflict in following the balance sheet approach to measuring income between the desire to present a complete picture and the desire for reliability, both of which are necessary if the financial accounts are to fulfil their traditional stewardship role, or indeed to facilitate decision-making.

The incomplete nature of balance sheets was illustrated by paper eight in relation to FRS 10, "Goodwill and Intangible Assets", which requires the capitalisation of purchased intangibles, but prohibits most internally generated ones, such as brands, from being recognised (Oldroyd, 1998a). Similarly, most intangibles are only allowed to be revalued downwards following their initial recognition, and not upwards (pars. 14, 45). It is presently unclear whether this conflict between completeness and reliability is capable of resolution. As the next section will show, accounting is not just constrained by the financial technologies that are available - the Accounting Standards Board (ASB) have been innovative here in their use of discounted cash flow analysis for valuing intangibles - but by the weight of past practice and the inertia produced.

III

Continuity and inertia: Continuity in accounting is a central theme of the articles now presented. Paper two, for instance, traced the development of financial control in the

Roman economy in the 1st century AD (Oldroyd, 1995). At the centre of the process was the emperor's principal financial secretary, the *a rationibus*, who, by the end of the century at least, was responsible for forecasting public revenues and expenditure, in addition to advising on how much coin to issue. But how did the office originate? Paper two argued that the public accounting records maintained by Augustus, and the budgetary role of the *a rationibus* some seventy or eighty years after his death, were part of the same evolutionary trend, originating in the employment by Augustus of his personal staff to administer both his public and private finances, which as we have seen became inextricably linked. Thus he used clerks and accountants from his private staff at Rome to assist him in supervising the public treasury, which entailed them having access to the public records held therein. De Ste. Croix's (1956, p. 43) observation that it was common practice for "men of property" at Rome to keep accounts to control their households and estates begs the question of whether the accounts kept by Augustus were themselves a continuation of existing procedures. The national scope and content of his accounts were after all fully consistent with the vast size of his property.

Continuity is a key issue in paper three, which examined estate accounting as well as governmental planning and control in the Anglo-Saxon period (Oldroyd, 1997). According to Harvey (1984, p. 8; 1994, p. 91), written estate accounting emerged in England during the 13th century, and was precipitated by population growth that made it more profitable for lords to farm their *demesne* instead of letting it to tenants. Paper three, however, argued that written accounts had been produced on English estates since at least the 10th century, when earlier Carolingian practice, preserved by the Church, was transmitted to England via the monastic reform movement. Efficiently managed estates were needed to support the new foundations. Thus estate surveys in England as late as the 14th century were still following the format prescribed by the Carolingians on the Continent five hundred years before. There was also continuity in the public accounting procedures. Domesday Book (1086), for instance, was in the tradition of those earlier surveys by Frankish kings that made use of the sworn inquest. The tax system of Henry I in the 12th century was a continuation of the pre-Conquest, Anglo-Saxon *geld*, that was itself based on a system of assessment dating back to the 7th or 8th centuries.

According to paper four, the accounting arrangements of the merchant, John Johnson in the 1540s and 50s were an extension of the formative written procedures operated by merchants sixty years earlier (Oldroyd, 1998b). Technically, they differed in their use of double-entry bookkeeping and Arabic numerals, which made calculations easier, but they shared the same primary objectives of controlling operations at a distance and dividing up the proceeds on voyages between partners (Hooper, 1995). The 1550s were a period of transition for English merchants, who stood on the threshold of a colonial expansion into new international markets, with the joint-stock company as a new form of commercial organisation to share the increased risks. These early companies were floated by mercantile capital, and their accounts continued to perform the same functions as before, with the sharing of proceeds on voyages becoming formalised in the payment of dividends; perhaps illustrating Lee's (1990, p. 98) point, that accounting has persistently adapted to a changing environment "without fundamentally changing its purpose or its main characteristics."

Continuity in accounting was promoted on the Bowes estates in the 1700s through the estate stewards copying the practice of their predecessors (Oldroyd, 1999b). Thus there are cash books for the Gibside estate covering the period 1728 to 1792, which were kept in the same format, despite a succession of different stewards. Family dynasties of stewards were quite common; and one generation was able to teach the next. A similar situation prevailed amongst colliery viewers (mining engineers/managers), whose duties included providing cost data for forecasting the profitability of mine workings and for evaluating the relative advantages of capital improvement projects (Oldroyd, 1996). A common factor which emerges from their records is that they worked in association with each other, and in particular, that they learnt their trade as apprentices with established viewers. In this way the succession of knowledge based on practical experience was assured. The lack of change in costing practice was a particular feature of the British coal industry, and subsequent work in progress demonstrates that the techniques devised by Newcastle viewers in the 18th century were still being practised in the nationalisation era following the Second World War (Fleischman and Oldroyd, 2000; Brackenborough et al., 2000).

The longevity of much of accounting practice implies a high degree of inertia. Paper one defined accounting inertia as the reluctance to adopt new practices and ideas allied to the hesitancy in discarding old ones, which it maintained imbues past practice with its own momentum (Oldroyd, 1999a). Lee (1990) and Hines (1991) observed the same phenomenon. Lee (1990, p. 97) described it as "the self-referential and recursive nature of accounting." For Hines (1991), the theoretical postulates underlying financial reporting are reflexively constructed from the established body of accounting practices and beliefs and have no intrinsic meaning. Arguably, inertia in accounting has increased as accounting has become embedded in the institutional, legal, and regulatory framework. Examples of inertia might include the delay in the adoption of double-entry bookkeeping in industrial accounting or the persistence of Victorian corporate style reporting to shareholders. Accounting legislation drafted by the European Community has displayed a tendency to adapt old rules. The same has been apparent in Eastern Europe following the demise of the U.S.S.R. (Walton, 1995, p. 3).

According to paper seven, inertia has played a major role in the recent debate over the treatment of intangibles in financial accounts (Oldroyd, 1994). The paper observed how the accounting profession, firmly grounded in a tradition of conservatism, initially attempted to exclude brands from the balance sheet altogether through the imposition of artificial recognition criteria based on the saleability of these assets, even though they are not generally developed or acquired with the intention of resale. Where objective verification is lacking, the paper demonstrated how accounting logic will err on the side of reliability at the expense of restricting asset recognition. According to Chatfield (1977, ch. 2), this propensity for understatement can be traced back to medieval agency accounting, where understating assets and revenues was a form of self protection for the manorial steward facing audit, in a situation where he would be held personally liable for any reported shortfalls. Whilst personal recompense is no longer an issue except in cases of negligence, the reputation of modern audit firms and of the profession as a whole is at stake if a company collapses with large amounts of intangible assets in its balance sheet, or if its assets are subsequently found to be over-valued following a take-over. Thus paper eight described how the ASB has a vested interest in promoting reliable information in order to preserve the current regulatory framework and the profession against further government intervention (Oldroyd, 1998a).

Continuity in accounting implies that one cannot necessarily disassociate a particular practice from what has gone before, either in the short or long-term, and casts doubt on Miller and Napier's (1993, p. 631) bold assertion that

> there is no "essence" to accounting, and no invariant object to which the name of "accounting" can be attached.

However, the high level of continuity does not mean that accounting is continuously improving either, as Littleton (1933) believed. First, the reluctance to change may imply stagnation, and an inability to respond to the changing needs of business. Whether this was true of costing practice in the British coal industry, for example, awaits research. Second, discontinuities in accounting do occur that have a profound effect on its future direction. An example is the lasting impact that the Nazi occupation of France has had on the country's financial reporting (Standish, 1990). Paper one maintained that an important characteristic of accounting inertia is that it can be overcome by events in ways that would have been difficult to foresee (Oldroyd, 1999a). We have already referred to the important role that accident and personality have played in precipitating accounting change. Fligstein (1990, p. 9) observed a similar phenomenon in relation to business organisations. He found that organisations tend not to change until they are faced with a crisis. Returning to the subject of intangibles, it remains to be seen whether the increase in the importance of these assets to business constitutes just such a "crisis" for accounting. The fact that the ASB has significantly altered its position on intangibles to allow their partial recognition suggests that it does, particularly given the high level of earlier resistance (Oldroyd, 1998a).

IV

Distance from events: According to Schmandt-Besserat (1992, p. 160), the first accounting records, which predated the invention of writing by several thousand years, represented a cognitive leap for mankind because they enabled "concrete information" to be translated into "abstract markings" and "knowledge" to be separated from the "knower". For the first time, economic events could be communicated at a distance apart from by word of mouth; and distance from events has continued to influence the development of accounting. In ancient Rome, for example, much of public finance was conducted at a distance because of the dispersed locations of the provinces, and accounts were used by the state as a check on the stewardship of its officials. The governors in the provinces accounted to the treasury in Rome for their expenditure, in addition to any local receipts, alongside the tax collectors (Oldroyd, 1995). The Roman authors Pliny the Elder and Columella described a system of management for large estates that too was dependent on stewards and charge and discharge accounts to regulate their activities. It may be significant that both these texts were available in the court library of the Frankish kings c.800, as it was at this time they embarked on their programme of administrative reform for the royal estates, and adopted the same system to manage their own vast holdings (Oldroyd, 1997).

According to Hooper (1995), the diversification of English merchants into overseas markets in the second half of the 15th century explains why they switched from oral to written accountability. Their traditional oral procedures "became increasingly inappropriate" (p. 112), whereas written accounts enabled merchants "to exercise more control over distant agents" as well as permitting greater accountability among partners (p. 93). Paper four described how the internationalisation of English trade continued apace in the 16th century, widening the network of agents and factors, and increasing the need for accounts (Oldroyd, 1998b). It was for this reason that letters and the postal system became vital to Tudor merchants, because they provided a more flexible and timely information source over wider distances than the account books.

Distance was an important factor in the management of the Bowes estates in the 18th century in view of their geographical dispersion. The three main estates were located at Gibside in the north of County Durham, Streatlam in the south, and Wemmergill in the west. Each of the estates acted as the centre of a pool of industrial activity. George Bowes, the proprietor, travelled frequently to London, and was himself often distant from events at home. When he was away, he maintained an active involvement in the day-to-day operations of the estates through correspondence. An organisational structure was therefore needed that was capable of delegating responsibility to stewards in key areas, whilst, at the same time, retaining control at the centre. Paper six found that this was achieved through a unified reporting network (Oldroyd, 1999b). Returns from all the various activities and locations were channelled through the one estate office at Gibside; and the chief stewards there, who were answerable directly to the proprietor, were responsible for ensuring their subordinates complied.

There is always the possibility of a conflict of interests between agent and principal when responsibility is delegated to stewards. Papers four and six both noted instances of agents acting opportunistically (Richard Johnson and Nathan Horne). However, the collection of articles shows that from at least the 1st century onwards people have been aware of the role that accounting can play in governing conflicts of interest. Lee (1990, p. 97) concurred, describing the process as "a power-knowledge relationship [that] has been persistent through time." Another example concerns the General Mining Association, the major coal producer in Nova Scotia during the 19th century, where detailed costing systems were devised expressly to enable the London based directors to exert control over their managers in Canada (Fleischman and Oldroyd, 2000). Modern agency theory emphasises the importance of contracting in "maximising the efficiency of the exchange between the principal and the agent", and of accounting in facilitating contractual relationships (Baiman, 1996, p. 27). Thus the emphasis on written contracts in the business arrangements of the Bowes estates, combined with the use of accounts to monitor compliance (see page 10), suggests an empirical, if rudimentary, understanding of the potential of agency theory for reducing agency costs. Generally speaking, the use of historical data to validate agency theory is a possibility that has been recognised in the literature, but is as yet underdeveloped, notwithstanding that agency theory suffers from the same potential difficulties of over-simplification as any other generalised causal theories of human behaviour (see page 7). Advocates of an agency approach include Napier (1989, p. 248), who suggested that "undistorted" pre-regulation data might be useful in the development of Positive Accounting Theory, and Roy and Spraakman (1996), who evaluated the development of the Hudson's Bay Company's management accounting systems in the 19th century in the light of what Transaction Cost Economics would have predicted.

The papers in the series suggest that distance from events has been as much of a factor in the creation of agency relationships and accounts as the separation of ownership from management via the joint-stock company. However, it is not just the geographical distance that is important, but the speed of communication, which is a function of technology. Tudor merchants were dependent on letters carried by horse and sail, and the time delay between sending and receiving letters could cause them difficulties. There are instances in the Johnson correspondence, for example, where goods would not have been shipped had the information about changing market conditions abroad been received sooner (Oldroyd, 1998b). Spraakman and Davidson (1998, pp. 80, 83) argued that improvements in communication after 1860 through the availability of railways, river steamboats, and the telegraph reduced "asset specificity" and "uncertainty" for the Hudson's Bay Company, thereby creating reverse Transaction Cost Economics pressures to the ones that had existed previously.

If technology has influenced the development of accounting in the past by making the world smaller, what will be the effects of global networking and other technological innovations that shrink it further? According to Previts (2000, p. 17),

> not since the advent of double entry have we found ourselves on the verge of such an important technological development affecting the process of financial and business reporting.

XBRL (eXtensible **B**usiness **R**eporting mark up **L**anguage), which is intended to facilitate the "instantaneous preparation, analysis and exchange of financial reports and other frequent performance data and measures on the web" is a likely indicator of the shape of things to come (ibid., p. 16). The most obvious impact will be felt by the accounting profession, whose lack of proprietary control over new technology threatens its dominance as the main provider of financial information. A similar lack in the banking industry has allowed non-bank competitors, such as supermarkets, to diversify into banking markets (Bátiz-Lazo and Wood, 2000). In the United States, the Elliott Report predicted that new technology would facilitate the entry of non-accountants into accounting - recent examples include American Express - and warned of the interlopers lobbying for the removal of the statutory regulations that protect the profession's traditional rights to conduct audits and related services (AICPA, 1997). The ultimate effects of new technology on accounting practice are more difficult to predict, although, at the very least, the public availability of performance data on an ongoing basis via the web will reduce the relevance of the annual/biannual reports to accounts' users. The Elliott Report pointed out that new entrants to the market will not be constrained by the profession's standards and rules. Neither therefore will they be as constrained by the inertia referred to in the previous section, increasing the likelihood that time honoured views will come under greater challenge in the future.

V

Reciprocal relationship between accounting information and user needs: The final strand in the papers concerns the ability of accounts' users to extend the purposes of accounting information beyond the explicit role of enforcing rights and obligations in order to promote their economic interests. This manifests itself in the collection in two main ways. First, there are the vested interests that turn accounting into a type of "game" rather than "a function of principles and professional judgement" (Lee, 1990, p. 73). Thus Watts and Zimmerman (1979) characterised it as a "market for excuses". Accounting policies are rationalised in the public interest, whereas in reality they are supplied to meet the demands of vested interests, who will gain or lose by the view shown in the accounts. Second, the uses to which accounts are put in practice can lead to an extension of the function of accounts to embrace decision-usefulness as a reporting aim. Chambers was one of the first accounting theorists in the modern era to champion the needs of the user for information relevant to decisions (Previts and Al-Hogail, 2000), and his plea that providing such information should constitute the primary objective of financial reporting has been taken up by standard setters internationally, most recently by the ASB in its *Statement of Principles* (ASB, 1999, par. 1.3).

Looking first at the game-play aspect, analysing the motives of the various players is particularly problematic in an historical context, given the lack of surviving evidence. The accounts in themselves may be insufficient for imputing why they were prepared and the uses to which they were put (Hoskin and Macve, 2000); and accounting historians have been criticised for reading too much of present-day practice into their interpretation of past records (Miller and Napier, 1993). Corroboration is needed in the form of minutes, correspondence etc. The Strathmore archive provides the highest incidence of this type of material encountered by the author to date, and game-play does emerge (Oldroyd, 1999b). Accounting was commonly used in business negotiations, for example, and surviving memoranda indicate that the Bowes were well aware of its potential for gaining an advantage over the other party in a bargaining situation by furnishing them with information to which the others were not privy. Accounting pervaded every aspect of the estates' activities, and it was also used by individual employees to promote their own interests at the expense of rivals, as in the dispute between John Gibson and Nathan Horne. Gibson, the manager of a lead smelting mill, used accounts to demonstrate his own expertise and Horne's inefficiency in a bid to obtain a salary increase and get his rival sacked.

Returning to the present, the lobbying that takes place prior to the issue of an accounting standard provides researchers with the opportunity to track the vested interests in accounting disclosures. This was the import of paper eight, which examined the lobbying of managers in the fast moving consumer goods sector, professional brand valuers, and the large accounting firms in relation to a new accounting standard for brands (Oldroyd, 1998a). It found that all of the parties concerned, including the ASB itself, stood to gain some benefit from the solution that was brokered (FRS 10), suggesting that in this case at least, the "market for excuses" hypothesis does provide a reasonable explanation of the accounting proposals, and that people act rationally to promote their own interests.

Another way in which accounting can facilitate rational economic behaviour is through providing decision-influencing information; and "decision-usefulness" is widely accepted as the most important reporting object in the present-day. This view was encapsulated by Jenkins (1999, pp. 27-28), the chairman of the Financial Accounting Standards Board in the USA, when he said that financial reporting should facilitate the "effective allocation of capital in the economy" by providing good information to investors and creditors for decision-making. However, the historical contribution of accounting to economic decision-making is not so certain. The question of whether accounting encouraged or assisted managers and entrepreneurs in exploiting the new opportunities arising from the technological, demographic and market changes of the British Industrial Revolution, for example, has generated much debate. Despite a tendency over the last fifteen years to question its perceived shortcomings (eg. Edwards, 1989; Fleischman and Parker, 1990; Boyns, 1993), Fleischman and Parker (1997, p. 8) describe how most researchers still take the view that accounting proved an ineffective management aid to eighteenth and nineteenth century industrialists. Miller and Napier (1993), for instance, argue that the concept of economic decision-making is far more recent. Bryer (2000) criticises the Economic-rationalist school for erroneously imputing decision-making as a motive when the true purpose of the accounts remained to promote accountability. According to Hoskin and Macve (2000, p. 105), decision-usefulness in Industrial Revolution accounting was inhibited by the amount of "noise" in the system inherited from earlier routines.

There is probably some truth in all of these views, although they do not give sufficient weight to the intention of the preparers as opposed to the efficiency of the accounts that were produced. Paper six, for example, highlighted certain defects in the Bowes' accounts, such as not distinguishing between revenue and capital in the *ex post* profit statements. But the intention remained to improve profitability, as shown by their attempts to forecast the incremental costs and revenues arising from alternative business strategies, such as whether to process lead or sell it raw (Oldroyd, 1999b). For Hoskin and Macve (2000, p. 99), the main challenge is to "explain the fullness of modern accounting's power", and here they perceive efficiency as being more important than intention. For them, accounting was, and possibly still is, a creaking gate as far as efficient decision-making is concerned (p. 106), and its true power must therefore lie elsewhere, as a normalising force in human relations (p. 99). However, intention is arguably just as important a factor in an historical context where one is attempting to trace the antecedents of modern practice, as well as the wider organisational and social linkages; and the articles now presented suggest that accounts' users from earliest times have recognised accounting's potential for informing the economic choices that were available to them.

Accounts were used primarily by the Roman state to control the operations of the Treasury and Imperial Mint, and also the financial dealings of the state's officials in the provinces. However, the possible uses of this information went beyond facilitating the minting operations; and it was during the reign of Augustus that its potential as an aid to imperial planning and budgeting was first recognised (Oldroyd, 1995). Financial planning was also evident in the fiscal and monetary systems that existed in late Anglo-Saxon England. The land tax known as the *geld* demonstrated the power of the state in operating a sophisticated system of assessment on a national level for defence against the Danes. Evidence of planning also exists in the systematic withdrawal and reissue of the coinage at fixed intervals, with subtle and deliberate variations in weight (Oldroyd, 1997).

Although the prime purpose of the account books and letters of Tudor merchants was to facilitate accountability and control, the scope of the information conveyed in the letters was wider, thereby forming the basis of decisions about what commodities/currencies to buy and sell, when to trade, in what markets, and on what terms (Oldroyd, 1998b). As Yamey (1981, p. 133) recognised, this was another consequence of the merchants' distance from events, which obliged them to rely on information supplied by others.

A similar situation prevailed on the Bowes estates in the 18th century. The majority of the accounts were designed to keep track of rights and obligations, and yet the survival of cost analyses, profit statements and especially planning data indicates that profitability was also an important issue - the estates were not simply treated as units of consumption - and that accounting informed business decisions (Oldroyd, 1999b). Colliery viewers were instrumental here. Financial estimation was relatively sophisticated in the Tyneside coal industry from an early date. Amongst the tasks that the viewers performed was the provision of cost data for forecasting the profitability of mine workings and for evaluating the relative advantages of capital improvement projects (Oldroyd, 1996).

If accounting has been about promoting economic interests in the past, what is the difference between then and now? As Macve (1985) suggested, the answer partly lies in the expanding range of economic choices available now compared to in earlier times. In this respect, modernity can be defined by the increased range of available choices rather than by a fundamental change in the nature of accounts. Another more subtle difference is that, with the growth of business education and the profession in the 20th century, theory and practice are now articulated in the literature and in public debate. It is no longer possible to practise accounting without theorising it. Inevitably this has led to the recognition that people will use accounts for decisions irrespective of their intended purpose. In an era where accountants are required to justify what they do, the upshot is that decision-usefulness is now recognised explicitly as well as implicitly as a reporting objective. However, the accounting profession faces an impossible dilemma as a result. On the one hand, this need for self-justification means that they must promote decision-useful accounting. On the other, they are constrained by the weight of past practice and the inertia produced (see page 15), as well as by the inherent uncertainties of the world they represent. The models we use today, for instance, are very poor in terms of forecasting. We have already alluded to the difficulties in representing intangibles (see page 12). Taken together with the new situations created by the rise in intangibles and the revolution in information technology (see page 20), this need to justify the potentially unjustifiable is a further indicator that the practice of accounting has reached a crisis point in its development.

VI

The eight papers presented for the degree of PhD by published work range in scope from the 1st to the 20th centuries, commencing in the early Roman Empire with an examination of the accounting implications of a centrally managed currency, and closing in the recent past with an appraisal of the effects of vested interests and accounting inertia on the standard setting process. Other landmark changes that are considered include the development of English landed estates, the adoption of new industry in the 18th century, and the geographical expansion of mercantile commerce two hundred years earlier, all of which had significant accounting implications that help illuminate the current state of accounting practice. This type of field-work will remain vital on an ongoing basis as it constitutes the only defensible means of making new discoveries or testing the validity of accepted views in an area, that with one or two notable exceptions, has been neglected by economic historians. The financial information flows surrounding activities provide the researcher with a valuable source of evidence that most historians ignore. Thus, by examining the information flows in the Roman monetary system in the 1st century I was able to contribute to the debate over how well the Roman economy was managed from a different angle (Oldroyd, 1995). The same was true in respect of the management of landed estates in the 18th century. The information flows provided the lens for testing the hypothesis that estates were essentially unproductive investments, that they were managed as units of consumption rather than as profit centres to be exploited (Oldroyd, 1999b). Perhaps the most exciting aspect of this work is its potential for discovery as new situations are examined and new archives explored. I was, for example, the first researcher to appreciate the significance of Tyneside viewers to the overall development of costing in the Industrial Revolution (Oldroyd, 1996), or to consider the role that correspondence played in the accounting systems of Tudor merchants (Oldroyd, 1998b). In terms of work in progress, my co-authors and I discovered that costing practice was disseminated from Newcastle to Nova Scotia in the 19th century, in addition to the timing and circumstances surrounding the adoption of discounted cash flow analysis in the coal industry (Fleischman and Oldroyd, 2000; Brackenborough et al, 2000). All of this has helped elevate Newcastle University to a position of international prominence in this crucial area of accounting research, as testified by its number one ranking in accounting history journals, 1996-1999 (Carnegie and Potter, 2000). The articles here presented are as significant for the questions they raise as for the degree of enclosure achieved, and ultimately, the proposed basis for the award of the degree is the extent to which they have opened up the subject of continuity and change in accounting for future discussion.

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Armitage and Norton   Chartered Accountants   Leeds
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4 "Engendering Prehistory: Early Women's Roles in Accounting"
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Reports for professional bodies	1

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HISTORIOGRAPHY, CAUSALITY, AND POSITIONING: AN UNSYSTEMATIC VIEW OF ACCOUNTING HISTORY

Abstract: The article reviews recent developments in accounting historiography in relation to the underlying positioning of the participants. It finds that accounting history has located itself within the tradition of social science, which subsumes events into generalizations and generalizations into theory. It reviews the efficacy of causal theories of human behavior and proposes an alternative non-theoretical approach.

INTRODUCTION

In a thought-provoking, short article, Slocum [1995, p. 21] suggested that the phenomenon of history repeating itself occurs when the need for survival, coupled to the desire to take the easiest course, determines the path that is chosen. The implication is that there is a pattern to human activity, and that it is possible to theorize causal relationships. This chain of reasoning underlies the various accounting historiographical paradigms which seek to explain accounting activities and accounting change in terms of the pursuit of wealth through rational decision making (economic rationalist), the subjection of the forces of production through capitalism (Marxist), or the exercise of power through knowledge and symbolic representation (Foucauldian). The resultant causal structures are not the same. Authors maintain that the economic-rationalist paradigm tends towards a mechanistic view of cause and effect, whereas the other schools are more dynamic in that they focus on the processes of change by which new situations and practices are

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brought into being [Hopwood, 1981, p. 294; Mouck, 1995, pp. 74-78]. The Foucauldian emphasis on discontinuity [Fleischman and Tyson, 1997, pp. 92-97], that it is anachronistic to interpret the past as an extension of the present, in no way prevents the "dynamics that come to drive the power-knowledge interaction" [Hoskin et al., 1997, p. 3] from being theorized. Rather, the question becomes, when did conditions exist for them to operate? When did the modern world begin [Hoskin et al., 1997, p. 2]? These three models are merely illustrative rather than representative of the full genre of theoretical studies, which is extremely diverse. Young [1995], for example, adopted the theoretical concept of "regulatory space," Walker [1995] that of "critical-conflict," and Walker and Shackleton [1995] "British corporatism" to explain historical events within a single volume of *Accounting, Organizations and Society*.

The purpose of this article is to highlight the limitations of a theoretical approach to accounting history. It is therefore unashamedly reactionary, as theoretical history has gained ground in recent years [Fleischman and Tyson, 1997, p. 97]. Undoubtedly, the discipline of accounting history has been stimulated as a result, although some "traditional" accounting historians have felt that they are being "goaded and ridiculed" by the "energetic proponents of the new" [Funnell, 1998, p. 142]. The article commences by reviewing trends in accounting historiography over the last 25 years, before moving on to consider the nature and limitations of causal theories of accounting behavior. It argues that (1) the terminology that has been applied to research directions in accounting history is confused; that (2) accounting historiography has become more theoretical under the stimulus of "critical" scholarship; that (3) causal theories are undermined by the volatile elements of accident and personality which are not susceptible to prediction; and that (4) the present emphasis on theorizing causation is a reflection of the accounting discipline's own search for identity, coupled to the anthropic fallacy of historical reasoning, which places the historian at the center of the historical universe and uses the past to justify his/her view of the present.

HISTORIOGRAPHY

In recent years, accounting history has moved closer to the center of accounting research, and the nature and aims of the discipline have come under increasing scrutiny. Table 1 illustrates the range of classifications that have been applied to accounting history over the last 25 years, as scholars have attempted to rationalize accounting history's place in accounting research. These classifications and their linkages are useful because they illumine the underlying historiographical trends.

TABLE 1
Chronological Categorization of Accounting History

Author	Classifications	Linkages
1970 AAA	Intellectual, Utilitarian	
1974 Goldberg	Accounting practice Accounting thought	
1975 Johnson	Economic history	Growth of organizations
	Accounting history	Evolution of accounting procedures
1977 Baladouni	Cultural, Technological, Social	
1981 Yamey	Descriptive	Situation specific
	Interpretive	Wider setting
1981 Parker	Evolutionary, Revolutionary	
1981 Hopwood	Processes and consequences of change	Social, economic, and institutional context; Theoretical
	Development of technical practice	Noncontextual; Atheoretical
1986 Johnson	Littleton school	Technical; Mechanistic; Evolutionary
	New	Organizational Problematic; Discontinuous
1987 Hopwood	Technical-rationalist	Progressive improvement
	Critical	Complex dynamics
1989 Napier	Traditional	Discovers the past; Evolutionary
	Sociohistorical	Contextualizes the past; Discontinuous
	New positivism	Tests predictions
1990 Previts, Parker, & Coffman	Narrative, Interpretational	
1990 Flesher & Samson	Descriptive, Interpretive, Predictive	
1991 Miller, Hopper, & Laughlin	New	Interdisciplinary
	Traditional	Disciplinary
1993 Merino & Mayper	Traditional	Economic rationalist; Hierarchical documentary model
	Critical	Hidden discourses; Non-privileging of primary sources

TABLE 1 (Continued)
Chronological Categorization of Accounting History

Author	Classifications	Linkages
1993 Miller & Napier	Genealogies of calculation	Outcomes of the past
	Traditional accounting history	Evolutionary origins of the present
1996 Cooper & Puxty	Traditional	Mechanical/ technical
	Revisionist	Organizational context
	Marxist/ Foucauldian	Political insights
1996 Fleischman, Mills, & Tyson	Conventional	Descriptive
	Critical	Interpretive
1996 Fleischman, Kalbers, & Parker	Traditional	Economic rationalist
	Critical	Foucauldian; Marxist/labor process
1996 Carnegie & Napier	Early studies	History glorifying accountants & accounting
	Utilitarian studies	Informing the present
	Critical/ economic decision-making studies	Encouraging particular modes of explanation

Author	Classifications	Linkages
1996 Funnell	Traditional	Positivist; Econocentric; Objective, knowable reality
	New	Nonpositivist; Sociocentric
	Postmodernist	No reality separate from text; Facts are dethroned
1997 Fleischman & Tyson	Critical/ New/ Postmodernist	Nonprimacy of facts; Data substituted with theory; Wider variety of contexts
	Traditional/ Old	Knowable objective reality; Archive based; Narrower economic focus
1998 Funnell	Traditional	Narrative
	New	Counter-narrative

Different layers of meaning can be deduced from the table. First, as new research methodologies have manifested themselves, the exponents of the "new" have been keen to draw a distinction between their brand of history and what has gone before, the "traditional." However, the nature of this dichotomy is confused, which the table's linkages clearly show. For instance, the Foucauldian and Marxist worldviews have been characterized as "critical" because they try to render the familiar economic-rationalist view unfamiliar, by focusing on the hidden, unarticulated aspects of the accounting discipline [Merino and Mayper, 1993, pp. 238-239]. Thus, the economic rationalist viewpoint has been said to constitute "traditional" history, although the term also applies to studies which are descriptive in nature rather then interpretive [Fleischman et al., 1996b, p. 66], and which chart the technical development of accounting practice without contextualizing it [Hopwood, 1981, p. 295]. In this scheme, the discovery of technical data by "traditionalists" is still regarded as useful, albeit at the least publishable level of historical activity [Flesher and Samson, 1990, p. 3], because it provides fodder for the "contextualisers" to theorize [Napier, 1989, p. 250]. But, this implies a lack of interest on the part of traditional historians in causal relationships, which is quite inconsistent with the notion that they are also economic rationalists. Carnegie and Napier [1996, p. 14] acknowledged this situation by linking critical and economic-rationalist studies together as both encouraging particular modes of explanation. Furthermore, "traditional" accounting histories have also been critiqued as those which follow an evolutionary or Darwinian model of accounting improvement from a less perfect past to a more perfect present [Hopwood, 1987, pp. 209-210; Napier, 1989, p. 244], a view also known as the "Whig interpretation of history" [Butterfield, 1973, p. 9], implying a causal model based on the natural selection of accounting techniques in which the "strongest" survive. It follows that there is some confusion in the terms that have been applied to accounting history over the last 25 years, which have multiplied as researchers have attempted to resolve disagreements over research aims and to rationalize the place of history in mainstream accounting research.

Second, Table 1 illustrates the extent to which research directions in accounting history have become an issue in the 1990s. This paradigmatic diversity is both a reflection of its increasing maturity as a discipline and the continuing rise in numbers of new entrants, since 1980, who come from different backgrounds, replete with their own baggage and agendas. Miller et al. [1991, p. 396] cited anthropology, economics, history of science, organization theory, and sociology as providing examples. Parker's [1980, pp. 26-28; 1988, pp. 76-81] accounting history bibliographies give some indication of scale. In the nine years to 1977, he cited about 170 authors, compared to about 510 in the seven years to 1987. Cooper and Puxty [1996,

p. 306] referred to the "proliferation" in the number of histories, historians, and ideological frameworks. In any discipline, new knowledge is largely incremental to the knowledge base and beliefs of the researcher. Looking at causation, interpreting the evidence will usually take place against a model that is dependent upon the researcher's objectives and background. Diversity in accounting history is therefore inevitable, and it is fruitless for individual schools to claim preeminence for their own point-of-view. Moreover, the large cluster of articles in the 1990s reflects the increased opportunities for publication arising through diversity. From a pragmatic viewpoint, it is not in the interests of accounting academics to close down particular lines of inquiry. Indeed, conflicting worldviews allow accounting historians to examine or reexamine issues from different angles and to draw contrasts, either in partnership or in opposition [e.g., Tyson, 1992; Fleischman et al., 1995; Hoskin and Macve, 1996].

Third, research directions in accounting history, as reflected by Table 1, are not divorced from trends in accounting theory. The idea of accounting progressing through time towards an ideal state is consistent with a normative-deductive approach to accounting theory. If Mouck [1995, pp. 55, 60] is correct that this type of study peaked in the 1960s and early 1970s as a result of the "unprecedented concern" in U.S. business schools at the time over the lack of scientific theory in management education, its subsequent decline has coincided with the overt rejection of the Darwinian model by most accounting historians. In 1975, Johnson [1975, p. 449] wrote about the "evolution of accounting procedures in large corporations" as an impetus to national economic growth, whereas by 1986, he was referring to the possibilities offered by the "new" accounting history that was by then challenging the evolutionary view [Johnson, 1986, pp. 74-75]. In 1981, Parker [p. 281] defended the notion of evolution on the grounds that "no accounting historian has discerned revolutions in accounting practice," but all subsequent entries in Table 1 tend to regard that idea as passé. This is not to say that the evolutionary model in accounting history is as defunct as the table suggests since the Foucauldian focus on discontinuities in management accounting history has been paralleled by a search for continuities between the modern world and the past by their critics [e.g.; Edwards et al., 1995, pp. 34-35]. Moreover, discontinuity and evolution need not preclude each other. In a true Darwinian sense, evolution does not imply progressive improvement, but the adaptation of species to suit their environment best. There will be extinctions and new starts along the way as the environment changes, as well as continuity and development. The main evolutionary question in accounting, then, concerns the way accounting has interacted with the environment (i.e.; social, political, economic, calculable, etc. contexts) in which it has operated at particular points in time and space, which is relevant to Marxists, economic rationalists, and Foucauldians alike. Has the interaction between accounting and its contexts been dysfunctional, congruous, or synergetic? Evidence of congruity/synergy would support the idea that accounting evolves. An example might be the growth of power systems in U.S. society from around 1800 in response to "the rise and rise of sustained cognitive growth" as the use of writing, examination, and numerical grading spread [Hoskin et al., 1997, p. 3].

Returning to the theme that developments in accounting theory and historiography are linked, the best example is shown by the post-1980 references in Table 1 to "critical" accounting history, which reflect the current vogue in "critical" or social-based accounting research. As Funnell [1996, p. 38] observed:

> Central to much of the critical accounting research which has sought to question the legitimacy of existing institutions, distributions of power and the role of accounting in sustaining and perpetuating dominant capitalist forms of discourse has been an emphasis on history.

The number of references to critical studies in the table is a measure of the impetus that critical accounting research has given to accounting history in recent years.

Finally, Table 1 shows that the debate over research aims has moved from looking at what we do and why we do it, to what we ought to be doing. Accounting historiography has become more schematic in the process. The early articles cited in the table followed in the wake of the American Accounting Association's (AAA) [1970] report on accounting history by defining the scope and utility of the discipline. Goldberg [1974] developed the AAA Committee's arguments concerning the benefits to be derived from accounting history [pp. 406-408] and suggested the interrelationship between accounting practice and thought as a worthwhile field of study [pp. 409-410]. Johnson [1975, p. 444] supported the AAA's contention that accounting history would lead to a better understanding of economic history, focusing on the contribution that accountants could make by studying the development of organizational methods in large corporations. By 1977, however, Baladouni [1977, pp. 59-67] was developing more sophisticated cultural, technological, and social frameworks, which he hoped would provide a "methodological backbone" to facilitate empirical and theoretical research in accounting history. The range of classifications in the table shows that from then on methodological issues have assumed a greater significance as the hitherto dominant "rule of economics" [Funnell, 1996, p. 39] has come under increasing challenge from social theorists. The economists have responded by defending their position. By questioning the nature of accounting history under the stimulus of "critical" scholarship, there has been a tendency to theorize it, which has culminated in the paradigmization of cause and effect along fairly rigid lines of demarcation.

