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Myth and accounting failure: The case of Ferrovia Leopolda 1842–1859

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Abstract

Accounting practices can be interpreted as a 'myth' for their capacity to provide a narrative with symbolic value. Myths create a language that becomes generally adopted and taken for granted. Informed by the work of Barthes and the literature about accounting and myth, this study analyses the reason why the first Tuscany Railway company, the *Società Anonima della Strada Ferrata Leopolda* ('SASFL') decided to align itself to the British railways in building its accounting system. Through an in-depth analysis of the original documentation (agreements, statutes, financial statements) of the SASFL for the period 1841 to 1860, the article demonstrates how, despite the non-superiority of British railways accounting practices, the Società Anonima, attracted by the 'myth' of British railway technology, privileged the adoption of this kind of accounting representation over the others.

Keywords

railroad industry, myth, double account system, nineteenth century, Grand Duchy of Tuscany, British railway accounting

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Introduction

Isomorphism has provided a recurring explanation for convergence in accounting practices between entities and across countries (Iredele et al., 2020; Tuttle and Dillard, 2007) yet it fails to explain why some accounting practices come to dominate others.

Furthermore, although the accounting history literature presents numerous instances of accounting knowledge transfer between countries and organizations, it predominantly emphasizes the factors that either facilitate or hinder the adoption of a specific method (Black and Edwards, 2016; Foreman, 2001). However, these studies often overlook the rationale behind selecting one method over multiple viable alternatives. Understanding this decision-making process is crucial, as it sheds light on the reasons behind the choice of accounting practices in diverse environments.

In the case of railways, during the expansion of railways into Continental Europe in the nineteenth century, British railway accounting prevailed as the adoptive choice even though France, Germany and Scandinavia offered alternative railway accounting practices (O'Brien, 1983). The purpose of this research is to examine one of the companies that chose British railway accounting during the nineteenth century to understand why this choice was made. The significance of this historical case study is that it provides an opportunity to explore why some accounting practices remain privileged over others. Although this case study concerns adoption by an individual company, privileging practices have been evident in the historical impositions of accounting practices and remain evident in the privileging of Anglo-American accounting in international accounting standards (Rodrigues and Craig, 2007).

An historical case study is used for this research because it is easier to see a myth when temporally removed from the myth. Temporal distance makes it easier to see that something which has been accepted as natural is, in reality, a constructed myth (Barthes, 1972).

This case study concerns *Società Anonima della Strada Ferrata Leopolda* ('SASFL'), the company that built and operated Tuscany's first railway, *Ferrovia Leopolda*. This was not the first railway in Italy but, throughout the period covered by this research, Italy was divided into separately ruled regions. It was not until 1861 that these regions were unified. Also, different dialects were spoken in different regions so there was little sharing of professional knowledge. Hence, the directors of SASFL had carte blanche when choosing the accounting practices the company would adopt. SASFL was selected for this research because it operated in an almost unregulated environment. British railway companies were subject to extensive regulations on all aspects of their operations, including their accounting. Existing railway companies in Continental Europe were also regulated, though not as rigorously as the British railways (O'Brien, 1983). SASFL was incorporated in 1842 and liquidated in 1859, following a merger with another railway company. This research covers SASFL's entire life. SASFL is also of interest because it does not seem an intuitive choice for a Tuscan railway company to adopt British railway accounting: at the time, Tuscany did not have ties to Britain. British railway engineering led the field internationally (Glynn, 1984) but British railway accounting did not. It had been criticised repeatedly by the British Parliament (Monteagle Committee, 1849; O'Brien, 1983), making it an unlikely choice.

The next section describes the archival sources that underpinned this research. Then, the literature on the theorisation of myths is summarised. This research takes a Barthesian perspective of myths, which does not accord with the way myths are understood in general parlance. This is followed by a brief contextual background. Next, SASFL's adoption of British railway accounting is examined. The adoption is then discussed from a Barthesian perspective. This research finds that the directors of SASFL were influenced by a myth encapsulated by British railway development. That myth concerned modernity, industrialisation, and the importance of industrial capital, which represented progress in nineteenth-century Britain. This research concludes that it may

not always be accounting practice *per se* that an adoptee seeks to acquire, but the underlying ideological myth that practice represents.

Historical sources

Consistent with the use of an historical case study, archival research methods are used in this research. Archival research can be problematic. Archives are often incomplete, and it can be impossible to identify what is missing or find other sources for that information. What is preserved can depend on political choices and social norms about what is considered worth preserving: for instance, histories of marginalised groups can be eradicated by the failure to preserve a record of them (Miley and Read, 2016). Also, since archival space is limited, archival content can be subject to culling decisions by archivists whose view of the value of historical content may not accord with that of subsequent researchers. The quality of archival sources was considered when selecting SASFL. The plethora of information on SASFL and *Ferrovia Leopolda* allowed the triangulation of data sources to lessen information bias and enhance information reliability.

The Florentine archives of *Ferrovia Leopolda* provided primary source materials that included SASFL's constitution, articles of incorporation and by-laws, minutes from stockholders' meetings, management and auditors' reports, balance sheets, revenue accounts and information disseminated to stockholders. This archive is comprehensive and extensive because it contains an unedited record of SASFL's documents, which enhances the credibility of research into SASFL.

The State archives were used for source documents on the importance of *Ferrovia Leopolda* in Tuscan history. It contains the archives of the Grand Duchy of Tuscany, including agreements of State, edicts providing Grand Duke Leopold II's approval for the railway and documents describing how he considered the railway important for Tuscany's economic development, which was linked to his personal agenda of modernisation. Contemporaneous newspaper archives were also used for this research. They reveal the urgency with which Leopold II's agenda was promoted, as he sought to quell civil unrest through his agenda of change.

As an invention of the industrial age, railways caught the public imagination and throughout the nineteenth century many books and railway pamphlets were produced dedicated to describing developments in railway construction and operation, commenting on railway financing mechanisms and comparing different railway ventures. This information was used for background information and to compare *Ferrovia Leopolda* with other railway projects being undertaken in the mid-nineteenth century. Contemporaneous specialist railway journals and stock exchange reports were also used to determine how widely SASFL financial information was disseminated. These sources also showed the public response to SASFL's accounting information.

Finally, financial reports from British railway companies, British Parliamentary debates, and Britain's Parliamentary inquiry into its railways (Monteagle Committee, 1849) were used to understand the gap between the myth and reality of British railway accounting.

Accounting and myths

Privileging and adoption are explored using the theorisation of myths developed by Barthes (1972). He contends that when a practice is accorded mythic status, it becomes desirable and eventually supplants alternative practices. The Oxford English Dictionary defines myths as '[a] popular conception of a person or thing which exaggerates or idealizes the truth' (Simpson and Weiner, 1989). Barthes (1972) defines myths as processes and practices that have specific historical and cultural roots but are presented as if they are timeless, universal, and hence natural. He believes myths

have power as a form of communication because when people believe the myth, they cannot see that it was constructed and does not represent a timeless, universal truth. Myths are found in all forms of language and all systems (Barthes, 1972) so whether accounting is described as a language (Avery, 1953; Bloomfield, 2008) or a system (Burchell et al., 1980; Hopwood, 1987; Lawrence, 1997), it provides a framework for the development of myths.

