



A French connection; paths to a 'new system' of accounting for the Royal Navy in 1832

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ABSTRACT

This study contextualises the official introduction of double entry bookkeeping in the Royal Navy, in 1832. The objective is to consider how accounting developed and changed through the competing logics of path dependent processes and to provide insights and explanations of those accounting changes in the Royal Navy. An innovative theoretical framework combines the longer-term lens of historical institutionalism with the roles of key actors to investigate change, logic and meaning of accounting in the Royal Navy in the context of financial reforms resulting from governmental investigations. The study is intended to make a contribution to accounting history and theory by means of this extension of historical institutionalism, exploring the options available and the paths taken at critical junctures, as the result of key players and their influence on the practices developed. The study identifies the paths available to the Royal Navy in the adoption of this 'new system' of accounting. The paper contributes to the literature on accounting development and change, on military accounting history and on the political nature of accounting in exploring the influences for change.

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1. Introduction

Political bodies often view accounting as contributing to the adverse impacts of financial problems and feel obliged to review and reform accounting practices in times of financial crisis (eg [Laux & Leuz, 2009](#)). Regaining control of the system of public accounting is seen as a necessity (eg [Bergtsson, 2011](#)). This paper analyses the development of double entry bookkeeping in the Royal Navy (hereafter Navy), an accounting change that was proposed, during financial crisis, by a politician, Henry Parnell,¹ in 1819 and implemented in 1832. This is set in the context of the development of accounting in the Navy from the first published regulations in 1731 ([ADM 106/3078](#))². These regulations advocated charge and discharge or cash accounting until parliamentary debate and a proposal to change the system of accounting to one of double entry bookkeeping. From 1731 to 1808, there was only gradual change in accounting an increase in practices, subsequently in accounting requirements, followed by this proposal for a 'New System'. As current financial crises provide a catalyst for reforms in

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¹ Henry Brooke Parnell (1776–1842) the 1st Baron Congleton, was an Irish writer and Whig politician. In 1828 Sir Henry Parnell was chairman of the Select Committee on the State of Public Income and Expenditure, this recommended and achieved abolition of the 280-year old Navy Board and the merging of its functions into the Board of Admiralty ([Bonner-Smith, 1945](#)).

² Records of the organisation and operation of the Royal Navy, from the Admiralty, Naval Forces, Royal Marines, Coastguard and other related bodies are held at The National Archives, Kew, London. These are organised and filed with the reference ADM (for Admiralty), see primary sources list.

accounting and accounting systems (eg [Arnold, 2012](#)), so in history, external political and financial pressures affected the system of accounting in the Navy.

Previous research in military accounting has mostly considered the influences on accounting and accounting development in times of war. It is after wars and the expenses that have been incurred by them that financial problems arise and the focus turns to public expenditure and accounting. This paper explores accounting change in times of peace. The proposal of the introduction of a 'mercantile system of double entry' for British government finances and the arguments surrounding this proposal are considered by [Edwards, Coombs, and Greener \(2002\)](#). They attribute the disputes that arise surrounding this introduction to a conflict of ideology, between the gentry and the rising capitalist classes, a debate that provides much context to this accounting development. [Mann, Funnell, and Jupe \(2016\)](#) refute this argument suggesting that the differences of opinion and the subsequent delays in implementation were the result of 'class interests, ideology, personal antipathy, professional intolerance and ambition' and that the changes to accounting were backed by those with strong liberal beliefs and the accounting development was designed by unrecognised accountants, John Deas Thomson³ and Sir James Graham.⁴ Thus pointing out the importance of supporting individuals and their contribution in times of accounting change. A contribution that provides depth to this accounting development.

The influence of key actors is developed in this paper, considering the key players in the debates surrounding this accounting change, particularly Henry Parnell and John Bowring.⁵ Additional evidence not included in the previous literature, indicates that during the disputes for two different variants of double entry bookkeeping, Dr John Bowring was sent to assess the bookkeeping of the other prominent Navies in Europe, those of the Netherlands, Belgium and France. Further, an extended narrative is interpreted using historical institutionalism to include the previous change in accounting and to provide additional context. The historical institutionalism critical junctures revealed by financial problems after the huge expenses of wars, the increasing focus on financing and the resulting impetus for change.

The objective of this study is to consider how the institution of accounting developed and changed through the competing logics of a historic institutionalism path dependent process, providing insights into the development of the accounting system of the Navy and subsequently of other government bodies. The paper explores how key players, assisted in this. The investigation focuses on reports, correspondence and debates around the implementation of changes in accounting. The historical narrative for viewing the critical junctures, competing logics and path dependent processes of historical institutionalism is set in the context of financial reforms addressing governmental investigations following financial crises after high wartime expenditure.