Most of the authors cited in Table 1 are active historians at a field-level, and there is no reason to suppose that the fieldwork of authors in general has not been affected either offensively or defensively by these historiographical trends. Witness the call in Fleischman et al. [1996a, p. 332] for an eclecticism that has been backed by collaborative ventures or Tyson's [1998, p. 224] rebuttal of Foucauldian terminology. Proof, however, would entail reviewing all the accounting history studies now being published over a series of years. Anderson [1998] cited some 280 for 1995-1996 alone. It would be insufficient just to review the articles appearing in the mainstream accounting history journals, as these are now in a minority. Out of the total of 280, only about 60 were published in *Accounting Historians Journal*; *Accounting, Business and Financial History*; and *Accounting History*. Furthermore, to concentrate on a narrow band of articles would be especially futile if journal titles act as "Baudrillardian signs," possessing value and meaning in themselves [Cooper and Puxty, 1996, p. 292], and by implication, tend to attract articles of the same type.

CAUSALITY

Whitley [1988] examined the role of scientific models in accounting theory and drew a distinction between those derived from natural sciences and those based on the social, both of which he found present. The essence of a good, natural-scientific theory is that it both accurately describes a large class of observations on the basis of a model containing only a few arbitrary elements, and that it makes definite predictions about the results of future observations [Hawking, 1988, p. 9]. This type of model has been used by positivist accounting researchers to explain and predict the workings of financial markets, and has been extended into the behavioral field by "positive accounting theory" [Whitley, 1988, pp. 632-634]. Essentially economic-based, such studies derive from the same natural-scientific root that underpinned the "normative apriorist" movement of the 1960s and early 1970s [Whitley, 1986, pp. 171-172; Mouck, 1995, p. 64]. Social models, on the other hand, are more value-laden because of their need for descriptions and terms that have "positive or negative connotations, both in the scientists' own culture and in the one being analyzed," and are of more limited applicability because of variations in cultural norms [Whitley, 1988, pp. 637-638]. However, this difference has not prevented social researchers from sharing the natural scientist's aim of using events to establish causal relations that can be generalized [McClelland, 1975, p. 86; Fleischman et al., 1996b, p. 63]. Haddock [1980, p. 150] described how "the claim that history should approximate a social science adhering closely to the methods of the natural sciences" first "attained the status of an orthodoxy" in the mid-19th century, and how it has continued to be "a central and contentious issue." According to Stone [1981], "the climatic years of the conversion of historians to an interest in the social sciences" were the late 1960s [p. 15], although he warned of the "growing mood of skepticism abroad about the value to historians of much of the newest and most extreme social science methodology" [p. 43]. The increased theoretical bent of accounting history since the 1980s grounds it firmly in that tradition.

The focus of the social scientist is on the present [Fleischman et al., 1996b, p. 63]. Knowledge of the past is not relevant for its own sake, but because it helps to illuminate the present and feeds into current issues. Such an opinion would be shared by many general historians [Evans, 1997, p. 61], but with accounting historians there is also the need to justify oneself in the accounting discipline where historical perspectives do not have a mature tradition. Indeed, the need for validity could explain the current emphasis on theoretical studies, as the term "atheoretical" has tended to become derisory in accounting history literature. Arguably, the postmodernist view that the past is essentially unknowable will never gain serious ground in accounting history, as this would render the discipline redundant to accounting researchers. For the same reason, historical studies which view the past as an object in itself tend to be dismissed as "antiquarianism." Accounting practice is regarded as a dynamic process, devised in historical situations. A study of the practice in relation to the situations enables one to question the manner in which the circumstances have changed and to assess the implications for modern practice [Whitley, 1988, p. 640; Edwards, 1989, p. 5]. Proponents of this view argue that we can learn from the past and see history as being capable of supporting contemporary research into policy making and standard setting, for example [Previts et al., 1990, p. 3].

Some accounting historians go one step further and would like to be able to predict the future. Evans [1997, pp. 53-62] traced this idea back to the 1860s, but expressed severe misgivings about history's predictive ability. Not many accounting historians have attempted to predict the future [Parker, 1981, p. 284], but various statements of intent by journal editors have suggested it as a desirable goal. Flesher and Samson [1990, p. 3] wrote that those studies which offered "the possibility for predicting or influencing future events" would be the ones that stood the best chances of publication. Whilst stopping short of advocating "predictions," Carnegie [1996, p. 5] did refer to the "considerable potential" that critical and interpretive research has for providing "insights into accounting's present and future." The stated objectives of papers that are published in *Accounting, Business and Financial History* include helping to predict possible future developments. Are such predictions possible? Goldberg [1974, pp. 408-409] and Baxter [1981, p. 5] argued they are not. Other writers have sounded a cautionary note [Edwards, 1989, p. 6]. Perhaps the answer depends on whether one takes a typical historical or typical social-scientific perspective, the latter being the more deterministic of the two [Mills, 1993, p. 802; Fleischman et al., 1996b, p. 64]. Theoretical histories derive useful insights by making predictions about past relationships, and it will be interesting to see whether the current trend towards theoretical history results in more predictions of future ones.

One of the main difficulties of causal theories of human behavior is that they do not acknowledge freewill or personality as a potential source of forecast error. This charge has been countered on the grounds that causal theories predict only the choices dictated by human dispositions rather than the resultant outcomes [McClelland, 1975, p. 71]. The distinction is a fine one, however, as such theories tend to assume a reduction in the number of acceptable choices, given similar dispositions exposed to similar stimuli [McClelland, 1975, p. 86]. Thus, "counterfactual" analysis changes the stimuli to predict what would have happened if historical circumstances had been different [McCloskey, 1987, p. 16]. Accident is another source of forecast error not recognized by historical predictions. Evans [1997, pp. 129-138] identified accident as a key factor in "the study of causes." Wars provide many examples where accident and personality have rendered the course of events unpredictable. For instance, the Battle of Britain was lost by Germany as a result of the accidental bombing of civilians in London on August 23, 1940, which prompted retaliatory raids on Berlin, and diverted the war away from British airfields towards British cities [Shirer, 1964, pp. 931-934]. Accounting itself is not immune from these unpredictable catalysts, witness the lasting impact of Nazi economic planning on French financial reporting [Standish, 1990, p. 350]. Walton [1995, p. 8] commented on the important part that wars have played in generating accounting change, and Nobes and Parker [1995, pp. 19-20] listed accident as one of seven key determinants of the nature of accounting in any particular country. What would have been the effects on future accounting practice had the Battle of Britain resulted in the German occupation of Great Britain? What shape would accounting have taken had not the Moslem advance into western Europe been halted at Tours in 732, given the importance of both Frankish rulers and the Roman Christian Church to its subsequent development [Oldroyd, 1997, pp. 18-22]? What effect did the unexpected collapse of Polly Peck International plc have on the regulation of U.K. financial reporting in the 1990s? Arguably, it led to more restrictive practice by U.K. standard setters in an attempt to restore confidence in the accounting profession [Oldroyd, 1994, p. 37]. What has been the influence of particular individuals on the development of a new profession/theoretical discipline? The current interest in biographical studies in accounting history literature suggests that it has been great. The "crucial discontinuity" in Hoskin and Macve's [1988, p. 46] Foucauldian thesis concerning the development of modern "managerialism" in the U.S. depended on the meticulous nature of Sylvanus Thayer.

Accident and personality impact primarily on events rather than systems. Accounting has been described as a social system [Lee, 1990, p. 75]. Such a view underplays the significance of particular happenings. Eventually one ends up at the same place through deterministic forces which govern the interaction of humanity with itself and the environment. Hoskin and

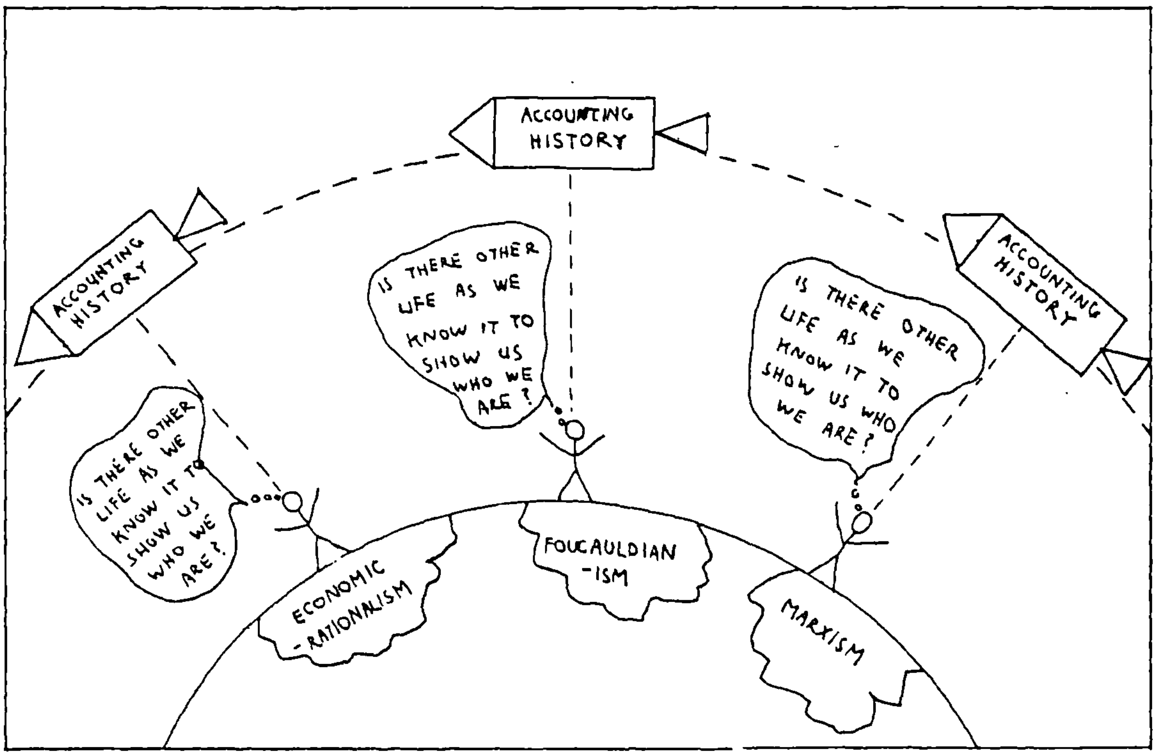
Macve [1988, p. 66] spoke of the demise of the "memorable man" under the welling-up of disciplinary knowledge within society. However, any systematic view of the world of accounting must take inertia into account. Lee [1990, p. 97] described inertia as "the self-referential and recursive nature of accounting," an important characteristic that can be overcome by events which are not always susceptible to prediction. Accounting inertia is both the reluctance to adopt new practices and ideas and the corresponding hesitancy to discard old ones. The inclination to follow what has been done before imbues past practice with its own momentum. Fligstein [1990, p. 9] observed the same phenomenon in relation to business organizations. He found that organizations tend not to change until they are faced with a crisis. Arguably, inertia in accounting has increased as accounting has become embedded in the institutional, legal, and regulatory framework. Examples of inertia might include the delay in the adoption of double-entry bookkeeping in industrial accounting or the persistence of Victorian corporate style reporting to shareholders. Accounting legislation drafted by the European Community has displayed a tendency to adapt old rules. The same has been apparent in Eastern Europe following the demise of the U.S.S.R [Walton, 1995, p. 3]. In short, there are many models that are possible to explain accounting activities beyond those that have been articulated already. By focusing on the resistors/catalysts of change, inertia could provide as complete a model as any other except that predictions would be tenable only in the indeterminate short-term where the level of forecast error is reduced. Accounting history would assume a central importance as a catalyst of change through its role in questioning the appropriateness today of "time-honoured concepts and ideas" [Edwards, 1989, p. 6].

POSITIONING

Causal theories of accounting behavior suffer from the anthropic fallacy of historical reasoning, which uses the past to justify the historian's view of the present, thereby placing him/her at the center of the historical universe. The anthropic principle in physics states that we see the universe the way it is because if it were different, we would not be here to see it [Hawking, 1988, p. 183]. At one level, any theory of the universe must include the evidence of humanity's existence. At another, humanity is placed at the center of the universe because the nature of the cosmos is contingent on our ability to witness it. There may be other universes or regions of the same universe obeying different laws, but if there are no observable consequences, they can afford to be ignored [Hawking, 1988, p. 125]. From an historical perspective, our understanding of the past is contingent on our location in the present, and history is useful to us because it helps identify and explain who we are. The tendency to place ourselves at the center of history accounts for the disparate nature of the historical universe. Children are taught their own history at school. The recent debate over the establishment of a national history curriculum in British schools emphasized the keen interest of government that British children should learn the important "landmarks" in British history. Protestant schools in Northern Ireland learn British history and Catholic schools Irish. Ultimately, accounting history exists as a distinct region of the historical universe because of the existence of the accounting profession. As Funnell [1996, p. 39] observed, the problem is that the academic community is uncertain whereabouts in the present accounting is located, at the heart of economic or social and political theory, and so the past is being used by accounting researchers to jostle for position and to justify their own perceptions of where we stand (Figure 1). Accounting history is useful to researchers as a medium for obtaining evidence to support particular worldviews.

FIGURE 1

The Anthropic Fallacy



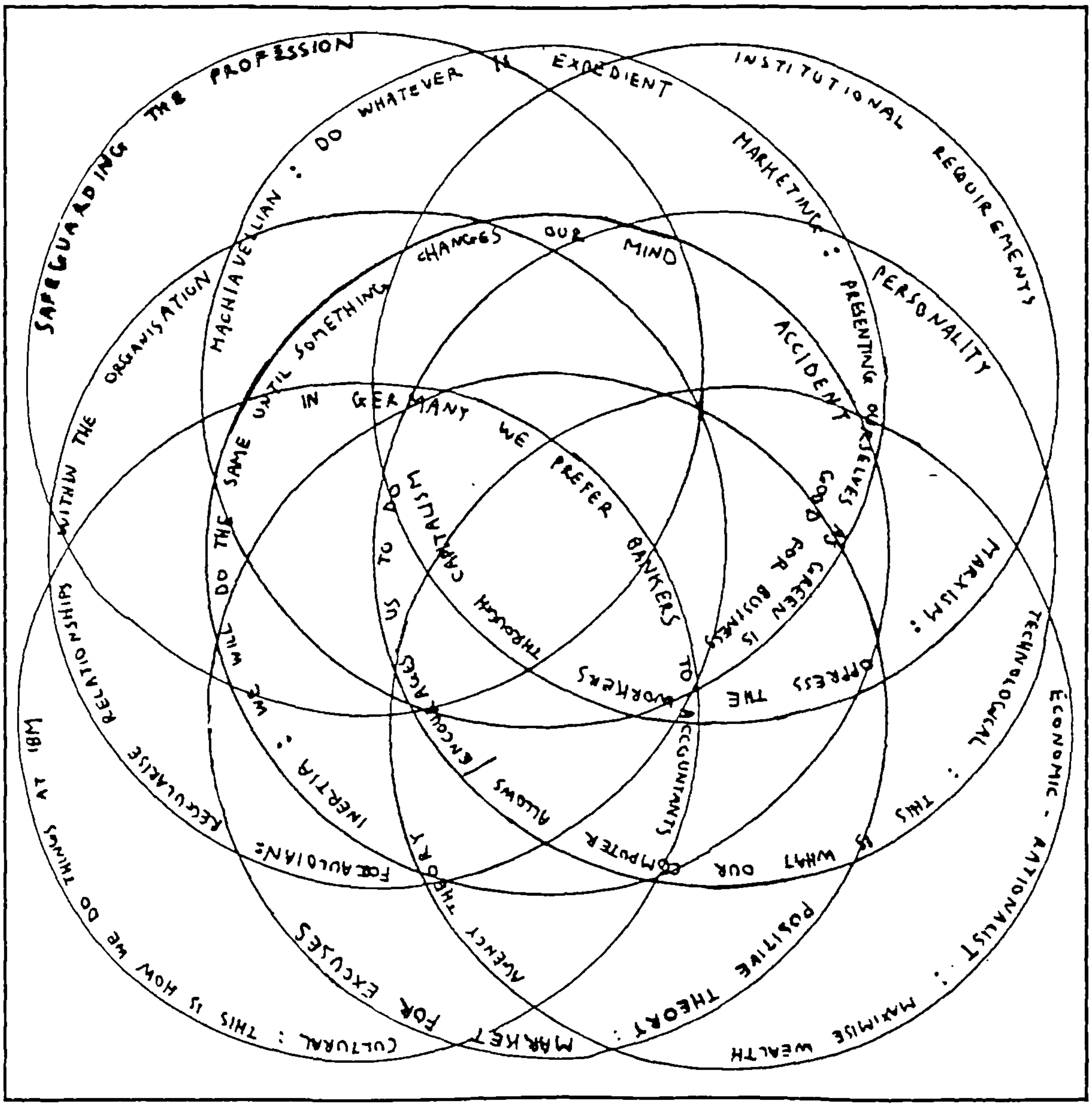
If history in general is prone to the fallacy of taking one's present position back into the past in order to find material to justify it, the flaw is accentuated in theoretical histories. This was observed by Merino and Mayper [1993, p. 245], who said that the danger of imposing current beliefs on the past "increases exponentially when researchers use a theoretical framework." The efficacy of causal theories depends on their ability to predict the results of future observations. The theoretical historian, therefore, comes to a problem having already predicted what the outcome will be (in this respect history becomes intrinsically uncritical) and looks for supporting evidence. Bryer [1987, p. 3] unwittingly summarized this view. Reviewing a paper on what he described as "the final stages of the transition from feudalism to investor capital," he wrote:

> If we can agree this [that there is a fundamental difference between the feudal and capitalist modes of production], then we have a conceptual and an historical basis for understanding the lords' 'ways of thinking', their 'aristocratic attitudes' (and platitudes), the overlap and contradiction of these notions of surplus in the aristocratic mind.

Marxism shows us how to interpret historical evidence before we have started to look. There is no suggestion of deliberate deception or that theoretical historians ignore available data or data sources. But, given the incompleteness of the historical record, together with the difficulties in accurately interpreting historical data, it is often possible to find evidence to support whatever claim. Maximizing wealth, commodifying labor, and regularizing relationships within the organization are not, after all, incompatible. In reality, there may be several reasons for a particular action, or what applies in one situation may not be valid in another, or the weighting of factors may vary between situations. An alternative, nontheoretical view of the accounting universe is that it is composed of interlocking causal relationships, which cannot necessarily be subsumed within unifying theories (Figure 2).

FIGURE 2

Interlocking View of Causation



The best that can be achieved in history is an hypothesis rather than a causal theory. The task of the historian is to select the hypothesis which best fits the available evidence, given or constructed, neutral or biased [Hammond and Sikka, 1996, p. 79], while recognizing its intrinsic limitations together with his/her own.

CONCLUSION

The article has reviewed recent developments in accounting historiography in relation to the underlying positioning of the participants. Accounting history has become more schematic under the impetus of "critical" studies. It has located itself within the tradition of social science, which subsumes events into generalizations and generalizations into theory. Causal theories are undermined by the unpredictable catalysts of accident and personality which impinge on accounting inertia. It follows that predictions can only be tenable in the indeterminate short-term where the level of forecast error is reduced. Furthermore, causal theories suffer from the anthropic fallacy of historical reasoning, which uses the past to justify the historian's view of the present, thereby placing him/her at the center of the historical universe. The difficulty with accounting is that it is uncertain whether it is located at the center of economic or social and political theory, and so accounting theorists are using the past to jostle for position. An alternative, nontheoretical view has been proposed in which it is accepted that the best that can be achieved in history are hypotheses whose intrinsic limitations are recognized.

Are there any implications for future research? First, theoretical history is fine and can yield useful insights, providing its limitations are recognized. Essentially, the article is a plea for more modest claims to be made on behalf of theoretical history. History is a multicellular creature, and the essence of historical inquiry lies is recognizing there are other points of view. It is not suggested that all views "are equally valid," or that it is impossible to resolve differences through "diligent search of the available evidence" [Fleischman and Parker, 1997, p. 218]. But uncertainty will remain. Second, the limitations of causal theories reinforce the need for more empirical studies to get as close as possible to the individual circumstances in which accounts were produced, the uses to which they were put, and the full range of participants involved. Despite the increased risks of belief transference, many theoretical historians use archival data to test their predictions. There are also those archivists, however, who through attempting "to stand apart from the paradigmatic debates" are in danger of becoming marginalized [Fleischman and Tyson, 1997, p. 102], and it is their work particularly that the article supports. Finally, using the past to cross-reference our position in the present fulfills a psychological need, which explains why all societies produce histories, either in written form or oral tradition. The great science fiction writer, Isaac Asimov [1986, p. 59] wrote:

> There never can be a man so lost as one who is lost in the vast and intricate corridors of his own lonely mind. . . . There never was a man so helpless as one who cannot remember.

The relevance of accounting history goes deeper than the utilitarian view which measures it in terms of in-feeds to modern practice. If this were all there is, the past would become less useful to us the further it were removed from the present, and one could agree with Stevelinck [1985, p. 1] that "there is little of interest to the present-day accountant in the study of primitive and obsolete accounting practices" of the ancient world. However, this view runs contrary to the historical imperative of going as far back in time as possible in the search for roots. Witness the genealogies of King David in the Bible going back to Adam and Eve or the genealogies of Anglo-Saxon kings going back to the Norse gods. Accounting history helps us to know who we are, where we came from, and how we got here [Baladouni, 1977, p. 54]. One should be careful in dismissing any historical study as antiquarianism. Furthermore, if, as this need for identity suggests, the *raison d'être* of accounting history is the existence of accountants, its future existence as an academic discipline ultimately depends on the future success of the accounting profession. If the profession were to decline, accounting historians would be returned to other types of historians, those who would remain interested in history, but only in so far as it impacted on their own place in the historical universe and their own fields of vision.

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THE ROLE OF ACCOUNTING IN PUBLIC EXPENDITURE AND MONETARY POLICY IN THE FIRST CENTURY AD ROMAN EMPIRE

Abstract: Previous authors have argued that Roman coinage was used as an instrument of financial control rather than simply as a means for the state to make payments, without assessing the accounting implications. The article reviews the literary and epigraphic evidence of the public expenditure accounts surrounding the Roman monetary system in the first century AD. This area has been neglected by accounting historians. Although the scope of the accounts supports the proposition that they were used for financial control, the impetus for keeping those accounts originally came from the emperor's public expenditure commitments. This suggests that financial control may have been encouraged by the financial planning that arose out of the exigencies of funding public expenditure. In this way these two aspects of monetary policy can be reconciled.

INTRODUCTION

This article reviews the literary and epigraphic evidence of the accounts which surrounded the Roman monetary system. Although these provide an early example of public finance accounting, it is an area which has tended to be neglected by accounting historians and classicists alike. The former have concentrated their efforts on the accounts of private individuals rather than of the state, whereas the latter are more interested in the economic implications of Roman monetary policy. Duncan-Jones [1990 & 1994], for example, offers an authoritative and detailed study of the various aspects of money in the Roman economy, but makes scant mention of public accounting or the information flows surrounding the Roman monetary system. A consideration of these factors can provide useful insights into the management of the Roman economy. If, for instance, one

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were to agree with Sugden [1993, p. 235] that Roman coinage was deliberately used by the state as a means of financial control, one might expect to find some evidence of financial planning. Sugden [1993, p. 231], however, does not deal with the accounting implications of his thesis, apart from a brief allusion to the budgetary role of the emperor's principal financial secretary, the *a rationibus.* This article explores the rationale behind Roman public accounting in the first century AD. In so doing it contributes to the ongoing debate over the uses of coinage to the Roman state from a different angle. It starts by describing this debate, before moving on to consider Roman accounting historiography. It then examines the role of public accounting at both operational and strategic levels within the Roman monetary system.

ROMAN MONETARY POLICY

There are two opposing schools of thought regarding the management of the Roman monetary system. The first was summed up by Finley [1973, pp. 160-66] when he asked the question: What did the Roman emperors contribute that was new to the management of the economy, with their "unprecedently greater power and greater resources," compared to the Greek city-states, of say, five hundred years before? The answer was "virtually nothing." The emperors were governed by the "satisfaction of material wants" rather than any conception of economic policy or the "needs of the economy." As for the money supply, "money was coin and nothing else." Its principal use was to enable the state to make payments, usually to the troops. This echoed the views of Crawford [1970, p. 48], who argued that the Roman government lacked a monetary policy.

The alternative view is that the Roman Empire was highly monetized, and that the government attempted to maintain a stable coinage for economic reasons. Sutherland [1951, p. 173] described the imperial coinage as "an indispensable element" of a centrally controlled economy. Lo Cascio [1981, p. 76] argued that the stability of the Roman monetary system in the late Republic and early Empire was "not a necessary one nor the result of chance." Rather, it was achieved deliberately through monetary policy. More recently Sugden [1993, pp. 230-31] maintained that although control of the coinage alone was not sufficient to ensure successful financial management, nevertheless the state used it to influence revenues and expenditures.

Financial control might have taken different forms. Lo Cascio [1981, p. 76] stated that the Roman authorities had an empirical understanding of monetary policy, which they used both to maintain fixed relationships between the different denominations of coin, and to supply the market with an adequate means of exchange. Sugden [1993, pp. 229 & 231] identified direct and indirect means of financial control. Directly, the state profited by reducing the gold and silver content of coins, to allow for their minting in greater numbers. The effectiveness of this policy depended on Rome's ability to enforce an enclosed currency system. Indirectly, the state was able to increase both its tax-take and money-stock through the increase in inter-regional trade, which according to Hopkins [1980, p. 101], resulted from the payment of taxes in money.

Additional evidence from literature, papyrus documents and coin-finds has resulted in a swing of opinion towards the monetary view of the Roman economy [Greene, 1986, pp. 50, 169]. For example, Howgego [1992, p. 1] wrote that "the possibility of using old coin for making payments means that, at least as regards the restriking of existing coin, decisions to coin might be taken for reasons other than the requirements of expenditure." The evidence is inconclusive, however, and recent studies have undermined the monetary view by questioning the extent of monetization within the Roman economy. Howgego [1992, p. 30] maintained that although the Roman world was monetized, in the sense that money was the normal means of exchange for goods, "agricultural produce, particularly corn, played a substantial role alongside money in taxation, rents, wages, and credit." Based on a study of Roman coin-survivals, Duncan-Jones [1994, p. 32] concluded that the level of monetization in the Roman Empire was "restricted and uneven," and "exchange based on barter was probably widespread below the surface." Such conclusions undermine Hopkin's [1980] trade and taxes theory, and Sugden's [1993] suggested corollary, concerning the implications for financial control.

It follows that there is still doubt over the function of money in the Roman economy. Study of the problem from an accounting perspective helps reconcile the opposing views, as it provides clues to the sophistication of Roman monetary policy by answering two key questions: (i) What was the scope of the accounts surrounding the Roman monetary system in the first century AD? (ii) Why were these public accounts brought into being?

ROMAN ACCOUNTING HISTORIOGRAPHY

Previous Roman accounting studies have concentrated on the level of sophistication of the accounting techniques. De Ste. Croix [1956, pp. 60-61] demonstrated the rudimentary nature of Roman bookkeeping and the absence of double-entry. Most [1979, pp. 8-11] identified certain flaws in de Ste. Croix's argument concerning the categorization of "debit" and "credit," the use of columns, and the numerical notation of accounts. While rejecting Most's criticism, Macve [1985, pp. 234-57] expanded de Ste. Croix's paper in relation to taxation and business management. He questioned de Ste. Croix's observation that the primitive nature of Roman accounting prevented the state from taxing income rather than capital, arguing that the converse was true. Roman accounts did not calculate income because the state saw no need to tax it. Similarly, Macve did not agree that rational economic decision-making was inhibited by accounting. Rather it was the lack of opportunity of Roman estate owners to benefit from alternative courses of action which resulted in the lack of systematic profit calculations. Other authors have focused on particular accounting records, such as Columella's profitability calculations in his first century textbook on agriculture [Carandini, 1983], or the accounts of the Appianus estate in third century Egypt [Rathbone, 1994].

In all of these cases the authors are concerned principally with the accounts of private individuals rather than of the state. The distinction between the two is not always clear, however, given the difficulty in separating the state's finances from those of the emperor personally [Millar, 1977, p. 189].

A factor which emerges from these works is a consciousness among Romans of the general advisability of keeping accounts. De Ste. Croix [1956, p. 43] notes, for example, that "it seems fairly safe to conclude that men of property at Rome often did write up their permanent account-books about every month." Personal wealth was both "necessary and good" [Finley, 1973, p. 35]. The fact that a citizen's rights were connected to the amount of property he declared was an incentive for keeping accounts [Edwards, 1989, p. 28]. In some cases political expediency determined the need for accounts. In a litigious society in which state officials could be prosecuted for extortion or embezzlement for political ends [de Ste. Croix, 1956, pp. 44-46], and in which the normal activity of young political aspirants was the launching of prosecutions in the law-courts [Grant, 1969, p. 27], it might be beholden on such officials to keep accounts for their own protection.

THE ROLE OF ACCOUNTING IN PUBLIC EXPENDITURE AND MONETARY POLICY

Turning now to the scope of the accounts surrounding the Roman monetary system, there are two levels at which accounts played a facilitating role in the quantification and storage of bullion in the *Aerarium* (treasury), and its issues to the Imperial Mint. First, there is the operational level at which the process was conducted; and second, there is the strategic level, at which decisions were made regarding the timing and quantity of coinage issued, and the mix of metals used.

Howgego [1992, p. 4] has described the various factors affecting the supply of bullion to the *Aerarium*. These included the gains or losses associated with conquest, the productivity of the mines and the balance of payments with the East. The relative importance of these factors fluctuated over the course of Roman history, as did the number and location of the mints in operation at any one time. Nevertheless when one speaks of the Roman monetary system which existed at particular points in time, one is able to draw analogies with earlier or later periods, because of the marked degree of continuity over a prolonged period [Bolin, 1958, p. 47; Howgego, 1992, p. 2]. In particular there was continuity in the central control exercised by the state [Sutherland, 1951, p. 9], and in the translation of procedures from the late Republic to the early Empire [Jones, 1968, p. 101].

Operational Role

Looking at the operational level first, there was a formal organizational structure within the *Aerarium* and Imperial Mint, which included supervision of the staff of freedmen and slaves, and specified lines of reporting. Included on the Mint staff were the *dispensatores*, or accountants, who kept the books. The other workmen can be categorized as skilled artists, unskilled workers or *nummularii*. These were probably state bankers, whose duty it was to receive bullion and obsolete coin, and to bring new issues on to the market [Mattingly, 1923, pp. lvii-lx; 1960, pp. 129-131]. Although there is a complete lack of surviving records, it is possible to infer the existence of inventories from the Natural History of Pliny the Elder, who was able to list the amounts of gold and silver, in cash and bullion, contained within the

Aerarium at various points in time to 49 BC [Pliny, Natural History, xxxiii, 55-56]. For instance, he noted that in 156 BC "the Roman treasury contained 17,410 pounds of gold, 22,070 pounds of silver, and in coin 6,135,400 sesterces." Such inventories could have been used to exercise physical control over the stocks of precious metals. We do not know the source of Pliny's information. Its inclusion in his encyclopedia suggests its retention within the public records, as it preceded the time of writing.

Effective control of production was established during the Republic. In addition to the inventories, this was achieved by a system of control-marks on the coins and dies, and by stringent mint regulations [Mattingly, 1982, pp. 22-24]. There are occasions when issues of coin contained the inscription *"EX A(rgento) PV(blico),"* to indicate that they were struck from public bullion rather than bullion drawn directly from the treasury. Mattingly [1982, p. 23] suggests that the moneyers were using state money on its way to the treasury, and that the suffix represented a control-mark, forming part of the procedures for checking the amount of bullion involved.

Finally at the operational level, accounts were used by the state as a check on the stewardship of its officials. Much of public finance was conducted at a distance because of the dispersed locations of the provinces. Accounts were kept to enable the state to exert some control over the inflows and outflows of revenues and expenditures. The governors in the provinces accounted to the *Aerarium* in Rome for their expenditure, in addition to any local receipts alongside the *publicani* (tax collectors) [Jones, 1968, p. 103]. These accounts or *rationes* evolved in the Republic to provide a retrospective check on the individual governors, rather than as an aid to imperial planning and budgeting [Millar, 1964, p. 38]. Millar suggests that they were used in this novel way for the first time by Augustus, which leads to a discussion of the extent to which accounting played a strategic role in the monetary system.

Strategic Role

In many respects Augustus was a watershed in Roman history. His rise to power as principal citizen and commander-in-chief of the army followed a turbulent period of civil wars. He remained in control for forty years until his death in AD 14, and in so doing restored peace. During this time Augustus sought to control the organs of state; and the nature of government changed to become consolidated in the person of the emperor. This applied not only to politics, but also to the monetary system, which Augustus took under his control. Arguably he could not have done this without the use of accounting information, which is known to have existed, and is discussed in due course.

It has been suggested that the archives and stores of information which were at the emperor's disposal consisted mainly of the acts and pronouncements of himself and his predecessors [Millar, 1977, p. 266]. Thus his role has been seen as essentially passive, making decisions in response to initiatives from below, rather than actively seeking information. Accounting information, however, represents one of the major exceptions, certainly in the early Empire at least. We know something of the content of these records from literary references and from the *Res Gestae* (The Acts of Augustus), copies of which were inscribed on temple walls throughout the Empire.

LITERARY AND EPIGRAPHIC EVIDENCE OF ACCOUNTING'S STRATEGIC ROLE

The dependency of the Roman currency on the supply of precious metals implies that it would have been a limiting factor in any budget. Corroborative evidence comes from the debasements following periods of heavy spending, and from the urgency with which the precious metal resources of new provinces were exploited following conquest. Archaeological finds of date-stamped ingots in Britain, for example, suggest that Britain's lead resources, from which silver was produced by cupellation, were developed rapidly following the Claudian invasion in AD 43 [Frere, 1974, pp. 321-24; Ireland, 1986, pp. 221-24]. Thus, one might ascribe a more proactive role to the inventories alluded to by Pliny, as being needed not solely to safeguard the stocks from theft, but also to plan expenditure and coinage issues, and ultimately to indicate the need to replenish stocks by securing new supplies.

Suetonius [Augustus, xxviii] and Dio [liii, 30,2] record that in 23 BC, Augustus, fearing he was about to die after a long illness, handed over an account *(rationarium)*, which listed public revenues and armed forces. Suetonius [Augustus, ci] informs us that on his death in AD 14 Augustus left "a summary of the condition of the empire" *(breviarium totius imperii)*, which Tacitus describes as containing "a list of the national resources. It gave the numbers of regular and auxiliary troops serving in the army; the strength of the navy, statistics concerning the provinces and dependent kingdoms; direct and indirect taxation; recurrent expenditure and gifts" [Annals i, 11, 4]. Suetonius and Dio note that it also listed the amounts of cash in the *Aerarium*, in the provincial *fisci*, and in the hands of the *publicani;* and that it included the names of the freedmen and slaves from whom a detailed account could be obtained [Suetonius, Augustus ci; Dio, lvi, 33, 2]. The closeness of this information to the executive authority of the emperor is attested by Tacitus' statement that it was written out by Augustus himself.

There is evidence that the imperial accounts were continued beyond Augustus' reign. Suetonius [Caligula, xvi] and Dio [lix, 9, 4] commented that the "accounts of the empire" *(rationes imperii)*, which had been made public regularly by Augustus, were allowed to lapse by Tiberius (AD 14-37), and revived by Caligula (AD 37-41). It would have been surprising had they not been continued beyond Augustus' lifetime, when one considers the evolutionary character of Roman political institutions in the first century AD. Revolutionary change did not follow the eclipse of the Republic. Rather, Augustus "proceeded by a slow process of trial and error, feeling his way forward with patient care." The system of government he established was enduring, and "gave the world a large measure of peace and stable government for over two hundred years." [Scullard, 1976, p. 215].

The *Res Gestae* is a remarkable account to the Roman people of Augustus' stewardship. It listed and quantified his public largesse, which encompassed distributions to the people, grants of land or money to army veterans, subsidies to the *Aerarium*, building of temples, religious offerings, and expenditures on theatrical shows and gladiatorial games. It was not an account of state revenue and expenditure, but was designed to demonstrate Augustus' munificence. The significance of the *Res Gestae* from an accounting perspective, lies in the fact that it was compiled retrospectively towards the end of Augustus' life. This illustrates that the executive authority had access to detailed financial information, covering a period of some forty years, which was still retrievable after the event.

Viewed in conjunction with the literary references, one is struck by the scope of the accounting information at the emperor's disposal, which suggests that its purpose encompassed planning and decision-making, particularly when one considers its closeness to the executive authority. Indeed, it is hard to imagine that financial control could have been exercised without some financial planning. Although, by itself, the sophisticated nature of the accounts surrounding the Roman monetary system in the first century AD cannot prove that financial control took place, it does corroborate that view.