Myths are usually associated with demonstrably false ideas that help people make sense of experiences and understand the world (Aiello, 2006; Lakoff and Johnson, 1980). Chambers (1980) claims that much of accounting is based on myths, describing adhockery, indeterminacies and polarities in many accounting practices, and contending accounting myths developed because accounting developed without recourse to critical or empirical analysis. Kaplan (1980) attributes the continuance of accounting myths to uncertainty in business environments. Boland Jr. (1982) describes accounting as a combination of myths and technology, attributing myths to competing institutional pressures. Myths occur at many levels of accounting and there is little thematic consistency in the research. Myths have developed about the historical practice of accounting (Alexander and Archer, 2000; Campbell and Turner, 2012; Nobes, 2003) but the development of myths in accounting continues. Extant research has described accounting harmonisation (Blake and Amat, 1994), accounting objectivity (Morgan, 1988), reporting neutrality (David, 2001) and academic rigour in accounting research (Yuthas and Tinker, 1994) as contemporary myths.

Myths have sometimes been interpreted as the alter ego of 'logos', or scientific and technological knowledge (Chambers, 1980). Myth, lacking empirical foundation, is often considered untrue, whereas logos represents absolute truth about reality and constitutes immutable knowledge (Rudkin, 2007).

The dichotomy between mythos and logos has been addressed by those who believe that myths and scientific thought share certain characteristics. Chambers (1980) noted that both seek to make objects of experience understandable and that scientific knowledge, being a human construct like mythology, is not necessarily true. Knowledge based on empiricism can be overturned by new scientific developments. The difference is that while myths are accepted by faith, scientific thoughts can be tested, modified, or rejected if unproven (Chambers, 1980).

The notion of myths (Table 1) as untrue is also reconsidered when it is recognized that myths are not necessarily false. They may not contradict reality and can be partially true. However, the primary importance of myths lies in their symbolic or metaphorical value rather than their truth value (Alexander and Archer, 2000; Archer, 1993).

Extant literature on the dominance of Anglo-American accounting implicitly assumes its superiority (Caramanis et al., 2015; Dedoulis, 2016; McKinnon, 1984) yet historically, British

Table 1. Definition of myth.

Author	Definition of Myth
Barthes (1972)	Processes and practices that have specific historical and cultural roots but are presented as if they are timeless, universal, and hence natural
Chambers (1980)	Propositions that are accepted (or not) as an act of faith without being self-correcting
Boland (1982)	Principles or criteria use to legitimise or judge the efficiency of an existing practice or technology
Alexander and Archer (2000)	Statements or facts that are not false, as they may not be in obvious contradiction to reality and indeed may be at least partially true, but their truth value is of little importance compared to their symbolic or metaphorical value
Rudkin (2007)	Beliefs that allow a comprehensive social and cultural understanding of reality

accounting dominated because of the power of colonial capitalists to subjugate and compel, and later, because of Britain's power in the international standard setting, and the United States imposed accounting dominance because of its economic dominance and military might (Botzem and Quack, 2009). Barthes (1972) explores how mythmaking embeds the practices that come to dominate, so alternatives can no longer be envisaged.

Rudkin (2007) describes accounting both as a protean and complex form of mythmaking. She attributes myths in accounting to the Enlightenment roots of accounting empiricism, arguing that subsequent research has failed to question the validity of these historical creations. Day (1984) explains that myths develop along a continuum, and identifies four stages of myth development: archaic, intermediate, derivative, and ideological mythmaking. Archaic myths are oral stories generally believed to be true, whether an explanation of creation or a 30-second media soundbite explaining a stock exchange movement. Intermediate myths are the written form of oral myths, whether written fairy tales or financial statements received without question by a naïve investor. Derivative myths require suspension of disbelief, even if temporary suspension, such as a moviegoer accepting a fantasy world with superheroes or the public accepting that financial markets act rationally and market failures are aberrations, because the alternative, which is that markets are chaotic, is considered unacceptable. Ideological myths are embodied in texts. It is ideological myths that interest Barthes (1972). He defines text broadly to include all written and oral communications, including visual images. He sees text as the basis of all contemporary social communication and hence, all types of communications have the potential to develop, or be captured by, myths. In accounting, ideological myths in financial statements have been the subject of detailed investigation (Davison, 2004, 2015). Rudkin (2007) contends that accounting myths are found in accounting records. Both Davison (2004) and Rudkin (2007) recognise that myths can be negative, however, ideological myths can also be beneficial, providing guidance and valuable knowledge by bringing order, meaning and stability.

For Barthes (1972), the distinguishing feature of an ideological myth is that it makes knowledge appear timeless and natural, even though that knowledge or information is actually an expression of an historically specific ideological viewpoint. He argues that many myths develop through laziness, citing the laziness of film directors who fail to do historical research and universally present ancient Romans in movies with fringes and sandals, so the public accepts this as the image of the ancient Roman despite its historical inaccuracy. Once the myth is embedded in the public consciousness, it becomes impossible for the public to perceive Romans in other ways, so the fringed and sandaled ancient Roman becomes the only possible movie presentation. Barthes (1972) also describes public acceptance of a myth as laziness because the public knows it is a myth but are willing to accept the myth because they too are lazy to challenge it.

Over time, myths became unassailable. The duplicity of myths is that they remain a fiction whilst simultaneously becoming reality because they have been accepted as such, so myths are more than delusions perpetrated by those in power: they transform cultural values. Barthes (2006) contends that even when they are not imposed by those in power, myths become a source of power by creating a discourse against which there can be no disagreement. Their power is that they persuade people to believe in them. Perhaps there has always been something inherently hegemonic about accounting that deserves further exploration since it has long been recognised that accounting communications create reality (Hines, 1988). Barthes (1972) used different terminology. He described myths as having the power to create language and those who adopt myths as merely renting that language.

The dominance of myths lulls people into forgetting that myths are socially constructed and then, the adoption of a myth silences any deviation from it. Barthes (1972) addresses the silencing of deviations when he discusses a law case involving Dominici, a peasant accused of murder. The

judges could not understand Dominici's rural dialect and labelled him as bourgeois. The judges then attributed motives to Dominici consistent with their understanding of the bourgeoisie. Barthes (1972) identified that because of this, Dominici could not receive a fair trial. The judges derived their notions of the bourgeoisie from a myth created in literature, not from empirical evidence of Dominici's behaviour. Their fixed notions about the bourgeoisie did not leave room for alternative explanations, or in the terminology of Barthes (1972), it silenced difference so the gap between Dominici's bourgeoisie reality and the myth of the bourgeoisie became invisible to them.

A limitation of the theorisation of the myth by Barthes (1972) is that all his supporting evidence concerns examples where the myth is in some way inferior to the reality it replaces: the myths he presents are always examples of negative practices and processes. Although this may appear to suggest that adopting the myth is always ill-advised because it will have negative consequences, this is not a claim that Barthes (1972) makes. He uses such examples only to make his point that adopting a myth will always lead to a change in outcomes. He makes no further claim. His theory indicates that it does not matter whether the myth would lead to a better or worse outcome: it only matters that the myth was powerful enough to be adopted because it was seen as the natural and obvious choice.

Background

In 1842, Tuscany was a Grand Duchy with an agricultural economy, ruled by Grand Duke Leopold II, a member of the royal house of Habsburg-Lorraine and related by marriage to Saxon nobility. There was considerable civil unrest, with calls for Tuscany to unify with other Italian States. To demonstrate to the public that Tuscany should continue as a Grand Duchy under his leadership, Leopold II decided upon an agenda of modernisation and building. When he was approached about approving a private joint-stock company to build and operate a railway, it was consistent with his personal agenda and so he supported the project, believing such a symbol of industrial capitalism would mark Tuscany's entry into the modern age while increasing his political credibility (Giuntini, 1991).

Ferrovia Leopolda was built to transport agricultural products and passengers between Florence and the port of Livorno (Società Anonima della Strada Ferrata Leopolda, 1841a) (Figure 1).

However, both Leopold II and SASFL's founders believed the railway would mark the start of Tuscan industrialisation (Dunnage, 2014; Lovett, 1982), bringing new economic development to the region underpinned by international investment. Leopold II also believed that if SASFL was backed by international investors, it would demonstrate that the international markets had confidence in his leadership, increasing local confidence in him and quelling public unrest (Giuntini, 1991). Thus, unlike British railways, *Ferrovia Leopolda* was not built to support existing industrialisation: it was intended to bring about industrialisation. However, without pre-existing industry along the railway line, *Ferrovia Leopolda* did not have a guaranteed revenue base so, unlike early British railways, this was a high-risk project.

SASFL was established with 30,000 shares of 1,000 lire each (Società Anonima della Strada Ferrata Leopolda, 1841b). These were sold in Tuscany and Western Europe, with major European banks acting on behalf of SASFL. SASFL's shares were bought by Italian bankers and medium to large investors in France and Germany (Landi, 1974). This differed from the shareholder mix of British railway companies, which was primarily small to medium British investors with businesses located near the railway line in which they were investing and who would use the railway line as their main form of transport for raw materials and finished goods (Odlyzko, 2011).

Figure 1. The Leopolda Railroad Line.
Source: Raccolta della documentazione, pubblica e privata, dei granduchi lorenesi giunta in Boemia al seguito di Leopoldo II, partito precipitosamente da Firenze la mattina del 27 aprile del 1859.

SASFL's founders hired British railway engineer Robert Stephenson to prepare a feasibility study and supervise the construction of the railway. Bringing Stephenson into the project was considered a coup because of his family's reputation in railway construction: the Stephenson name was associated with high-quality railway construction (Lewis, 2015; Macpherson, 1955). His father, George, was responsible for Britain's first locomotive and had extensive experience constructing British railways, including the Stockton and Darlington Railway (opened in 1825), the Liverpool and Manchester Railway (1830) and the London and Birmingham Railway (1833). These railways have been studied in accounting history (Arnold and McCartney, 2005; Glynn, 1984), transport history (Cottrell and Ottley, 1975; Jarvis, 1998), economic history (Bythell, 1996; Pollins, 1952, 1954) and industrial archaeology (Fawcett, 2015; Wild, 2018). After assisting his father with early British railway projects, Robert Stephenson became more interested in developing railways outside Britain. Aided by two British civil engineers, William Hoppner and William Bray, he constructed railways in the United States, Belgium, France, Poland and Egypt (Jeaffreson, 1866).

Stephenson was employed to give confidence to potential investors and the public that the project would succeed (Rolt, 1960). Histories of *Ferrovia Leopolda* describe the importance of Stephenson's personal assurances of project success (Bellinazzi and Giuntini, 1998; Landi, 1974). Railways had fired the public imagination in Britain, causing a speculative frenzy in British railway investment (Bryer, 1991). SASFL's founders hoped there would be similar enthusiasm for *Ferrovia Leopolda* (Società Anonima della Strada Ferrata Leopolda, 1841a).

The plan was to develop the 97-km railway line in four stages: Livorno to Pisa, Pisa to Pontedera, Pontedera to Empoli and Empoli to Florence. Each stage was costed separately and would become operational when completed, with Stephenson, Hoppner and Bray receiving bonuses for each completed section (Robert Stephenson & Co Ltd, 1842–56). Warner (1985) states that industrial modernisation always expands employment opportunities. This did not occur in Tuscany: new industries did not spring up and the railway line ran through agricultural areas of peasant farmers with insufficient disposable income to invest in a railway venture (Stuart, 1876). Thus, SASFL was heavily dependent on foreign equity capital (Federico and Tena-Junguito, 2014). French and German railways also ran through agricultural areas, but they received government funding either as equity or debt capital and ongoing government subsidies so were not as dependent on revenue (O'Brien, 1983).

Despite these issues, as soon as the first section opened for passengers and freight, it proved financially successful, generating enthusiasm for the other sections to be completed ahead of schedule and for the addition of a second track (Bellinazzi and Giuntini, 1998) (Table 2). As Table 2 shows, the line was completed in 1848 with an increase in the number of passengers and total revenues. However, not everyone supported the railway. The inhabitants of Montelupo Fiorentino, who made their living transporting goods between Livorno and Florence by river-barge, were concerned about the loss of livelihood to the railway, protesting unsuccessfully to block the completion of the track (Stuart, 1876).

Table 2. SASFL operating data 1844–1859.

Year	Kilometres of track opened	Number of passengers (daily average)	Freight (lire)	Total revenue (lire)	Net profit (lire)
1844	12.0	1861	–	–	–
1845	31.4	1721	–	33,770	–
1846	31.4	1772	–	–	252,720
1847	58.2	2147	–	–	–
1848	97.0	2576	–	950,227	428,689
1849	97.0	2753	–	1,480,205	749,747
1850	97.0	2559	82,046	1,803,625	973,455
1851	97.0	2495	119,226	2,074,828	1,178,772
1852	97.0	2420	122,182	2,314,577	1,425,223
1853	97.0	2505	147,454	2,299,524	1,398,607
1854	97.0	2185	175,987	2,784,735	1,573,638
1855	97.0	2072	180,951	2,438,730	1,181,241
1856	97.0	2385	181,640	2,354,054	1,354,250
1857	97.0	2515	219,384	2,794,848	1,798,046
1858	97.0	2450	237,575	2,921,229	1,914,542
1859	97.0	2638	244,359	–	–

Source: Landi (1974), Società Anonima della Strada Ferrata Leopolda (1851, 1852, 1853, 1854, 1855, 1856b, 1858).
Note: Net profit does not include depreciation or maintenance expense.

The company maintained a well-structured organisation since its inception. It was governed by a board of directors consisting of seven members (Società Anonima della Strada Ferrata Leopolda, 1841b). These directors were chosen from among shareholders who owned at least 30 shares, ensuring competent management of the company (Article 56; Società Anonima della Strada Ferrata Leopolda, 1841b). Board members were required to reside in Florence and served for one year following the subsequent shareholders' meeting (Articles 57 and 58; Società Anonima della Strada Ferrata Leopolda, 1841b). The board of directors was responsible for appointing three managers: a director, a cashier, and an agent (Società Anonima della Strada Ferrata Leopolda, 1841b). Notably, the director was the executor of all company business and had to attend every board meeting. The director's term lasted three years (Table 3).

British influence was evident in all areas of *Ferrovia Leopolda*. Apart from Stephenson's leadership of the railway building project, the railway tracks and rolling stock came from Britain. British engine drivers were employed to train Italian engine drivers, though Italian clerks were employed to manage daily administration and to keep the accounts (Giuntini, 1991). SASFL's first managing directors were Bray and then Hoppner, the British civil engineers who aided Stephenson. Neither had previous railway management experience. The other directors were Italian bankers with an investment interest in SASFL, but they too had no previous railway management experience, although some had management experience in other business areas.