Origins

It remains to consider why these accounts were brought into being. The evidence indicates that the answer lies in the emperor's public expenditure commitments. He was obliged to subsidize the state heavily from his own private funds *(fiscus)*, because of the inadequacy of public revenues which resulted in large budget deficits. The scale of these subsidies, and the wealth of the emperor, is apparent from the 2.4 billion sesterces noted in the *Res Gestae* as having been spent by Augustus on the *Aerarium*, the people and the veterans alone [*Res Gestae*, Summary, 1], compared to annual public revenues, which have been estimated hypothetically in the region of 500 million sesterces [Millar 1977, p. 191]. Increasingly, therefore, the emperor's personal finances became intertwined with those of the state [Millar, 1977, pp. 189-201], and he had strong personal motivation to exercise budgetary control over public spending [Brunt, 1966, p. 89].

De Ste. Croix's [1956, p. 43] observation that it was common practice for men of property to keep accounts begs the question of whether the accounts kept by Augustus were a continuation of this. Their national scope and content were fully consistent with the extent of his property. As principal citizen his property transcended that of anyone else, and over the period of his reign became difficult to separate from that of the state. It was not unnatural, therefore, that his accounts should be of national significance.

The manner in which the process was administered further illustrates the connection with the emperor's personal finances. At the center of the management of the Roman monetary system was the emperor's principal financial secretary, the *a rationibus*. The most detailed description of his duties comes from the poet Statius [Silvae, iii, 3], from whom we can deduce that in addition to advising on how much coin to issue, he was required to forecast public revenues, and estimate public expenditure. Statius was writing about the reign of Domitian (AD 81-96), which indicates the importance of this office some seventy years after Augustus' death. But how did the office evolve? Brunt

[1966, p. 89] suggests its origins lay in the employment by Augustus of the same staff to administer both his public and private finances, which as we have seen became inextricably linked. Thus he used clerks and accountants from his private staff at Rome to assist him in supervising the public treasury, which entailed them having access to the public records held within the *Aerarium*. If this scenario is correct, the public accounting records maintained by Augustus, and the budgetary role of the a rationibus under Domitian, can be viewed as part of the same evolutionary trend; and there is no reason to suppose that it excluded the emperors in between. In the case of Claudius (AD 41-54), for example, his private secretaries, including Pallas, his *a rationibus*, seem to have enjoyed unprecedented political status [Millar, 1977, pp. 74-77].

The dependency on the emperor for subsidies was heightened by the absence of government borrowings, which exposed the state to short-term deficits. These could result in the state defaulting on obligations, seizing large fortunes, or debasing the coinage [Duncan-Jones, 1994, pp. 3-5]. Difficulties in funding army discharge bonuses under Augustus and his immediate successor, Tiberius, led to virtual mutiny [Duncan-Jones, 1994, p. 11]. It follows that although there has been a shift away from the view that coin was minted solely to enable the state to make payments, this role remained vital. Furthermore, the origins of the emperor's accounts in the first century AD appear firmly linked to the state's public expenditure requirements. In this respect, the evidence from the accounts runs contrary to the view that money was used for financial control, because it emphasizes the importance of money to the state for making payments. These two aspects of monetary policy are not mutually exclusive, however, and the one may have been the logical outcome of the other. Effective financial control depended on financial planning, which was initiated by the keeping of the accounts that arose from the emperor's public expenditure obligations. This supports Lo Cascio's [1981, p. 77] argument, that even when the "primary purpose" of government measures was to make payments, "this result was attained by a government aware of, and interested in, what happened to its coinage once it was in circulation."

CONCLUSION

The scope of the accounting information surrounding the Roman monetary system in the first century AD supports the view that coinage was used for financial control. Accounts enabled the state to control the operations of the *Aerarium* and the Imperial Mint, and also the financial dealings of the state's officials in the provinces. The possible uses of this information went beyond facilitating the minting operations; and it was during the reign of Augustus that its potential as an aid to imperial planning and budgeting was first recognized. This represents an exception to the normally passive role of the emperor in not actively seeking information. The *Res Gestae* together with the literary references indicate a wide range of financial information over a prolonged period of time, suggesting that its purpose included planning and decision-making, particularly when one considers its closeness to the executive authority of the emperor. There is evidence in the role of the *a rationibus* under subsequent emperors, and from literature, that these accounts were continued beyond Augustus' lifetime.

The emperor had strong personal motivation to exercise budgetary control over public spending owing to the inadequacy of public revenues, which required him to provide large subsidies. The dependency on the emperor was increased by the absence of government borrowings. Increasingly his personal finances became intertwined with those of the state. This was apparent in the government office of *a rationibus* which evolved out of the management of the emperor's private estate. It follows that although the scope of the accounts supports the proposition that they were used for financial control, the impetus for keeping those accounts originally came from the emperor's public expenditure commitments and the need for the state to make payments. This suggests that financial control may have been encouraged by the financial planning that arose out of the exigencies of funding public expenditure; and in this way these two aspects of monetary policy can be reconciled.

The main way forward for research lies in the coins themselves. Analysis of quantities, composition and geographical distribution provides evidence of the adjustments to the coins' relative weight and content, decisions on when and how much to mint, and the extent to which the currency system was enclosed, all of which have been put forward by previous authors as indicators of financial control. Inevitably the evidence is incomplete owing to the haphazard nature of the coin-survivals. The evidence is still being augmented by the discovery of new finds and the publication of old ones. Studies from alternative perspectives, such as the present one, are useful because they compliment the incomplete evidence from coins. The process can work the other way, however. In this respect, the major inference to be drawn from this article is that financial control, which depended on planning, is likely to have become more developed under Augustus and his successors than before, because it was Augustus who initiated systematic planning information. Coin-research in this direction could help confirm or deny the role of accounting as a facilitator of financial control.

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3. "Accounting in Anglo-Saxon England: Context and Evidence", *Accounting History*, NS Vol. 2, No. 1, 1997, pp. 7-34.

Accounting in Anglo-Saxon England: context and evidence

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Abstract
The Anglo-Saxon period has been characterised as playing no part in accounting history. The article appraises whether this view can be sustained in the light of current knowledge. A review of the use of written English, accounting in the Church, governmental financial planning, the dissemination of accounting practice from Europe, and the use of money values in Anglo-Saxon law-codes, provides evidence to the contrary. Evidence of accounting exists in the surviving documentation, in the sophistication of government finances, in the Anglo-Saxon mind-set relating to the use of money and monetary values, and in the continuity between earlier and later periods.

Keywords: *Early medieval; public accounting; Church; estates; monetary values.*

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Introduction

The Anglo-Saxon period (c.450-c.1066) has been characterised as playing no part in accounting history. The conventional view is that government accounting commenced in England in the twelfth century, and manorial accounting in the thirteenth. In Europe, accounting was preserved in the Roman Church following the eclipse of the Roman Empire in the West, and at the court of Charlemagne in the ninth century. Apparently, neither source influenced the development of accounting amongst the Anglo-Saxons. They remained an illiterate society, dependent on the spoken word. Chatfield (1977, p.20) writes that "in pre-Norman England literacy was so rare, even among the nobility, that a written system of accounts would hardly have justified its cost. Until the eleventh century, financial data was nearly always communicated and verified orally, written documents being merely supplementary to the more important spoken word". This view is shared by Edwards (1989, p.32). Perhaps the reason why accounting historians have taken this line is that the main article on the subject (Jack, 1966) is negative in its conclusions about account-keeping in England and Europe prior to 1100 (p.146). This apparent unanimity is illumined by Parker's (1980, p.90) only comment on Jack in his useful bibliography that the article "argues that medieval accounting was more efficient than is usually admitted".

However, Anglo-Saxon scholarship has advanced considerably during the last thirty years; and the purpose of this present study is to appraise whether the established view, that accounting was virtually non-existent in Anglo-Saxon England, still seems tenable in the light of current knowledge. The answer is a cautious negative; although the prime aim of the article is to highlight those areas that warrant further investigation, rather than to provide definitive solutions. This type of study, which touches both the ancient and modern worlds, helps answer Lister's (1983, p.68) criticism that accounting history is a series of disconnected episodes. An important issue is the difficulty of delineating what constitutes accounting, particularly in an historical context. The article seeks to resolve this by looking for evidence of continuity with those earlier or later practices, commonly regarded as falling within the ambit of accounting history, such as estate renders or governmental planning and control. The article is not just concerned with Anglo-Saxon England, therefore, but also looks at the post Conquest period together with Roman and Frankish Gaul. It attempts to take an overview, although most of the evidence is concentrated in the tenth and eleventh centuries.

The article starts with Alfred the Great (871-899), as he has been singled out for particular mention by accounting historians (Jack, 1966, pp.141-2; Edwards, 1989, p.32). It then considers the extent to which the literacy of the society and the role of the Church were facilitating influences, before moving on to look for evidence of accounting in the fiscal and monetary systems, the dissemination of European practice to England, and the use of the monetary unit of measurement.

Alfred the Great

Alfred's significance for accounting historians lies in his educational programme which aimed to improve the level of learning and literacy in his kingdom. Edwards (1989, p.32) writes that "the fact that Alfred, who ruled between 871-899, learned to read and write marks him out as a person of exceptional ability". It was therefore "extraordinary" rather than typical of the time, "that he arranged for the maintenance of accounting records and for a periodic inventory of his properties". Edwards is following Jack (1966, p.142), who states "that Alfred, like Charlemagne, had, or could readily have made, inventories of his lands and those of his monasteries". Jack juxtaposes this statement with a description of some of Alfred's financial reforms, which begs the question of whether keeping inventory records was also an innovation. Jack's surmises are based on a statement by Alfred's biographer, Asser, that Alfred presented him "with two documents in which there was a lengthy list of everything which was in the two monasteries named Congresbury and Banwell" in Somerset (Keynes & Lapidge, 1983, p.97). Assuming the work not to be a forgery, because its authenticity has recently been called into question (Smyth, 1995, p.366), the two monasteries were granted to Asser as an inducement for him to stay at court rather than return home to his monastery in Wales. The inventory records were only important to him because they helped illustrate Alfred's determination that he should stay. Asser (Keynes and Lapidge 1983, p.105-10), who was himself a monk, did not regard the monasteries' inventory records as remarkable, in the same way that he enthused about Alfred's other innovations. It therefore seems unlikely, on the strength of a genuine Asser, that the recording of property in English monasteries was unusual in the late ninth century, or that it was initiated by Alfred. If, on the other hand, Smyth (1995, p.226) is correct, and the work is a forgery that originated at Ramsey Abbey (Huntingdonshire) in the early eleventh century, one can discount the grant of monasteries to Asser altogether as being a fabrication that was borrowed from the anonymous *Life of Alcuin*.

On both counts, Alfred's significance as an accounting innovator is doubtful, although his life does touch on several important issues that have accounting implications. His educational programme, his links with the Church, the tax system which funded his defence against the Danes, the European orientation of his court, and his new law-code are all relevant to the rest of the discussion.

How widespread was the use of written English?

If one accepts Asser's biography of Alfred as genuine, it provides a contemporary record of Alfred's educational reforms, and the state of literacy in ninth century England. The general level of illiteracy within Anglo-Saxon society is the main argument against the use of written accounts. Two main points can be deduced from Asser's work: 1.) Asser regarded Alfred's desire for learning as exceptional. This is borne out by the literary output of his reign (Smyth, 1995, p.217). However, the extent to which Alfred was exceptional is difficult to tell, owing to the lack of information about other kings. For instance, Bede, who was writing in the first half of the eighth century, mentioned certain other kings as being learned, without elaborating. He noted that Sigbert, king of the East Angles, founded a school in the seventh century "for the education of boys in the study of letters" (Bede, 18). Bede's history was dedicated to King Ceolwulf of Northumbria, who had an "eager desire" to learn history, and studied the Scriptures with "diligent zeal" (Bede, preface). The extent of King Athelstan's (925-39) book collection bears witness to the scholarly nature of his court (Keynes, 1985, p.198). 2.) If Alfred was exceptional, it was not because he could read English. A distinction should be drawn between English and Latin literacy, the former being more common than the latter. For Asser, it was Alfred's hunger for knowledge and mastery of Latin in adulthood that was unusual, rather than his learning to read English as a boy. Smyth (1995, pp.220, 230) dismisses Asser's account as unbelievable, arguing instead that the maturity of Alfred's writings are suggestive of a man "steeped in a lifetime of Latin and Old English scholarship". However, the primacy of English over Latin literacy, which Asser's account implies, is consistent with Alfred's own testimony that "many could still read things written in English" even though the knowledge of Latin had "decayed throughout England" (Keynes & Lapidge, 1983, p.126). The alternate view, that Alfred was exaggerating the decline in Latin (Morrish, 1986, pp.96-7), and that he himself had a lifelong understanding of the language, would raise further doubts over the illiteracy of the society.

In the short term, the replacement of English with Latin as the language of government and administration following the Norman Conquest may have resulted in a reduced level of literacy in England (Clanchy, 1993, p.27). This would tie in with Baxter's (1980, p.69) suggestion that the invention of the squared table known as the "exchequer" was necessary to assist reckoning by illiterate officials. Galbraith (1948, pp.39, 57) suggests that the inability of Norman officials to understand written English caused them to discard the pre-Conquest archives, which could explain their disappearance. Aside from the difference in language, the Normans did not share the Anglo-Saxon tradition of written history and law-making; and their administrators were less experienced in the use of written records than their Anglo-Saxon counterparts (Galbraith, 1961, pp.45-6; Clanchy, 1993, p.27).

The implication for accounting historians is that the use of written English by the Anglo-Saxons was more widespread than they realise. This is backed up by the common occurrence of inscriptions in churches and jewellery, and by the survival of a significant number of administrative documents, written in English, that include law-codes, wills, leases, memoranda, charters (most charters were written in Latin), marriage agreements, estate lists and surveys, lists of treasures and stock inventories (Campbell, 1986, p.158; Kelly, 1990, pp.47-51). An extract from one of these, relating to the assignment of property in the late tenth century, is reproduced in Appendix 1. This document is more than a list. It places monetary values on the various items of livestock and deadstock, the totals of which provide evidence of reckoning.

Campbell (1986, pp.158, 175, 177-8) suggests a possible connection between the ability of many laymen to read English, and the sophistication of government administration in late Anglo-Saxon England. He speculates that the extensive use of the written record for administrative purposes might go back as far as the eighth century. Throughout the Anglo-Saxon period, royal charters were written in monasteries working for the king, and letters were used from the ninth century at the latest. It seems likely that royal scribes were producing letters, charters and other administrative documents in a type of secretariat in the mid-tenth century (Keynes, 1980, pp.79-81; Dumville, 1992, p.182), although Chaplais (1985, pp.43-4, 51) questions whether these were full-time officials, and argues that clerics rather than laymen continued to produce documents in Latin. Monasteries may have acted as repositories for the documents of neighbouring lay magnates, just as they were used to store their hoards of treasure (Keynes, 1980, p.148; Loyn, 1986, p.3; Smyth, 1995, p.372). Viking raids on churches and monasteries, beginning with the raid on Lindisfarne, Northumberland, in 793, did not favour the preservation of records (Loyn, 1967, p.41; Dumville, 1992, p.32; Smyth, 1995, pp.371-2). It is not suggested that documents supplanted the spoken word as a means of doing business, but there is a weight of evidence that writing was used extensively in the routine procedures of late Anglo-Saxon England (Keynes, 1990, pp.244, 255-7). Campbell (1986, p.158) maintains that those documents which have survived are merely representative of a much larger number, suggesting that English was the ordinary language for much written business. Not all authors agree (Wormald, 1977). The dispute is not about whether documentation existed, but about how extensive it was, and how far it went back. These issues are difficult to resolve (Clanchy, 1993, pp.27-32). The widespread use of administrative documents seems likely from at least the tenth century, however, with important implications for the literacy of the upper levels of Anglo-Saxon lay society and the use of written accounts.

Did the Church foster the development of accounting practice?

Alfred showed great respect for the papacy, and may have been the first Anglo-Saxon king to make regular payments of the Peter's Pence levy to Rome (Duckett, 1956, p.193; Loyn, 1991, p.242). His scholarly advisers were all clerics. Bishops attended his councils, and even fought in the army against the pagan Vikings (Loyn, 1967, p.48). Alfred is a good example, therefore, of the interdependence of Church and secular ruler, that became characteristic of England and Gaul in the post Roman period. Loyn (1991, p.239) writes that nowhere was this "mutual need" more apparent than in England following its conversion to Christianity. There, the missionary Church offered a discipline based on the permanent written evidence of books, which served as an example of "kingship in action". This contradicts Jack's (1966, p.140) stark observation that the written word "had no particular authority" throughout the Dark Ages. The utilisation of the authority bestowed by the written wisdom of the Church is illustrated by Alfred's law-code, which incorporated Old Testament laws (Whitelock, 1979, p.408). It follows that the close involvement of the Church in secular matters, coupled with a reliance on the Church's written learning, are important features of Alfred's reign.

This raises the question of whether the written learning of the Church extended to administrative matters. According to Loyn (1991, pp.233, 283):

> ... there is much more than mere abstraction to the generalisation that in the Church appeared the true heir of Rome. ... In face of at times most savage difficulties the Gallic bishops kept alive the spirit of Roman administration.

In the towns of Gaul, the bishop took the place of the Roman official as the "characteristic social leader". In the fifth century, bishops in Gaul tended to be drawn from the old aristocratic senatorial class (Geary, 1988, pp.33-4). For accounting historians, the Church is significant as the conservator of accounting practice following the collapse of the Roman Empire in the West. Chatfield (1977, p.20) observes that the receipt and disbursement accounting of the Roman Church offers the closest parallel to Roman bookkeeping method. For hundreds of years the Church levied and collected taxes throughout Europe. As early as the sixth century, deacons were appointed to administer church properties and report on their revenues. Throughout the Middle Ages, agents of the papal treasury were located in the provinces and were responsible for forwarding receipts to Rome (Chatfield, 1977, p.20; Yamey, 1982, pp.3-5).

Direct evidence that the Church fostered accounting practice in Anglo-Saxon England exists in connection with church estates. This is discussed in the section of the article relating to the dissemination of European accounting practice. Furthermore, the close involvement of the Church, with its higher level of literacy and tradition of account-keeping, in the economic life of the community, increases the likelihood that the Church also had an accounting role in secular Anglo-Saxon society. This would not be surprising, given the Church's role in producing other secular documents, such as royal charters in favour of thegns and other laymen (Chaplais, 1985, p.46). Churchmen were involved in the economic life of the community first through the collection of tithes and customary dues. The laws of

King Ine of Wessex indicate that Church-Scot, or payment of the first fruits of the harvest, was already compulsory by the beginning of the eighth century. The list of dues in the first code of Cnut in the early eleventh century shows that the Church collected dues at every stage of the agricultural year (Loyn, 1991, pp.263-6). Second, the Church's authority extended to "good faith in business" (Loyn, 1991, p.246). Bishops had a responsibility for weights and measures, and churches arbitrated on the fairness of commercial transactions (Campbell, 1986, p.148). Finally, there was an intermingling of the administration of Church and government finances. On the one hand, churches were used to facilitate the collection of state taxes (Loyn, 1991, p.270), suggesting that the Church assisted the state in administering the fiscal system. In 872 the bishops of King Burgred of Mercia took an active role in helping the king to levy and collect tax to buy off the Danes (Smyth, 1995, p.41). On the other hand, the government became involved in enforcing the collection of tithe in the latter part of the period, and in prescribing how it should be used (Godfrey, 1962, pp.325-7; Loyn, 1991, p.265).

Is there any evidence of accounting in the fiscal and monetary systems?

Domesday Book of 1086 is regarded as a landmark in accounting history, primarily because it heralded a written system of government accounting in England, notwithstanding that it reflected concepts of accountability, decision-making and control (Godfrey & Hooper, 1996, p.35). Written government developed further under Henry I (1100-35), with the creation of the office of the Exchequer, which brought the agents of local government directly under the control of the Crown (Barrow, 1956, p.76). The Pipe Roll which commenced in 1130, and recorded the twice-yearly tax returns of the county sheriffs to the Exchequer, is generally regarded as the earliest surviving public accounting record in England, although strictly speaking this is not true. The Geld Rolls, which are related to, but distinct from, Domesday Book, recorded the amount of tax paid into the treasury at Winchester in about 1086 by the counties of south-west England. An earlier account for the county of Northamptonshire dates from the 1070's, which listed the hides (units of land) in the shire, followed by the number which had paid the *geld* (land tax) (Galbraith, 1961, p.87; 1974, pp.92-3).

The expansion of written government in England under the Norman and Angevin kings, allied to the poor survival rate of early documentation, has encouraged accounting historians to discount its existence prior to the Norman Conquest. However, the written government of Henry I was based on the system that existed in 1066. The use of writs (written instructions) by Henry I was inherited from the Anglo-Saxons, notwithstanding that their form changed (Barrow, 1956, p.77; Keynes, 1980, pp.136-8; Clanchy, 1993, pp.31-2). Henry's tax system was a continuation of the Anglo-Saxon *geld*, which itself was "an advanced institution of government for its day and age" (Loyn, 1991, p.316).

The pre-existence of a sophisticated tax system, together with the survival of the Geld Rolls and the Northamptonshire Geld Roll, belies Jack's (1966, pp.145-6) conclusion that public accounting is unlikely to have predated the invention of the Exchequer in the twelfth century. Historians have argued that the complexity of the royal finances as revealed by Domesday suggests that Edward the Confessor (1042-66) had a "fairly good system of accounting using written record"; and that the Northamptonshire Geld Roll in particular indicates "that written tax records at least antedate the [Norman] Conquest" (Galbraith, 1948, pp.44-5; Campbell, 1986, p.176). The Northamptonshire Geld Roll (see Appendix 2) is significant because of its close chronological proximity to the Conquest, and because it was written in English rather than Latin, which is unusual for a post-Conquest document. These factors, together with its content, which suggests a routine operation based on traditional figures that were not open to scrutiny by the collectors, have led to the conclusion that this type of document was typical of the pre-Conquest period (Galbraith, 1961, p.95; 1974, p.93; Stenton, 1971, p.644). The Geld Rolls, for their part, which were written in Latin, indicate that the writing of accounts probably accompanied the collection of tax, as the collectors of Somerset were allowed a deduction for the cost of a scribe. Other expenses included the purchase of money-bags, and the fee for carrying the money to Winchester (Galbraith, 1961, p.88; Campbell, 1986, p.174).

Domesday Book itself was in the tradition of those earlier surveys by Frankish kings that made use of the sworn inquest. Surveys were undertaken for a variety of purposes, such as the assessment and valuation of property, and could be consulted by the king to determine both what he possessed and how much it was worth (Ganshof, 1971, p.294; Campbell, 1986, p.164; Nelson, 1990, p.277). Harvey (1971, p.763) identifies certain county lists, traditionally regarded by historians as by-products of Domesday Book, as being earlier; and concludes that the lay-out of Domesday was based on existing fiscal documents, some of which pre-dated the Conquest. Furthermore, it has been shown that the "hidages" recorded in Domesday Book were partly dependent on the earlier Anglo-Saxon hidage lists (Campbell, 1986, p.157). The Tribal Hidage dated from the seventh or eighth centuries, the Burghal Hidage from the late ninth century, and the County Hidage from the tenth or early eleventh centuries. These lists recorded the number of hides in an area as a basis for determining its taxable capacity. The "hide" was a unit of land-division. Traditionally, one hide represented the amount of land necessary to support a peasant and his household, although it changed to become a notional unit of assessment (Galbraith, 1961, pp.47-8; Loyn, 1984, pp.36-8; Andersen, 1991, p.75). The assessment of taxes based on hides appears as early as the seventh century, as soon as there are charters to provide descriptions of land (Loyn, 1984, pp.38-9; Campbell, 1986, p.172). In some instances, the hidages attributed to the shires in the County Hidage have been shown to tally with those recorded in Domesday Book to "a remarkable degree", providing evidence of continuity in shire assessment between the Anglo-Saxon and Norman periods (Loyn, 1984, p.120; 1991, p. 319).

Like Domesday Book, the antecedents of the county sheriff's role as a tax collector predate the Norman Conquest, although it was not until Norman times that the full potential of the office was realised (Loyn, 1984, pp.139, 196). By 1066 England was already divided into shires, each under a royal official, the sheriff (Campbell, 1986, p.172). Historians have linked the origins of the sheriff's office to the collection of traditional renders from estates. The great estates were both centres of administration and economic resources (Smyth, 1995, p.38). From an early date, food and labour were supplied to support the king and his household and to maintain the defence of the kingdom. It became common for these dues to be paid in money. The task of collection fell on the king's reeves, who also managed the royal estates and exercised justice in the locality (Whitelock, 1979, p.64). Gradually through time, the office of the sheriff ("shire-reeve") evolved as the king's chief agent for the collection and remittance of renders from all the estates in the shire (Loyn, 1991, p.315).

The most important source of public revenue in late Anglo-Saxon England was the land tax known as the *geld*, which was assessed at so much per hide. The *geld* demonstrated the power of the state in operating a sophisticated system of assessment on a national level that involved planning. The need for defence against the Vikings provided an impetus for such a tax system. This is illustrated by the Burghal Hidage, which assigned men to defend the network of *burhs* (fortified sites) that had been set up by Alfred the Great in the 880s. Although the Burghal Hidage has been dated to the reign of Edward the Elder in the early tenth century, it is likely that this document is a revision of an earlier one compiled under Alfred (Keynes & Lapidge, 1983, p.339). The document began by listing all the *burhs* which formed part of the network, in addition to the number of hides of land in the vicinity assigned to each. Each hide would supply one man. The number of hides allocated to a particular *burh* depended on the length of its defensive wall, calculated using the ratio of four men to one pole (5.5 yards) of wall. The document explains:

> ... if every hide is represented by one man, then every pole can be manned by four men. And so for the maintenance of twenty poles of wall, eighty hides are required (Keynes & Lapidge, 1983, pp.193-4).

This formula enables one to calculate the length of the fortifications of particular *burhs* from the listed hidages. The fact that in many cases the imputed length has been shown by archaeologists to correspond to the actual length indicates the accuracy of the Burghal Hidage as a planning document (Campbell, 1986, p.173). The possibility that Alfred was forced to pay large tributes to the Danes to secure peace (Smyth, 1995, pp.38-9, 143) suggests that he also used the hidage system to raise taxes in money.

The assessment of taxes based on hides was extended in the late tenth century with the renewed threat of Viking attack. *Geld* was assessed both to pay for defence, and to buy off the Danes (*danegeld*). The *Anglo-Saxon Chronicle* records that *danegeld* amounting to £137,000 was paid during the reign of Ethelred (978-1016), in addition to £21,000 paid to mercenaries. £82,500 tribute was collected by Cnut in 1018 following his accession. These figures have been alternately disputed and defended by scholars (Lawson, 1984 & 1990; Gillingham, 1990); but even allowing for the scaling-down suggested by the sceptics (Gillingham, 1990, p.944), the collection of such huge sums in the tenth and eleventh centuries indicates the efficiency of the tax system. Payment of tax was encouraged by the penalty of forfeiting lands in cases of default (Lawson, 1984, pp.723-6). Following the peace settlement with the Danes, *geld* continued to be levied until 1051 to maintain the army and the navy. It was reinstated by the Normans, and it was not until the twelfth century that the use of hides as the regular basis of assessment began to decline (Campbell, 1986, p.180).

It follows that continuity and planning are the key-notes of the fiscal system that existed in late Anglo-Saxon England. The planning aspects are emphasised when one considers the possible connections between the fiscal and monetary systems. Money was in general use in England from at least the eighth century. The continuous history of the English currency began with King Offa (757-96) of Mercia. From his reign to that of Henry III in the thirteenth century, the English currency was based on the silver penny, with the king's name on the obverse and the moneyer's name on the reverse (Stenton, 1971, p.223; Lyon, 1976, p.179). Analysis of the coin-finds indicates that by the eleventh century money was a common means of exchange, with coins circulating rapidly over distances of up to two hundred miles (Metcalf, 1986, p.133). From the end of Edgar's reign (975), the monetary system was highly sophisticated compared to other European states. It was kept under complete royal control. Every six or seven years initially, and later every two or three, the old coins were called in to be replaced by a new issue (Lyon, 1976, p.194). The evidence from the surviving coin-hoards indicates that the withdrawal from circulation of millions of silver pennies, and their replacement with new stock, was carried out efficiently (Campbell, 1986, p.155), suggesting an effective system of mint controls. For instance, dies were produced centrally, and contained the name of the mint/moneyer to which they related, as a control-mark (Laing, 1979, p.158; Loyn, 1986, p.5). The effectiveness of the system is borne out by the subtle and deliberate variations in weight that were carried out over a wide range of mints (Lyon, 1976, pp.216-7; Loyn, 1986, pp.9-10). According to Athelstan's laws (c.926), each *burh* was entitled to a mint, and there were about thirty-five that were active in his reign (Blunt *et al.*, 1989, p.255). The complexity of the task of withdrawing and re-issuing coin illustrates the government's interest in managing the currency. The drain on bullion, caused by the heavy tributes exacted by the Danes, was a major incentive (Lyon, 1976, pp.174-5, 203-4). Deliberate adjustments to the weight of new issues, coupled with evidence that the Crown insisted on receiving tax only in coin of the current issue, implies a connection between the fiscal and monetary systems. Thus it has been argued that the state exploited the enclosure of the fiscal and monetary systems to manipulate its revenues (Loyn, 1984, p.125; Campbell, 1986, pp.156-7), which if correct, is further indication of financial planning.

Was European accounting practice disseminated to England?

There were close ties with Europe throughout the period in trade, monetary policy, religious, cultural and dynastic affairs (Godfrey, 1962, p.220; Stenton, 1971, pp.222-4; Laing, 1979, pp.124-7; Campbell, 1986, pp.160, 187; Morrish, 1986, p.100; Loyn, 1991, p.122; Welch, 1992, p.117-8; Smyth, 1995, pp.201, 228). The question of whether such contacts resulted in the dissemination of accounting practice to England is pertinent because of the relatively early existence of estate accounting on the Continent. In England, estate accounting appears to have commenced on the great Church estates in the first half of the thirteenth century (Harvey, 1994, p.91). In Gaul, it is evident in the *Capitulare de Villis*, a series of written instructions for the management of the royal estates, inspired by Charlemagne at the end of the eighth century (Latouche, 1967, pp.180-1).

The *Capitulare de Villis* is the most important of a series of surviving documents that provide an insight into the organisation and management of the great estates of Charlemagne's Empire. It was intended to correct abuses that had crept into the administration of the royal estates (Latouche, 1967, p.181; Yamey, 1982, p.3). Although Ganshof (1971, p.134) doubts that it was universally applied, more recent work suggests that surveys of ninth century royal estates were not uncommon (Nelson, 1990, p.274). The existence of the *Capitulare de Villis* reflects the importance of these estates as a source of Crown revenue and a basis of political authority (Previte-Orton, 1971, pp.321-2; Martindale, 1983, pp.160, 165). The document contains a number of references to accounting, which are reproduced in Appendix 3. The essential features are as follows: The estates were managed by stewards, who were responsible for particular districts (clause 5). The steward was directly accountable to the lord, whereas lower officials were accountable to the steward (clause 63). The steward was obliged to supply the lord, the household workers, the women's workshops and the army with produce, and to keep records of the amounts involved, and surplus left over (clauses 20, 30-31, 44, 55). Standard volume measures were used throughout the estate (clause 9). Surplus produce was sold for cash, which was remitted to the lord on Palm Sunday, after the steward's accounts had been audited (clause 28). At Christmas time, the steward submitted an account of the estate's produce for the year, classified by type (clause 62). The document makes it clear that written accounts were required (clauses 44, 55, 62), although it is possible that these were compiled with the help of *missi* (itinerant commissioners) (Yamey, 1982, p.3).

Latouche (1967, p.181) comments on the haphazard nature of the *Capitulare de Villis*, which does not follow a set plan. This is the case for the accounting instructions, although two types of accounting can be distinguished. The first is a type of charge and discharge accounting, whereby the steward was rendered accountable for the difference between the income of his district and his payments, in goods or money. These accounts were subject to audit. The second, which is evident in the annual Christmas statement (clause 62), is more in the nature of a survey of possessions and revenues. Such documents were described as *polyptyques* or *descriptiones* in the Carolingian period. Their purpose is unclear. Latouche (1967, pp.179-80) contends that *descriptiones* were ordered by Charlemagne as a control measure to correct "sharp practices". In clause 44, Charlemagne rebuked estate stewards for not having submitted proper returns in the past. The inclusion of information concerning the gross product of the estate indicates they could also have been used for planning next year's output. The detailed nature of this type of information in the *Polyptyche of Irminon*, which dates from the time of Charlemagne, led Latouche (1967, p.192) to conclude that the "main concern" of Irminon, abbot of Saint-Germain-des-Prés, "was to assess the average income from his lands". This is borne out by the capitulary known as *Brevium Exempla*, which provided a model for estate surveys. The final instruction in the document, that totals should be given, item by item, "for past and present amounts, and for amounts still remaining" (Loyn & Percival, 1975, p.105), suggests an interest in the average. It could also imply the existence of an account with opening and closing balances. The juxtaposition of estate survey and charge and discharge accounts in the *Capitulare de Villis* suggests that both these forms of accounting went together. This impression is corroborated by similarities between the *Capitulare de Villis* and the *Brevium Exempla*, both of which survived in the same early ninth century manuscript (Loyn & Percival, 1975, p.98). The similarities between the two are most apparent in the final section of the *Brevium Exempla* relating to the survey of five royal estates. Extracts from one of these are contained in Appendix 4. The same standard units of measurement are employed, which in both cases are noted as being set centrally by the palace. The survey of estates by district is the same, as are the types of headings under which produce is classified.

It is difficult to tell the extent to which the *Capitulare de Villis* was an innovation, as opposed to the encodement of established practice. The capitulary is pre-dated by a seventh century *polyptyque* from the abbey of St Martin of Tours, which listed the names of the tenants grouped in localities together with the yields owing to the monastery (Wallace-Hadrill, 1983, p.125). The chance survival of this document – fragments of it were used in a bookbinding – suggests that such returns were not necessarily retained on a permanent basis, and implies the existence of others which were discarded.

In particular, accounting historians would like to know whether there was any lingering memory of Roman estate-practice. After all, the main aim of Roman estate accounting seems to have been to expose any losses due to the dishonesty or negligence of officials (de Ste. Croix, 1956, p.38), which is consistent with the spirit of the *Capitulare de Villis*. Jack (1966, p.143) suggests that the Carolingians should have been aware of Roman practice through the parables in the New Testament. However, it is likely that there were other more direct sources. First, there is the possibility that Roman estate-practices never ceased. Authors have commented on the ready integration of the incoming Germans into Gallo-Roman country life, following the collapse of the Empire in the West (Latouche, 1967, p.102; Boussard, 1968, pp.10-12; James, 1988, pp.189-91); witness the continued use of coloni (small farmers tied to the land) instead of slaves, which was an important feature of the late Empire (Latouche, 1967, pp.18, 71, 182). According to Geary (1988, p.96), there was also continuity with late Roman field division, agricultural techniques and manorial organisation. Second, reference material existed in the form of preserved classical texts. The Carolingian court and the monasteries associated with it made a concerted attempt from the late eighth century to preserve classical knowledge through the collection and copying of ancient material from Italy (Reynolds, 1983, pp.xxi-xxv; Bischoff, 1994, pp.94-5). For example, the name forms of the plants and animals listed in the *Capitulare de Villis* and the *Brevium Exempla* correspond to Greek and Latin glossaries that had been developed from classical sources (Metz, 1960, pp.32-43).

Amongst the texts which were copied at this time were Columella's textbook on agriculture and Pliny the Elder's *Natural History*. Like the *Capitulare de Villis*, both these authors wrote about large estates that were dependent on stewards for their efficient management, rather than the direct involvement of the owners (Columella, XII, preface 10). Columella made various references to the estate-steward submitting charge and discharge accounts to the master (I, viii, 4, 13; XI, i, 24; XII, iii, 7), but did not deal with the subject explicitly. The assumption seems to have been that such accounting was taken for granted. Columella gave a fuller account of the other duties and responsibilities of estate-stewards (I, vii-viii; XI; XII), which are also touched on by Pliny (XVIII, vii-viii). In this connection, Pliny is most significant because he alerted the reader to Columella's existence, by quoting him as a source for the sections of his work on agriculture (XVII-XVIX). Correspondence between Alcuin and Charlemagne in 798 and 799 indicates that Charlemagne had access to Pliny's *Natural History* in the court library at Aachen (Reynolds, 1983, pp.309-10; Bischoff, 1994, p.57). It follows that Charlemagne, with his interest in rationalising his estates, might also have known about

Columella's work, which was circulating at about this time. Copies of *Columella* were made at the abbeys of Corbie and Fulda, and the text was also known at Tours and Reichenau (Wallace-Hadrill, 1983, pp.336-7; Bischoff, 1994, pp.146, 148, 150). Bischoff (p.150) dated the Fulda manuscript to the 830's, and believed that it might derive from an earlier copy in the court library. Therefore, there is a reasonable chance that the text was known to either Charlemagne or his successor, Louis the Pious. According to Louis' anonymous biographer, he also had an interest in estate reform (Martindale, 1983, pp.132, 159-60). It is not suggested that the detailed arrangements in the *Capitulare de Villis* were drawn verbatim from *Columella*, but that the underlying Roman idea of stewardship coupled to accountability, might well have been.

If continuity with Roman practice in the *Capitulare de Villis* is a possibility, what about continuity with later generations? Continuity is evident in the tradition of the Carolingian estate survey which was preserved by the Church in the ninth century, and transmitted to England in the tenth (Campbell, 1986, p.164). There are indications that the practice of surveying estates in England increased as a result of the tenth century monastic reform movement. English monastic reform depended on European houses, which provided models for both spiritual living and estate management (Campbell, 1986, pp.165-6; Loyn, 1986, p.6). In the late ninth century, King Alfred attempted to revive organised monastic life in England, which had declined. True revival occurred from the middle of the tenth century, however, and was inspired by reformed Benedictine observance on the Continent (Godfrey, 1962, pp.294-309; Loyn, 1991, p.251). The spiritual and temporal aspects of the monastic reform movement are illustrated by the life of Bishop Ethelwold, one of its prime architects. As a monk himself, he was concerned to promote religious observance; but this required the building and decoration of elaborate churches and precincts, together with the acquisition and efficient management of estates to support the new foundations (Yorke, 1988, pp.5-7).

Corroboration that the European practice of surveying estates was disseminated to England at this time exists in the form of a handful of surviving documents from the tenth and eleventh centuries, showing English monasteries surveying their estates and compiling lists of stocks, treasures and sources of income (Campbell, 1986, pp.165, 173). An extract from one of these, dating from around 963, which relates to Ethelwold's revival of the great monastery of *Medeshamstede* at Peterborough, is reproduced in Appendix 5. The mention of monastery inventory records by Asser in his Life of Alfred (qv. p.10) is further evidence of this trend, if Smyth (1995, p.366) is correct that the work originated at Ramsey Abbey in the early eleventh century. Kelly (1990, p.51) maintains that it was common practice by the end of the period for the great monastic houses to keep detailed records of their estates, tenants, rents, stock and disbursements. If, as has been suggested, the valuations contained in Domesday Book were based on estate surveys compiled by estate stewards (Godfrey & Hooper, 1996, pp.38, 46), the underlying expertise was already in place before the Norman Conquest.

The adoption of European estate practice in England in the tenth century raises the question of whether this included charge and discharge accounting, as this seems to have featured in Carolingian estate practice, alongside the survey. The chances of estate surveys surviving were relatively good, as they were intended for use on an ongoing basis. Consequently, they were copied into cartularies or registers more readily than other manorial records (Harvey, 1984, p.15). An alternative approach to the question of why charge and discharge accounts emerged in England in the thirteenth century, therefore, might be to consider those factors that would have led to their preservation as opposed to their origin.

The estate surveys which have survived from the Anglo-Saxon period tend to fall into the category of "customals", because they recorded the customary obligations of the estate's tenants, in money, labour or produce. Such documents were still being used in the fourteenth century; and like manorial charge and discharge accounts, their incidence rapidly increased in the thirteenth century with the spread of demesne farming. It follows that from the thirteenth century, it is sometimes possible to check the theoretical obligations of the tenants recorded in customals against the figures in the charge and discharge accounts (Harvey, 1984, pp.18-19). Where a valuation was added, these surveys became known as "extents" (Titow, 1969, p.29). An extract from a fourteenth century extent of the Manor of Hodsock in Nottinghamshire is reproduced in Appendix 6, which but for the valuations, would not have been out of place in a Carolingian *polyptyche*.

Is there any accounting significance in the money values incorporated within Anglo-Saxon law-codes?

There was a tendency in Anglo-Saxon society to attribute monetary values to assets and obligations, even where settlement took place in kind. For example, *wergilds* - the compensation for killing someone - were assessed in currency, although mixed payments in coin and in kind were common (Loyn, 1991, p.214). Another example is the practice of valuing rents from *demesne* in money, although frequently these were paid in kind (Galbraith, 1948, p.44). The inclusion of monetary values in some of the law-codes for cattle and other livestock would have assisted the conversion of cash values into kind (Chadwick, 1963, pp.156-7).

The emphasis on money measurement is paralleled by the Anglo-Saxon tradition, as reflected in the poem *Beowulf*, that the performance of social obligations and the value of individuals to society could be measured in terms of treasure. Although *Beowulf* probably dates from the eighth or ninth centuries, it looks back with nostalgia to an earlier time when Anglo-Saxon war-bands followed their chiefs in search of plunder. *Beowulf* depicted a society that was dependent on the honouring of mutual obligations between a lord and his thegns, as evidenced by the exchange of treasure. The lord would protect his people and reward his warriors with treasures in return for loyal service (Beowulf, pp.97-8, 117-8, 137, 142). The possession of gold, silver, jewellery, weapons and armour signified more than material wealth. It symbolised the performance of an individual's social obligations and his standing in society. Campbell (1982, p.54) writes that "the social and emotional significance of gold-giving and gold-wearing was complex and deep; and it was not for nothing that Beowulf died to win a treasure hoard".

This fascination with precious objects was probably one of the factors that encouraged the early use of coinage in England and the adoption of money as a unit of measurement. The established history of English coinage began in the seventh century with the issue of imitations of the small gold *tremisses*, which had been penetrating south-east England from the Continent for a considerable time (Lyon, 1976, p.176). The association between ornaments and coinage is evident in the Scandinavian practice of making gold pendants in imitation of Roman coins. Many of the Roman coins found in Anglo-Saxon graves were pierced as ornaments, and one was gilded for mounting on a horse's harness (Laing, 1979, p.43). The Anglo-Saxon ideal of measuring the performance of social obligations in terms of treasures meant their easy translation into monetary values. This is apparent in the first law-codes, dating from the beginning of the seventh century, which graded the seriousness of offences in monetary terms, usually the shilling. The shilling was a unit of account rather than an actual coin. It was the silver penny that was the coin in circulation; and there were regional variations in the number of pence to a shilling (Chadwick, 1963, pp.12-20; Loyn, 1986, p.2). A central feature of the various law-codes was the *wergild* or "man-price", which was common to other early Germanic societies (Loyn, 1984, p.45; James, 1988, pp.210-11, 216-18). Every free man and woman was assessed at his/her *wergild*, which represented his/her value to society measured in shillings. This was the amount of compensation for killing someone, and was gradated according to the victim's social status from the king downward (Duckett, 1956, p.87; Laing, 1979, pp.116-7).

The social significance of treasure stretched back to the early days of the Anglo-Saxon settlement, and persisted throughout most of the period. There is some evidence it declined in the tenth century, when kings bought the loyalty of their thegns with grants of land rather than treasure (Hinton, 1977, pp.193-4; Smyth, 1995, p.449). By this time, however, the use of money as a unit of measurement was firmly established, providing a foundation for future developments, such as the money valuation of landed property in Domesday Book (Andersen, 1991, p.77).

Conclusion

The paper has questioned whether the traditional view, that the Anglo-Saxon period played no part in accounting history, is tenable in the light of current knowledge. The main findings are summarised as follows:

1. Written English was more important as a language of business and administration than has been generally acknowledged by accounting historians. The illiteracy of the society is the main argument against the use of written accounts in Anglo-Saxon England; and the possibility that this view is inaccurate opens up further lines of enquiry.
2. The close involvement of the Church, with its higher level of literacy and tradition of account-keeping, in the economic life of the community, increases the likelihood that the Church had an accounting role in secular Anglo-Saxon society.
3. The survival of the Geld Rolls, the Northamptonshire Geld Roll, and the earlier hidage lists shows that public accounting in England predated the Norman Conquest. The only question is how systematic that accounting was. The level of planning and control achieved by the fiscal and monetary systems in the latter part of the period, suggests a high degree of systematisation.
4. Direct evidence that the Church fostered accounting practice in Anglo-Saxon England exists in connection with church estates. The Carolingian practice of surveying estates was preserved by the Church in the ninth century, and transmitted to England in the tenth via the monastic reform movement. This raises the question of whether charge and discharge accounting was also transmitted from the Continent, as this was a feature of the body of Carolingian estate practice, alongside the survey. The chances of estate surveys surviving were relatively good; and an alternative approach to the question of why charge and discharge accounts emerged in England in the thirteenth century, might be to consider the factors that would have led to their preservation as opposed to their origin.
5. There is probably a connection between the Anglo-Saxons' willingness to attribute monetary values to assets and obligations, even where settlement took place in kind, and the heroic ideal of measuring the performance of social obligations and the value of individuals to society in terms of rings, weapons and other treasures.

To summarise, evidence of accounting exists in the surviving documentation, in the sophistication of government finances, in the Anglo-Saxon mind-set relating to the use of money and monetary values, and in the continuity between earlier and later periods, all of which warrant the attention of accounting historians.

Appendix 1

Extract from the Assignments of Property to Thorney Abbey

(Robertson, 1956, Appendix II, IX)

These are the things which have been supplied to Thorney. First of all 2000 herrings were bought for 40 pence and then 40 pence [went] for bean-seed; 5 ores [went] to Ethelferth of Newton for his man; 2 ores were for a ship and nets at Farcet; and for three plots of ground at Thetford ... ores and 12 pence were given; and a woman worth 5 ores to Stanground; and three harrows worth 3 ores – one was given to Newton, the second to Yaxley and the third to Stanground – and 15 pence for bean-seed at Yaxley and ... pence for another ship and nets at Whittlesey Mere, and 9 ores for a ... at Huntingdon. One ship worth 2 ores was given from Ely to Whittlesey Mere. This amounts altogether to three and a half pounds less 30 pence.

Then after that 80 swine and the swineherd were transferred from Milton ... ; the swine were valued at one and a half pounds and the swineherd at half a pound; ... and 12 wagons [were obtained] for 180 pence; and 4 ships at 2 ores each for 8 ores – one was given to Newton, the second to Yaxley, the third to Stanground, the fourth to Whittlesey Mere. And 10 mancuses of gold were given to Elfnoth for mill-oxen at Huntingdon, and ... worth 5 mancuses of gold to the monk Elfsige, and a pound for mill-oxen at Yaxley and at ... to Sweta; 10 pounds. And apart from this the abbot gave the monk Elfsige ... mancuses of gold for the improvement of the property belonging to Thorney. And 5 ores were for iron for three mills – 2 ores worth for Huntingdon and 2 for Yaxley and 1 for Stanground. The value of the total amount given by Ely to Thorney (apart from the money for their clothes which ...) is 16 pounds in gold and silver less 40 pence ...

Appendix 2

Extract from the Northamptonshire Geld Roll

(Robertson, 1956, Appendix I, III)

To Sutton Hundred belong 100 hides as was the case in King Edward's time, and of these 21 hides and two-thirds of a hide have paid geld, and 40 hides are in demesne [exempt], and 10 hides are the king's own food rent and 28 hides and one-third of a hide are waste.

To Warden Hundred belong 100 hides as was the case in King Edward's time, and of these 18 hides less 1 yardland have paid geld and 40 hides are in demesne and 41 hides and 1 yardland are waste ...

To *Egelweardesle* Hundred belong 100 hides, as was the case in King Edward's time, and of these 16 hides and half a hide have paid geld and 40 hides are in demesne, and from 6 $^{1}/2$ hides at Norton not a penny has been received – Osmund, the king's secretary, owns that estate – and 37 hides are waste ...

Appendix 3

Capitulare de Villis vel Curtis Imperialitus

Accounting Extracts (Loyn & Percival, 1975, pp. 68-73)

9 It is our wish that each steward shall keep in his district measures for *modii* [units of volume] and *sextaria* [one sixteenth of a *modius*], and vessels containing eight *sextaria* [ie. half a *modius*], and also baskets of the same capacity as we have in our palace.

28 It is our wish that each year in Lent on Palm Sunday, which is also called Hosanna Sunday, the stewards shall take care to pay in the money part of our revenue according to our instructions, after we have determined the amount of our revenue for the year in question.

30 It is our wish that from all the revenue they shall set aside what is needed for our purposes; and in the same way they are to set aside the produce with which they load the carts that are needed for the army, both those of the householders and those of the shepherds, and they shall keep a record of how much they are sending for this purpose.

31 That in the same way each year they shall set aside what is necessary for the household workers and for the women's workshops; and at the appropriate time they are to supply it in full measure, and must be in a position to tell us how they have disposed of it and where it came from.

44 Two thirds of the Lenten food [i.e. food permissable during the Lenten fast] shall be sent each year for our use – that is, of the vegetables, fish, cheese, butter, honey, mustard, vinegar, millet, panic, dry or green herbs, radishes, turnips, and wax or soap and other small items; and as we have said earlier, they are to inform us by letter of what is left over, and shall under no circumstances omit to do this, as they have done in the past, because it is through those two thirds that we wish to know about the one third that remains.

55 It is our wish that the stewards should record, in one document, any goods or services they have provided, or anything they have appropriated for our use, and, in another document, what payments they have made; and they shall notify us by letter of anything that is left over.

Appendix 3 (cont'd)

62 That each steward shall make an annual statement of all our income, from the oxen which our ploughmen keep, from the holdings which owe ploughing services, from the pigs, from rents, judgement-fees and fines, from the fines for taking game in our forests without our permission and from the various other payments; from the mills, forests, fields, bridges and ships; from the free men and the hundreds which are attached to our fisc; from the markets; from the vineyards, and those who pay their dues in wine; from hay, firewood and torches, from planks and other timber; from waste land; from vegetables, millet and panic; from wool, linen and hemp; from the fruits of trees; from larger and smaller nuts; from the graftings of various trees; from gardens, turnips, fishponds; from hides, skins and horns; from honey and wax; from oil, tallow and soap; from mulberry wine, boiled wine, mead and vinegar; from beer and from new and old wine; from new and old grain; from chickens and eggs and geese; from the fishermen, smiths, shield-makers and cobblers; from kneading troughs, bins or boxes; from the turners and saddlers; from forges and from mines, that is, from iron- or lead-workings and from workings of any other kind; from people paying tribute; and from colts and fillies. All these things they shall set out in order under separate headings, and shall send the information to us at Christmas time, so that we may know the character and amount of our income from the various sources.

63 With regard to all the things mentioned so far, our stewards should not think it hard of us to make these demands, since it is our wish that they likewise should be able to make demands of their subordinates without giving offence. And all these things that a man ought to have in his house or on his estates, our stewards shall have on our estates.

Appendix 4

Brevium Exempla

Extract from a Survey of Five Royal Estates

(Loyn & Percival, 1975, pp. 102-3)

Concerning the district of this or that mayor

We found on the crown estate of *Asnapius* a royal house, well built of stone, with three chambers; the whole house surrounded by galleries, with 11 rooms for women; underneath, one cellar; 2 porches; 17 other houses inside the courtyard, built of wood, with as many rooms and with the other amenities all in good order; 1 stable, 1 kitchen, 1 bakehouse, 2 barns, 3 haylofts ... Equipment: 2 bronze bowls, 2 cups, 2 bronze cauldrons and 1 of iron, 1 cooking pan, 1 pot-hook, 1 fire-dog, 1 lamp, 2 axes, 1 adze, 2 augers, 1 hatchet, 1 chisel, 1 scraper, 1 plane, 2 scythes, 2 sickles, 2 iron-tipped spades ... Produce: 9 baskets of old spelt from the previous year, which will yield 450 measures of flour; 100 modii of barley. In the present year there were 110 baskets of spelt; of these 60 baskets have been sown, and we found the rest [in store]; 100 *modii* of wheat: 60 have been sown, and we found the rest ... From the 5 mills, 800 smaller *modii*; 200 *modii* were given to the workers on the home farm, and we found the rest. From the 4 brewhouses, 650 smaller *modii*. From the 2 bridges, 60 *modii* of salt and 2 shillings. From the 4 gardens, 11 shillings, 2 *modii* of honey, 1 *modius* of butter in payment of dues; 10 sides of bacon from the previous year, 200 sides of new bacon, along with the offal and lard ... Livestock: 51 head of older horses, 5 three-year-olds, 7 two-year-olds, 7 yearlings, 10 two-year-old colts, 8 yearlings, 3 stallions, 16 oxen, 2 donkeys, 50 cows with calves, 20 bullocks, 38 yearling calves, 3 bulls, 260 older pigs, 100 piglets, 5 boars, 150 ewes with lambs, 200 yearling lambs, 120 rams, 30 she-goats with kids, 30 yearling goats, 3 he-goats, 30 geese, 80 chickens, 22 peacocks ...

We found that the measure for *modii* and *sextaria* were the same there as at the palace ...

Appendix 5

Extract from the Gifts of Bishop Ethelwold to Peterborough

(Robertson, 1956, XXXIX)

... From the two hundreds which owe suit to Norman Cross 350 acres of seed and 23 acres of clean wheat were given as tithes to *Medeshamstede.* From the two hundreds out on the promontory on which *Medeshamstede* stands tithes were rendered from six manors, as had always been done, in the ratio of a fother of corn containing 8 thraves for every plough.

Then ... from the 24 manors 203 acres of seed were rendered to the monastery.
From Maxey 14 acres of seed as tithes.
From Ashton 13 1/2 acres and 5 quarter-acres of seed as tithes.
From Nunton 6 acres of seed and 5 quarter-acres of seed as tithes.
From the other Maxey 9 acres of seed as tithes.
From Ashton 17 1/2 acres of seed and 14 quarter-acres and 3 roods of seed as tithes.
From Pilsgate 6 acres of seed as tithes.

This is the inventory of the stock at Yaxley: 13 able-bodied men and 5 women and 8 young men and 16 oxen, a stalled ox and 305 sheep and 30 swine and 100 flitches of bacon and all the delicacies that belong to them, and 30 fothers of corn and 80 acres sown and 1 harrow (?) and 6 barrels and 2 tubs and 3 troughs and a cauldron and a trivet and 9 year-old stallions and 1 fat pig ...

Appendix 6

Extract from the Extent of the Manor of Hodsock, 1324

(Titow, 1969, pp.151-3)

... [there] is there a certain Manor, surrounded on all sides with a moat, in which [there] are: one hall (*aula*), three chambers (*camere*), a pantry, a buttery, a kitchen, a bake-house, a granary, two barns, one chapel, two stables, one chamber above the bridge with portcullis and a drawbridge, one malt-kiln, [and] two fish-ponds, which are worth nothing per year beyond their own usefulness (*ultra reprisam*). [There] is there one garden which is worth, with [its] produce and grazing, 6d a year. [There] is there one dove-cote which is worth 2s a year. [There] are there, outside the moat, two stables, [and] one ox-shed, which are worth nothing beyond their own usefulness. [There] is there one garden whose apples, produce, and grazing are worth 2s a year. [There] is there a certain enclosure, with a fence on the north side, whose grazing is worth 6d a year. Demesne lands are not being evaluated because they are not measured. And [there] is there one plot of land (*placia*), which is called Marl(e), and it is worth 8d a year ...

Total: 5s 8d

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

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

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

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

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

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

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

The main problem for accounting historians of the period is the lack of documentary evidence, a fact that should be borne in mind when forming general conclusions. Ramsey's [1956] study was based on the accounts of Thomas Howell, John Johnson, Thomas Laurence, and Thomas Gresham. Winjum [1972] added to these the records of John Smythe [pp. 120-125], a Bristol merchant, and Sir William Calley [pp. 147-155], who was trading in the early years of the 16th century. The books of John Isham, a London merchant between 1542 and 1572, are another example [Yamey, 1963, p. 228]. Finally, Hooper [1995] reviewed the Cely shipping accounts relating to a voyage from London to Bordeaux in 1486-1487. The lack of surviving evidence is not surprising given that trade was heavily concentrated through the port of London in the Tudor period [Ramsay, 1982, p. 39], and that many of the records were destroyed in the Great Fire of 1666. Johnson's letters are therefore invaluable, and it is ironic that we owe a debt of gratitude to his bankruptcy for their preservation. Following the conclusion of the legal proceedings, the letters were stored in the Tower of London until they were transferred to the Public Record Office in London some 300 years later [Winchester, 1955, p. 14].

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

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

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

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

AGENCY RELATIONSHIPS AND THE TRANSITION FROM ORAL TO WRITTEN ACCOUNTABILITY

Hooper [1995, pp. 87-89] said that the diversification of English merchants into overseas markets in the second half of the 15th century prompted a transition from oral to written accountability. The increased scope of operations necessitated the use of agents and written accounts to control them. Traditional oral procedures "became increasingly inappropriate" [p. 112], whereas written accounts enabled merchants "to exercise more control over distant agents" and permitted greater accountability among partners [p. 93]. Evidence that written accounts were new to merchants at this time was found in the use of English rather than Latin [pp. 91-92], and in the repetition of clauses to emphasize particular transactions [p. 93]. Johnson's letters, for their part, contain a good deal of information about the writing process and network of agents, and, thus, provide an insight into how the formative trends identified by Hooper developed during the intervening 60 years.

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

The formal account books played a part in this process, and the number of references in Johnson's letters to the account books suggests that the keeping of accounts by English merchants had become commonplace by the 1540s. Johnson himself seems to have been highly regarded as a bookkeeper; the letters reference his associates asking him to put their accounts in order [Winchester, 1955, pp. 229-232], confirming Winjum's [1972, pp. 125-130] finding that he maintained his own ledger with great care. The letters, however, were a more flexible and timely information source than the account books, and were more useful to merchants in managing their businesses from a distance. This greater utility is illustrated both by the letters' content, which is discussed in due course, and their frequency. The brothers John and Otwell Johnson occasionally corresponded twice a day or frequently several times a week [Winchester, 1955, p. 232]. In a letter dated May 6, 1547, Otwell referred to three letters from John which had arrived in close succession:

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

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

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

Calculation of Moneys Due to John Johnson

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

so yourself in lent & dayes of payement past	080.10. 0 / So your app-
tement than amonteth as it is true in dede	461. 6. 0 / And that de-
ducted owte of 711.1.8 / abouesaid / your rest is	249.15. 8 / & therunto let
be added the payementes monney et cetera	085. 8. 0 / so boeth thies
somes amontes & that is all that is due of your hole	
sale	335. 3. 8

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

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

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

ACCOUNTABILITY AND CONTROL

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

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

Details of Payments Made in Antwerp

.... But yet brieffly vnderstond
that I have charged Robert Androwe in your name with thies payementes following, sins your owne being hier; / Videlicet, ffirst

To Robert voytier payable the 19th in April last	225. 0. 0 flles /
To William gravener & Richard malory the last in merche payable at sight	120.10.10
To one lawrence bradshawe & his fellowe seruant with your cosin sanders of harington for money hier received of them	006.11. 0
To Iaques prieuv of Andwarpe the 22th of April payable at sight	053.15. 0

To peter bristo the last in April payable at sight	-	107.10. 0
soma of thies parcelles at sight (besides my payement of		513. 6.10
80 libra f to Jehan lobell & compaigny of lylle in the cold maert last)		

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Legal Record: The intent that the accounts should show a complete record of the merchant's affairs was recognized in contemporary textbooks and by the courts. "False bankrupts and broken merchants" were condemned in Johnson's bankruptcy proceedings for keeping incomplete books in order to defraud creditors [Winchester, 1955, p. 302]. Merchants' correspondence formed part of this legal record, as witnessed by the utilization of both letters and account books as evidence in the case against John Johnson.

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

DECISION MAKING

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

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

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

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

LIMITATIONS

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

Various authors have described the crisis surrounding the collapse of English exports in 1550-1551 [Ramsey, 1972, pp. 66-68; Clay, 1984, pp. 113-115; Loades, 1992, pp. 90-91]. Exports were heavily concentrated in woolen cloth traded through Antwerp, the commercial capital of Europe, to markets in northwest, central, and eastern Europe [Clay, 1984, p. 12]. Confidence was riding high in the late 1540s when demand peaked, only to be shattered in 1550-1551 when the market collapsed. This pattern is borne out by analysis of the cloth purchases recorded in the journal of Thomas Gresham, a major cloth exporter, which revealed a sharp increase in the late 1540s, followed by an abrupt decline and total withdrawal from the trade:

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

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

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

The information contained in his letters of 1551 followed the usual pattern. There were regular stewardship reports of the state of trade [PRO: SP 46/6, Fo. 100; SP 46/7, Fo. 32-33], supplemented by special information that was relevant to the crisis. There were references to the bad state of trade [PRO: SP 46/6, Fo. 128-128d, 130d-131], the adverse price of wool, and the problems caused by the currency fluctuations. In November 1550, for example, Richard Johnson supplied details to his brother on the price of wool in Calais, and expressed his reluctance to sell wool there for less than its cost [PRO: SP 46/6, Fo. 26]. In June 1551, Johnson himself wrote to Robert Andrew from Calais concerning the price of wool, commenting that they would be obliged to seek a new trade if prices continued to fall [PRO: SP 46/6, Fo. 109d, 110d-111]. In August 1551, Anthony Cave expressed an opinion to Johnson that there would be no stability in prices until order had been restored in money [PRO: SP 46/7, Fo. 14]. Other symptoms of the crisis included a refusal to hold sterling in case it was devalued, a scarcity of gold, and a reluctance to grant loans or credit in case debtors defaulted. In May 1551, Otwell Johnson informed his brother that he had accepted £200 from Thomas Gresham, intending to change it to gold, but that little was to be had [PRO: SP 46/6, Fo. 103]. Shortly before his death in July 1551, Otwell informed John that he had sent some money to Richard Preston in Calais, and had advised him not to keep it as another devaluation seemed imminent. If he could not distribute it all to John's creditors, he was to use it to buy wool or fells [PRO: SP 46/6, Fo. 181]. Ambrose Saunders, who wrote to Johnson in the same month, observed that people were unwilling to sell for ready money because they feared another devaluation [PRO: SP 46/7, Fo. 7]. Finally, in September 1551, Henry Garbrand wrote to Johnson that loans were unobtainable at Antwerp because of bankruptcies, although he noted the capture by the French of 17 ships laden with merchandise for Spain as another reason [PRO: SP 46/7, Fo. 17].

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

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

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

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

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

CONCLUSION

English overseas trade developed rapidly in the first half of the 16th century, widening the scope of merchants' operations and increasing their dependence on agents. Tudor merchants relied heavily on letters as a means of controlling their businesses at a distance by making agents accountable. The article supports the contention that written accountability among merchants was encouraged through agency relationships. Letters promoted accountability and control by evincing agents' stewardship, conveying instructions, controlling the remittance of cash, confirming balances on personal accounts, acting as a source of prime data for the account books, and, finally, by providing a legal record of mercantile transactions. They were also useful for business decisions about what commodities/currencies to buy and sell, when to trade, in what markets, and on what terms. Tudor merchants were not in a position to uncover all this information in person, owing to the international scope of their operations. It follows that if written accountability was the product of agency relationships, so too was information for decision making. The system could be undermined by the breakdown of communication through the negligence of a factor or lack of involvement of the principal. The time delay between sending and receiving letters and procuring and conveying goods caused further difficulties.

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

Finally, the article has discussed the economic crisis of the mid-16th century, an event felt to have been a turning point in economic history as it forced English merchants to seek markets outside Europe. English merchants stood on the threshold of a colonial expansion into new international markets, with the joint-stock company as a new form of commercial organization to share the increased risks [Ramsey, 1972, p. 66; Quinn, 1983, p. xi]. The article has described the information network that was available to English merchants in a European setting. More work, such as Roy and Spraakman's [1996] study of the

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

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5. "The Costing Records of George Bowes and the Grand Allies in the North-east Coal Trade in the Eighteenth Century: Their Type and Significance", *Accounting, Business and Financial History*, Vol. 6, No. 1, 1996, pp. 2-22.

The costing records of George Bowes and the Grand Allies in the north-east coal trade in the eighteenth century: their type and significance

David Oldroyd

Abstract

This article reviews the costing records of the 'Grand Allies', of whom George Bowes was a founder member. It assesses the contribution of these records to our knowledge of the development of cost accounting during the Industrial Revolution. It commences with an examination of the costings in the Grand Allies' minute book, before looking for evidence of dissemination in George Bowes' estate papers. It finds a body of practice, devised by colliery viewers, which had become widespread comparatively early in the north-east and which may have influenced costing methods in other regions, as the influence of the north-eastern viewers spread outwards during the eighteenth and nineteenth centuries. The findings in the article support other growing evidence of purposeful cost accounting in pre-industrial Britain.

Keywords: coal; costings; eighteenth century; estates; north-east; viewers

Introduction

This article reviews the costing records of the influential and aristocratic coal cartel known as the 'Grand Allies', of which George Bowes was a founder member. It attempts to categorize the records by type, and to assess their contribution to our knowledge of the development of cost accounting during

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the Industrial Revolution. In particular, it seeks to discover the extent to which the Grand Allies were drawing on existing knowledge and/or their association resulted in the dissemination of costing techniques among the members. Throughout, various technical coal-mining terms will be used, a fuller explanation of which can be found in the glossary in Appendix 1.

The findings in this article are drawn from two main collections of primary documents: the Grand Allies' minute book (1727–40) and the Strathmore papers. The former is part of the collection of the North of England Institute of Mining and Mechanical Engineers, which is deposited in the Northumberland County Record Office (hereafter NRO). The fact that it contains some accounting reports specific to Sir Henry Liddell, the Grand Allies' senior partner, and that his residence, Ravensworth Castle, was a common meeting place, suggests that the book was originally his property. The Strathmore papers, which are the property of the Earl of Strathmore and Kinghorne, are housed in the Durham County Record Office (hereafter DRO). They comprise the Durham and Yorkshire estate records of the Bowes and Lyon families, which were united in marriage in 1767. The existence of these two sets of records allows us to examine the possibility of dissemination of costing techniques between the Grand Allies and one of its members, George Bowes. Additionally the article makes reference to the records of contemporary colliery viewers, such as Amos and John Barnes, Stephen Drydon, Edward Smith (jnr), Nicholas Walton, Richard Peck and others.

George Bowes and the Grand Allies

In 1700, mining in the north-east of England was concentrated on the Tyne itself, to the west of Newcastle and Gateshead, and astride the Rivers Derwent and Team to the south. As the shallow and more easily worked seams near the Tyne became exhausted, the geological configuration of the region resulted in a south-westerly drift of mining towards Tanfield and Pontop (see Figure 1).[1] Centrally positioned within this region of colliery and wagonway development and rich in coal-bearing lands were a number of estates, including that of Gibside. In 1722, following the death of his two older brothers within the space of two years, George Bowes, the youngest son of Sir William Bowes of Streatlam and Elizabeth Blakiston, heiress to her father's lands at Gibside, inherited both estates. It was Gibside, strategically placed, which was to provide the source of his influence in the sea-sale coal trade to London, and to ensure that, in the forty years or so until his death in 1760, Bowes would not only be a major coal-owner in his own right, but an important member of the Grand Allies (Durham County Council, 1980).

The Grand Allies were a grouping of three landed families (Liddell, Wortley and Bowes) and a subsidiary party (Cotesworth). Their dual objectives were to concentrate capital for the purpose of joint-stock mining and to raise the price of coal. The Grand Allies achieved the latter by blocking entry to

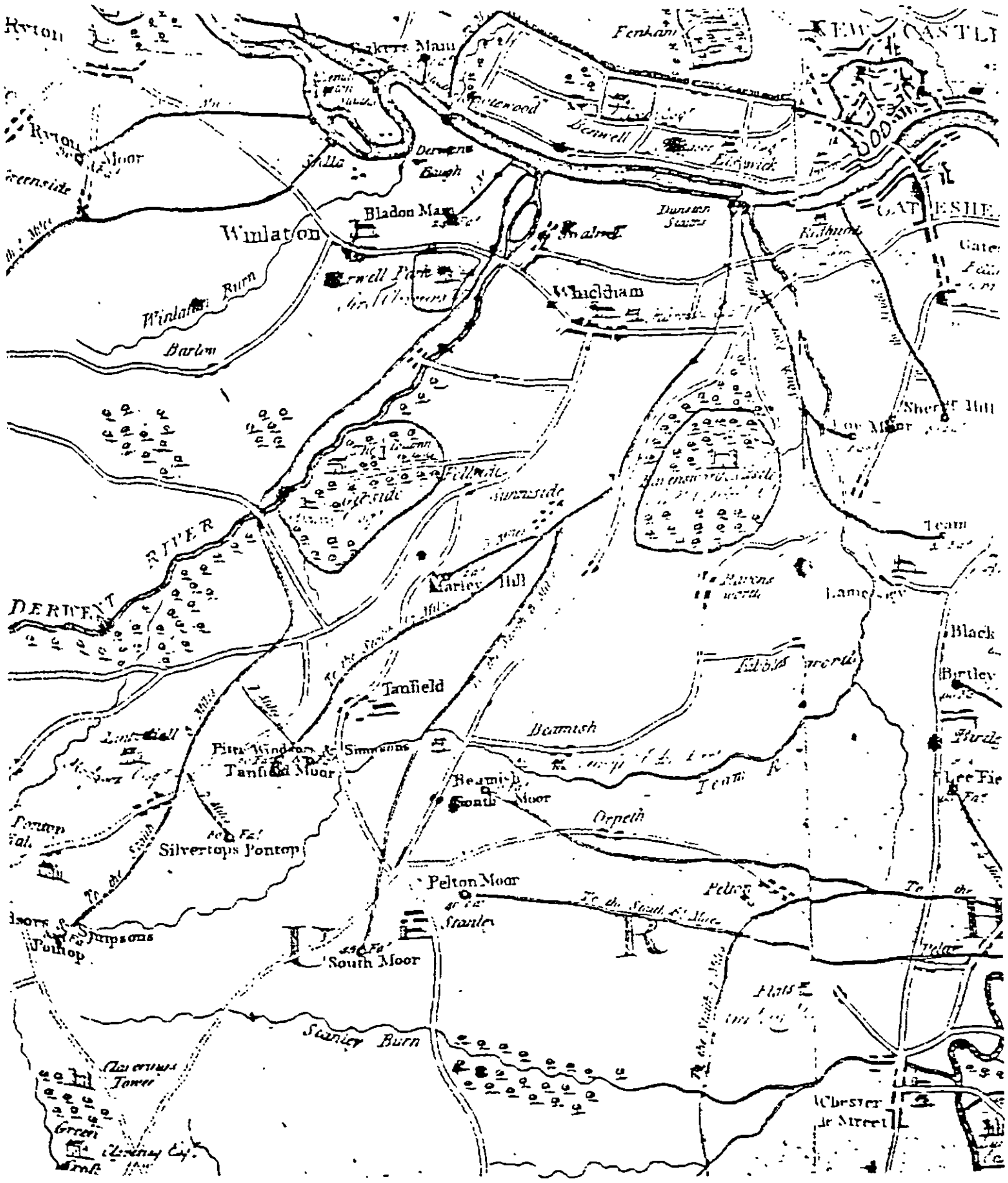

Figure 1 Portion of a plan of the collieries on the Rivers Tyne and Wear, taken from surveys by John Gibson in 1788 (DRO:D/MRP/77/24).

the Tyneside coal industry through a systematic policy of acquiring collieries, wayleaves and the land necessary for constructing wagonways to transport the coal to the River Tyne. Figure 1 illustrates the importance of wagonways as the collieries moved further from the Tyne. The Grand Allies aimed to control a large enough proportion of total output to force the other coal-masters to agree to its regulation; and by 1750 they controlled sixteen of the thirty-one working sea-sale collieries north and south of the Tyne (Ashton and Sykes, 1964: 212; Cromar, 1978; Flinn and Stoker, 1984: 40, 161, 256–8).

The attempt at regulation of the Tyneside coal industry by the Grand Allies was, however, nothing new. In the seventeenth century it had been practised by the Newcastle Company of Hostmen, and Flinn and Stoker (1984: 256) have contended that the scale of coal-mining in the north-east coupled with the high proportion of output sent to London encouraged monopolizing tendencies both at the London end of the market and among the Tyneside coal-owners. Another factor leading to restrictive practices was the relatively small number of major producers. As with earlier attempts at raising prices through restricting output by the Tyneside coal-owners, such as the first formal 'Regulation' between 1708 and 1715, the Grand Allies (c. 1726–1771) were not always successful in achieving their aims. The Regulation periodically collapsed, since major coal-owners such as the Ridley-White partnership chose to stay out, and the members themselves were prone to disagreement. In 1730, for example, George Bowes unilaterally cut prices. Despite such set-backs, regulation of output remained an important theme throughout the eighteenth century, not least because of the need to safeguard prices as deeper mining increased the scale of investment required.

Over the years 1727, 1732 and 1733, the Liddells and Wortleys accounted for between 18 and 27 per cent and 16 and 18 per cent respectively of the coal trade of the River Tyne (Grand Allies' minute book (part 1: 16, 78, 82)). For George Bowes, whose share over these years was between 13 and 15 per cent, coal constituted the greatest part of his income (Ellis, 1976: 208). Thus the three families making up the Grand Allies would appear to lend support to Ashton and Sykes' (1964: 9) comment that, in Northumberland, Durham and Cumberland at least, 'coal-mining was the main business of the landed proprietor and not merely one of many preoccupations'. This view belies that which sees English landowners as a 'class of consumers' (Habakkuk, 1953: 100), whose estates exhibited a lack of a 'business-like approach' (Thompson, 1963: 153).