Historical accounting research suggests a specific form of railway accounting was first developed in Britain (Glynn, 1984; Reed, 1975). By the 1840s, distinct railway accounting systems had emerged in Western Europe, including French, German, and Scandinavian models, while other systems had developed in Eastern Europe and beyond. This gave SASFL's directors a range of existing models to choose from or the option to create a unique Tuscan accounting system, as railway companies typically adapted accounting practices to suit their specific needs. So, by adopting British railway accounting without adapting it to align with existing Tuscan accounting practices, SASFL was unusual.

Accounting for *Ferrovia Leopolda*

Although *Ferrovia Leopolda* looked like a British railway transplanted to Tuscany, it was not regulated like a British railway. British railways were subject to a plethora of legislation. Although there was no standard form for British railway accounts until 1868, the *Railway Regulation Act (UK) 1844* and the *Companies Clauses Consolidation Act (UK) 1845* contained detailed accounting requirements (Glynn, 1984). Between 1845 and 1847, the British Parliament passed 330 Acts of Parliament pertaining to railways. Also, British railways were subject to ongoing Parliamentary scrutiny. In 1849, a British Parliamentary inquiry into railway accounting criticised the poor quality of railway accounts and the use of profit-lowering techniques to avoid dividend payments (Monteagle Committee, 1849). The inquiry led to further legislative control of railway financial reporting and mandatory annual audits of railway accounts (Campbell and Turner, 2012; Lord Brougham, 1849; Lord Monteagle, 1849; O'Brien, 1983). By contrast, Tuscany's railway was virtually unregulated. Napoleonic decrees on trade were in force in Tuscany, supplemented by corporate, contract and bankruptcy laws based on legal systems elsewhere in Europe, including French and British precedent (Grand Duke of Tuscany, 1844). Tuscan law required companies to keep journals and make an annual count of inventory, but they were not required to provide financial statements, nor was there any other accounting regulation.

SASFL adopted British railway accounting without discussion by the Board of Directors. Alternative forms of railway accounting were not considered, even though a French accounting

Table 3. Members of the board of directors and managers.

Year	Members of the board of directors	Managers
1844	Pasquale Benini, Felice Vasse, Graziano Senigaglia, Pietro Grilli, Francesco Leoni, Giuseppe Martelli, Orazio Fenzi	
1845	Pasquale Benini, Felice Vasse, Pietro Grilli, Orazio Fenzi, Paolo Viesseux, Vincenzo Peruzzi, Luigi Siccoli	
1846	Pasquale Benini, Luigi Siccoli, Felice Vasse, Orazio Fenzi, Pietro Grilli, Paolo Viesseux, Vincenzo Peruzzi	
1847	Felice Vasse, Luigi Siccoli, Pasquale Benini, Orazio Fenzi, Pietro Grilli, Pietro Wagniere, Cristiano Heinzmann	
1848	Pasquale Benini, Luigi Siccoli, Felice Vasse, Orazio Fenzi, Pietro Wagniere, Cristiano Heinzmann, Gustavo Mejean	
1849	Luigi Siccoli, Giacomo Levi, Pietro Wagniere, Cristiano Heinzmann, Francesco Giustiniani, Orazio Fenzi, Pasquale Benini	
1850	Carlo Schmitz, Tommaso Mangani, Francesco Giustiniani, Giacomo Levi, Abramo Philipson, Luigi Dufresne, Giovanni Pappudor	William Hoppner, Giovanni Schmitz, Giacomo Senn
1851	Carlo Schmitz, Tommaso Mangani, Giacomo Levi, Abramo Philipson, Giovanni Pappudor, Alberto Ziegler, Luigi Dufresne	William Hoppner, Giovanni Schmitz, Finzi Morelli
1852	Giacomo Levi, Tommaso Mangani, Ubaldino Peruzzi, Giovanni Pappudor, Alberto Ziegler, Abramo Philipson	William Hoppner, Luigi Casamorata, Giacomo Senn
1853	Giacomo Levi, Tommaso Mangani, Giorgio Maurogordato, Alberto Ziegler, Abramo Philipson, Sebastiano Fenzi, Carlo Schimitz	Ubaldino Peruzzi, Luigi Casamorata, Coppi Pietro Igino
1854	Carlo Schmitz, Tommaso Mangani, Giacomo Levi, Giorgio Maurogordato, Alberto Ziegier, Sebastiano Fenzi, Abramo Philipson	Ubaldino Peruzzi, Luigi Casamorata, Coppi Pietro Igino
1855	Carlo Schmitz, Tommaso Mangani, Giacomo Levi, Giorgio Maurogordato, Alberto Ziegier, Sebastiano Fenzi, Abramo Philipson	Ubaldino Peruzzi, Luigi Casamorata, Coppi Pietro Igino
1856	Carlo Schmitz, Tommaso Mangani, Giacomo Levi, Giorgio Maurogordato, Alberto Ziegier, Sebastiano Fenzi, Abramo Philipson	Ubaldino Peruzzi, Luigi Casamorata, Coppi Pietro Igino
1857	Carlo Schmitz, Tommaso Mangani, Giacomo Levi, Giorgio Maurogordato, Alberto Ziegier, Sebastiano Fenzi, Abramo Philipson	Ubaldino Peruzzi, Luigi Casamorata, Coppi Pietro Igino
1858	Carlo Schmitz, Tommaso Mangani, Salvatore Disegni, Giorgio Maurogordato, Alberto Ziegier, Sebastiano Fenzi, Abramo Philipson	Ubaldino Peruzzi, Luigi Casamorata, Coppi Pietro Igino

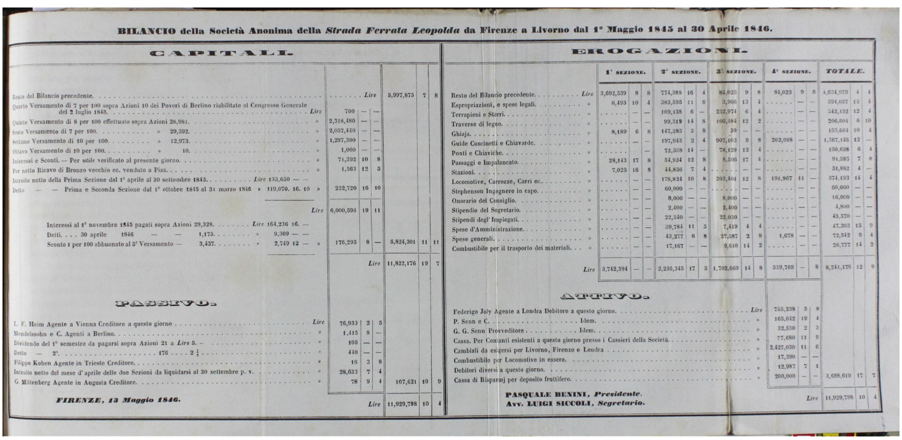
Sources: Società Anonima della Strada Ferrata Leopolda (1846, 1848, 1849, 1850, 1851, 1852, 1853, 1854, 1855, 1856b, 1858).

textbook containing information on accounting for railway fares, shares and reserve funds, and the role of a railway company's board of directors was translated into Italian and widely distributed so many Italian accountants were familiar with French railway accounting practices (Coronella, 2014; Perdonnet and Polonceau, 1850). Bray and Hoppner, though British, were not accountants so were unqualified to comment on the suitability of British railway accounting practices for Tuscany and the Italian bankers with accounting experience were unfamiliar with British accounting practices.