The accounting records of the Grand Allies are of interest, therefore, because of these families' significance in the coal trade during the first half of the eighteenth century. They are also of interest because of the potential effect that techniques developed there might have had both on other industries in the north-east and on the coal industry in other regions of the country. In the north-east it is generally accepted that the coal industry was a major catalyst in industrialization and, although the pace of industrial development in the north-east was outstripped by that of other regions during the course of the eighteenth century, industrialization nevertheless occurred relatively early (McCord, 1979: 15). Authors are agreed that it was the access to London via the sea which made Northumberland and Durham the largest and best developed coalfield in Britain (Ashton and Sykes, 1964: 194; McCord, 1979: 36). Furthermore, the north-east's collieries enjoyed a high reputation for technical progress and business organization (Flinn and Stoker, 1984: 18), which others clearly followed.

The influence of developments within the coal industry on other industries would have been facilitated through common ownership and organization, such as the colliery and salt interests of William Cotesworth, one of the Grand

Allies, where the small coals unsuitable for domestic consumption were used in the extraction of salt from sea water (Ellis, 1976: 139). Links also existed to the iron industry, with some local collieries being leased by the Crowleys in 1702 to supply their iron factories in County Durham (Flinn, 1962: 117). Though it was not until the second half of the eighteenth century that methods of smelting pig iron with coke began to displace the use of charcoal (Scrivenor, 1854: 84; Flinn, 1962: 4), resulting in the widespread development of large-scale iron production in Great Britain, prior to 1750 coal was nevertheless used in the secondary production processes. Thus, although the Crowley works, which were exceptional in the eighteenth century in terms of their size and organization, did not generally smelt iron, relying instead on imports from Sweden, they nevertheless consumed large quantities of coal in the secondary processes such as smith-work. The firm was even involved in the sale of coal, shipping surplus stocks to London (Flinn, 1962: 101, 106, 116–18).

In addition to influencing developments within other local industries, due to its pre-eminent position in the coal trade, the north-east also had an influence on other coal-mining districts. In 1709, for example, the sixth Earl of Mar sent his colliery manager to Newcastle to obtain drainage plans while in 1724, Sir John Clerk of Penecuik travelled from Edinburgh to see how mining was carried on around Newcastle (Atkinson, 1966: 16). More generally, Duckham (1969, 1976) has traced the involvement of Tyneside 'viewers' (mining consultants) north of the border, concluding that a significant feature in the development of coal-mining in Scotland during the eighteenth century was 'an ultimate dependence on English experience'. Thus, in 1754, the Tyneside viewer William Brown supervised the installation of an underground railway at Bo'ness Colliery on the Duke of Hamilton's estates. Much of this interchange of information concerned the dissemination of technical knowledge, but it is no less probable that accounting techniques, including costing, could have been disseminated in a similar fashion. Financial expertise was certainly available. In 1750, for example, Amos Barnes, who had been appointed viewer at Heaton by the Grand Allies in 1730 (NRO: 3410, GA/2, part 1: 63), estimated the cost of winning Grange Colliery, near Bo'ness, at £1,557 (NRO: 3410, WAT 1/5/1).

Pre-eminent in the dissemination of knowledge were the colliery viewers, whose influence spread outwards from the north-east to other parts of Britain and overseas during the eighteenth and early nineteenth centuries (Pollard, 1965: 127; Hiskey, 1979: 17). There was a notable growth between 1550 and 1700 in the number of these professional mine experts, who acquired their knowledge through first-hand experience, and were not permanently attached to particular enterprises (Nef, 1932: 421–2). Although relatively little is known about them in the early eighteenth century, the activities and influence of later viewers such as John Buddle (1773–1843) are well known, their notability and expertise causing them to be surrounded by schools of apprentices (Hiskey, 1979: 8–9; Flinn and Stoker, 1984: 57–9). Among the many tasks which they performed was the provision of expert opinion for forecasting, including costing, and it is in this respect that the records of the Grand Allies are of particular interest to accounting historians.

Among the records are a number of costings. These are particularly significant, not only because they represent an early example of such costings but also, due to the roving nature of the viewers who generated them, they possibly provided a source of ideas which may have influenced the development of costing throughout the British coal industry and possibly in other industries. It follows therefore that these records have a wider significance to accounting historians beyond their regional interest in the search for multi-variable explanations of the historical origins of cost accounting (Edwards, 1989). While the possibility of links between costing in the coal industry and that in related industries like iron, such as those at Carron examined by Fleischman and Parker (1992), is an area which will have to await further research, the records of the Grand Allies are none the less able to throw light on the extent of knowledge of costing ideas within the eighteenth-century coal industry and their possible diffusion.

The article thus proceeds by examining the costings in the Grand Allies' minute book, before turning to George Bowes' estate papers to examine evidence of dissemination. It then considers the role of the colliery viewers and the incidence of costings in the viewers' records. Finally, avenues for future research are suggested.

The Grand Allies' costings

The Grand Allies' partnership was formally constituted by a ninety-nine year agreement which provided for the mutual working of collieries and the granting of wayleaves (DRO: D/ST/B1/6/1 & NRO: 3410, GA/1). Signed on 27 June 1726 and commencing on the 11 November 1726, the principal features included: (i) with the exception of the partners' estate collieries, such as Gibside, all of their colliery interests were to be divided into three equal parts; (ii) the partnership collieries were to be worked jointly at a joint charge, although the coal was to be transported to separate staiths and sold by the individual partners on their own account; (iii) the capital costs of building bridges, making wagonways, acquiring or winning collieries, in addition to any costs of litigation were to be borne equally between the three partners; (iv) the partners' shares of total annual output were specified; (v) the right of each partner to inspect the others' books weekly; (vi) the year end was fixed on the Wednesday following Christmas day, thereby establishing the period of account for financial accounting purposes.

The agreement is mainly significant from a financial accounting perspective, because it determined to a large extent the partnership's financial accounting arrangements. Thus George Bowes' estate papers contain accounts which established parity between the partners in relation to costs and output (DRO:

D/ST/B1/6/77). Two points relevant to cost accounting emerge from the agreement, however. First the December year-end reflected the seasonal nature of the coal trade. It was not until 1760 that the Tyne coal-ships began to make the voyage to London all year round (Ashton, 1961: 72). Previously the sale of coals had taken place 'chiefly in summer by reason of the weather, which makes it hazardous for ships to sail in winter on those coasts' (J.C., 1708: 46). It is probably not coincidental, therefore, that many of the Grand Allies' costings were prepared between the months of October and February, looking ahead to next year's sales. Second, the agreement reflected a separation of the production and selling functions, as coal was produced jointly but sold separately by the partners. The practice of treating these two functions separately may have been customary throughout the north-east, as it was not confined to the Grand Allies. It is also evident in George Bowes' other partnerships, for example, such as the ones with Edward Gilbert at Northwood (DRO: D/ST/B1/2 – 170/1; 170/3; 174 & 176/1) and Lady Clavering at Bucksnook and Bucksfield (DRO: D/ST/B1/5/2/7). The separation of production and selling was possibly encouraged by the common use at this time of subcontractors for production, such as in George Bowes' estate mines at Gibside (DRO: D/ST/B1/2/7), though subcontractors were not used by the Grand Allies. However, as the coal was produced jointly by the Grand Allies, but sold by the partners individually, one would expect the emphasis of the partnership's costings to be on determining production costs rather than selling price. There is no evidence in the minute book that the costings were used in pricing decisions. The selling price of coal seems to have been a function of the market, both when it was regulated and when it was not.

The Grand Allies' minute book (NRO: 3410, GA/2) contains a large number of colliery 'views' (viewers' assessments), computations and accounts. The most common type of computation is the calculation of cost/profit per unit of output, measured in 'tens', which was the standard measure used in the production of coal in the north-east in the eighteenth century. There are thirteen occasions in part one of the book where unit cost/profit calculations were presented to partnership meetings between 1727 and 1736. Part two of the book, which consists of further colliery views and computations, records twelve instances between 1728 and 1738. In 1734 (part 1: 90), for example, the cost per ten was calculated for Cawsey Colliery and compared with the selling price to yield a figure of unit profit (Table 1). This type of calculation was based on estimates of output, initially derived from colliery 'views'. An example is John Barnes and John Bullocks' proposal in 1727 for winning Heaton Colliery, which involved an engine and an engine pit (part 1: 34). The capacity of the mine was estimated at 8,000 tens for the first working, with a further 4,000 tens if the supporting walls could be worked. This capacity was then used to calculate the unit cost of sinking (Table 2), and the resulting figure of 12d per ten was incorporated into the computation of unit profit which followed. Unit profit took depreciation into account, therefore, as the

Table 1 A computation of the charge of working and leading [Cawsey colliery in 1734] and the profit it will yield

Working £1.13.6; Leading 34s 10	£3.	8.	4
Way and wagons 14s 6, Rent 12s 6	1.	7.	-
Contingency charges 2s, Staith 2s 6	–	4.	6
Wayleaves, staith rents and water courses	–	10.	-
	5.	9.	10
Will make 19 4/10 chaldrons at 9s 9 ½	9.	9.	11½
Profit	£4	–	1½

Table 2 Computation of the sinking cost of Heaton colliery, 1727

Sinking first pit at Heaton	£45
100 yards of drift to the second pit	100
Sinking second coal pit and water drift	200
Cribbing and stopping	45
Drawing water whilst sinking at 15 fathoms below Tyne level	80
	£470
Cost per ten on 8,000 tens	15d

If walls can be worked on 12,000 tens this would become 9½d per ten. But it would not be above 12d per ten.

capital costs of the mine were apportioned in proportion to output over its estimated useful life.

There are other examples of the calculation of the various components of unit cost. Table 3 (part 1: 90), for example, details the calculation of the 10s charge for wayleaves, staith rents and water courses, noted in Table 1 above for Cawsey Colliery.

This emphasis on unit cost is perhaps not surprising, bearing in mind that

Table 3 Account of wayleaves, staith rents and water courses chargeable annually of Sir Henry Liddell and George Liddell share of partnership collieries above bridge on south side of Tyne 1734

Mr Shaftoe	£ 20.	–	–
Mr Clavering of Cawsey	166.	13.	4
Mr Hardings	100.	–	–
Sir Francis Clavering	166.	13.	4
Mr Davisons	33.	6.	8
	£486.	13.	4
On 2,000 tens is called	£ –	5	–
Wayleave through Whickham Manor		5	–
	£ -	10	–

mine rents ('tentale') charged to subcontractors were traditionally based on so much per ten. A subcontracting agreement between George Bowes and John Dunn and Brian Davison, for example, indicates that Dunn and Davison agreed to work two of the estate pits at North Banks in 1725 in exchange for 35s per ten of coal led (DRO: D/ST/B1/2/7). Though there is no evidence that the Grand Allies used unit cost calculations to determine mine rents, other documentary material relating to the north-east suggests such a connection. An *ex ante* computation of the unit cost of working Virgin pit at Byker, which was prepared by the viewer Stephen Drydon on behalf of the mine-owner Richard Ridley, was appended to a subcontracting agreement, and formed the basis of the tentale rent of £2/10 (NRO: 3410, FOR 1/5: 8). *Ex ante* unit cost/profit calculations were also included in a report to the owner William Carr by the viewer Richard Peck on the prospects of leasing his colliery to Mr Donnison (NRO: 3410, PECK 1: 5).

In all but two cases these calculations of unit cost and profit in the Grand Allies' minute book were used in *ex ante* projections, contradicting Parker's (1980) observation that early cost accounting was mainly a matter of *ex post* recording rather than *ex ante* planning. Some were based on projected annual rather than total output, suggesting that the original estimates were periodically revised. At a meeting in December 1730 (part 1: 62) the partners, having considered estimates of unit cost and profit based on projected annual output of 600 tens, decided to carry on the Stella Colliery for another year. It seems to have been common practice to determine annual output in advance, and not just when the Regulation of the coal trade was holding. At a partnership meeting on 18 November 1730 (part 1: 63), at a time when the Regulation had faltered (Cromar, 1978), it was noted that 'the viewers have made their report how the several collieries are to be wrought in the year 1731, which is as followeth'. The numbers of tens to be worked were then specified for each of the various collieries.

In the two instances where *ex post* costings were prepared, the actual quantities of coal mined rather than the actual production costs formed the basis of the computations. The first is a calculation of Henry Liddell's total profits for 1734 (part 1: 93), which is shown in Table 4 below. This document attempted to quantify the annual profits of the proprietor's different colliery interests and to produce a total. Estimates of unit profit were incorporated into an *ex post* statement by multiplying them by the number of tens actually led from the mine during the year. This calculation includes that of the unit profit of £4/0/1½ for Cawsey Colliery detailed in Table 1. Unit profit was also used to price the revenue derived from the sale of last year's closing stock. The comment at the foot of the page regarding the four previous years suggests regular annual reporting. The second example concerns a computation made on 6 November 1735 of the expense of working Heaton Colliery (part 1: 99), where the projected unit cost was revised in the light of the number of tens actually led. Water and contingency charges were shown as 13s 9d on the basis of 2,000 tens, and then adjusted to 15s 9d (13s 9d × 2,000/1729) 'as there

Table 4 A computation of the profits of Sir Henry Liddell's collieries for the year 1734

Partnership Collieries	Tens	Wag [ons]	Making out	Profit per ten		
Dawsons Tanfield . . .						
Burdon Moor . . .						
Davisons Tanfield . . .						
Beamish . . .						
Cawsey	41	19	19 4/10	4 — 1½	167.14.3	
Spearmans . . .						
	1,579.	19			6,136—3	
Resting at Redheugh [staith] at the end of year 1733 which are or will be vended in 1734. 3,527 chaldrons which at 19 4/10 to a ten is 181.12 [tens] at £3. 16. 5½					694—7	
						6,830—10
Team ship coal						
899.13 [tens] at 21 at £5. 3. 11½					4,675.19.12	
Resting at Team Staith at end of year 1733 which are or will be vended in 1734. 1,592 chaldrons which is 75.17 [tens] at 21 at £5. 3. 11½					393. 17. 2	
					5,069. 17. 2	
[Salt] pan and glass house [coal] resting 31 December 1733					669. 12. 3	
						5,739. 9. 5
[Other income:]						
Mr Bowes rent for 1/24 Blackburn Colliery						49.16—
Sir H Liddell's interest in Farnacre Colliery						200—
H Liddell's moiety of Heaton Colliery this year is 706.1 [tens] at 19 4/10 £2. 16. 6¼						1,995. 6. 3
						14,814.12.6
Deduct						
H Liddell annual sum out of Ravensworth Colliery					400——	
G. Liddell annual sum out of several collieries					2,000——	
Charge for contingencies on the trade					1,137. 10. 8	
						3,537.10. 8
						£11.277.1.10

NB The wetness of the season occasioned this year's vend to be short of the 4 former years in an average of 577 tens 9 wagons which would have added to the profit £2,426. 2. 4.

was only 1,728 tens, 8 wagons vended in 1735'. The resulting unit profit figure then formed the basis of a projection of total annual profits after interest over the remaining term of the lease.

In reviewing Jones' work (1985), Edwards (1989: 309) noted the use of cost estimates rather than actual costs, which he surmised was probably due to 'the absence of detailed record-keeping, and the lack of any conviction that the benefit obtained from such information would justify the work involved in its preparation'. The Grand Allies too were concerned with cost estimates rather than detailed build-ups of actual costs incurred, although in some cases the estimates may have been based on past actuals of particular enterprises, rather than the viewers' experience of mining costs in general. It is difficult to tell from the minute book which was the case. General experience presumably formed the basis of the costings of new ventures where there was no track-record of historical costs. Historical data about the costs of existing operations were available from the financial accounting records. Detailed annual statements of the profits of George Bowes' estate mines at Marley Hill (DRO: D/ST/B1/2/125), for example, were prepared from a ledger which was updated once or twice a month (DRO: D/ST/B1/2/126). The ledger was totalled annually on 31 December. It classified the expenses under headings of 'working charges', 'contingent charges', 'stable charges' and 'wagonway charges'. The working charges comprised the bill of Abraham Laverick, a subcontractor, for working the various pits. The contingent charges seem to have been any additional working expenses. If costings were prepared from this ledger, none have survived. Similarly detailed annual accounts made up to 31 December exist between George Bowes and Henry Liddell for the period 1728–52, recharging George Bowes with his share of the partnership's expenses (NRO: 3410, WAT 4/20). It follows that, whatever the basis of the cost estimates, the complete absence of detailed *ex post* costings in the Grand Allies' records cannot be explained by a lack of record-keeping.

An alternative explanation of the absence of *ex post* calculations is that the costings and the financial accounts were prepared by different parties. If this were true, it would support the view that in this instance, at least, cost accounting and financial accounting grew from different roots. This was observed by Fleischman and Parker (1990) at the Carron ironworks in Scotland, where the pre-1786 records 'reflected all the correct instincts about cost accounting methodologies but a failure to integrate costing with acceptable financial reporting'. A review of twenty-five sizeable British firms, mainly in iron and textiles, between 1760 and 1850, revealed that 'costing activities were rarely reported in financial accounting records' (Fleischman and Parker, 1991). By way of contrast, one of the main findings of an investigation of ironmaking in Sheffield between 1690 and 1783 was that 'an integrated system of financial/management accounting was in use in 1690' (Edwards and Boyns, 1992). If the Tyneside viewers prepared costings, did they also prepare financial accounts? Unfortunately, the answer is not clear because in some cases viewers acted as consultants, whereas in others they were resident at particular mines, and may well have been involved in preparing accounts as part of their overall management responsibilities. William Leaton is a case in point. The Grand Allies' minute book refers to him as a viewer, and he regularly presented reports to partnership meetings. On the other hand, he also acted as one of George Bowes' principal stewards in his estate mines, and in 1726, for example, we see him inspecting and countersigning the fortnightly presentments of coal worked by the subcontractors (DRO: D/ST/B1/2/15).

The accuracy of the Grand Allies' projections of costs and profits depended on the economic conditions and, in particular, on whether the major coal-owners agreed to the Regulation. The awareness that costs and revenues would vary in different markets was not unique, and was noted by Jones (1985: 21), for example, in relation to the Welsh copper industry during the eighteenth century. In a 'fighting trade' the selling price of coal in the north-east would be lower and the production and selling costs greater. For instance, the fitters, who transacted the sale of coal from the mine-owners to the ship's masters, would require a greater measure of coal for the same price. Wayleaves would be dearer, and the London coal-dealers would command a premium to secure an ultimate market for the coals. The minute book contains some sensitivity analysis, taking these factors into account. The negotiations with Lady Clavering in April 1727 for the allies to lease Collierly, Barker's Closes and Tanfield West Field collieries at 30s per ten are an example (part 1: 10). Computations were produced which contrasted her profits under this arrangement favourably with the unit cost and profit if she worked the collieries herself in a fighting trade. The partnership's unit cost and profit were also calculated on the basis that it worked these collieries and paid her the 30s rent. In October 1727 the unit profit of working and leading Urpeth colliery was projected at £3/17 in a Regulation, and £3/2/10 without (part 1: 25). Profit calculations for 'contesting', 'fighting' and 'peaceable' trades were produced at the further negotiations in November 1727 with Lady Clavering, which also involved Richard Ridley (part 1: 26). Finally, the minute book contains a projection, dated October 1733, of the profits of Sir Henry and George Liddell's partnership collieries 'out of/in a regulation', in which the relative merits of both were quantified (part 1: 74). The projection noted, for instance, a saving of £2,635 premium, presumably to the London coal-dealers, if the Regulation held.[2]

The frequency with which the calculations of unit cost and unit profit appear, together with their *ex ante* basis, indicates their importance in business decisions, rather than in controlling costs. It has already been noted that the minute book provides no evidence that they were used in pricing decisions. In the majority of cases the decision under consideration seems to have been whether to continue working a particular colliery. Similarly costings were prepared to indicate whether a new working was viable, which entailed the subsidiary decision of the best means of gaining access to the coal. In 1732, for example, the viewers John Barnes and John Bullock set out two alternative means of gaining access to coal at the east end of Killingworth Moor, and concluded which would be the least costly (part 1: 89). Unfortunately, the cost calculations are not included in the report. The other major decision which has been identified was whether to persist with the Regulation.

Estate papers – costings

The business association between the Grand Allies raises the question of whether their meetings were a medium for disseminating costing techniques. It was, after all, not just George Bowes who attended partnership meetings, but also his resident viewers at Gibside, Anthony and William Leaton. The significance of the meetings in disseminating costing techniques is related to the separate question of whether these techniques were already well known. If the Grand Allies were drawing on an existing body of knowledge, it would be difficult to tell whether the meetings contributed to its dissemination, even if there were indications of similar costings in George Bowes' estate records.

The main configuration of his estate collieries was at Gibside, variously described as Gibside, North Banks or Marley Hill collieries. Brian Davison, a subcontractor in the 1720s and 30s, compiled a list of pits at North Banks containing approximately sixty entries (DRO: D/ST/B1/2/30). The large number of pits suggests relatively shallow mining, with minimal site-preparation costs. Sinking itself was not particularly a major outlay, the whole work being done manually; and it was not uncommon to sink another pit in order to minimize the cost of underground haulage (Atkinson, 1966: 9; Flinn and Stoker, 1984: 190). The costs of sinking a shaft at Northwood in 1753, for example, amounted to £74 only (DRO: D/ST/B1/2/154).

The most notable feature of the estate costings is their scarcity. George Bowes' estate papers contain a large amount of accounting information, but most of it is of a financial accounting type, with the emphasis on controlling his colliery operations and safeguarding the interests of the various parties. The lack of costings for the estate mines is perhaps a reflection of the lower level of capital investment involved in shallow mining. The corollary of this is that the concentration of costings in the Grand Allies' records could be explained by the higher amounts of capital which they invested. Although each of the Grand Allies was a major coal-owner in his own right, the extent of the resources which they commanded as a combination was much greater, enabling them to invest on a larger scale (Cromar, 1978). The forty-two miles of the Grand Allies wagonways alone in 1739 were said to have involved a capital outlay of £50,000 (Flinn and Stoker, 1984: 157), and £21,000 was expended in acquiring Whickham Manor in 1738 (NRO: 3410, WAT 4/20). If the level of investment was higher, so were the potential losses should collieries fail. Authors are agreed on the high risks of coal-mining in this early period (Ellis, 1976: 67–8; Flinn and Stoker, 1984: 49), which necessitated the involvement of professional viewers to reduce the risks of failure (Flinn and Stoker, 1984: 59–63). The effectiveness of the viewers' costings is a separate question, but it seems reasonable that the scale of the Grand Allies' operations encouraged their use.

Despite the lack of costings for George Bowes' estate mines, those that are to be found exhibit similar features to those found in the Grand Allies' minute book. Examples include a survey made by Anthony Leaton of the coal

Table 5 Charge of working North Banks Pits 1749

Quarry Pit	
13 tens underground charges	£22 – 10 – 11
Light underground galloways [8 pit ponies]. 2 weeks oats at 3 bushels each is 24 bushels at 18d	1 – 16 –
Ditto hay at 28 stone each 2 weeks 224 stone at 2d	1 – 17 – 4
4 gin horses 2 weeks oats at 6 bushels each	1 – 16 –
Ditto hay at 28 stone each 112 stone at 2d	18 – 8
	28 – 18 – 11
[Divided by 13] is £2. 4s. 6d per ten	

remaining in the Letch and Barn pits at North Banks in 1726, which converted the thickness of coal (measured in yards) left in the supporting pillars into tens (DRO: D/ST/B1/2/22), thereby providing an output figure which could be used to calculate unit cost. An occasion where unit cost was calculated occurred in 1749. The cost per ten was computed at five of the North Banks pits in relation to a fortnight's workings, and then extended by the quantity worked in the year to give a total cost (DRO: D/ST/B1/2/28). The calculation for Quarry pit is reproduced in Table 5. Similarly, the cost per ten was calculated at various of the North Banks pits on the basis of the costs incurred during the fortnights ending 17 August, 12 September and 22 December 1753 (DRO: D/ST/B1/2/29). These instances are particularly interesting in view of the previous comments regarding the absence of *ex post* costings in the Grand Allies' records because they seem to have used the *ex post* costs of a fortnight's workings. The subcontractors were required to make fortnightly presentments to the estate's stewards (DRO: D/ST/B1/2/7), and it is possible that the two are linked. The shortage of costings in the estate records, however, prevents us from forming a general conclusion.

The closest parallels in the estate records to the Grand Allies' minute book are two computations of George Bowes' total coal profits for 1735 and 1736 (DRO: D/ST/B1/6/96–97). The 1736 computation is included in Table 6. Their close proximity both in type and time to the 1734 computation of Henry Liddell's profits, which has already been discussed (Table 4), is perhaps the most certain indication in the records of the transference of accounting techniques between the partners.

The costings in George Bowes' and the Grand Allies' records are not unique. The late sixteenth-century costing records of Daniel Hechstetter the younger, for example, contained statements focusing on the cost per unit in copper mining (Edwards *et al.*, 1990). From his observation of Welsh industry in the eighteenth century, Jones (1985: 199–200) concluded 'that the recording of cost estimates was a natural pursuit of those leading industrial development before the industrial revolution'. In 1770, for instance, the unit cost and unit profit of smelting lead ore in Cardiganshire were calculated. Edwards (1989)

Table 6 Profits in the coal trade for the year 1736

Profit by Hutton ship coals. 376 tens . . . . produces neat profit £6. 8 – per ten is	£2,392. 18 -	
Profit by Hutton glass house coals. 270 tens . . . . produces neat profit of £5. 3 – per ten is	643.15 -	
Profit by Hutton pan coals. 270 tens . . . . produces neat profit of £2 per ten is	540 - -	
Profit by Hutton fire [land-sale] coals. 60 tens at £1. 16 – per ten	108 - -	
Profit by difference in price of coals sold the beginning of the year	36 - -	
Total Hutton [Gibside] profits		3,720 - -
[Partnership collieries:]		
By doing strict calculation making 1,800 [tens] per annum, allowances for dead rents of £1,000 per annum of which will be repaid again of partners' collieries, will clear £4 per ten of coals sold for £10. 8. 9 3/4 . . . . The vend this year 1,717 tens at £4 neat is		6,868 - -
Total profits this year in the coal trade		10,588 - -
By saving of the premium [to the London coal dealers] that which was expected to have been paid		1,100 - -
Total profit		11,688 - -

identified a range of business decisions which were the subject of financial analysis in the eighteenth century, including whether and how much to produce. The Darby and Carron iron-works 'were clear leaders in generating cost analyses to aid decision making', such as whether to forgo unprofitable product lines (Fleischman and Parker, 1991). Decisions by the Carron Company in the 1770s to abandon certain iron-fields were based on monthly reports of the differential costs of extracting iron ore (Fleischman and Parker, 1992).

Thus, although they are not unique, the Grand Allies' costings are significant for two reasons. First, as will become apparent from a review of the records of contemporary colliery viewers, they reflected a body of practice which was widespread in the north-east of England at a comparatively early date. Hatcher (1993: 265) has surmised that this was probably the case from the early seventeenth century. Second, they are significant because they were prepared by colliery viewers who, as has already been suggested, were instrumental in disseminating mining expertise to other areas.

Colliery viewers

A review of the records of contemporary viewers in the first half of the eighteenth century, some of which predated the Grand Allies' partnership, confirms that the Grand Allies were drawing on existing costing techniques rather than inventing them. There is a variety of examples of costings at non-Grand Allies mines in the records of contemporary viewers. John Barnes, who was later employed by the Grand Allies, prepared *ex ante* unit cost/profit figures for Fenham colliery in September 1717. Similar computations were prepared by Amos Barnes in 1734, 1735, 1736 and 1738 for various collieries (NRO: 3410, F 1/4: 1, 15, 17–18 & 32). The 1735 computation was prepared jointly with William Dagleish, and the 1738 one with Stephen Drydon and William Hepple. Richard Peck prepared *ex ante* unit cost/profit estimates in 1718, 1723 and 1726 (NRO: 3410, PECK 1: 7 & 55; FOR-1/5: 27). The 1726 computation was prepared jointly with Stephen Drydon. Nicholas Walton prepared *ex ante* unit cost/profit calculations in support of an estimate of working Long Benton colliery 1745–7 (NRO: 3410, WAT 3/54: 15). The notebook of Edward Smith (jnr), a viewer at Houghton Colliery between 1749 and 1751, contains similar calculations of unit cost and profit, in addition to estimates of output over the remaining life of a pit (Robertson, 1970: 9, 27–9, 45). These techniques were enduring and can be found in the works of later viewers. John Buddle's papers, for example, contain similar estimates, based on annual production, such as the calculation of the unit cost of working Harraton Moor Colliery in 1798, which was used to calculate total cost and total profit (NRO: 3410, BUD 14: 70). These examples by no means comprise a comprehensive list.

It has already been noted that the calculations of unit cost and profit were based on estimates of output, initially derived from colliery views, suggesting that these types of costings originated in the body of practice developed by the viewers. However, there is no evidence that these costing techniques were set down in a written form, whether published or not, for general dissemination. This is in marked contrast to the 'numerous eighteenth and early nineteenth century textbooks [which] dealt almost exclusively with merchant accounting techniques' (Fleischman and Parker, 1990). Works relating to coal-mining in the eighteenth century do exist, but these generally dealt either with technical matters, such as J.C.'s *The Compleat Collier* (1708), or were arithmetically based ready reckoners, possibly drawn up by viewers themselves, designed to help them carry out their calculations (e.g. the colliery memoranda book mentioned in Appendix 2).

The emphasis of coal-mining literature on technical issues rather than costing, and the absence of any costing works in the accounting literature, possibly reflects a pragmatic approach to such issues, in particular that of learning by doing. It may also reflect the fact that, while cost estimation in relation to physical measures of output might have been an integral part of viewing, it nevertheless comprised a relatively small part of the viewers' total work. Most of the viewers' records examined dealt with the technical problems of mining, rather than the financial. This is illustrated by a viewer's leather-bound notebook, dated 1774–95, which is contained within the Mining Institute Collection. The book commences with a series of hand-written rules of mathematical calculation to assist the viewer in estimating weights, measures and capacity (NRO: 3410, WAT 4/14). A full list of the contents is included in Appendix 2. Page 15, for instance, details 'the rule to find how many tens of coals there is contained in an acre of ground'. The viewer is instructed to 'multiply the square yards in one acre (which is 4,840) by the height of coal, and that by 8, being the bolls contained in a solid yard, and that divided by 418 gives the content in tens'. Pages 12 to 14 contain tables for converting the thickness of coal into measures of volume and weight. Although this information underlay the calculations in the Grand Allies' costings, it is listed alongside other instructions for estimating the capacity of pumping machinery.

A factor which emerges from the viewers' records is that they worked in association with each other and, in particular, that they learnt their trade as apprentices with established viewers. In this way the succession of knowledge based on practical experience was assured, perhaps reducing the need for textbooks. John Watson (snr), for example, served his apprenticeship with his cousin William Newton of Burnopfield, 'who was one of the most eminent viewers of the day' (NRO: 3410, WAT 2/4). Nicholas Walton became first acquainted with Heaton colliery in 1725 when he served as an assistant to his predecessor John Bullock. John Bullock was in the service of Sir Henry Liddell, and regularly undertook work on behalf of the Grand Allies (NRO: 3410, WAT 3/43: 2/3). Edward Smith (jnr) succeeded his father Edward Smith (snr), and in turn had five sons who were also brought up as colliery viewers (Hiskey, 1979: 12).

A contemporary published textbook on coal-mining, *The Compleat Collier*, written by the anonymous author 'J.C.' for estate owners in the north-east, while containing no calculations, confirms the importance of viewers in compiling costing reports. *The Compleat Collier* is a guide to the various techniques involved in coal-mining, such as boring, sinking and drawing water. Its orientation is technical rather than financial, therefore, but it contains evidence of the way in which the viewers' practical experience underlay the calculation of unit cost. The author, for instance, speaking in the first-person of a fictitious viewer, records that drawing 420 corves (baskets) a day from a pit sixty fathoms deep is 'as much as most collieries of that depth, can, or do constantly work'. This will require at least eight horses 'which is, as always customary', to work four shifts at two at a time. The horses 'in these parts' will cost six or seven pounds each; and the viewer recommends purchasing ten to prevent production being halted by animals going lame. In relation to the hewing of coal, one miner would require a working seven yards wide 'in these parts'. This would allow three yards of coal for working, and four yards to act as roof support. One hundred and fifty yards of coal would therefore support twenty miners. One barrow-man would be able to propel seventy corves a day. Having worked 200 yards 'to the east, west, north and south of the pit shaft, then it is time to have another shaft at that distance sunk for another new pit'. One viewer earning fifteen to twenty shillings a week would 'serve three or four working pits'. Each pit would be serviced by an over-man, earning about eight shillings a week, who was responsible to the viewer (J.C., 1708: 32–3, 42–4). Such information established the relationship between the cost of the inputs and the physical quantities of output, and lent itself to the calculation of unit cost.

Conclusion

This article has reviewed the minute book of the Grand Allies in addition to the estate records of George Bowes, a founder member. The former contains a variety of costings of strategic significance, concerning both new and existing mining operations, while the latter contains very few examples of costings. This imbalance perhaps reflected a higher level of capital investment among the Grand Allies compared to George Bowes' estates, where relatively low-cost shallow mining seems in evidence.

The basis of the costings was the calculation of unit cost and profit, derived from colliery views yielding estimates of total or annual output. The emphasis on cost per ten is not surprising, since the ten was traditionally used as the basis for fixing proportional mine rents. Although the Grand Allies do not appear to have used unit cost calculations for calculating rents, positive confirmation of such a connection is found in other sources.

The Grand Allies' costings were prepared from an *ex ante* perspective and therefore made use of cost estimates rather than detailed build-ups of actual costs incurred. Viewers were concerned with future workings and drew on their general experience of the costs of mining rather than historical accounts to draw up their costings. This does not, however, appear to have been due to any deficiency in the accounting system since the historical accounts were sufficiently detailed for the actual costs to have been determined in the same format as the costing estimates, had the viewers or anyone else so wished. The lack of *ex post* costings therefore appears not to have been due to a deficiency in the records, but possibly reflects that the costings and accounts were prepared by different parties, supporting the view that in this instance they may have originated separately.

Calculations of unit cost/profit were used to estimate future total profits. In some cases sensitivity analysis was undertaken to reflect the different economic conditions of a regulated or non-regulated market. The frequency with which the calculations of unit cost/profit appear indicates their importance in business decisions, such as whether to dispense with a colliery or to continue it for another year. In this respect one could see the accounting information as being a determinant of business activity, a view which supports other growing evidence presented during the last two decades leading to a 'rehabilitation of Industrial Revolution managerial accounting' (Fleischman and Parker, 1990).

The business association between George Bowes and other estate owners and their agents through the Grand Allies, or through negotiations with non-partners such as Richard Ridley over the regulation of the coal trade, afforded the opportunity for dissemination of these techniques. Certainly there are traces of them in George Bowes' own estate records. A review of the records of contemporary colliery viewers, however, confirms that the techniques were well known rather than invented by the Grand Allies, and that their origins lay in the practices developed through experience by the professional coal viewers. The Grand Allies' records are significant, therefore, because they reflected a body of practice, devised by the viewers, which was widespread in the north-east of England at a comparatively early date, and which may have spread to other regions, as the influence of the viewers spread outwards from the north-east to other parts of Britain and overseas during the eighteenth and early nineteenth centuries.

It remains to consider possible future lines of enquiry. Two spring clearly to mind. First, more work needs to be done on the issue of the origins of the costing estimates and their relationship to the accounting records, to see whether or not they were separate and, if so, why. Second, the possibility that the costing methods examined in this paper spread to other regions and to other related industries, such as iron, through the influence and expertise of Tyneside colliery viewers needs to be examined. In this second sphere, work is presently being undertaken at Newcastle University to map the eighteenth and nineteenth century viewers' costings contained within the Mining Institute Collection chronologically both by type and location, in order to trace patterns of development. Additional work needs to focus on identifying the individuals who prepared the costings in Tyneside and other regions, in order to construct genealogies of masters, apprentices and associates. It may be possible to detect their presence not just from the viewers' records themselves, but also from the accounting records of enterprises such as those of George Bowes, whose estate cash books recorded both the viewers' names and fees.

The University of Newcastle upon Tyne

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Notes

1 Even by 1750, most mining activity was still south of the Tyne, in the area between the Derwent and the Team, with only four of thirty-one working sea-sale collieries to the north (Cromar, 1978; Flinn and Stoker, 1984: 21–2).
2 If the Regulation faltered, there would be more coal on the market at a lower price, and competition among the coal-owners would increase. In this situation the coal-owners would be forced to pay the London coal-dealers a premium to secure an ultimate market for their coal. If the Regulation survived, this would not be necessary, and the coal-owners would make a saving.

Appendix 1: glossary

CHALDRON A coal measure based on the dimensions of a coal wagon. A Newcastle chaldron weighed approximately 53 cwts.

CORVE A basket for transporting coal from underground.

DEAD-RENTS A basic rent which would be due to the landlord whether or not the mine was worked. This sum would be payable where mines were acquired, but left unworked, merely in order to prevent others from working them.

FITTER Shipping agent employed by the mine owners, who transacted the sale of coal from the owner to the ship's master.

LEADING (LED) Transporting coal from the pit-head to the staith.

STAITH Construction for storing coal at the riverside prior to it being rowed downstream to the rivermouth in keels, where it was loaded into ships.

TEN A coal measure, which was often used as a basis for fixing proportional mine rents ('tentale').

VIEWER Mining consultant or chief mine manager.

WAGONWAY Horse-drawn railway for transporting coal from the pit-head to the staith.

WAYLEAVE Rent for allowing coal to be transported over a landowner's property.

Appendix 2: colliery memoranda book 1774–95 (NRO: 3410, WAT 4/14) – Rules for mathematical calculation

Page	
1	Rule to find the weight of a column of water. Rule to find the power of any cylinder.
2	Rule to find the diameter of the cylinder having the length and diameter of the pumps.
3	Rule to find a proper cylinder to work a given pump freely.
4	Rule to find what water any engine discharges at a stroke.
5	Rule to proportion a boiler having your cylinder diameter.
7	Rule to find what quantity of water a cask will hold.
8	Rule for measuring cistern troughs.
9	Dimensions of a chaldron wagon.
10	Rule to gauge milk bowls and the like.
11	Rule for measuring a hay stack.
12–13	Coal measure.
14	A table of Newcastle coal measures.
15	Rule to find how many tens of coal there is contained in an acre of ground.
16–20	Tables of weights and measures.

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Through a glass clearly: management practice on the Bowes family estates c.1700–70 as revealed by the accounts

David Oldroyd

Abstract

Through the accounts, the article examines the management practices employed on the Bowes estates in order to ascertain whether they were managed as profit centres to be exploited, and whether accounting aided managerial activity at this early stage of industrial development. The majority of the estate accounts were designed to keep track of rights and obligations. The survival of cost analysis, profit statements and planning data indicates that the estates were not treated simply as units of consumption and that the accounts played an important facilitating role. There are indications that a knowledge-power mechanism also existed within the estates, casting doubt both on the mutual exclusivity of Economic-rationalist and Foucauldian explanations of accounting activities and on the notion that a relevant distinction exists between modern and pre-modern business organization.

Keywords: eighteenth century; accounts; mineral industries; stewards; managerialism; Bowes estates

Introduction

Through the accounts, this article examines the management practices employed on the Bowes family's estates c.1700 to 1770. The Bowes estates are unusual in the continuity of the business records over such an extended time-scale – c.1700 to 1940 – and in the large quantity of data surviving from the early part of the period.[1] Accounts pervaded every aspect of the estates' operations, from the housekeeper's groceries to the lead and coal mines, and thus provide direct

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evidence of the underlying management systems. The accounting records are also significant in what they reveal about the technical state of accounting knowledge, and the role and status of accounting within the organization.

Although there are many questions relating to estates in the eighteenth century, two have tended to dominate the economic and accounting history literature. The first concerns their productivity: were estates managed as profit centres to be exploited? The second question is connected with the first: did accounting aid managerial activity at this early stage of industrial development? These are the central questions which this article attempts to answer by examining the nature and function of accounts within the organization.

Economic historians have tended to regard estates as non-productive investments. Flinn (1966: 45–6) argued that 'reverse investment' of merchants buying into land had a negative influence on capital formation during the Industrial Revolution, because it sterilized savings that would otherwise have been used more productively elsewhere. Crouzet (1972: 178) spoke of a net outflow of capital from industry to land-owning. However, the productivity of estates could be influenced by the attitudes of the individual landowners. William Cotesworth, a north-eastern merchant and landowner, is a case in point. On the one hand, his appetite for increasing his land-holdings left him seriously short of cash. As a result he decided to cut his investment in salt (Ellis, 1981). On the other, he set about improving his new properties at Shipcote and Gateshead with vigour to increase the value of his rents (Manders, 1973: 128–9). The answer to the question of whether particular estates were productive investments or not might lie in their accounts, as one might expect concern for efficiency and productivity to be evidenced by some kind of planning and profitability analysis. Perhaps this is anachronistic, although it is the absence of such data in previous case studies, coupled to the predominance of charge and discharge accounting, that has led commentators to conclude that estates were not managed 'as profit centres to be exploited' (Napier, 1991: 165).

Regional variations make generalizations difficult. Industrialization occurred relatively early in the north east of England (McCord, 1979: 15). Coal was the most significant output, with shipments to London rising from around 250,000 tons per year in 1600 to 650,000 tons in 1700. The fleet of colliers undertaking the two-week voyage down the east coast increased from around 400 in 1615 to over 600 in 1703 (Levine and Wrightson, 1991: 9). As far as other industries were concerned, the region was producing more than half the national output of steel in 1750. The Crowley iron works in County Durham were exceptional in the eighteenth century in terms of their size and organization (Flinn, 1962). Salt output had risen to 15,000 tons annually by 1720, and shipbuilding, glass making and lead mining were also expanding (McCord, 1979: 13–15). According to Wood (1910: 106), there were four factories operating in Newcastle in 1737 that manufactured glass bottles. Chartres (1977: 25, 28, 35) described how the butter, meat and fish trades were boosted by the increase in salt production, as was the demand for draught animals by the growth in coal. Newcastle became a principal port for the trade in copper and lead (Chartres, 1977: 35). Wood (1910: 70, 140) added rope making and tanning to the list of early industries. Rope was needed both for shipping and mining; and trade between Russia and Newcastle led to the establishment of tanneries on the Tyne.

The early nature of these developments was matched by the recent origins of many north-eastern landowners, such as the Cotesworths, Liddells, Carrs, Ellisons, Ridleys and Blacketts, who had made their fortunes in trade. Forty-one per cent of the fathers of Merchant Adventurer apprentices in Newcastle could describe themselves as 'gentlemen', which was 'a far higher proportion than in any other corporate town' (Bennett *et al.*, 1990: 20). The progression from merchant to landowner was typical of many regions, but it seems to have been 'accelerated' in the north east (Hughes, 1952: xvi–xviii). The traditional view is that the older Catholic families of Northumberland and Durham were supplanted by merchant land-holders as a result of debts or sequestrations following the Civil War and Jacobite Rebellions (e.g. Hughes, 1952: xvi–xviii; Cromar, 1978).

Established landed families, such as the Bowes, shared the commercial interest of coal with the newcomers. At the start of the eighteenth century, the north east possessed the largest and best developed coalfield in Britain (Ashton and Sykes, 1964: 194); and at the forefront of this dominance were the landowners: 'The motor [driving industrial activity] was Newcastle trade, and industrialization was the outcome of using its profits to exploit the landed resources tradesmen acquired' (Clavering and Rounding, 1995: 265). The sea-sale coal trade to London was the catalyst of new industry, and the landed estate the key to its exploitation. Estates provided 'long-term planning, supplies of timber, fodder and manpower', the strategic control of access to the Tyne and, 'above all, a financial cushion'. In consequence, 'industry grew as fast as markets expanded, constrained in general neither by insufficient technology nor lack of capital' (Clavering and Rounding, 1995: 265). The business orientation of the landed community in Northumberland and Durham poses the question of whether there was more of a tendency here, than elsewhere, for estates to be managed as profit-making investments. We shall argue that the Bowes estates were managed as profit centres, as evidenced by the systematic nature of the accounting and management arrangements and the focus in the accounts on making activities profitable.

The question of whether accounting encouraged or assisted managers and entrepreneurs in exploiting the new opportunities arising through the technological, demographic and market changes of the British Industrial Revolution has generated much debate. Despite a tendency over the last ten years to question its perceived shortcomings, Fleischman and Parker (1997: 8) describe how most authors still take the view that accounting was an ineffective management aid. This negative view of British Industrial Revolution accounting also applies to estates. Indeed, Napier (1997) argued that eighteenth- and nineteenth-century concepts of land ownership on estates held back the development of industrial accounting. In an earlier article, he wrote that 'the basic form of estate accounts as late as the nineteenth century had changed little from that developed in the Middle Ages for controlling and reporting on the activities of manorial bailiffs and reeves' (Napier, 1991: 164). He maintained that estate accounts enabled landowners to control their agents, and provided them with the cash-flow information they needed to facilitate the day-to-day operations of the estate. Cash-flow information was particularly useful in a situation where the landowner wished to develop his property, but borrowing was constrained. Notwithstanding these advantages, Napier argued that estate accounts were wholly inadequate for the 'more directly commercial activities', that required 'both careful planning and more accurate monitoring of performance' (1991: 174).

The debate over the managerial utility of British Industrial Revolution accounting has been complicated by disagreements over terminology. For example, Miller and Napier (1993) argue that the concept of decision making in business is a recent innovation, and criticize previous studies for reading too much of the present into their interpretation of accounting practice during the British Industrial Revolution. Fleischman and Parker (1997: 22–3) disagree, stating that qualitative judgements are necessary when one is seeking the foundations of 'purposeful' and 'sophisticated' managerial accounting, and that present methodology acts as a useful reference point for defining these adjectives. Hoskin and Macve (1988) maintain that managerial accounting originated in the US industrial environment of the 1840s. However, following Foucault, the term 'managerialism' is used by these authors in quite a narrow sense to describe the exercise of disciplinary power over labour through accounting, whereas economic-rationalists, such as Tyson (1992, 1993), define it in a wider sense to encompass all rational management activity in pursuit of profits. Boyns and Edwards (1996a: 45) have argued in favour of a broad view of managerialism and, in this vein, we shall argue that the Bowes accounts were managerial in orientation despite the absence of a disciplinary system of labour control, and that, by implication, the economic-rationalist/Foucauldian dichotomy is too simplistic.

The article proceeds by discussing the estates, together with the underlying organization of their activities, and hence the need for, and knowledge of, accounting by those involved, before moving on to consider the extent to which the estates were managed as profit centres to be exploited, and whether accounting aided managerial activity, through detailed examination of the function of accounting data within the organization.

Estate organization and reporting structure

Role of the proprietor

For most of the period under consideration, George Bowes was the proprietor in question (Gill, 1980). Ward (1971: 104) described him as the prototype of the 'swashbuckling tycoon'. To his contemporaries he was known as the 'count' or 'csar' (Wills, 1995: 11). Bowes inherited the estates in 1722 at the age of 21, following the premature deaths of his two elder brothers. According to Wills

He's about six foot in Height,
Wod he walk but upright . . .
His complexion is good . . .
His Mouth & Nose small . . .
His Eyes grey as a cat
Hansome Legs, Autre Chose
And his name is George Bowes.
(Wills, 1995: 6)

Plate 1 Portrait of George Bowes, by Enoch Seeman, 1744

(1995: 8), he 'had looks, personality, and a talent for business affairs', together with an overbearing and autocratic temperament plus all the 'rashness of youth'.

> The picture is of an arrogant and strong willed man, all the more determined to get his own way because of his extreme youth, and who would stop at nothing to get what he desired – at least in business.
>
> (Wills, 1995: 11)

During the next forty years, until his death, he played a major part in the Newcastle coal trade, on his own account and as a founder member of the Grand Allies cartel which tried to control the entire trade (Cromar, 1978). It was the single most influential coal-owners' association in the eighteenth century, and during Bowes' lifetime controlled most of the output on the Tyne. According to calculations contained within the estate papers, Bowes' total profits from coal amounted to £9,778 in 1735 and £10,588 in 1736, indicating the scale of his interest (DRO: D/ST/B1/6/96–97). Coal represented only one portion of his income, and the family were also involved in a range of other business activities, such as lead mining and smelting, salt panning, forestry and farming. George Bowes left his only child, Mary Eleanor, property valued upwards of £600,000, which was adjudged by contemporaries as sufficient to make a prospective husband 'one of the great peers of the Realm' (Wills, 1995: 63, 65).

How active a manager was he? Bennett *et al.* (1990: 133, 158) characterized him as an absentee landowner who preferred London society to industrial concerns. His brothers' deaths had reluctantly 'dragged' the young socialite away from London in 1722; and he returned at the first opportunity. According to these authors, he fully merged all of his collieries with those of the Grand Allies after 1736, leaving himself free for a life of politics and culture.

It is true that George Bowes retained life-long passions for architecture, music, fox-hunting and horse-racing, and served as a Member of Parliament for County Durham from 1727 until his death (Wills, 1995: 7–9), but to portray him as disinterested in estate business is inaccurate. In the first place, the survival of separate accounts for his colliery interests after 1736, such as at Cow Close (1742), Marley Hill (1750s), North Banks (1749) and Northwood (1750s), shows that they continued to be managed separately from the Grand Allies (DRO: D/ST/B1/2/28, 99, 101, 116, 146, 170). Kay Coats, the manager at Cow Close, was directly accountable to Bowes. The Grand Allies were not involved in the partnership at Northwood. Second, Bowes' correspondence indicates that he took a proactive role in the management of the estates. He received continual progress reports from his stewards when he was away in London, and replied by sending them instructions (DRO: D/ST/C2/3/21/7, D/ST/C1/3/52, D/ST/C1/3/58–60, D/ST/C2/1/5/4). The numbers of letters and degree of detail do not diminish after 1736 when he is supposed to have opted out of business life. Finally, spending time in London was necessary for business. As an MP, Bowes was able to lobby Parliament on behalf of the Newcastle coal-owners (Wills, 1995: 8). He banked with the London firm of Francis Child and Co., and some of the bank statements are annotated: 'Copye. The original Mr Bowes took with him to London' (DRO: D/ST/C1/3/62/7–8). Newcastle coal was traded through Billingsgate in London. In 1730 Leaton wrote to Bowes concerning the payment of the premium to the London coal dealers. He feared that nonpayment would be a 'very great prejudice' to his trade if Bowes' 'neighbours' paid it, and concluded: 'When you are at Billingsgate you there will be able to judge what is necessary to be done' (DRO: D/ST/C1/3/39/2). These references are not suggestive of a proprietor who eschewed control of his business affairs. Furthermore, Bowes was an itinerant rather than absentee landowner, who travelled frequently between his homes at Gibside and London, and rented a house at Ledston, to act as a staging-post on the journey (Wills, 1995: 9).

Whether or not the estate business depended on his active involvement at an operational, as opposed to strategic level, is a separate question. The continuance of procedures following ownership changes implies that it did not. Bowes acquired an established manner of practice, organization and accounting when he inherited the estates in 1722; and the same applied to his successors. The lease of the Gibside coal mines to Charles Montagu outlived several proprietors, yet the format of the estate accounts remained the same (DRO: D/ST/B1/2/2). This was also true of the colliery partnership at Northwood following Bowes' death (DRO: D/ST/B1/2/170/2–6). The estate officials too remained unchanged. William Leaton, John Sedgwick, Richard Stephenson, Thomas Colpitts II, John Gibson and Nathan Horne among others, all survived their master's death. The fact that Nathan Horne could be criticized by John Gibson for working the lead mines instead of letting them (see below, p. 195), implies that such decisions lay within a steward's responsibilities. Another example is a decision to sell lead ore rather than process it (see below, p. 191), which was taken by William Leaton without recourse to the proprietor.

Reporting network

The three main estates were located at Gibside in the north of County Durham, Streatlam in the south and Wemmergill in the west. Each of the estates acted as the centre of a pool of industrial activity. Gibside was George Bowes' principal residence, and headquarters for all the estate operations. His active involvement in the day-to-day operations of his estates, coupled with the geographical spread of his activities and his distance from events, necessitated a centralized organizational structure that was capable of delegating responsibility to stewards in key areas, while, at the same time, retaining control at the centre. This was achieved through a unified reporting network. Returns from all the various activities and estates were ultimately channelled through the estate office at Gibside; and William Leaton and Richard Stephenson, the chief stewards there, were able to determine what they expected to receive. Their correspondence was wide-ranging, and included advising on the accounting procedures. The division of responsibility between these two stewards is unclear, although Leaton seems to have been in ultimate command. Accountable only to the proprietor, they were in a position of considerable power. Their ability to influence procedures was enhanced by the length of their tenure, as they each held office concurrently for more than thirty-five years.

This centralized system of organization and reporting probably explains why management and accounting practices were highly integrated over different activities. For instance, the farm tenants and colliery subcontractors at Gibside were dealt with in a similar way. Both made use of the estate's horses, and were recharged through control accounts. Just as the subcontractors' accounts were charged with equipment provided by the estates, so too were the farm tenants (DRO: D/ST/E5/10/3, D/ST/E5/14/6). Another factor encouraging integration was the tendency to assign management responsibility by location rather than activity. Thus John Sedgwick, the manager of Northwood Colliery, also managed the farms at neighbouring Toft Hill and Ramshaw, and accounted for both colliery and farms together. Whether this kind of doubling-up of role was possible may have been influenced by the size of the undertakings, as it was not universal. At Wemmergill, for instance, the lead mines and smelting mill were managed separately, despite the common location.

Technical characteristics

Generally, the accounts were based on the bilateral recording of cash receipts and payments, with adjustments for opening and closing debtors, creditors and stocks as appropriate. There are many examples. The 1740 charge and discharge accounts of Thomas Colpitts I, agent for the estates at Streatlam and Wemmergill, were adjusted for the rent arrears owing by tenants (DRO: D/ST/E1/6/1). The 1754 charge and discharge accounts of John Sedgwick, manager of Northwood and Cragwood colliery, took into account moneys due in respect of 'coals sold on trust [credit]' (DRO: D/ST/B1/2/164). Stock was included in the calculation of the profits of Marley Hill colliery for 1772 (DRO: D/ST/B1/2/125). Physical stock checks and stock reconciliations were carried out regularly, which is not surprising given the importance of mineral extraction to the estates.

The only unequivocal evidence of double-entry bookkeeping on the estates is a pro-forma scheme of partnership accounts for lead mining and smelting, compiled around 1741 in double-entry format (DRO: D/ST/B2/159). It contained ledger accounts for cash, debtors, mill and mine charges, profit and loss (lead account) and partners' capital, and the following note was written on the final page:

> A good for nothing paper de[livered] to Streatlam as a curious precedent for keeping a smelt mill account per R.E.
>
> Approved of by T. Colpitts [chief steward at Streatlam] and recommended by him to the study and perusal of F.O.

Although such exemplars were not uncommon for merchants – Parker (1991) talks about the dangers of mistaking them for the real thing – they were unusual for industrial enterprises. This particular exemplar is doubly rare, as there are few known instances where British industrial concerns used double-entry accounting prior to the nineteenth century (Edwards, 1989: 56–8). The rare exceptions include the Cyfarthfa ironworks in South Wales and the Duke of Norfolk's and Staveley ironworks near Sheffield (Jones, 1985: 127; Edwards and Boyns, 1992). The survival of annual profit and loss accounts for the Bowes lead operations (DRO: D/ST/B2/105), presented in a similar format to the exemplar, indicates that the scheme was applied in practice between 1741 and 1746.

Double-entry accounting appears to have been the exception, however. The bilateral recording of cash transactions was probably preferred because it was simpler and more versatile. A variety of statements could be prepared from the cash books, in addition to the traditional charge and discharge account. Such accounts recorded the charge and discharge of a steward's obligations, and the balance for which he was still accountable. All of the Bowes stewards kept charge and discharge accounts, although they were not the most common type of report. As we shall see, the complexity of the estates' business arrangements necessitated a range of other accounts to control the activities of lessees, employees, subcontractors and partners.

Knowledge base

The existence of a centralized reporting network that was capable of dealing with different types of activity raises the question of who prepared the accounts, and from where they acquired their knowledge. Most of the accounts were prepared by the stewards. What sources of guidance were available to them? First, a number of contemporary printed guides were available, although none of them encompassed the full range of accounts used on the Bowes estates. Charles Snell's *Accompts for Landed-men* (1711) was based on the bilateral recording of cash receipts and payments, and included a survey or rental, showing details of the tenants, property and annual rents. Snell was described in his text as a 'teacher of writing and accompts at the free writing-school in Foster Lane with whom young gentlemen may board', suggesting the existence of formalized tuition in accounting procedures. Thomas Richards' *The Gentlemans Auditor* (1707) set out a method for keeping charge and discharge accounts, supported by a double-entry ledger. Both of these guides produced annual summaries. Edward Laurence's *The Duty and Office of a Land Steward* (1731) was mainly concerned with non-accounting matters. It did incorporate a pro-forma survey, containing the names of the tenants, their farms and annual rents, in addition to pro-forma charge and discharge accounts. These were produced in bilateral form, and were analysed under a range of headings. Rents were accounted for on the basis of moneys received; so, unlike the Bowes accounts, arrears were not included. Perhaps the most comprehensive guide was Roger North's *The Gentleman Accomptant* (1714), which produced a full double-entry scheme with accounts that mirrored the organization of the estate. It also contained a dictionary of accounting terms (Parker, 1997).

In addition to printed handbooks, there were also hand-written exemplars. The article has already referred to the exemplar for lead mining and smelting. 'A method of a salt pan account', dated 1754, has also survived. This was based on a bilateral cash account, containing total figures for coals, wages, incidents and salt delivered. Separate schedules listed the transactions that made up these figures in chronological order (DRO: D/ST/B3/11). The account for coals analysed the deliveries over the various pits and quantified the keel dues. As with the pro-forma lead accounts, actual accounts have survived that were prepared in the same format as the salt pro-forma, indicating that it was applied in practice (DRO: D/ST/B3/14).

Stewards also followed the practice of their predecessors. There are cash books for the Gibside estate covering the period 1728 to 1792, which were kept in the same format, despite a succession of different stewards (DRO: D/ST/E5/1–13). Family dynasties of stewards were quite common; and one generation was able to teach the next. For example, Thomas Colpitts II succeeded his father, Thomas Colpitts I, as principal agent for the estates at Streatlam and Wemmergill in 1755. Anthony Leaton (snr) was a chief steward at Gibside (c. 1721–5), as was his son William (c. 1734–70). William's brothers Anthony (jnr) and John were also agents on the estate.

Finally, a body of accounting expertise existed in the hands of colliery viewers, who were highly paid professional engineers. Edward Smith senior's terms for serving as a viewer at North Biddick colliery in 1728 were £50 a year plus settling on a farm in the owners' possession (DRO: D/ST/B1/6/233/4). The Smith family were 'celebrated mathematicians', and viewers in general were well grounded in mathematics as part of their training (Flinn and Stoker, 1984: 64; Harris, 1976: 170). They had been providing cost data for forecasting the profitability of mine workings from an early date (Hatcher, 1993: 265; Oldroyd, 1996), and some of the Bowes' stewards came from a viewing background. William Leaton, the chief steward of the whole operation, was himself a viewer. His father, Anthony, before working for the Bowes, had originally served as chief viewer to Charles Montagu, who leased the coal mines at Gibside between 1692 and 1723 (Levine and Wrightson, 1991: 66). The involvement of viewers in the management of the Bowes estates was not unique. Newcastle viewers were also employed by the Lumley estate in County Durham and the Duke of Norfolk's estate in south Yorkshire (Beastall, 1975: 25, 30; Medlicott, 1981: 183–8). Their role as *change agents* in the dissemination of accounting technology awaits further research (Oldroyd, 1996: 19). Boyns and Edwards (1996b) describe a similar phenomenon in Wales.

Function of accounts within the organization (1): safeguarding the interests of the proprietor

Organizational link

Most of the records are of a financial accounting type, because they were designed to keep track of rights and obligations. For instance, accounts were necessary to ensure that the proprietor was not being cheated about the amount of coal produced or the expenses attaching to it. This need to enforce rights and obligations meant there was a close linkage between the form of the accounts and the mode of organizational control. This is most clearly illustrated in relation to coal, where different methods of organization were used at different times, and the accounts responded accordingly. There are examples where the mines were leased, subcontracted, mined directly by the estates or mined in partnership.

Leasing The 1692 lease of the Gibside mines to Charles Montagu specified that he was obliged to pay the estate a fixed annual sum in addition to a proportional rent, dependent on the quantity of coal 'led' (transported) from the mine, measured in 'tens', the standard unit of coal production. From the estate's point of view, accounts were required which kept a tally of the quantities of coal led each year and the amounts of rent received. This information was supplied in the form of weekly and annual summaries over the thirty-one years of the lease (DRO: D/ST/B1/2/2).

Subcontracting The accounting arrangements became more complex after 1723, when the lease was replaced with subcontracting agreements. A subcontracting agreement, dated 8 December 1725, between George Bowes and John Dunn and Brian Davison in respect of two of the North Banks pits at Gibside has survived (DRO: D/ST/B1/2/7). The salient features are as follows: Bowes agreed to pay them 35s per ten of coal led. He would employ the miners. Dunn and Davison were to work under the direction of William Leaton, Bowes' chief steward and resident viewer. Dunn and Davison would use George Bowes' horses for drawing the coals, for which they were obliged to pay Leaton. They were required to discharge all the expenses of working and drawing the coals to the surface. Finally, every fortnight they were to present daily reckonings of coals worked and coals led.

The accounting records indicate that there were other subcontractors at Gibside, such as William Barras and Partners, who were presumably controlled by similar agreements. Subcontracting on Tyneside seems to have been commonplace in the early eighteenth century. Oldroyd (1996: 7) was incorrect in stating that the Grand Allies did not use subcontractors – a tentale men's account book shows that they did (DRO: D/ST/B1/6/277) – and they were also used by the Ridley family at their Jesmond colliery (NRO: ZR1/35/13). Such overmen were only semi-independent contractors. The miners were employed by the estate rather than the contractor, and the contractors used the estate's equipment. By the nineteenth century they had evolved into paid employees.

Various examples exist of the types of reckonings mentioned in the agreement with Dunn and Davison (DRO: D/ST/B1/2/31–2). Also, there was a control account for each subcontractor which summarized the various charges. The physical verification of coal stocks played a major part; and coal seems to have been measured twice, once when it came out of the ground and once when it was led away from the mine. The subcontractors were paid on the basis of the coal led, and it was important to ensure that none went missing beforehand.

Consequently, the quantity of coal led was reconciled to that of coal worked, taking into account the closing stocks resting at the pit (DRO: D/ST/B1/2/21 & 35). The overs and shorts were priced, and ultimately the subcontractor was charged with any shortfall. In the case of Dunn and Davison, their control account for 1735 was debited with a shortfall of £82/19/1.

Direct mining Although out-sourcing of at least some part of the production process seems to have been the norm, direct mining did take place at Cow Close, near Streatlam. Here a manager, Kay Coats, was directly responsible to George Bowes. The absence of the intermediary subcontractor simplified the accounting problem. Charge and discharge accounts sufficed, such as the ones prepared by Coats during the period 1742 to 1746. These recorded the colliery expenses and coal sales, taking into account the arrears owing for coal sold on 'trust' (credit). They were prepared from sales ledgers and bound weekly cash books on a calendar-year basis (DRO: D/ST/B1/2/146, 148–53).

Partnerships George Bowes was involved in various colliery partnerships, and accounts ensured he received his dues in line with the agreements. This was the case at Northwood and Cragwood colliery, near Streatlam, which from 1752 he worked in partnership with Edward Gilbert, who was also his father-in-law. The colliery was managed by John Sedgwick, who received cash advances from Thomas Colpitts, Bowes' agent at Streatlam, and was responsible for meeting colliery expenses and the land-sale of fire coals. The two partners bore an equal share of the colliery's expenses and output, and retrospective statements exist to prove this (DRO: D/ST/B1/2/ – 170/1 & 3; 174; 176/1).

Although collieries were worked in partnership, the output was divided between the partners, and sold by them individually. The reasons for this are unclear, except that the practice was customary on Tyneside. As a result, the production and sale of coal were treated as separate functions, and it was common accounting practice to apportion expenses and output separately between the partners, rather than to apportion a figure of profit. Output was determined by physical stock checks. In the partnership between George Bowes and Lady Clavering at Bucksnook and Bucksfield collieries, these inventories also determined the apportionment of expenses, which was done in direct proportion to the number of tens led by each partner (DRO: D/ST/B1/5/2/7).

Legal underpinning

An important feature of the accounting procedures, therefore, is that they were flexible enough to respond to the different forms of organizational control that applied at different times. Another is that the contractual obligations of third parties were underpinned by written agreements, such as the subcontracting agreement referred to above. The legal underpinning of the business arrangements, combined with the use of accounts to monitor compliance, was typical of all the Bowes estates' business activities. There are many examples. Agreements for hiring gangs of labourers in return for stipulated wages, were controlled by weekly time sheets (DRO: D/ST/E5/23/1). Fitters' contracts obliged them to provide George Bowes with regular accounts of coal sales and shipments (DRO: D/ST/B1/21/33). Tenancy agreements stipulated annual rents, and rent rolls and ledgers ensured they were paid (DRO: D/ST/E5/9/1–3, D/ST/E5/10). Subcontracting to partnerships of miners was common practice in the lead industry, and the contracts were entered in bargain books. In 1762 John Bourn, a mine manager, wrote:

> I told them [the subcontractors] that I was advised for the safety of Mrs Bowes [George Bowes' widow] as well as my own satisfaction to keep a bargain book, and enter all agreements made betwixt party and party and signed by us both; and that the said book of agreements might be produced upon any emergency, before you [William Leaton] or Mrs Bowes to determine any dispute that might hereafter arise. . . .
>
> (DRO: D/ST/C2/3/39/1)

The most common type of bargain was the *bingtale*, whereby the mining partnership was paid according to the number of bings (standard unit of lead production) of ore produced (Hunt, 1970: 39). Accounts which reconciled the payments to the quantities produced at the agreed rates ensured they were correct (DRO: D/ST/B2/103/4).

Internal audit

Internal audit checks increased the effectiveness of the accounts as a control mechanism. The 'presentments' of third parties were audited by estate stewards, who were themselves subject to audit by their superiors, which was common practice at the time (Medlicott, 1981: 186). Checking was evidenced by ticks, comments and signatures. For example, the coal-subcontractors' presentments were signed by the subcontractor, and countersigned by an estate agent (DRO: D/ST/B1/2/15). Similarly, both subcontractor and agent signed the subcontractor's control account to attest that it was 'right' (DRO: D/ST/B1/2/69/4), and the reports that compared the quantities of coal worked and coal led contained auditors ticks (DRO: D/ST/B1/2/34/7).

The need for stewards to justify their accounts meant that supporting documentation had to be retained. This is illustrated by the annual charge and discharge accounts of John Sedgwick, the manager of the partnership colliery at Northwood, where there was a visible audit-trail (DRO: D/ST/B1/2/164 & 173): a pocket-sized notebook contained rough weekly accounts of his expenditure at the mine (DRO: D/ST/B1/2/168). A two-sided cash book listed receipts and payments. It was closed off on 31 December; and the last page of the year was certified with the word 'examined' (DRO: D/ST/B1/2/154 & 156). A debt book listed credit sales as they arose, which were totalled at the end of the year. Receipts from debtors were also listed as they arose, and the relevant sales ticked off (DRO: D/ST/B1/2/155–6). Finally, the total debtors' balance was calculated from a listing of the individual accounts (DRO: D/ST/B1/2/156).

Ultimately, stewards would not be paid the moneys owing to them if they failed to produce the necessary receipts and vouchers. William Thompson, an agent at the South Shield salt pans (c. 1760–73), seems to have been particularly lax in this respect. In March 1761 he wrote to Richard Stephenson, chief steward at Gibside, informing him: 'According to your desire I have sent up the books [to Gibside], but it has not yet been convenient for ye Widdow [Mary Bowes] to pay the balance'. The problem seems to have been a lack of vouchers, and in September he wrote: 'I believe I should get settled with the widdow provided I had the ticketts sent down for the coals you charged her with' (DRO: D/ST/C2/3/80).

Do the above observations indicate either that the estates were managed as profit centres to be exploited or that the accounts aided managerial activity? The answer to both these questions is only partly in the affirmative. The main purpose of the accounting procedures so far identified was to safeguard the interests of the proprietor. The fact that these procedures were extremely systematic as well as being versatile enough to accommodate a range of different situations shows that management were efficient in pursuing this aim, but does not necessarily imply that they were also efficient in terms of maximizing profits. Similarly, although the accounts were an indispensable aid to management in that without them the estate operation would have been unable to function, given its size and diversity, this is not the same as saying that the accounts aided *managerial* activity, if *managerialism* is defined in terms either of the rational pursuit of profits or of exercising disciplinary power over labour. However, we have not as yet presented the full picture. A range of other accounting data has survived that was more managerial in orientation, and less concerned with tracking rights and obligations.

Function of accounts within the organization (2): improving profitability

Was profitability an important issue on the estates? The survival of cost analyses, profit statements and planning data seems to indicate that it was. Although these types of account are in a minority compared to the number that were concerned with safeguarding the proprietor's rights, the fact that they are not restricted to particular dates or industries suggests they are not merely exceptions.

Cost analysis

Despite the near total absence in the estate papers of the type of colliery costings used by the Grand Allies partnership (Oldroyd, 1996), the analysis of expenditure in some of the estates' cash books shows that the stewards were interested in tracking and monitoring expenses. Fleischman and Parker (1997: 29) identified this as the 'necessary first step' in the development of an effective costing system. It focused the attention of management on the relationship between costs and profitability, and provided the data that were needed for other costing activities such as product costing, cost comparisons and decision making.

There are many examples in the Bowes papers where expenses were analysed. The Marley Hill cash book listed the colliery's expenses under headings of 'working charges', 'contingent charges', 'stable charges' and 'wagonway charges' (DRO: D/ST/B1/2/126). Weekly staith bills analysed the costs relating to the transportation and storage of coal at the staith (DRO: D/ST/B1/20/38). The pro-forma scheme of lead accounts referred to above incorporated cost analysis. The costs charged to the mine and mill accounts were recorded under separate headings, and the final page of the exemplar appears to be a weekly or monthly cost analysis sheet relating to the following year. The actual lead accounts also analysed costs; and schedules have survived showing the build-up of the figures of ore carriage, sinking and drifting, winning ore and contingent charges that were included in the account for 1742 (DRO: D/ST/B2/105). This account provided a profit summary of the whole operation, taking opening and closing stock into consideration, and the schedules were a means of monitoring the individual costs.

Profit statements

The survival of *ex post* profit statements for coal, lead and salt demonstrates an interest in the profitability of these activities. These schedules were not financial accounts of the proprietor's rights and obligations. As the article has shown, other types of account served that purpose, and the notion of using profits to calculate dividends did not apply.

Summary profit and loss accounts were prepared for Marley Hill colliery for the years 1772 to 1773 and 1775 to 1778. These summaries were derived from detailed annual profit statements, which took closing stock into account, together with accruals for 'notes given in since and not included in the working charges' (DRO: D/ST/B1/2/125). The latter shows an appreciation of the need for an accurate cut-off. Calculating profits on an accruals basis was advanced for the time, as was showing them on an annual periodic basis (Edwards, 1989: 80, 89), although this did not always happen. We have already referred to the profit and loss accounts for lead. In addition to these overall profit statements, an *ex post* analysis has survived (c. 1740) that showed the unit profit of a batch of lead. The unit cost of mining, smelting and delivery was calculated at £11/10s, which, compared to a selling price of £12/10s, resulted in a net profit of £1 a fother (DRO: D/ST/B2/91/2). A profit statement for Middleton's salt pans showed a loss of £199 for the period 1757 to 1760, and calculated that this loss would have been reduced by £151, had it been possible to maintain a selling price of 40s a ton, instead of the actual prices which ranged from 28 to 40s (DRO: D/ST/B3/9/3). Profits or losses on salt were calculated either on an annual basis, or over an extended time period (DRO: D/ST/B3/9/1, 6 & 9).

Previous authors have questioned the ability of estate accounts to measure profits accurately. Pollard's (1965: 211) criticism that estate accounts were flawed because they did not group together incomes with the appropriate expenditures does not apply. His contention that they were ineffective because they confused capital and revenue expenditure is less easy to refute, as the Bowes accounts tended to treat both in the same way. Whether distinguishing capital from revenue mattered as far as measuring profits was concerned depended on the length of the reporting period and the size of the outlay. The difference between capital and revenue expenditure disappears over the full life of an undertaking, as ultimately all assets are consumed or sold, and translated into profits or losses. Therefore, the longer the reporting period, the less relevant is the distinction between the two. As noted above in relation to salt, the profit statements sometimes covered a period of several years. Furthermore, in a situation where most of the work was undertaken manually or by horse, the distinction between capital and revenue expenditure was less significant still. Coal mining at Gibside was not capital intensive, owing to the availability of plentiful coal reserves at a shallow depth (Hatcher, 1993: 61; Oldroyd, 1996).

Planning data

A wide range of planning data has survived relating to the Bowes estates. Some of it quantified the future cash or capital requirements. Other documents appraised the future profitability of particular operations or investments, calculated the present value of future cash flows or evaluated the outcomes of alternative actions in order to decide on the optimum course.

One of the earliest surviving planning schedules was compiled by Charles Montagu, who leased the estate mines at Gibside from 1692 to 1723. It is a cash-flow forecast for the summer of 1696 that attempted to quantify the mine's cash requirements (NUL: MSS/MISC/85). The statement commenced by estimating the cash outflows arising from the new season's mine workings, and then went on to consider how these would be funded. Most of the expenditure would come out of the rents received by the agent, George Baker, although Montagu identified slow payment by the tenants as a potential problem. This schedule is characteristic of the very systematic approach that Montagu applied to mine management, which routinely involved quantifying future outcomes (Hatcher, 1993: 266–7).