Although there were no state regulations mandating specific disclosure duties for SASFL, internal rules required the company to present and audit its financial information (Società Anonima della Strada Ferrata Leopolda, 1841b). The SASFL Statute (Articles 99–107) includes a section dedicated to the publication and auditing of financial statements. According to article 102, SASFL was required to publish its financial statements annually in the Gazette of Florence. Additionally, article 103 mandated that the financial statements be sent to the audit committee along with all necessary documents for verification (Società Anonima della Strada Ferrata Leopolda, 1841b).

Investors expected a higher return on investment from Continental European railways than from British railways. O'Brien (1983) states this was because they were riskier. It may also have been that Continental European railways had a significant proportion of large shareholders with more sophisticated investment strategies than British railways companies. SASFL used its accounting disclosures to demonstrate that *Ferrovia Leopolda* was a sound investment choice, publishing its financial information in railway journals and newspapers in Germany, Britain, and France, and translating its financial information into all three languages (Landi, 1974). Like British railway companies, SASFL provided a balance sheet with separate sections for capital, disbursements on non-current assets, expenses, liabilities, and current assets (Figure 2).

Contributed capital and revenue were shown as increases to equity, with dividends and interest paid to investors shown as equity deductions. Shareholders received a copy of the financial statements, an audit report, a letter from SASFL's board of directors and a report from SASFL's managing director. The letter commented on the board's harmonious working relationship, gave an update on new railway works and described key decisions made by the board of directors. The reports explained key management decisions, gave further details about items in the financial statements, explained any audit comments and provided information about SASFL's operating efficiency that included average costs per kilometre of railway line, a detailed break-down of passenger and freight revenues, details of freight hauled, and the average length of passenger journeys (Landi, 1974). There were also comparisons between SASFL's financial performance and the performance of British railway companies (Società Anonima della Strada Ferrata Leopolda, 1851, 1852, 1853, 1854, 1855, 1856b, 1857, 1858).


BILANCIO della Società Anonima della *Strada Ferrata Leopolda* da Firenze a Livorno dal 1° Maggio 1845 al 30 Aprile 1846.

CAPITALI.

Resto del Bilancio precedente. . . . . Lire				5,997,875	7	8
Quarto Versamento di 7 per 100 sopra Azioni 10 dei Poveri di Berlino riabilitate al Congresso Generale del 2 luglio 1845. . . . Lire	700	—	—			
Quinto Versamento di 8 per 100 effettuato sopra Azioni 28,981. . . . »	2,318,480	—	—			
Sesto Versamento di 7 per 100. . . . » 29,392. . . . »	2,057,440	—	—			
Settimo Versamento di 10 per 100. . . . » 12,973. . . . »	1,297,300	—	—			
Ottavo Versamento di 10 per 100. . . . » 10. . . . »	1,000	—	—			
Interessi e Sconti. — Per *utile* verificato al presente giorno. . . . »	71,392	10	8			
Per netto Ricavo di Bronzo vecchio ec. venduto a Pisa. . . . »	1,563	12	5			
Introito netto della Prima Sezione dal 1° aprile al 30 settembre 1845. . . . *Lire* 133,650 — —						
Detto — — Prima e Seconda Sezione dal 1° ottobre 1845 al 31 marzo 1846 » 119,070. 16. 10 »	252,720	16	10			
Lire	6,000,596	19	11			
Interessi al 1° novembre 1845 pagati sopra Azioni 29,328. . . . *Lire* 164,236 16. —						
Detti. . . . 30 aprile 1846 — — 1,175. . . . » 9,309 — —						
Sconto 1 per 100 abbuonato al 5° Versamento — 3,437. . . . » 2,749 12 — »	176,295	8	—	5,824,301	11	11
Lire				11,822,176	19	7

PASSIVO.

L. F. Heim Agente a Vienna Creditore a questo giorno . . . . *Lire*	76,933	2	5			
Mendelssohn e C. Agenti a Berlino. . . . »	1,415	8	—			
Dividendo del 1° semestre da pagarsi sopra Azioni 21 a *Lire* 5. — . . . . »	105	—	—			
Detto — 2°. . . . 176 . . . . 2 ½ . . . . »	440	—	—			
Filippo Kohen Agente in Trieste Creditore. . . . »	16	3	8			
Introito netto del mese d'aprile delle due Sezioni da liquidarsi al 30 settembre p. v. . . . »	28,633	7	4			
G. Miltenberg Agente in Augusta Creditore. . . . »	78	9	4	107,621	10	9
FIRENZE, 13 Maggio 1846. *Lire*				11,929,798	10	4

EROGAZIONI.

	1ª sezione.			2ª sezione.			3ª sezione.			4ª sezione.			*TOTALE.*		
Resto del Bilancio precedente. . . . *Lire*	3,692,339	8	8	774,388	16	4	84,025	9	8	84,025	9	8	4,634,979	4	4
Espropriazioni, e spese legali. . . . »	6,495	10	4	383,595	11	8	3,966	13	4	. . . .	—	—	394,057	15	4
Terrapieni e Sterri. . . . »	. . . .	—	—	109,158	6	—	232,974	6	4	. . . .	—	—	342,132	12	4
Traverse di legno. . . . »	. . . .	—	—	99,519	14	8	106,484	12	2	. . . .	—	—	206,004	6	10
Ghiaja. . . . »	8,189	6	8	147,385	3	8	30	—	—	. . . .	—	—	155,604	10	4
Guide Cuscinetti e Chiavarde. . . . »	. . . .	—	—	197,945	2	4	907,103	9	8	262,098	—	—	1,367,146	12	—
Ponti e Chiaviche. . . . »	. . . .		—	72,568	14	—	78,129	12	4	. . . .	—	—	150,698	6	4
Passaggi e Impalancato. . . . »	28,143	17	8	54,934	12	8	8,506	17	4	. . . .	—	—	91,585	7	8
Stazioni. . . . »	7,025	16	8	44,856	7	4	. . . .	—	—	. . . .	—	—	51,882	4	—
Locomotive, Carrozze, Carri ec.. . . . »	. . . .	—	—	178,824	10	8	203,401	12	8	191,967	11	—	574,193	14	4
Stephenson Ingegnere in capo. . . . »	. . . .	—	—	60,000	—	—	. . . .	—	—	. . . .	—	—	60,000	—	—
Onorario del Consiglio. . . . »	. . . .	—	—	8,000	—	—	8,000	—	—	. . . .	—	—	16,000	—	—
Stipendio del Segretario. . . . »	. . . .	—	—	2,400	—	—	2,400	—	—	. . . .	—	—	4,800	—	—
Stipendi degl' Impiegati. . . . »	. . . .	—	—	22,540	—	—	23,030	—	—	. . . .	—	—	45,570	—	—
Spese d'Amministrazione. . . . »	. . . .	—	—	39,784	11	5	7,419	4	4	. . . .	—	—	47,203	15	9
Spese generali. . . . »	. . . .	—	—	43,277	6	8	27,587	2	8	1,678	—	—	72,542	9	4
Combustibile per il trasporto dei materiali. . . »	. . . .	—	—	17,167	—	—	9,610	14	2	. . . .	—	—	26,777	14	2
Lire	3,742,394	—	—	2,236,345	17	5	1,702,669	14	8	539,769	—	8	8,241,178	12	9

ATTIVO.

Federigo Joly Agente a Londra Debitore a questo giorno. . . . *Lire*	755,338	5	8			
P. Senn e C. . . . . Idem. . . . »	165,642	19	4			
G. G. Senn Provveditore . . . . Idem. . . . »	32,550	2	3			
Cassa. Per Contanti esistenti a questo giorno presso i Cassieri della Società. . . . »	77,680	11	9			
Cambiali da esigersi per Livorno, Firenze e Londra . . . . »	2,427,030	11	6			
Combustibile per Locomotive in essere. . . . »	17,390	—	—			
Debitori diversi a questo giorno. . . . »	12,987	7	1			
Cassa di Risparmj per deposito fruttifero. . . . »	200,000	—	—	3,688,619	17	7
PASQUALE BENINI, ***Presidente.*** **Avv. LUIGI SICCOLI,** ***Segretario.*** *Lire*				11,929,798	10	4

Figure 2. Balance sheet.
Source: Società Anonima della Strada Ferrata Leopolda (1846).

Despite making extensive financial disclosures, SASFL was continually criticised for its lack of accounting disclosures, yet by following the accounting disclosure requirements imposed on British railway companies, SASFL's disclosures exceeded those of French and German railway companies, so these criticisms seem unfair. Italian stockholders complained of accounting manipulations intended to cause speculation in the secondary market for SASFL shares (Bernardello, 2015). The following criticisms are typical of the complaints made (translated by authors):

> What is missing … is the belief that Leopolda is a good way to invest one's funds. The managers should try to make this known to everyone by publishing frequent, clear [accounting] information. (Altre notizie sulle strade ferrate in Toscana (More news on railways in Tuscany), 1846: 202)

> One cannot form any opinion on the subject [of the company's performance] … all those details that are essential to properly judge the performance of an operating railway are missing (Ultime notizie intorno alle strade ferrate in Toscana. ((Latest news around the railway tracks in Tuscany), 1847: 109)

> We would like the directors to disclose a report with detailed information about the flows as can be found in the annual reports of any well-organized railway company, as this is the only way one that the company's performance can be properly judged. (Strade ferrate in Toscana (Railways in Tuscany), 1847: 236)

The criticisms by *Der Acktionär,* which was the official gazette of the Frankfurt Stock Exchange, are typical of the reactions of analysts to SASFL's financial disclosures. In March 1855, it described SASFL's financial reports as distorted and dangerous. It criticized SASFL for lack of financial transparency, called on SASFL's shareholders to become more proactive at the annual meeting, and advised shareholders to demand the appointment of a trusted managing director. It claimed SASFL's revenue information was false and advised SASFL to borrow money rather than retain profits, to encourage cost control. SASFL's response to these criticisms was to send a copy of the articles in *Der Acktionär* to each of its German shareholders together with a copy of the proceedings of its annual general meetings supplemented by tables with passenger and freight data (Società Anonima della Strada Ferrata Leopolda, 1856a). This did not stop the criticisms.

Reading the criticisms over the entire period of *Ferrovia Leopolda's* operations, the recurring themes are that international investors did not trust accounting information from a company whose managing directors had no managerial experience and they did not believe it was possible to operate a railway without a high level of debt finance. The latter criticism may reflect the shareholder mix. French and German investors were accustomed to railways being leveraged with the State as the primary creditor. French and German railways were funded by State loans and subject to extensive State control. By contrast, British railways were funded with a mixture of private debt and equity but operated in an environment subject to extensive scrutiny by the State and detailed legislative control (Reed, 1975). In Britain, France, and Germany, the first concern of government was to protect shareholder interests, but different strategies were used to do this: no such protections were in place in Tuscany. Between 1842 and 1859, the quality of British railway accounting remained poor but did improve in response to legislative intervention following public criticism. However, no such intervention occurred in Tuscany.

The inadequacy of the directors' knowledge is most evident in their management of the two largest expenses for any railway company: asset maintenance and asset replacement. Under British railway accounting, amounts for asset replacement and maintenance were subtracted before calculating profit. This led to Parliamentary concerns in Britain that investors would never receive a return on their investment, but it meant that British railways were able to manage their cash flows. Initially, SASFL's directors did not provide for maintenance or asset

replacement. Table 4 shows maintenance costs between 1842 and 1854 and includes the cost for the maintenance for the railway lines, rolling stock and engines.

SASFL's directors believed that without providing for maintenance and asset replacement, they could give investors a quick return on investment, which would foster further investment in SASFL (O'Brien, 1983). This led to higher short-term profits but caused the company longer-term cash flow problems. To address this issue, in 1853 the directors proposed a reserve fund that would have a transfer of 5 per cent of the annual profit to cover extraordinary expenditures and non-current asset replacement. By failing to establish the reserve at incorporation, the directors had to seek shareholder approval for the change. SASFL's minutes show that the directors did not expect shareholder opposition when this plan was raised at the annual general meeting. However, shareholders were concerned that the reserve transfer would lower dividends. The directors had failed to consider that since the majority of SASFL's shareholders were large speculative French and German investors, their primary interest was in a short-term return rather than supporting the company's long-term survival and growth.

Although a resolution was passed at the annual general meeting to establish an asset replacement fund, the amount proposed by the directors was rejected. They then proposed to transfer 7,868 lire per annum to the fund and describe it as a depreciation charge on rolling stock (Società Anonima della Strada Ferrata Leopolda, 1853). Using the cost price of rolling stock of 34,000,000 lire, and the same useful life of 100 years for rolling stock that British railway companies used, an annual transfer of 340,000 lire was required for rolling stock alone. This amount ignores the replacement of other non-current assets. Thus, the amount proposed by the directors would not have sufficed. During subsequent discussion about the size of the asset replacement reserve, the directors revised their proposal, suggesting a transfer of 1 per cent of profit, but capping the annual transfer to the reserve at 250,000 lire. An Italian banker who had been a founder of SASFL mentioned at the annual general meeting that this amount would be inadequate, but he was ignored. In 1854, shareholders approved an annual transfer of 0.5 per cent of profit with each annual transfer capped at 90,000 lire (Società Anonima della Strada Ferrata Leopolda, 1854). This decision ensured SASFL could not be financially viable in the long term. Table 5 shows actual amounts transferred into the asset replacement reserve each year, end-of-year cumulative balances and the expected cumulative shortfall in the fund, assuming it was only used to replace rolling stock. The financial accounts do not have the specificity to determine asset values for other depreciable assets.

The issue of allocating replacement and maintenance costs for fixed assets was common among railroad companies outside of Europe as well. The debate on the accounting treatment of

Table 4. Maintenance costs in lire, 1842–1854.

Year	Railway lines	Rolling stock	Engines	Total
1842	3490		8210	11,700
1846	20,890		13,932	34,822
1848	65,823	26,670	63,809	156,302
1849	87,630	37,156	83,496	208,282
1850	13,200	15,860	2220	31,280
1851	13,600	13,870	2280	29,750
1852	10,440	12,430	3770	26,640
1853	262,583	256,986	73,257	592,826
1854	333,767	471,441	86,221	891,429

Source: Società Anonima Strada Ferrata Leopolda (1842, 1846, 1848, 1849, 1850, 1851, 1852, 1853, 1854).

depreciation became crucial for achieving accounting harmonization (Heier, 2006). Similar to SASFL, the American railroad industry opposed depreciation accounting, believing that this practice could negatively impact the balance of return on assets ratios (Heier, 2006).