Planning data have survived, covering a range of activities. Output was projected at North Banks colliery in 1725, 1735 and 1737 (DRO: D/ST/B1/2/22, 24–5). William Leaton wrote to George Bowes in 1728 concerning Beckley colliery, which neighboured the estate mines at North Banks. He calculated the cost of draining Beckley via a drift out of Gill pit in Cawsey colliery to be £227/10s, compared to the then current annual cost of drainage which amounted to £600. Furthermore, the proposed drift would allow the estate to mine the hitherto inaccessible 'part of North Banks that's under ye Dyke out of Beckley'. On this basis, he urged that the work should be undertaken (DRO: D/ST/C1/3/39/1).

A valuation of woodland in 1763 was based on estimated future cash flows from timber, discounted using compound interest tables to their present value (DRO: D/ST/E5/17/1/4). Discounting in forestry valuation was not uncommon on eighteenth-century estates and, in 1730, John Richards, a surveyor, produced a guide for estate owners which provided examples that could be applied in different situations (Scorgie, 1996). In this particular instance, the valuation was connected to the purchase of the wood by Mary Bowes (George Bowes' widow). There seems to have been some double-counting, as the terms of the sale were that Mrs Bowes would pay £4,925 on signing the deed, and £2,087 at the end of the forty years. However, the residual value of £2,087 had already been taken into account in the present value calculation of £4,925, suggesting that, although the technique of discounting was known to the estate stewards, it was not perfectly understood.

In 1762 the unit cost of producing lead at Birkdale and Lunehead was projected, with a 2/3d difference in favour of Birkdale (DRO: D/ST/B2/140). Apart from the difference in the cost of extracting the ore – forty-nine shillings compared to forty-five – less ore would be needed to produce a saleable fother at Birkdale because it was of a better quality, whereas the cost of carriage to the mill would be greater as it was further away.

There are a number of examples relating specifically to lead smelting where projections underlay business decisions. In 1763 the decision was taken to sell a consignment of lead ore, rather than smelt it and sell the finished product at Newcastle, on the basis of a computation that showed the total cost of the lead at £17/10s per fother if it were processed and transported to Newcastle, which figure exceeded the market price there (DRO: D/ST/C2/3/39/4–6). In 1742 the decision under consideration was whether to build a new mill at Isabell Meah Hill where the lead was mined, or to continue to use the existing mill at Boylup, the main difference being the transportation costs. Taking into account the capacity of the mine and the differential costs of carriage, a computation showed that a new mill would result in a saving of £59/8/4 on 600 bing of ore. Other computations compared the unit operating costs of mills at Staindrop, 'ye Mind' and Holwick to see which would be the cheapest to run (DRO: D/ST/B2/135/1–2). These computations were related to the decision about where to build a new smelting mill. In this respect, estimates were made of the capital costs of construction at the various locations (DRO: D/ST/B2/135/9–11). In contrast to the *ex post* profit statements, there was a clear distinction in these projections between capital and revenue expenditure, with the costs of building the new smelting mills and the ongoing running expenses being treated separately. Furthermore, the explicit exclusion from one of these schedules of the cast iron that had already been bought shows an appreciation of the distinction between sunk costs and incremental costs. Comparing the incremental costs arising through alternative courses of action was characteristic of the financial estimates prepared by colliery viewers. It is not therefore surprising that two of these computations are noted as having been prepared by the eminent viewer, Nicholas Walton, in conjunction with a Mr Boag, confirming that viewers were instrumental in disseminating costing methods to related industries (DRO: D/ST/B2/135/4, 11).

These findings run contrary to Pollard's (1965: 248) observations regarding the inadequacies of Industrial Revolution accounting. The surviving cost analyses, profit statements and planning schedules show that the profitability of activities was an important issue on the Bowes estates – they were not simply treated as units of consumption – and that the accounts played an important facilitating role.

Function of accounts within the organization (3): exercising power

The debate over the managerial utility of Industrial Revolution accounting has crystallized into two main theoretical paradigms. The first tries to explain accounting behaviour and accounting change in terms of the pursuit of wealth through rational decision making. Those authors supporting the view that the British Industrial Revolution was an important formative epoch in the development of modern accounting practice have tended to come from this school. This economic-rationalist perspective has been challenged by followers of the social theorist, Michel Foucault, who interpret accounting as a 'disciplinary technology' that controls the lives of people within organizations through detailed surveillance (Loft, 1986: 139). Accounting becomes a source of power through its ability to 'articulate' their performance.

The key development in this process for industry was the imposition of performance standards on the workforce (Hoskin and Macve, 1988: 68), and the explanation of why performance measures were transferred from materials and machines to labour has become the main focus of disagreement between the two schools. The Foucauldians disagree that their introduction was 'a rational response to the needs of economic development' (Fleischman *et al.*, 1995: 164). According to them, the preconditions for this change were social rather than economic. They had more to do with the spread of grammatocentrism (centrality of writing) and calculability (examination and grading) within American society in the first half of the nineteenth century than the increased opportunities for making profits afforded by the British Industrial Revolution.

Furthermore, it is not just the nature and function of accounting activity that are up for debate, but also the issue of continuity and discontinuity with the past. The economic-rationalists tend to stress the continuous nature of accounting development – Scorgie (1997) found progenitors of modern management accounting concepts on English medieval estates – in contrast to the Foucauldians who see it as more discontinuous (Miller and Napier, 1993). According to Hoskin and Macve (1988), a clear dividing line exists between the modern and the pre-modern accounting worlds, with accounting first being used as disciplinary technology in a modern sense at Springfield Armory in the United States in the 1840s. In Britain, the change may not have occurred until after the First World War, when scientific management systems were introduced from America (Edwards *et al.*, 1995).

Is there any evidence of a Foucauldian type knowledge–power relation in the Bowes estates? If this is interpreted to mean a system which imposed performance norms on the workforce, against which 'each individual's commitment and omissions were constantly evaluated' (Hoskin and Macve, 1988: 41), the answer is no. This can be illustrated in relation to coal, which was the largest industrial source of employment in the region, and also the one with the most clearly defined control procedures. Here, Fleischman and Parker (1997: 118) found a lack of attention to labour-cost control, despite the relative sophistication of the costing records in the Tyneside coal industry compared to other regions or industries in Great Britain (1760–1850). They wrote that researchers seeking the origins of modern managerialism in accounting systems that establish discipline over labour would be disappointed in the Tyneside archives. The same was true at the Dowlais ironworks where management accounting was used for administrative co-ordination and strategic decision making, but not for labour control (Boyns and Edwards, 1996a: 54).

The system of labour control adopted by most Tyneside coal owners, including the Bowes, has been described in detail by Fleischman and Macve (1998). Its two main components were paying miners on a piece-rate basis and tying them to a particular employer for a year by a pitman's bond. While the piece-rate records provided the necessary data for managers to evaluate individual performance, Fleischman and Parker (1997: 118) and Fleischman and Macve (1998) found no evidence that they were used in this way. Some of the paybills did compare the fortnight's production to that of the previous period, but it was done 'on an aggregated, rather than an individual basis'. The accounting system was lacking from a Foucauldian point of view, therefore, because it did not establish disciplinary control over individual workers in a modern sense. However, the significance of this omission is unclear. Would efficiency gains necessarily have resulted from imposing performance standards on labour, compared to the system adopted of paying miners on a piece-rate basis, and tying them to particular employers through legal constraints, such as the miner's bond? Arguably the system could not have been bettered. The piece-rate method gave the miners the incentive to produce more without alienating them through unnecessary management interference. One of the difficulties that owners faced in a period of escalating production – according to Flinn and Stoker (1984: 340–1) it increased ten-fold between 1700 and 1830 – was labour shortage, and experienced miners being 'poached' by other owners after their year was out. Harris observed that

> a skilled coal-face worker was a very valuable man; in good times his pay was high though, as in a number of trades, peak earnings were achieved for only part of his working life, since a close combination of skill and strength was required. Good men were able to get more sizeable, saleable coal by skilful under-and side-cutting, sometimes avoiding the waste of slack and dust by cunning wedging and use of natural roof pressures to break up the coal.
>
> (Harris, 1976: 171)

The 'rapid increase' in the coal trade had produced such a scarcity of skilled pitmen by 1764 that some mine-owners were offering binding money of two to four guineas in place of the customary shilling (Hammond and Hammond, 1919: 13). The owners responded to this situation by agreeing not to hire colliers unless they could produce a certificate of release from their last employer. By striking successfully in the following year in response to this move by the owners to reduce their freedom of employment (Hammond and Hammond, 1919: 12–17; Flinn and Stoker, 1984: 351), the miners demonstrated their support for the traditional system, which, in a situation where skilled labour was scarce, restricted the ability of the owners to 'discipline' the workers any further, because it allowed them to walk away to another employer after their year was out. A similar situation prevailed in the mid-nineteenth century at the Dowlais ironworks where labour was controlled by non-accounting means. Boyns and Edwards (1996a: 55) observed that the adoption of an accounting system to control and discipline labour at Dowlais 'in conditions of labour shortage, high worker turnover, etc. . . . would most probably have led to widespread unrest, and would therefore have proved counter-productive'. The scarcity of skilled labour in an expanding coal market, coupled with the low level of technology and reliance on manpower, explains why the Newcastle coal-owners were unable to regulate the labour market in the mid-eighteenth century. Fleischman and Macve (1998) describe how by 1805 they were in a much stronger position.

It could therefore be argued that the economic circumstances on Tyneside prior to the late eighteenth century rendered it inappropriate to use accounting as a disciplinary technology over labour in a Foucauldian sense, thereby lending support to the economic-rationalists. However, the absence of performance standards over labour does not mean that accounting knowledge could not function as a power mechanism in other areas of the Bowes estates' organization. One might even expect this from a Foucauldian perspective. As we have seen, accounting permeated every aspect of the estates' operations, suggesting a high degree of grammatocentrism, which Hoskin *et al.* (1997: 3) identify as one of the main dynamics driving the Foucauldian 'power–knowledge interaction'. Indeed, the lack of performance standards despite the presence of this dynamic shows that a linkage between the two is not inevitable. Is there any evidence of the interaction of knowledge and power in the accounts?

First, the ubiquity of accounting suggests that it enjoyed a high status within the Bowes estates, which is confirmed by its common use in arbitration. The article has already referred to keeping bargain books in lead mining in order to resolve disputes between the proprietor and subcontractors. George Bowes' heads of proposal for reconciling differences between himself and the other Grand Allies in 1736 included the drawing up of accounts (DRO: D/ST/B1/6/22/1). An internal memorandum at Gibside in 1725 shows an appreciation of accounting's potential for gaining an advantage over the other party in a bargaining situation. The point at issue was the fixing of the London lightermen's premium, which was a matter of negotiation between the coal-owner and the lightermen. Lightermen owned the lighters, a type of vessel that was used to transfer coal between the moored colliers and riverside wharves.

They also acted as the principal intermediaries in the disposal of ships' cargoes in London, and could command a high premium from the Newcastle coal-owners for accepting their coal in a 'fighting trade', when the coal-owners were in all out competition. The memorandum began: 'NB The accounts of fitters' reports sent Mr Bowes ought not to be exposed neither to crimps [a type of selling agent at London] nor lightermen but purely for his own information and guide on setting ye premium with them' (DRO: D/ST/B1/22/60). The owner was in a position of superior knowledge because he had access to detailed information about the Newcastle end of the coal market from the fitters' accounts, and it was important to ensure they did not fall into the wrong hands.

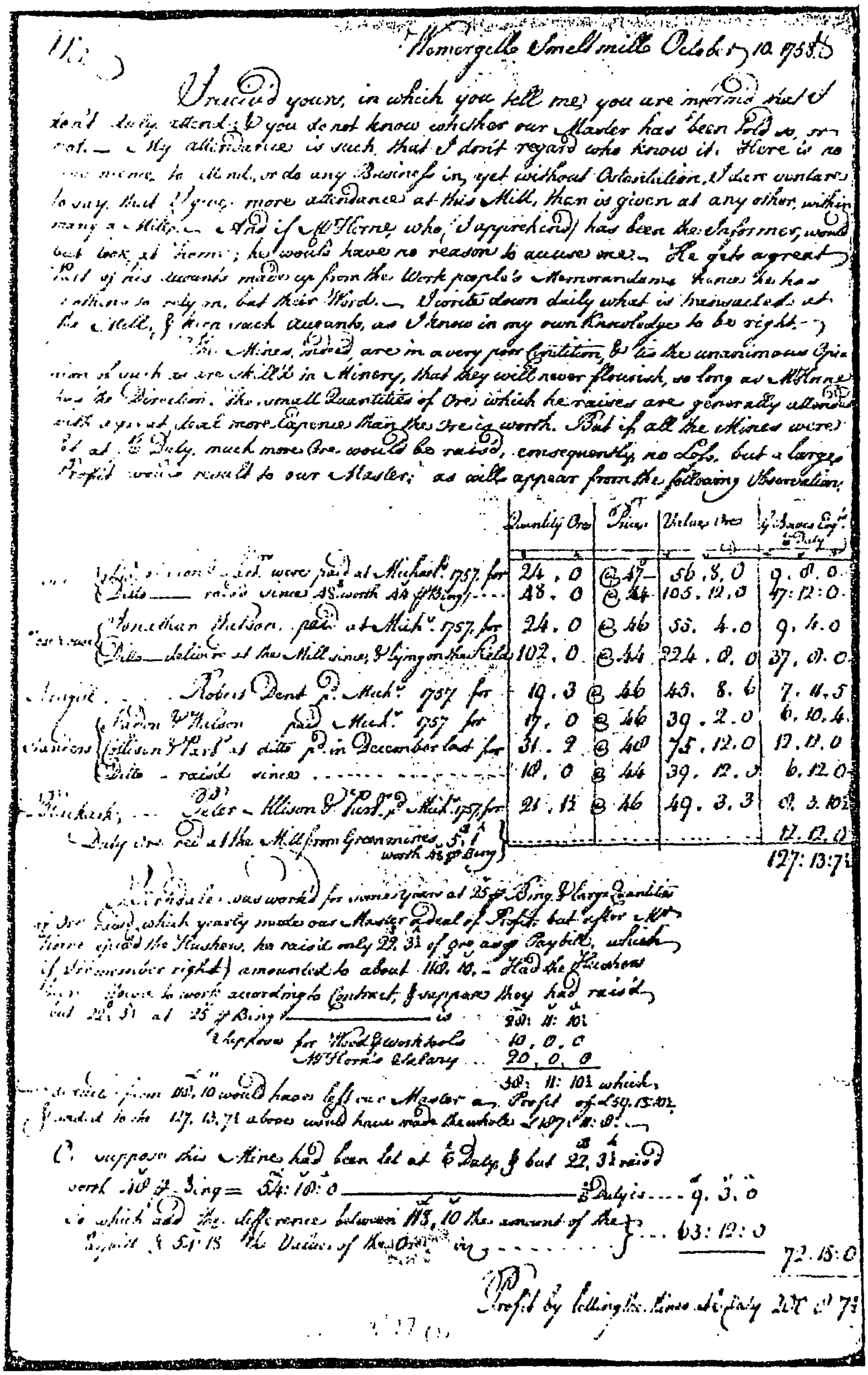
Second, the quality of the accounts was itself an issue: the better the accounts, the greater the credit reflecting on the person who had prepared them. This is illustrated by correspondence in 1758–60 between Richard Stephenson, one of the chief stewards at Gibside, and John Gibson, the manager of the lead-smelting mill at Wemmergill (DRO: D/ST/C2/3/77/5–7, D/ST/B2/93/4). The bone of contention was Gibson's salary of £10 per annum, which he said was insufficient to supply him 'with the necessaries of life'. He threatened to resign unless the salary were increased to £20, which was the sum paid to Nathan Horne, the manager of the lead mines there. Stephenson rejected his request, countering that he had heard that Gibson was not giving 'due attendance at the mill'. Gibson's first line of defence was the quality of his accounts. Suspecting Horne as the informer he wrote:

> would [he] but look at home; he would have no reason to accuse me. He gets a great part of his accounts made up from the work people's memoranda, hence he has nothing to rely on, but their word. I write down daily what is transacted at the mill and I keep such accounts as I know in my own knowledge to be right.

The fact that he kept a daily record proved his attendance, in contrast to Horne, who was content to rely on the presentments of third parties.

Finally, the performance of stewards could be judged from the accounts. Gibson sought to demonstrate his own accounting expertise, and Horne's inefficiency, by quantifying the losses that had resulted from Horne's mismanagement. Going back over the recent figures of price and output, he prepared detailed schedules of the profit that had been forgone by working the mines instead of letting them (Figure 1).

Further schedules quantified the loss of revenue caused by Horne's dismissal of the hushers at Birkdale. Hushers used the water pressure built up by damming a stream either to prospect for new ore, by clearing away the surface soil and rock, or to extract worked ore from the mine wastes. According to Gibson, the total profit that had been forgone since the hushers had been discharged four years previously amounted to £807/10/7 (DRO: D/ST/B2/93/4). The high status of accounting within the organization meant that it could be used to promote the interests of individuals. In this particular case, although



Wemergells Smelt mills October 10 1758

Sir

Received yours, in which you tell me you are informed that I don't duly attend; & you do not know whether our Master has been told so or not. — My attendance is such, that I don't regard who know it. Here is no [illegible] to attend, or do any Business in, yet without Assistation, I dare venture to say that I give more attendance at this Mill, than is given at any other within many a Mile. — And if Mr Horne who (I apprehend) has been the Informer, would but look at home; he would have no reason to accuse me. — He gets a great Part of his accounts made up from the Work people's Memorandums, hence he has nothing to rely on, but their Word. — I write down daily what is transacted at the Mill, & keep such accounts, as I know in my own Knowledge to be right. —

The Mines, indeed, are in a very poor Condition, & 'tis the unanimous Opinion of such as are skill'd in Minery, that they will never flourish, so long as Mr Horne has the Direction. The small Quantities of Ore which he raises are generally attended with a great deal more Expense than the Ore is worth. But if all the Mines were let at 1/5 Duty, much more Ore would be raised, consequently, no Loss, but a large Profit would result to our Master; as will appear from the following Observation;

	Quantity Ore	Price	Value Ores	ye Masters Ext. 1/5 Duty
[illegible] were paid at Michael 1757 for	24.0	@47/-	56.8.0	9.8.0
Ditto raised since 48 worth 44/ p Bing	48.0	@44	105.12.0	47:12:0
Jonathan Watson paid at Mich 1757 for	24.0	@46	55.4.0	9.4.0
Ditto deliver'd at the Mill since, & lying on the Fields	102.0	@44	224.8.0	37.0.0
[illegible] Robert Dent pd Mich 1757 for	19.3	@46	45.8.6	7.4.5
Aaron Watson paid Mich 1757 for	17.0	@46	39.2.0	6.10.4
[illegible] Allison Hart at ditto pd in December last for	31.9	@40	75.12.0	12.11.0
Ditto raised since	18.0	@44	39.12.0	6.12.0
Flushels; Peter Allison & Part pd Mich 1757 for	21.15	@46	49.3.3	8.3.10½
Duty Ore rec at the Mill from Greenmines 5 1/2 worth 44 p Bing				11.0.0
				127:13:7½

[illegible] was work'd for some years at 25/ p Bing & large Quantities of Ore raised, which yearly made our Master a deal of Profit but after Mr Horne opened the Flushels, he raised only 22.3½ of Ore any Paybill, which (if I remember right) amounted to about 110.10. — Had the Flushels been given to work according to Contract, I suppose they had raised but 22.3½ at 25/ p Bing is 28:11:10½

Suppose for Wood & work tools 10.0.0

Mr Horne's Salary 20.0.0

58:11:10½ which deducted from 110.10 would have left our Master a Profit of £51.18.1½ added to the 127.13.7½ above would have made the whole £179.11.9 —

I suppose this Mine had been let at 1/5 Duty & but 22.3½ raised worth 48/- Bing = 54:10:0 — 1/5 Duty is ... 9.3.0

To which add the difference between 113.10 the amount of the Paybill & 51.18 the Value of the Ore is ... 63:12:0

72.15.0

Profit by letting the Mines at 1/5 Duty 206.8.7½

Figure 1 Schedule of the profit forgone by working the lead mines instead of letting them, 1758

Gibson did not get his salary increase, Horne was dismissed for bad management. Accounts had been used to make visible his performance, and he was disciplined as a direct result.

It is true that this is not the same as creating large populations of calculable persons. Horne and Gibson were stewards whose significance had been identified before the accounts were prepared. However, as we have seen, an important feature of the estate organization was a reporting and management structure that existed independently of the identity of individual stewards – cf. the continuity of the records (see above, p. 184) – or indeed of the proprietor himself (see above, p. 181), and essentially the stewards were no more prominent than managers today.

To sum up, it is argued that the economic-rationalist and Foucauldian dichotomy is too simplistic. In reality, there may have been several reasons for preparing accounts, which varied from situation to situation. The correspondence between Gibson and Stephenson is a case in point. On the one hand, it demonstrated Gibson's understanding of differential costs and revenues, and how one could use this information to determine the optimal course of action – Fleischman and Parker (1997: 127) cited the letters as an example of rational economic analysis, and so they were – whereas, on the other hand, Gibson's prime motive was to promote his own interests in the estates at the expense of his rival. The previous section of the article highlighted cases where economic decisions were based on planning data. The same system also generated information for controlling the operation of contracts, evaluating past performance, monitoring costs and exercising power, all of which are characteristic of the modern organization. These findings cast doubts both on the mutual exclusivity of particular explanations of accounting behaviour and on the Foucauldian notion of a relevant distinction between 'pre-modern' and 'modern' business accounting, with the latter beginning in the mid-nineteenth century.

Conclusion

Through the accounts, the article has examined the management practices employed on the Bowes family estates in the first three-quarters of the eighteenth century, in order to ascertain whether they were managed as profit centres to be exploited, and whether accounting aided managerial activity at this early stage of industrial development. The answer to both questions is yes. George Bowes was the estate proprietor for most of the period in question. His active involvement in the day-to-day operations of his estates, coupled with the geographical spread of his activities and his distance from events, necessitated a centralised organizational structure that was capable of delegating responsibility to stewards in key areas while, at the same time, retaining control at the centre. This was achieved through a unified reporting network which ensured that management and accounting practices were highly integrated over different activities. Generally, the accounts were based on the bilateral recording of cash receipts and payments, with adjustments for opening and closing debtors, creditors and stocks as appropriate. Charge and discharge accounts did not predominate. Most of the accounts were prepared by the stewards. The majority of the estate accounts were designed to keep track of rights and obligations.

There was a close linkage between the form of the accounts and the mode of organizational control, and the accounting procedures were flexible enough to respond to organizational changes. Written agreements underpinned the contractual obligations of third parties, and accounts were used to monitor compliance. Internal audit checks increased their effectiveness as a control mechanism. The survival of cost analyses, profit statements and planning data indicates that profitability was also an important issue – the estates were not treated simply as units of consumption – and that the accounts played an important facilitating role. Colliery viewers were instrumental here. There are indications that a knowledge–power mechanism operated within the estate organization, despite the absence of labour standards. In this instance, the absence of a disciplinary system of labour control is of doubtful significance. These findings cast doubts on both the mutual exclusivity of economic-rationalist and Foucauldian explanations of accounting behaviour, and on the notion that a relevant distinction exists between modern and pre-modern business organization.

Are there any implications for future research? By questioning the conventional view that estate management and accounting were essentially unproductive, the article affirms, at a time when the value of such work has been queried, the need for more archival studies to build up as complete a picture as possible (Miller and Napier, 1993; Fleischman and Tyson, 1997). In particular, the question was posed as to whether it was more likely for estates to have been managed as profit-making investments in the north east than elsewhere, given the business orientation of the local landowners. Comparative studies of the accounting procedures employed on other estates in the north east and elsewhere would therefore be useful. Much work has already been done, including Jones's survey of Welsh estate accounting (Jones, 1985: 39–74). The Strathmore collection forming the basis of this study is itself unusual in the large volume of business data that has survived over such a prolonged period. The present study has merely scratched the surface. The estate and business records extend to the Second World War, and it would be interesting to trace how the systems identified in this article developed in response to technological, organizational and other changes.

Acknowledgements

I gratefully acknowledge the help of Dr R.A. Lomas, Prof. R.H. Macve and the two anonymous referees. The Earl of Strathmore and Kinghorne is acknowledged for the reproduction of George Bowes' portrait in Glamis Castle and the letter contained in Figure 1. Special thanks also to Miss J. Gill and the staff of the Durham County Record Office.

Note

1 The study draws on one main collection of primary documents, the Strathmore archive, comprising the business and estate records of the Bowes and Lyon families in

County Durham and Yorkshire. The two families were united by marriage in 1767. The article also refers to two ancillary collections, the Ridley (Blagdon) estate records and the letter book of Charles Montagu, who leased the Bowes' coal mines at Gibside until 1723.

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International Services Marketing: A Comparative Evaluation of the Dimensions of Service Quality between Developed and Developing Countries

Naresh K. Malhotra, Francis M. Ulgado, James Agarwal and Imad B. Baalbaki

Developing Countries, Service Industries, Top Management

Discusses and applies a general framework for services quality to make a comparative evaluation of ten dimensions of service quality between developed and developing countries. Derives specific hypotheses for each of the service quality dimensions based on the relevant environmental factors characterizing developed and developing economies. Discusses managerial implications of the hypotheses that are derived, and proposes the empirical investigation of these hypotheses as a direction for future research.

Export Behaviour of Fresh Produce Marketers: Towards a Co-ordination with General Theory of Exporting

Safak Aksoy and Erdener Kaynak

Export, Marketing

Probes the export behaviour of fresh fruit- and vegetable-marketing firms in an international context. The case study investigations comprise examination of Belgium, Chile, Canada (The Government of Ontario), New Zealand (The New Zealand Apple and Pear Marketing Board), Turkey, and South Africa (The Outspan Organization and Unifruco Ltd). Identifies selected firms' export behaviour, export objectives, export stimuli, and export inhibitors. Explains the concept of export success and delineates profiles of successful exporters. Concludes that fresh fruit and vegetables provide scope for future contributions with reference to general theory of export marketing.

Accounting and Marketing Rationale: The Juxtaposition within Brands

David Oldroyd

Accounting, Brands, Marketing

There is a paradox within some market economies that accounting appears to enjoy superior power and status to marketing. This is significant because of the close working relationship between the two professions, and can be linked to accounting's key role in market regulation. Brands allow us to consider this in a single issue, by juxtaposing the accounting and marketing rationale applied, with illustrations from practice. A fundamental difference of focus is observed in their attitudes to the uncertainties of brands. Marketing regards them as intrinsically valuable strategic devices which reduce the risks of products failing. Accounting sees them as intrinsically misleading, because they increase the risks of reporting unreliable information. Unlike marketing, therefore, financial accounting can ignore the perceived economic benefits of brands on the grounds of uncertainty, and by so doing preserves its own reputation for integrity. Inevitably the claims of accounting will prevail because it controls financial reporting.

Comment: The Evolution of Distribution Systems

Ronald Savitt

Innovation, Retailing

Offers a commentary on Mueller and Baron's Case Note, which had sought to understand changes in distribution systems taking place in Central and Eastern Europe, and particularly in Hungary. Savitt criticizes the authors for disregarding the considerable research into change in distribution systems, and restricting their perspective by failing to consider the conditions under which marketing institutions are changing; over-emphasizing the importance of Western distribution models to the evolving Hungarian system; failing to take account of recent Hungarian research on innovative retailing, particularly in respect of Skala Trade and Centrum; lack of attention to important privatization developments now taking place; and failing to take stock of the effects of economic conditions on consumer behaviour, and mistaking cosmetic alterations to structure for real advances in development.

Comment on the Evolution of Distribution Systems: A Reply

R. D. Mueller and P. J. Baron

Distribution, Effectiveness

Contends in reply that Savitt has misconstrued the marketing focus with the total distribution framework of the original article. Disagrees with Savitt's contention that there is coherent literature on distribution, claiming that studies tend to be discipline-oriented and therefore piecemeal, rather than being concerned with system efficiency as such. Maintains that a variety of current initiatives, as well as historical factors, will propel the Hungarian distribution system towards a convergence with the more efficient models of the Western system, and argues that Savitt's emphasis on Skala Trade and Centrum creates a distorted picture of Hungary's retail sector because they are unrepresentative of Eastern European food retailers.

Revised May 1994

Accounting and Marketing Rationale: The Juxtaposition within Brands

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Introduction

Through the subject of brands, this article explores the subordination of marketing as a profession to accounting, which has been said to exist in some market economies. Piercy (1986), for example, spoke of the declining corporate status of the marketing department, and the danger that the marketing viewpoint will be heard less in developing corporate strategies, because of the lack of a suitable language. Accounting, for its part, is able to express its own viewpoint through its role as "score-keeper" within the organization. This lends power to accountants, and Wilson (1981) linked accounting's hypothetical superiority to this.

The shrinkage of Communism in Eastern Europe and Asia has raised the profile of market forces, and the importance of markets and marketing to the world economy. Free markets for their part depend on good information in order to function successfully. Where asymmetric information is present this can seriously inhibit the well functioning of markets, by discouraging trading. The regulation of information is of prime importance, therefore, and this has been addressed in different ways. In Germany, for example, there are internal regulatory structures within organizations (Nobes and Parker, 1991, pp. 12, 197), whereas in Britain, the USA, Canada and Australia regulation tends to be carried out externally through public institutions (Nobes and Parker, 1991, pp. 52-69). In the latter case accounting has a monopoly in providing information, which offers further explanation of the paradox that in these economies, which are market-based, accounting appears to enjoy a superior power and status to marketing. Therefore it is not just that accountants measure the marketing effort within organizations, but also that they play a key role in regulating information. This is relevant to brands, which themselves have become a regulation issue.

Not all authors agree that marketing is subordinated to accounting. Wilson (1981), for instance, quoted from empirical studies casting doubts on this. Militating against it is the emergence in the last 40 years of the "marketing concept", in which marketing has played a more central role in company policy formation (Harrison, 1981); and in which the solutions proposed by management accountants have been seen as inappropriate, with

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their traditional orientation towards production costs (Mallen and Silver, 1981). A recent report by the Henley Centre for Forecasting, which was commissioned by the Institute of Chartered Accountants in England and Wales (1993, para. 9), identified the declining participation of accountants at top board level in the UK as a danger for the future of the accounting profession. There are doubts, therefore, but in any competition between marketing and accounting "to determine whose view of the world will prevail" (Piercy, 1986) accounting starts off with an innate advantage through its control of internal and external financial reporting.

This issue is significant for marketers because of the close working relationship between the two professions, which results in accounting information being used for decision making at both operational and strategic levels of marketing activity. Field and Gabhart (1981) wrote that "efficient marketing is impossible without a continuing flow of salient data about costs, cost consumptions and profits", and "management cannot make rational decisions regarding the marketing function without knowledge of marketing costs and profitability". This could, for example, affect the allocation of marketing efforts and expenditure to marketing segments (Piercy, 1986). One means of evaluating the performance of marketing segments might be to calculate return on investment; and Wilson (1986) quoted from various studies urging this. He then went on to explain the extent to which this measure is affected by the way in which the accountant deals with marketing outlays. There might be disagreement between accountants and marketers, for example, over whether marketing outlays should be treated as expenses or marketing assets. If the accounting view takes priority, there is cause for concern for marketers, if this impacts on marketing decisions.

The debate in Australia and the UK over the accounting treatment of brands provides an ideal opportunity to question the apparent subordination of marketing to accounting, because it brings them together in the one issue. This article is able to contribute to previous studies, therefore, by examining the interrelationship of the two professions in microcosm; and the issues which it raises are fundamental to a wider understanding of both disciplines. In particular the subject of brands enables us to compare the truth claims of the accounting profession, on which its reputation for arbitrational expertise is based, with those of the competing organizational culture of marketing. Marketing reality is concerned principally with attaining competitive advantage, whereas accounting reality concentrates on the reliability of information. Thus the marketer is interested in the distinctive competences of a brand that can be used to attain added value in the minds of the buyers, whereas the accountant focuses on asset characteristics derived from economic theory, and recognition criteria grounded in accounting practice. By juxtaposing the accounting and marketing rationale, with illustrations from practice, this article gains insight into the relative perspectives and status of these two schools.

The article starts by considering financial accounting's claim to represent the truth, which lends it superiority over other organizational cultures such as marketing. It then turns to the subject of brands specifically. The political implications of recognizing brands in the balance-sheet are considered from both marketing and accounting perspectives, as are the underlying characteristics of brands, and the problems associated with their recognition.

Accounting Truth

Following Foucault, who emphasized the close connection between knowledge, truth and power (Loft, 1986), it could be argued that financial accounting gains integrity and thereby power from its claims to represent the truth. Thus the accountant holds the status of a type of witch-doctor within the organization, dispensing truths in order to accommodate "awkward facts" (Gambling, 1977). This emphasis on truthful representation enhances the social credibility of accountants, which itself can become an issue in arbitration disputes (Power, 1992). Also it contrasts with marketing, which, by focusing on consumer behaviour through concepts such as added value, is perhaps more able to accept truth in terms of perceptions rather than reality.

Accounting's truth claims are backed by company law, which states that a company's annual accounts should represent a "true and fair view" of its activities; and have been accepted internationally by accounting standard setters, through the adoption of "faithful representation" as a key reporting concept. Faithful representation is both a reporting concept and an affirmation of the neutral position of the accountant in society, as an unbiased reporter of economic events. A definition of the term, therefore, includes such precepts as valid description, freedom from error or bias, and according with the substance of economic reality (ASB, 1991, paras. 28, 30). This view has both its champions and detractors, and one might cite Solomons (1991) and Tinker (1991) respectively as representatives of the opposing ends of the argument.

Opponents have challenged the implication that economic reality can exist independently of the manner in which it is reported, and questioned whether accounting truths are absolute, or merely determined by the established body of accounting practices and beliefs (Hines, 1991). Such doubts pose one of the most important challenges to accounting's search for a conceptual framework for financial reporting based on the principle of faithful representation, and are not easy to refute. If we accept the argument that accounting truths have no intrinsic meaning, but are reflexively constructed from practices and beliefs, any subjectivity gap between financial accounting and the other social sciences, such as marketing, is reduced. What then if two conflicting sets of reality, constructed from different cultures, exist within an organization? Although this might be quite normal, it will be the accountant's view which prevails as far as information for market regulation is concerned. Let us then consider the possibility of such a conflict between accounting and marketing in relation to brands.

Brand Politics

First there are conflicting political considerations.

Aside from any vested interest of professional brand valuers, there is a political issue for the marketing profession as a whole, which concerns the acknowledgement of the contribution of marketers to the long-term health of the business. Branding is a powerful concept to marketers "that does not just focus on one element of the marketing mix, but represents the result of a carefully conceived array of activities across the whole spectrum of the marketing mix" (de Chernatony and McDonald, 1992, p. 15). De Chernatony and McDonald (1992, pp. 31-41), for example, identified eight different brand strategies employed in practice, each utilizing different marketing competences, and de Chernatony and McWilliam (1990) proposed a matrix defining the dimensions of a brand, to enable marketers to determine the optimum combination of marketing resources necessary to sustain it. The resources needed are not static, but will change through time as the brand progresses through its life cycle (de Chernatony and McDonald, p. 220). Brands are crucial, therefore, to the marketing process as a whole; and from a marketing perspective the recognition issue does not simply concern the recognition of brands in accounts, but also the recognition of the role of marketers within the organization.

Indeed some companies have followed the marketing perspective and recognized the value of their brands in the balance-sheet, although the main impetus for this has come from the strategic implications of the alternative accounting treatments. The strategic benefits of capitalizing brands and not depreciating them are well-rehearsed, and have been dealt with elsewhere (Egginton, 1990; Faris, 1989; Mather and Peasnell, 1991; Power, 1992). Briefly, it is probably not coincidental that accounting for brands came to public attention during the late 1980s at a time of intense take-over activity in the UK, and was pioneered by acquisitive companies, such as Grand Metropolitan plc and Rank Hovis McDougall plc. This is because of the significant effects on reported earnings and net assets of either writing off purchased goodwill to reserves, or amortizing it in the profit and loss account, both of which have either real or perceived implications for acquisitive companies. There was speculation, for example, that the recognition of brands in accounts, coupled with their non-depreciation, has enabled UK companies to pay larger premiums in take-over bids than their US competitors. This accounting treatment would be unacceptable in the USA; and it has been suggested that the size of bids by US companies has been restricted by the expectations of their investors in terms of earnings per share (Brown, 1989).

Whether this type of speculation is valid or not has little to do with the nature of brands. Possibly it has fostered the suspicion of the accounting profession that by capitalizing brands companies are "warming up the books" if not actually "cooking" them. This has not been helped by companies continuing to capitalize brands in the face of Accounting Standards Committee Technical Releases (1989, para. 6) encouraging them not to do so pending the issue of a standard. Moreover the timing of the issue is significant, occurring during a period of public disquiet following the collapse of companies such as Polly Peck International plc, whose accounts, prepared in accordance with accounting standards, may have appeared to reveal a picture of financial health (Financial Reporting Council, 1991, para. 5.34). The sincere desire of both Government and accounting profession to restore public credibility is apparent in the establishment of a new regulatory framework backed by the 1989 Companies Act. In such a climate there might be a political inclination towards curtailing an accounting practice seen to be governed by expediency, in order to re-enforce both the credibility of accounts and the status of accountants as guardians of the truth. The tendency, therefore, would be towards restoring the status quo and not allowing brands to be capitalized. Indeed this was one of the main thrusts of the Accounting Standards Committee (1990, paras. 19-25), albeit justified on theoretical grounds. Possibly there is a distinction here between the "nominal" and the "real". Accounting issues may be put forward for nominal reasons which the majority perceive as real, whereas the hidden agenda is apparent only to a few. "Although often formally advocated in the name of the user's interests, the articulation of accounting standards has continued to reflect the dynamics of the institutional context of which they are an outgrowth" (Burchell *et al.*, 1980). In a political climate where the accountancy profession is under attack, the nominal case might be presenting information useful for decisions, and the real the maintenance of the profession.