British railway companies were avoiding dividend payments as part of a strategy of long-term survival and growth. There is no evidence in the minutes that SASFL's directors considered this strategy: they believed SASFL would only be an attractive investment if investors received a return from the date of investment (Rolt, 1960). Hence, the capital structure of SASFL was unlike that of British railway companies. British railway companies did not give a return on investment until the company became profitable, carefully defining that term in a way that caused concerns in the British Parliament that British railway companies were manipulating profit to avoid paying dividends (Glynn, 1984). The profit manipulations of Britain's railway companies helped them become large and profitable: SASFL's strategy treated shares like debt instruments and ensured SASFL could not remain financially viable in the long term. SASFL investors received a 4 per cent return on investment from the date of their share purchase. The Articles of Association stated that it would be converted to a bi-annual preference dividend payment once SASFL became fully operational, not when it became profitable (Società Anonima della Strada Ferrata Leopolda, 1841b). Thus, the dividend was also due when the company made a loss (Società Anonima della Strada Ferrata Leopolda, 1841a).

In 1849, SASFL sought to ease its cash problems by issuing a 10-year bond with a face value of 1,200,000 lire. By 1854, bond payments were in arrears and SASFL had unpaid dividends of 690,000 lire (Società Anonima della Strada Ferrata Leopolda, 1854). Shareholders voted to forgo one-third of their dividend payments and accept vouchers for additional shares in lieu of that payment (Società Anonima della Strada Ferrata Leopolda, 1854). The additional shares were never forthcoming and the unpaid dividends continued to accumulate annually (Società Anonima della Strada Ferrata Leopolda, 1858).

SASFL's Articles of Association stated that its financial information would be published annually in the official gazette of the Grand Duchy, called *Gazzetta di Toscana* from 1841 to 1848 and *Monitore Toscano* from 1849 to 1858 (Società Anonima della Strada Ferrata Leopolda, 1841b). Publication would demonstrate the success of the railway project to investors and serve Leopold II's political agenda by highlighting a result from his modernisation program. This made SASFL a political symbol. Since gazettal was equivalent to a declaration by the State that the accounting numbers were correct, SASFL's accounting numbers were audited prior to publication. At the time, audits were unusual and would not otherwise have been required for SASFL (Antonelli

Table 5. Estimated shortfall in asset replacement fund.

Year	Amount in lire required to be transferred (assuming straight line depreciation of non-current assets and a useful life of 100 years)	Annual in lire amount transferred into reserve	Closing balance in lire of the asset replacement reserve	Shortfall in asset replacement fund balance
1854	340,000	7868	6225	333,775
1855	340,000	15,882	23,750	650,025
1856	340,000	6771	30,521	959,504
1857	340,000	8990	39,511	1,259,993
1858	340,000	9573	49,084	1,550,909

Source: Società Anonima Strada Ferrata Leopolda (1854, 1855, 1856b, 1857, 1858).

et al., 2017). These audits demonstrated the accuracy of the accounting numbers, but audits do not ensure managerial effectiveness.

Table 6 shows the comparison between the SASFL and British railroad in terms of accounting practices, corporate governance, and socio-economic context.

SASFL's adoption of British railway accounting failed to consider the social, economic, political, and cultural context in which the railway operated. It failed to consider the dividend and information expectations of its investors, particularly its many French and German shareholders. The following section brings a Barthesian theory of mythmaking to a discussion of SASFL's privileging of British railway accounting.

Discussion

O'Brien (1983) states that in nineteenth-century Europe, British railways represented the gold standard in railway technology and that there was a myth of British railway excellence that covered all aspects of British railway technology, including railway accounting. To be historically correct, it is inaccurate to use the term *technology* in the context of mid-eighteenth-century accounting because accounting was not described as a technology until 1876 (Carnegie and Parker, 1996). As Schatzberg (2006: 486) explains:

> before this time, issues that historians now discuss in terms of technology were framed in such terms as '"useful arts"', '"manufacturing"', '"industry"', '"invention"', '"applied science"', and '"the machine"'. In other words, when historians now address "attitudes toward technology" before 1930, they are employing an analyst's category not used by the historical actors themselves.

Odlyzko (2011) avoids the contentious term *technology* but argues that the perception of British railway excellence extended to British railway accounting, and this seems to be supported by the approach of SASFL's directors, who chose British railway accounting as part of a package for establishing a railway company in Tuscany that replicated a British railway company.

Table 6. Comparison between SASFL and the British railroad.

Pivotal aspects	Tuscan case	English case
Political and economic context	Lack of State regulation for the managing the railwayand the railroad accounting system	Each line had to be authorized by a Parliament act, Railway Regulation Act (1844) and Railway Clauses Consolidation Act (1845)
Corporate governance	Board of directors consist of seven members, managers, audit committee	Board of directors, auditors
Major companies	Società anonima della strada ferrata Leopolda	Stockton and Darlington Railway, Liverpool and Manchester Railway, London and Birmingham Railway
Financial reporting practices	Double account system based on splitting the conventional balance sheet into two sections: Capital account for the investment for fixed assets and a general balance sheet.	Double account system based on splitting the conventional balance sheet into two sections: Capital account for the investment for fixed assets and a general balance sheet. Firstly a cash basis account system and then progressively accrual-based account system

Note: SASFL = Società Anonima della Strada Ferrata Leopolda.

Prior to Odlyzko (2011), Arnold and McCartney (2003) argued that any notion of British railway excellence was confined to its engineering and could not be extended to its accounting practices. They examined railway accounts to demonstrate that any notion of British railway excellence was a myth since it was based on profit manipulations that disadvantaged shareholders and used creative accounting ruses to avoid audit detection of its many fraudulent practices. However, accounting excellence may be a matter of perspective: from the perspective of ensuring long-term survival and growth, British railway accounting did an excellent job, but from the perspective of owners seeking a return on investment, it was problematic.

Apart from the evidence presented by Arnold and McCartney (2003), there is ample evidence elsewhere indicating that the accounting practices of nineteenth-century British railways were widely known to be manipulative and possibly fraudulent. In the House of Lords, Lord Brougham (1849) described Britain's railway companies as 'public nuisances' and their accounting as 'ruining the country' (1031) and something that should 'fill every reflecting man with no slight, nay, with most serious apprehensions'. A Parliamentary inquiry into the problems with Britain's railways could not find one positive thing to say about Britain's railway accounting practices (Monteagle Committee, 1849) and railway journals devoted special issues to this topic. Although the historical archive does not address whether SASFL's directors knew about the 'scandals of British railway accounting' (Lord Brougham, 1849), since SASFL's founder-directors investigated British railways prior to settling on them as the model for SASFL, and then travelled to Britain to conduct negotiations with Robert Stephenson, it is difficult to imagine they were unaware that the accounting practices of British railways had received adverse press. Barthes (1972) suggests that when a questionable practice is adopted, it usually indicates that the practice supports a myth: the strength of the myth outweighs, obfuscates, or hides issues with the practice.

The myth that was supported by British railway accounting, and which led to its adoption by SASFL, is not the myth of British railway excellence mentioned by Arnold and McCartney (2003), who use the term *myth* to describe an untruth. Their concern is that it is untrue that British railway accounting was of excellent quality. Barthes (1972) uses the term myth in a different way. To him, the myth is the ideology underpinned by the practice so it is irrelevant whether British railway accounting is of high quality or not: what matters is what values are symbolised by adopting British railway accounting. Barthes (1972) states that myths become entrenched because they reflect an underlying ideology or value set, so it is the underlying ideology or value set, and what it represents, that becomes desirable and which others seek to adopt. By adopting the practices that symbolise a certain desirable ideology or value set, adoptees believe they gain the underlying ideology or value set.

The myth of the British railway determined the transfer of the British accounting system to SASFL as a form of accounting innovation. It has been noted that accounting innovation is often bolstered by the introduction of new technology (Collier, 2012). In the case of SASFL, the process of British mythmaking, stemming from the fascination with technological innovations like the construction of the railroad, encompassed all aspects of the railroad apparatus, including accounting practices. Specifically, the technological advancements in railways enabled SASFL to adopt British accounting practices as 'new' informal accounting rules. Although not formally established as accounting guidelines, British accounting standards became institutionalised and integrated into routine organisational practices (Burns and Scapens, 2000; Johansson and Siverbo, 2009).

Most notably, like British railway companies, the SASFL adopted the double account system for recording their financial statements, which involves splitting the conventional balance sheet into the capital account—recording all investments in fixed assets—and the general balance sheet (Edwards, 1985; McCartney and Arnold, 2002, 2008).

According to Foreman (2001), various factors enable technology transfer between organisations, with social and cultural influences being particularly significant. In this context, technology encompasses not only products and processes but also a broad spectrum of knowledge, including management technologies such as accounting systems and procedures (Grosse, 1996; Samkin, 2010). Additionally, crises like wars can exert substantial pressure to alter accounting practices (Djatej and Sarikas, 2009). Individuals migrating between countries or organisations are crucial in promoting technological innovation and transferring soft technologies like accounting (Carnegie and Parker, 1996; Grosse, 1996). These individuals act as key agents in the knowledge transfer process, thereby enhancing and accelerating innovation (Black and Edwards, 2016; Foreman, 2001).

In SASFL's case, the involvement of Robert Stephenson and English engineers Hoppner and Townshend was vital in ensuring effective technology transfer and innovation. Stephenson brought extensive experience from his previous roles in the London and Manchester Railway and as chief engineer of the London and Birmingham Railway, where he also honed his skills as a railway manager.

In this case, instead of considering accounting as a mere technology embracing a positivistic approach, we consider accounting as a form of myth making (Rudkin, 2007). In this respect, accounting goes beyond technical aspects.

The ideology concerned modernity, industrialisation and the importance of industrial capital, which were the hallmarks of nineteenth-century British progress that Leopold II wanted to bring to Tuscany. Faith (1990) contends that the railway had a greater impact than any other mechanical or industrial invention. Aguiar (2011) describes railways as the mechanism for, and the main symbol of, modernity. The railway transformed British cultural understandings, making it an industrial nation (Carter, 2001) and opening investment opportunities so that the move to industrial capitalism became both feasible and desired by the British public (Taylor, 2014). The more 'British' *Ferrovia Leopolda* seemed, the more strongly it could align with the myth of modernity, industrialisation and the importance of industrial capital, creating a fiction that Tuscany had entered a similar age. The myth represented everything Leopold II planned for Tuscany, albeit motivated by his own political survival. It positioned investment in SASFL as an opportunity to be part of Tuscany's impending industrial progress, which was presented as inevitable (Landi, 1974). Stephenson, Hoppner, and Bray did not merely construct a railway in Tuscany: they constructed a dream underpinned by a myth of modernity and industrialisation. British railway accounting reflected and supported that myth.

Myths need not reflect reality to become accepted as natural and to be adopted. Extant research has questioned whether railways are an appropriate symbol for British industrialisation and the progress of capitalism (Delacroix and Nielsen, 2001; Tuathail, 1992). From a Barthesian perspective, neither the myth nor what it purports to symbolise need to be true. All that matters is that the myth is accepted as natural by those who adopt its associated practices.

The power of an adopted myth raises a concept of control that has not previously been explored in accounting. Extant accounting research has focused on deliberate uses of accounting as a mechanism of control (Thomson et al., 2015; Uddin, 2009; Uddin and Hopper, 2001). By examining accounting adoption through the Barthesian lens of myth adoption, the model of control shown is neither deliberate nor does it require a conscious act to control. British railway companies had no control over SASFL, yet SASFL's choice to adopt British railway accounting led to what could be termed conceptual control because the adoption of British railway accounting contributed to shaping how SASFL's directors conceptualised the company, how they managed it and the accounting information they prepared. It also shaped the space that remained invisible to SASFL's directors, so they could not understand the dissatisfaction of the shareholders when the company was publishing a plethora of

accounting information. This form of control differs from the direct accounting control that occurred under British colonial capitalism, where British accounting was imposed after colonial conquest. Barthes (1972) states that myths have power because they silence alternatives. As others adopt the practice, whether by imposition or choice, it strengthens and further entrenches the myth.

Barthes (1977) describes the practices and processes that support myths as texts. He states that a text has meaning in the context in which it develops, but when it is adopted because of a myth it symbolises, rather than for the appropriateness of its contextual meaning, the texts become unanchored from its context. He developed this line of thought in subsequent work, arguing that once the original meaning becomes lost, it is neither retrieved nor reconstructed (Barthes, 1977). British railway accounting was a response to the unique social, economic, political, and cultural factors in which British railways developed (Gourvish, 1980). *Ferrovia Leopolda* developed in an entirely different social, economic, political, and cultural context. According to Barthes (1972), SASFL's practices and processes should reflect the context in which it developed, not the context in which British railways developed. The practices associated with the myth may lead to positive outcomes and may prove to be best practice, but the point that Barthes (1972) is making is that SASFL should have discovered this by examining its context and accounting needs, not from the blind adoption of British railway accounting.

Conclusion

This research examines the adoption of British railway accounting for *Ferrovia Leopolda*, Tuscany's first railway. This case study provides an illustration that demonstrates how some accounting practices become privileged over others. The practices that come to dominate are those that reflect desirable myths. The practice is adopted to achieve the myth. In this case study, the adoption of British railway accounting was part of a plan to operate a British-style railway in Tuscany. This supported a myth about the British railway as the symbol of modernity and progress, and industrialisation and the importance of industrial capital. By adopting the trappings of a British railway, including its accounting, SASFL adopted the myth. As the case study demonstrates, this does not mean that the company adopted accounting practices suited to its needs.

This case study enhances understanding of accounting's power to control by demonstrating that control need not be a direct imposition of power. British railway companies had no connection with SASFL. However, SASFL's directors were controlled nonetheless by British railway accounting because its adoption meant that they could not appreciate that following British railway accounting was not serving their company or failing to satisfy investors.

The study is archival and for this reason it presents an ontological limitation due to the availability of archival records that have survived and the impossibility of identifying what is missing or finding other sources for that information.

This case study suggests that isomorphic responses may reflect the desire to adopt the ideological myth reflected in an accounting practice. However, it also suggests a broader challenge for accounting. By recognising that accounting adoptions can relate to the power of a myth, rather than the appropriateness of the accounting practices, it throws into question contemporary adoptions of international accounting standards that have supplanted local accounting standards, silencing factors that include national histories, politics, religion, and social differences. It also challenges ongoing legacies from historical impositions connected with imperial conquest and colonial capitalism.

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