Asset Characteristics

Turning now from the politics to the rationale, this has centred on the benefits associated with brands. There is a consensus among accountants that a major characteristic of "assets" is that they produce future economic benefits, which has been accepted in the USA by the Financial Accounting Standards Board (1980, para. 19), and internationally by the International Accounting Standards Committee (1989, paras. 53-55), and is supported by a body of economic and accounting theory. The first consideration of the financial accountant, therefore, must be whether brands do in fact produce a future stream of benefits. Although marketing for its part is not concerned with asset recognition in the accountant's sense, it does set limits about what constitutes a marketable object. In the case of a brand these depend on an assessment of the ability of its various attributes to influence consumer behaviour, and ultimately to determine its position in the market. In this way brands are strategic devices, used by companies to develop and sustain competitive advantage.

It follows that the economic benefits associated with brands are relevant to both marketing and accounting. Brands, however, are ambiguous entities in both marketing and accounting literature, and the future economic benefits which they engender are not so clear as one might suppose. It has been stated that the long-term success of a brand lies in the number of consumers who become repeat purchasers (Jacoby and Chestnut, 1978, p. 1). This is partly attributed to brand loyalty, and encourages the view that brands exist as assets for the continuing benefit of a business. However, the degree to which brand loyalty influences repeat purchase behaviour remains uncertain. Jacoby and Chestnut (pp. 2-5) cited a variety of other possible causes, such as price, quality, location, the amount of available time or personal involvement in brand choice, loyalty to particular stores or suppliers which may limit the range of brands, and the number of choices between brands which are available to the consumer. Ehrenberg (1972) in fact concluded from empirical observation that in general neither these factors nor the brand itself matter explicitly under stationary no-trend conditions. Instead the key determinant of the pattern of repeat purchase behaviour is the average purchase frequency per buyer of an item. There is uncertainty, therefore, about the causes of repeat purchase behaviour, which is complicated by the variables changing over time. An example of this is consumer preference. During the 1980s there was a persistent swing in favour of own-label goods at the expense of manufacturers' brands, which to some extent has undermined the existing perceptions of marketers concerning their brands. This has been particularly apparent during the present recession when it has been increasingly common to see brand manufacturers promoting on price at the expense of brand advertising (de Chernatony *et al.*, 1992).

From an accounting perspective there are doubts also. In the first place, there is uncertainty because the accountant is dealing with the future nature of the benefits associated with brands, in order to assess whether they are assets. In this a distinction can be drawn between purchased and home-grown brands, with the latter being more uncertain. This is because purchased brands have an exchange value, which implies a greater degree of certainty over their future economic benefits than is the case for home-grown brands, which merely have a production cost. Second, in the case of those home-grown brands which are recognized in the balance-sheet, it is possible that some double counting is taking place. This is because the fixed assets which facilitate their production are also included in the accounts. Finally, it is necessary for the accountant to consider whether branded products have "added value" above that of non-branded goods. One might view this as the "super-contribution" attributable to brands (Blanchet and Tweedie, 1989). The concept of added value was seen by de Chernatony and McDonald (1992, pp. 8-10, 18) as crucial to understanding the nature of brands, and the difference between brands and commodities. They argued that "to be successful it is necessary for firms to have a very clear view about precisely what added values their brands offer as well as understanding the relevance of these added values to consumers" (p. 157); and proposed a four-level model to enable companies to identify possible added values (pp. 161-6). From an accounting viewpoint, however, the question of whether brands have added values, depends, in a standard investment setting, on a quantification of the additional cash flows and the risk. Neither of these areas has yet received adequate consideration.

Despite the doubts, the economic potential of brands has not been a major subject of controversy to date in the recognition issue. Thus the Accounting

Standards Committee (1990, para. 19) concluded that "there is no doubt that brands and branding under skilful management can add significant value to commercial operations, and are a major force in modern commercial practice". In this respect the ASC was accepting the marketing reality that brands are economically valuable. Whether this reality is absolute, or whether it has been reflexively constructed from company practices and beliefs may be questioned, but it is not a major area of conflict between accounting standard-setters and those marketers who advocate the value of their brands. Indeed the brand accounting debate has tended to reinforce the perception of marketers that their brands are valuable, through the interplay which has taken place between accounting and marketing. The application of accounting technology to value brands through concepts such as present value, for example, lends them credibility. Returning to the accounting profession's claims on truth, one could argue that marketing has used this to legitimize its own claims. This was noted by Power (1992) in the juxtaposition of terminology in the marketing text entitled, *Brand Valuation: Establishing a True and Fair View* (Murphy, 1989).

Strategic benefits are perceived in a number of areas, such as in using established brand names to minimize the risks of new products failing. In March 1989, for example, it was reported that, despite an explosion in new product launches in the UK, fewer than one-third were likely to survive for more than two years (Whelan, 1989). Such failures result in "significant financial and resource losses to the companies which developed them, and brought them to market" (Goldsmith and Flynn, 1992). Companies, therefore, use established brand names to minimize the risks of failure. In September 1988 Beecham Bovril Brands planned to use the "Marmite" label for a new range of savoury spreads, and Scottish and Newcastle plc, the "McEwan's" name for its new lagers. In April 1989 the Unilever Group company Van den Bergh was forced to drop one of its key brands just 18 months after it had been launched. The low fat "Latta" spread, which had been successful in some Scandinavian countries, did not achieve the same potential in the UK. A problem was in communicating that it was both low in fat and high in polyunsaturates, which the company hoped to overcome by replacing it with a similar product under the name of "Flora Extra Light".

In addition to the initial risk of products failing there are also risks associated with their continuation. In particular there is the risk that consumers will switch either to other brands or to own label goods. Applying the financial management concept of market risk (β), one might expect brands to be more risky than cheaper non-brands, through a consumers' switch into or out of brands at the top or bottom of the business cycle. Indeed we have already noted some evidence of this in brand manufacturers' pricing policies in the current recessionary climate. There is, however, a counter-argument that companies are able to use branding to insulate themselves against the risk of this type of behaviour. Thus de Chernatony *et al.* (1992) found evidence that a brands-price differential still exists in the minds of consumers when they are encouraged through advertising to think in these terms. An example of this is the successful launch of the relatively chunky "Yorkie" bar against a background of escalating cocoa prices in the mid-1970s. Careful market research and successful branding of the product enabled Rowntree Mackintosh plc to capture a share of the market from "Cadbury's Dairy Milk", which had been made thinner in order to restrict price increases (Watkins, 1986, pp. 38-9). It is in fact argued that brand names/concepts act as heuristics for the consumer, by encapsulating a pool of available information at the point of purchase to the exclusion of all external sources (Jacoby and Chestnut, 1978, p. 114). From the consumers' viewpoint, purchase of the brand can become a risk aversion strategy which avoids the risk of dissatisfaction with the alternatives (Watkins, 1986, p. 23).

Another area of perceived strategic benefit lies in the purchase of established brands as a vehicle for diversification into new markets. Again this is associated with the risks of failure of the alternative course of action of launching new products. Thus, by acquiring Rowntree Mackintosh, Nestlé also acquired its brands, the strong position of which in the UK confectionery market was reflected in the size of the premium offered for the shares (Murphy, 1992).

Finally branding is an important means for companies to promote their image, not just to increase sales, but also to encourage investment. The advertising campaigns in support of privatizations are examples. Another was the decision of British Petroleum Co. plc in 1989 to rebrand its petrol stations in the USA under the "BP" name in place of the local names. This was intended to raise the "BP" profile with US investors, although fears were expressed at the time that US petrol sales might suffer as a result.

Recognition Criteria

Although the two professions are not in opposition over the perceived economic benefits associated with brands, a problem between the two lies in the accountant's desire to present useful information which is "reliable" (ASB, 1991, para. 26). In an environment of uncertainty this requires evidence, expressed in terms of recognition criteria, before asset recognition can take place. For example the International Accounting Standards Committee (1989, para. 89) proposed that assets should not be recognized if they are incapable of reliable measurement. Uncertainty is inevitable if one accepts the future nature of the benefits stemming from assets, and in this regard recognition criteria are necessary to make information more reliable. There is, however, a counter-argument that recognition criteria may actually impede reliability by placing boundaries on reality, to the potential detriment of valid description and faithful representation. To make use of the type of physical analogy sometimes found in accounting literature, one might liken this to photographing a landscape with a narrow angle lens. This may lead to sharper definition at the expense of not revealing the full picture.

Apart from reliability, "relevance" is proposed as the other key characteristic of accounting information which is useful (ASB, 1991, para. 23). This is associated with the decision-making needs of accounts' users, which must include information about brands, in view of their operational and strategic importance. Inevitably there is some trade-off between concepts such as relevance and reliability (ASB, 1991, para. 27), and sometimes they are in open conflict. Faced with such a dilemma, accounting practice, firmly grounded in a tradition of conservatism (Chatfield, 1977), will err on the side of reliability in order not to mislead (ASB, 1991, paras. 27, 29). This has been described by the Accounting Standards Board as a sceptical attitude of mind about the results of uncertainty (1991, para. 40), and is a reflection of the unwillingness of the accounting profession to embrace the notion of probability. It also reflects a fundamental difference of focus between accounting and marketing in their attitudes to the risks associated with brands. Marketing, as we have seen, tends to regard brands as intrinsically valuable strategic devices, which help develop and sustain competitive advantage, and thereby reduce the risks of products being rejected. Although accounting does not necessarily disagree, it tends to focus on brands as being intrinsically misleading, because they increase the risks of reporting information which is unreliable. Returning to the argument that accounting truth is reflexively constructed from accounting practices and beliefs, one might see this as a case in point. Thus the Accounting Standards Committee (1990, paras. 23-24) stated that, while information about brands is useful and should be presented in the notes to the accounts, brands should not be capitalized because they fail the asset recognition test of "separability". We therefore come back to the asset recognition criteria which lie at the heart of accounting reasoning in relation to brands. Let us now consider these as they have been applied.

The accounting problem is that the characteristics of brands are difficult to distinguish from those of goodwill, and indeed of other potential marketing assets such as product image and reputation (Guilding and Pike, 1990). This is because they produce similar benefits in the form of increased earnings potential, and are constructed from common elements such as company history, advertising, regional loyalties, quality control, technology, staff training (Bryant, 1989). The distinction between brand and goodwill is particularly nebulous in the case of a differentiated product such as a famous malt whisky which is synonymous with the brand (Blanchet and Tweedie, 1989). Indeed the uncertainties are increased by the difficulties in defining a brand, which is perhaps indicative that the accounting debate is as much about what brands are, as how to account for them. In these circumstances then it is not surprising that the separability issue has assumed a prominence in brand accounting.

There is uncertainty, therefore, over the separate identification of brands, which in turn may prevent them from being measured with reasonable certainty. Thus, although accountants may be willing to value brands in internal management accounts, they are less willing to do so externally (Guilding and Pike, 1990). This is contrary to the stance of marketers that, "if valuations are credible for internal management purposes, then surely they must also be credible for external purposes" (Power, 1992). A possible accounting solution then, in pursuit of objective verification in external accounts, is to require the separability of brands to be evidenced by their saleability, although this is inconsistent with their marketing purpose, in that they are not generally developed or acquired with the intention of resale (Rank Hovis McDougall plc, 1989, p. 4). In 1984 the Accounting Standards Committee (para. 22) introduced the criterion that an intangible asset should not be recognized in the balance-sheet separately from goodwill unless it is capable of sale without disposing of the business as a whole. In 1990 the ASC (para. 38) made the test more stringent by stating that separability should be evidenced by an active market in the intangible asset, separate from the purchase and sale of business segments. It is too early yet to assess what stance will be taken by the Accounting Standards Board, successor to the ASC. However, in a recent discussion paper on *Goodwill and Intangible Assets* (1993, paras. 3.2.4-3.2.6), the ASB reiterated the saleability criterion, and expressed the view that brands are so similar in character to goodwill that they cannot be separated.

Paradoxically the saleability of brands is evidenced by companies trading in them either as parts of business segments or separately. There are many examples of the former in group reorganizations following takeovers. Thus following Kohlberg Kravis Roberts' takeover in 1989 of the US foods and tobacco group, RJR Nabisco, it auctioned several of the Nabisco European biscuits and snacks companies. Examples where the name was sold independently include BBC Enterprises granting a licence to Nova International in 1988 to use the BBC Sports logo in a range of sportswear, and Cadbury Schweppes licensing Premier Brands UK to use the "Cadbury" name in a variety of products (Bryant, 1989). Evidence therefore exists to support the saleable nature of brands; an impression corroborated by the readiness of professional brand valuers to accept saleability as a legitimate asset recognition criterion. Cameron-Smith and Mattiussi (1989), for example, who were directors of Hambros Australia Ltd, stated that it is only those intangible assets that are saleable independently of any pre-existing management infrastructure which can be valued individually. However, to seek evidence of saleability and in particular of an active market conflicts with the marketing reality of the types of economic benefit which companies are looking to achieve from their brands, such as increased market share and competitive advantage. This is reflected in the longevity of brands, allied to the careful way in which they are nurtured over long periods of time.

The anomalous nature of the accounting reasoning can be illustrated in Figure 1.

In order to gain assurance that brands are measurable one must confirm first that they are independently saleable and second that they are separable from goodwill. However, the logic of this enquiry is mono-directional, because confirmation of brands' saleability does not necessarily imply that they are separable from goodwill – it may be a portion of goodwill which is being disposed of – and confirmation of their separability is not the only factor in deciding whether they are capable of measurement. There may be other uncertainties, such as the reliability of the measurement methods (ASB, 1993, para. 3.2.12). It follows that, while the answer to any one of these questions need not depend on the outcome of the others, accounting practice would tend to accept this only in the one direction of restricting asset recognition.

Further illumination is provided by the diversity of factors affecting a brand's measurability. Rank Hovis McDougall plc (1989, pp. 6-7), for example, adopted a methodology encompassing the key factors of brand leadership, stability, market, internationality, trend, support and protection. These are relevant to both acquired and home-grown brands, because the carrying value of the former in the balance-sheet might vary through time from the cost originally allocated in a fair-value exercise. Variations might result from changes in the marketplace, such as the swing in favour of supermarket own-label goods, or from economic changes, such as European economic union (de Chernatony and McDonald, 1992, pp. 196-7). It follows that the measurability of brands is intrinsically complex and touches on more issues than saleability and separability; and various valuation techniques have been devised to take cognizance of these uncertainties (Murphy, 1989, pp. 23-5; Power, 1990; Rank Hovis McDougall, 1989, pp. 3-10). It might be reasonable to consider these in detail, and to criticize them for being too subjective, or lacking in consistency, for example, Barwise *et al.* (1989); yet the type of accounting reasoning we have seen would reject them on the narrow grounds of saleability alone.

The question remains whether there is scope for accounting to change. The separability of brands and other intangible marketing assets was discussed by Guilding and Pike (1990) from a management accounting perspective. They noted that management accounting, following a financial accounting orientation, has not yet developed a methodology for recognizing these assets. They contended that a redefinition of intangible marketing assets is essential for this to take place; and proposed a typology, highlighting the inputs and outputs associated with intangible marketing asset management, as a first step to solving the segregation problem. The conclusion was that, while this would be useful from an internal reporting viewpoint, it might not provide sufficient objective verification to enable these assets to be recognized externally. Many issues in accounting, however, involve the jointness of costs, and attempts are made to deal with them. Moreover the existence of management accounting systems is crucial to the recognition of other assets, such as long-term work-in-progress and development expenditure,

Are brands independently saleable?

↑

Are they separable from goodwill?

↑

Can they be measured with reasonable certainty?

Figure 1.
Accounting Criteria for the Recognition of Brands as Assets

in financial accounts, and serves to provide the auditor with an additional source of evidence that is susceptible to testing. It follows that the establishment of management accounting systems which recognize brands, following a redefinition of the related constructs of marketing assets, may yet lead the financial accountant towards an alternative solution to the separability problem. This would entail a shift of emphasis by the financial accountant towards the internal management planning involved in the production of brands, and is an important area warranting further investigation.

Conclusion

There is a paradox within some market economies that accounting appears to enjoy a superiority to marketing with regard to power and status. This can be linked to the key role which accounting plays in market regulation. The debate over the recognition of brands in accounts has allowed us to consider this in relation to a single issue.

Financial accounting's assertion that it is capable of faithfully representing reality has been shown as susceptible to challenge on both political and epistemological grounds. The accounting profession does not accept this, however, and seeks to preserve its status as arbiter of the truth by requiring "objective verification" to counteract uncertainties. This was apparent in the prescriptive nature of the accounting reasoning applied to brands.

Marketing is also confronted by uncertainty regarding future patterns of demand, and in this sense shares the concern of the accountant over the future benefits stemming from brands. The article, however, observed a fundamental difference of focus between the two cultures in their attitudes to the uncertainties of brands. Marketing regards them as intrinsically valuable, as strategic devices which help develop and sustain competitive advantage by creating added-value in the minds of the consumers, and thereby reduce the risks of products being rejected. Accounting, on the other hand, tends to see them as intrinsically misleading, because they increase the risks of reporting information which is unreliable. Financial accounting can thus ignore the perceived economic benefits of brands on the grounds of uncertainty, whereas marketing cannot because they are too fundamental.

Inevitably the claims of accounting will prevail because it controls financial reporting; and, if it is indeed true that marketing as a profession is subordinate to accounting in power and status, the article has seen the brands issue as perpetuating this. By keeping brands off the balance-sheet and dismissing the claims of marketing concerning the fruits of its labour, the accounting profession succeeds in preserving its own reputation for integrity, at the expense of the integrity of marketing. It would be naïve to see this in terms of a deliberate conspiracy. Effective regulation depends on reliable information, and in this accounting is inevitably constrained by the uncertainties of the world which it represents. But perhaps it does illustrate how accounting can misuse the power it gains from control of financial reporting, when the recognition tests which it applies are too restrictive.

The question remains whether a change of accounting orientation towards brands is possible. Previous authors have considered this from a management accounting perspective, where change seems feasible. The establishment of management accounting systems which recognize brands would also benefit the financial accountant, however, by providing an additional source of objective verification; and the article considers this a useful area for future research.

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Formulating an accounting standard for brands in the 'market for excuses'

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ABSTRACT

The article examines the formulation of standard accounting practice for brands from the perspective of the vested interests. Although brand accounting remains a minority practice, it is likely to become more prevalent in future, with the advent of a new accounting standard. The move towards brand accounting is explained in terms of the accommodation of the vested interests of managers in the fast moving consumer goods sector, professional brand valuers, the accounting firms that provide auditing and consultancy services to large companies, and the Accounting Standards Board itself.

INTRODUCTION

In December 1997, the UK Accounting Standards Board (ASB) issued a financial reporting standard (FRS 10) that encompassed the subject of brands, bringing to a (temporary?) conclusion seven years of debate on the correct treatment of brands in company accounts. There is a school of thought in accounting literature, explaining accounting-standard setting in terms of the operation of a 'market for excuses'.[1] Accounting theories are rationalised in the public interest, whereas in reality they are supplied to meet the demands of vested interests, who stand to gain from particular accounting treatments. This paper examines the formulation of the new standard for brands in relation to the vested interests of the participants. The ASB has moved from a position of widespread disagreement over its original proposals which precluded the separate recognition of brands and other intangible assets in accounts,[2] to one of apparent consensus over their inclusion. Does the market for excuses offer an adequate explanation of this change, and, if so, how has the ASB reconciled the different interests involved, including its own?

The paper follows on from a previous study which contrasted the rationale that marketers and accountants have applied to brands.[3] A fundamental difference of focus was observed between the two professions in their attitudes to the uncertainties of brands. Brands are intrinsically valuable to marketers because they reduce the risks of products failing, whereas to accountants, they are intrinsically misleading, because they increase the risks of reporting information that is unreliable. A political difference also exists. From a marketing perspective, the accounting issue is not just about recognising brands in accounts, but also about acknowledging the importance of marketers to the organisation. For accountants, there is the need to maintain the profession in the face of public disquiet over its ability to regulate itself, which has led to a clamp-down on 'creative' accounting practices. The prolonged debate over the accounting standard has generated

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much public comment, opening up to scrutiny the motives and attitudes of the participants. During the last seven years, the ASB and its forerunner, the Accounting Standards Committee (ASC), have issued two exposure drafts, a discussion paper and a working paper, and conducted public hearings. At each stage the Board canvassed opinion; and the study is based on the representations of the interested parties.

The paper proceeds by placing the issue in its reporting context, before moving on to consider how the interests of accountants, brand valuers, managers of companies in the fast moving consumer goods sector (for whom brands are most relevant), and the ASB itself have been accommodated in the new accounting standard.

REPORTING CONTEXT

How important is accounting for brands to most companies? The question can be approached in a number of ways. First, a survey of 300 companies ranked in The Times 1000 indicates that brand recognition is a growing minority practice for the largest companies in the UK.[4] Only two companies from the sample recognised brands during 1991–2, compared to six in 1995–6. All of the six were members of the FT-SE 100 Index. On the other hand, the brand valuers Interbrand carried out valuations for internal management purposes of more than 800 brands in the five years to 1994,[5] suggesting that many more companies will consider showing their brands on the balance sheet now that the practice has been codified by an accounting standard. In 1994, the chief accountant of Allied-Lyons plc said this would be the case for his company.[6]

A possible obstacle to companies recognising brands in their accounts is the cost of collecting and auditing the necessary data to comply with the accounting standard. This is particularly the case for companies which choose not to charge annual depreciation on their brands in the profit and loss account, on the grounds that properly maintained brands do not have a limited useful life. In such cases, the new accounting standard imposes a requirement for the value of the brands to be reviewed annually for impairment, based on a projection of the associated cash flows, discounted to their present value.[7] There may be a trade-off between the costs of obtaining the information and the benefits of showing brands in that way, which would tend to penalise the smaller companies with the lesser resources.[8] However, in practice, the cost of data gathering and processing is unlikely to prove critical, as those companies wishing to show their brands in the accounts will be the ones for whom brands represent a significant investment, who already value them for internal management purposes. The finance director of Cadbury Schweppes plc said that the costs and revenues relating to particular brands are 'readily available',[9] and the chief accountant of Guinness plc confirmed that valuing brands is well established.[10] Interbrand noted that most internal valuations are based on a risk-related discount of the future cash flows,[11] which is the method proposed by the new standard.

Even though cost is unlikely to prove a prohibitive factor, companies still may not choose to separate brands from goodwill in the accounts, if they are obliged to account for the two in the same way. When a company takes over another company, the purchase consideration is allocated over the other company's separable net assets for accounting purposes. An asset is considered separable if it can be disposed of without selling the whole business. Goodwill is the unallocated residual amount. It represents the difference between the cost of the investment and the fair value of the separable net assets acquired. Accountants must decide whether brands can be valued separately on acquisition, in which case the residual amount of goodwill is reduced.

The finance director of BAT Industries plc expressed the view that, if recognition were given to all the separately identifiable intangibles a company possessed, purchased goodwill would not be material.[12] The ASB showed it believed brands and goodwill are one and the same, and cannot be separated, when it recommended that brands should be subsumed within the figure of goodwill in the accounts.[13] Although the Board later changed its mind about this, its proposals have continued to link the two issues. According to the ASB, it was the common UK practice of writing off the goodwill arising on acquisition to reserves, that, in the first instance, led some companies to reclassify expenditure as brands.[14] This practice boosted their equity, without affecting earnings, as the brands were not depreciated. It convinced the Board that companies should not be able to gain this type of relative advantage; and the new standard requires companies to treat goodwill and brands in the same way.[15] If the difference in accounting treatments caused companies to recognise brands in the past, logically they should now cease to do so once the incentive is removed.

However, this logic does not hold up. Most of the opposition to the ASC's original proposals centred on the requirement to depreciate goodwill and intangible assets through the profit and loss account,[16] thereby reducing reported annual earnings. A substantial majority of UK companies prefer to avoid this reduction of profits by writing off goodwill to reserves on acquisition.[17] The reasons are discussed in the next section of the paper. The implication of removing the write-off option in the new standard is that companies will still seek to avoid depreciation by performing annual impairment reviews instead. As noted above, the financial technology for reviewing the impairment of brands is already in place, whereas for goodwill it is less developed, although the ASB did field-test its proposals on seven large groups, six of which found them to be workable.[18] Goodwill is more difficult to track than brands in the years following acquisition, particularly when the subsidiary's business is integrated with the group's activities, rather than bolted on as a separate component. The finance director of Bass plc commented on the difficulties of tracing and measuring goodwill on a continuing basis.[19] The finance director of Scottish and Newcastle plc wrote that most companies seek synergy gains from their acquisitions. Such gains depend on the rapid integration of acquired businesses within the group, causing purchased goodwill to lose its identity straight away.[20] These observations contrast with those of the finance director of Grand Metropolitan plc who said that the cash flows and income steams associated with consumer brands are often already identified for management purposes, and unlike goodwill, normally retain their identity in reorganisations.[21] If companies opt for impairment reviews to avoid depreciation, showing brands in the accounts will reduce the practical difficulties, and encourage them to do so. Returning to the original question about the importance of brand accounting to most companies, one can conclude that although it remains a minority practice, it is likely to become more prevalent, with the advent of the new accounting standard.

MARKET FOR EXCUSES

What are the vested interests, and how have they been reconciled? The ASB attracted representations on goodwill and intangible assets from a wide range of interest groups, but the three that have the closest interest in brands are managers of fast moving consumer goods (fmcg) companies, professional brand valuers, and the accounting firms that provide auditing and consultancy services to large companies. The ASB itself is the other major player.

Managers of fmcg companies

The following companies in this sector submitted written representations to the ASB:

- Allied-Lyons plc
- BAT Industries plc
- Bass plc
- Cadbury Schweppes plc*
- Grand Metropolitan plc*
- Guinness plc*
- Reckitt & Colman plc
- Scottish & Newcastle plc
- Unilever plc
- United Biscuits (Holdings) plc*

The asterisked companies are the only ones that currently recognise purchased brands in their accounts. None of them recognise brands that are home-grown. Apart from Scottish and Newcastle and Unilever, the respondents all said that they are in favour of including acquired brands in the balance sheet, and not depreciating them. How can this be explained?

Several of the fmcg companies argued that charging depreciation would be misleading, as properly maintained brands do not decline in value. It would also be double-counting, as brand maintenance expenditure is already charged to the profit and loss account.[22] However, there may be hidden managerial motives, such as the wish to maintain directors' bonuses. Many bonus plans are linked to profits calculated in accordance with generally accepted accounting principles (GAAP). It is therefore important to the recipient whether the GAAP specified in the contract is 'frozen' or 'rolling'. Directors with rolling GAAP plans are the ones most likely to oppose new accounting standards that reduce reported profits. Gore et al found some evidence of this. However, their results also showed that profit-based management compensation plans are relatively easy to amend, suggesting they may not be such an important factor;[23] and other studies indicate that the correlation between the remuneration of the highest paid directors in the UK and company performance is 'very weak'.[24] An alternative explanation, is that not depreciating intangibles allows managers to justify higher dividends in bad years, by disguising the company's true results. Bryer said this was especially true during the mergers and acquisitions boom of the 1980's, when large portions of the UK's manufacturing industry were closed down.[25]

Showing brands on the balance sheet has the effect of increasing equity and reducing gearing. There is some empirical evidence that companies with high gearing ratios are more likely to treat intangibles in this way, than companies with low gearing.[26] To do so would give directors greater freedom of action, if their companies were in danger of breaching debt covenant restrictions, and greater autonomy to go ahead with major take-over bids, without seeking the members' approval. The Stock Exchange requires them to seek such approval, only when the reported assets/profits of the company being bid for are greater than 25 per cent of those of the company making the bid.[27]

Finally, managers will be concerned about an accounting treatment if they believe it may affect the company's share price. A strong share price assists a company in raising new investment, and helps protect it from hostile predators. It gives the directors greater freedom, and strengthens their control of the company. Unfortunately, the evidence is not clear cut as to whether adjustments to the accounts in respect of goodwill and intangible assets do affect share price. If financial analysts are capable of recomputing figures on a common basis, it seems unlikely that 'the stock market would be fooled or share prices significantly affected' by the ASB's eventual choice of accounting treatment.[28] However, there is some empirical evidence to contradict this. Several recent studies suggest that the manner in which companies report brands, goodwill and other intangibles does supply the stock market with value-relevant information.[29] It is also a question of what the managers themselves believe. It is a recurring theme among the fmcg respondents that brands are major investments, and showing them in the accounts provides shareholders with valuable information. The chief accountant of Guinness plc was concerned about the effects on shareholder perception of leaving brands out, and thought that in practice the share price of fmcg companies could suffer if brands were not reported, 'despite the economic theory to the contrary'.[30]

Professional brand valuers

The detailed submissions of Interbrand UK Ltd to the ASB clearly set out the brand valuers' position. Brand valuers, perhaps, stand to gain the most. An increase in their fee income and client base could be anticipated from an accounting standard that required or encouraged companies to value brands in their accounts. Furthermore, such a standard would formalise the techniques of brand valuation and lend them credibility. Accounting's truth claims are backed by company law; an accounting standard which incorporated brand valuation would imply that brand valuations too are 'true and fair'.[31]

The preferred outcome for brand valuers, therefore, would be for companies to be obliged by the ASB to include the maximum possible amount of information about brands in their accounts. To this end, Interbrand proposed that both home-grown and acquired brands should be accounted for as assets, and should be revalued annually, rather than depreciated. Furthermore, their should be a requirement for companies to list the individual brands making up the total balance sheet figure.[32] This contrasts with the brand valuers' fall-back position, for, at least, some minimum disclosure to be required. Thus Interbrand proposed a compromise, that companies should be compelled to include information about brands in the notes to the accounts, even if the ASB took the view that brands should not be recognised in the balance sheet. Interbrand suggested that the notes should include a fair valuation of the principal identifiable intangible assets, in cases where the purchase consideration in a take-over is considerably greater than the net tangible assets acquired.[33]

Large accounting firms

The representations of the 'Big Six' international firms of accountants were reviewed:

Arthur Andersen
Coopers & Lybrand
Deloitte & Touche
Ernst & Young
KPMG
Price Waterhouse

Their views were not wholly consistent, as although they favoured the separate recognition of intangibles such as brands in the accounts — the only dissenting voice, as far as brands are concerned, was Ernst and Young[34] — they expressed strong reservations about the practicability of impairment testing. Possibly there is a conflict of interests, as firms of accountants provide a wide range of ancillary services to their clients in addition to auditing. Accounting comprises a disparate range of calculable technologies, and its boundaries are constantly changing. Not all of these technologies were originally carried out by accountants. An example of this is the pre-war railway industry in Britain, where engineers rather than accountants supplied the solutions to the problems of management control.[35] Returning to the present, brand valuation is another example. As auditors, firms of accountants have a captive market for promoting new services. Brand valuations represent a potential source of untapped revenue, that it is in the firms' interests to support. Furthermore, as auditors, these firms have an interest in maintaining and extending their client base in the face of competition from rival firms. It might be politically expedient, therefore, to support the views of their clients that brands should be recognised. All of the four fmcg companies that the paper identified as currently showing brands in their accounts are audited by Big Six firms.

However, as auditors, these firms are also obliged to express an opinion on whether accounts show a true and fair view, and need accounting information that is reliable, and capable of being audited. Accounting standards do not exist in a vacuum. The reputation of audit firms is at stake if a company collapses with large amounts of intangible assets in its balance sheet, or if its assets are subsequently found to be over-valued following a take-over. Recent years have seen a large increase in litigation against auditors, and a concomitant rise in their insurance premiums. The proposed accounting standard has been criticised for asking too much of auditors. Auditing the annual impairment review will require auditors to verify the truth and fairness of 'commercial judgements, technology, risk, discount rates, net realisable values, the weighted average cost of capital and future economic trends in small sectors of the economy'.[36] Most of the firms were concerned about this. Ernst and Young voiced the strongest opposition, saying they believed impairment testing would not work well in practice, as it involves too many parameters that are capable of being flexed or manipulated.[37] Confusingly, Arthur Andersen and Coopers and Lybrand said that the proposed accounting standard is too conservative, because it restricts the ability of companies to recognise self-developed intangibles.[38] This practice would increase the subjectivity of the audit, by depriving auditors of a purchase transaction to act as a source of objective verification.

The ASB

Perhaps the main interest of the ASB lies in ensuring that companies present information that is reliable. In a climate where the accounting profession is under attack, the ASB has a vested interest in promoting reliable information in order to preserve the current regulatory framework and the profession against further government intervention. It is therefore necessary to prevent companies from gaining a benefit, simply through the manner in which they classify expenditure. Hence the requirement for goodwill and brands to be accounted for in the same way. Second, any accounting treatment must be capable of objective verification. To this end, the new standard does not allow companies to recognise home-grown brands, or to revalue purchased brands upwards. The purchase consideration provides a ceiling, above which the brands cannot be stated. Subsequently, this ceiling can only be adjusted downwards for impairment. Another source of objective verification comes from the requirement for companies to compare the actual cash flows in the years following an impairment review with those that were forecast at the time, and to make downward adjustments if the projections are found to be too optimistic.[39]

The ASB may also have a hidden interest. The passage of the proposals on goodwill and intangible assets has coincided with an attempt by the ASB to provide a conceptual framework for financial reporting in the form of a Statement of Principles. The draft Statement of Principles has run into heavy opposition from accounting firms and financial directors alike, and has had to be withdrawn for a rewrite.[40] Critics have accused the ASB of using its proposals on intangibles to present companies with a conceptual fait accompli. The conceptual arguments are beyond the scope of this paper, except to say that the proposed standard's focus on asset recognition and impairment is consistent with the ASB's support for a balance sheet approach to measuring income. Similarly, the impairment reviews are based on 'value in use', which is consistent with the ASB's preference for showing assets at their current value.

Accommodation

If accounting standard setting is to be explained in terms of the operation of a market for excuses, the ASB's role must be to act as the mechanism that allows it to function, by promoting solutions that accommodate the vested interests. From this perspective, it is not surprising that the ASB has committed itself to a policy of seeking consensus since its inception in 1990. The experience of its predecessor, the ASC, in relation to an accounting standard on current cost accounting (SSAP 16) illustrates the impracticability of imposing solutions that are widely opposed. The same was true of the ASC's early proposals on brand accounting (TR 738), which were largely ignored.

How does the new standard accommodate the vested interests? The recognition of brands in the balance sheet and their subsequent review for impairment is consistent with the needs of fmcg company managers to preserve earnings and equity. It is consistent with the interests of professional brand valuers, as it necessitates annual valuations. The accounting firms themselves may have an interest in providing valuations, and the proposals allow them to support clients who wish to recognise brands. The proposals go some way towards meeting the concerns of auditors and the ASB itself over the need for objective verification, and are consistent with the ASB's conceptual agenda. The ASB has shown considerable diplomatic skill in brokering such a solution, although the forgoing analysis does indicate that the vested interests in brand accounting are not incompatible.

CONCLUSION

The paper has examined the formulation of standard accounting practice for brands from the perspective of the vested interests. Although brand accounting remains a minority practice, it is likely to become more prevalent in future, with the advent of the new accounting standard. The move towards brand accounting has been explained in terms of the accommodation of the vested interests of managers in the fast moving consumer goods sector, professional brand valuers, the accounting firms that provide auditing and consultancy services to large companies, and the ASB itself. All of the parties involved stand to gain some benefit from the solution that has been brokered by the ASB, suggesting that, in this case at least, the market for excuses does provide a reasonable explanation of the proposals.

The market for excuses hypothesis is not proven, however. It could be argued that the resultant outcome was inevitable, irrespective of any self-interest, given the rising importance of brands and intangible assets in general to many companies. Intangible assets cover a wide range of different types of 'dematerialised products', such as computer and biological software, patents, telecommunications, agricultural quotas, trademarks, research and development, brands etc.[41] Their growth internationally is evidenced by the huge increase that has occurred since 1970 in the relative size of goodwill for UK and US companies;[42] and the rise of brands reflects the more central role that marketing now occupies in company policy formation.[43] Cadbury Schweppes' director of financial policy and services said that the major part of his company's effort is directed towards maximising the value of brands.[44] There is widespread agreement among the respondents to the ASB's various proposals, cutting across 'party lines', that the nature of business has changed dramatically, and that intangible assets such as brands are now too important to be ignored. Various authors maintain that although accounting is comprised of calculable technologies, it can only be understood in its social, economic and political contexts;[45] and stress the important role that contextual discontinuities have played in generating accounting change.[46] The increasing importance of intangible assets in business is possibly an example of this, and is an important rider to the forgoing explanation of the move towards brand accounting.

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