The paper offers two main contributions. It makes a theoretical contribution by the innovative extending of historical institutionalism, combining it with the influences of key actors in this process of change. Historical institutionalism identifies the key critical junctures for changes in accounting regulation and control within the Navy, exploring the options available and the paths taken dependent on the influences of key actors. The Navy was the first government enterprise to introduce double entry bookkeeping in the UK (Funnell, Mann & Jupe, 2016). The paper identifies the options available to the Navy at two critical junctures leading to adoption of this 'New System' of accounting. Thereby the paper also contributes to literature on accounting development and change and on the political nature of accounting in identifying the critical junctures, the narrative and the paths to this change, with competing logics driven by influential actors.

In studying the influence of changes in accounting in the Navy in the early 19th century, the paper considers a 'New System' of accounting which was implemented in the Navy, initially at Greenwich Hospital (1828) and then elsewhere (from 1832). This was the first time double entry bookkeeping had been instituted in the Navy or elsewhere in government organisations. The research uses archival sources, in particular reports and correspondence prior to these changes in accounting. The Regulations and Instructions, Government papers, reports and correspondence in Admiralty papers of the National Archives (ADM references) from the early to mid-1800s are considered to ascertain how this system was developed and implemented.

The paper is presented as follows: A literature review identifying research in the institution of Navy accounting, other military accounting including accounting change influenced by war and as in this research by the after-effects of war. Then research work investigating the introduction of double entry bookkeeping in the British Government and, specifically, in the Royal Navy. The next section expounds the theoretical framework and considers the competing logics inherent in this framework. There follows the historical narrative and analysis, where a first critical juncture is proposed. Investigations into the uses of public finance in the Navy, led to the impeachment of Lord Melville in 1805/6 ([HC Sit 1806](#); [HL Sit 1805](#))⁶ and initial

³ John Deas Thomson (1763–1838) was private secretary to Charles Middleton, First Lord of the Admiralty (see footnote 8 below) from May 1805 to May 1806. He was appointed as a 'commissioner without special functions' in 1805. He became Accountant General of the Navy from 1829 to 1832.

⁴ Sir James Graham (1792–1861) was a member of the British House of Commons from 1826 until his death in 1861. He was First Lord of the Admiralty from 1830 to 1834.

⁵ John Bowring (17 October 1792–23 November 1872) An accomplished linguist, first editor of the 'Westminster Review' and a friend and scholar of Jeremy Bentham. Bowring would become Governor of Hong Kong in the 1850s. The visit to the low countries in 1828 was the start of his public career. He was commissioned by the Chancellor of the Exchequer and the Parliamentary Finance Committee to report on the public accounts of Holland and Belgium. In 1830 he was dispatched to France for a similar mission. In 1832 he was appointed secretary to the Commission for the Reform of the Public Accounts, Sir Henry Parnell was chairman ([London and China Telegraph, 1872](#)).

⁶ House of Commons or House of Lords, Debates, Sitings or Reports have been referenced to Primary References using initial letters HC or HL then Deb, Sit or Rep and the year.

radical changes in accounting regulations. Then the competing logics that determine a second critical juncture are addressed. Further financial difficulties and an economic crisis after the Napoleonic Wars, led to increased calls for accountability of government monies including those in the Navy and the decision to adopt a form of double entry bookkeeping. The paper explores the self-reinforcing paths of these accounting changes and the key actors who influenced the decisions made. Finally, there is a discussion and conclusion and some suggestions for further research.

2. Literature review

Research in accounting, the military and war is mainly carried out considering the influences in times of war (Cobbin & Burrows, 2018). Both World War (WW) 1 and WW 2 have been studied for details of costing (Fleischman & Tyson, 2000), budgeting (Antonelli, D'Alessio, & Rossi, 2014) and risk evaluation (Quinn & Jackson, 2014) and fraud and other corrupt activities (Vollmers, Antonelli, D'Alessio, & Rossi, 2016). WW1 provided impetus for the development of an improved pay system (Black, 2006a) and the pioneering role of women in implementing that pay system (Black, 2006b). Wars and war effort have also been the cause of state control by means of accounting, leading to negative outcomes (Cinquini, Giannetti, & Tenucci, 2016; Djatej & Saritas, 2009). Accounting is observed to be partly implicated too in some of the darker facets of war (Chwastiak, 2001, 2006, 2008, 2013; Miley & Read, 2017).

2.1. Accounting in peacetime

Changes in accounting in the time of peace represents only 18 per cent of the research carried out in the area of military accounting research (Cobbin & Burrows, 2018). The discussion of the contribution of military accounting to modern costing and related procedures, generally focuses on war, as noted above, but some research has investigated other areas, the development of costing in military arsenals, by Lemarchand (2002) in France and in Venice by Zan (2004) and Zambon and Zan (2007). Cobbin and Burrows (2010) consider the changes to the system of budget estimates in the Royal Navy in late Victorian Britain, in order to become more efficient. Rosier (2010) reviewed costs in royal dockyards, seeking to compare overhead costs with private dockyards.

Some military research explores longer periods of accounting in the military, which include periods of peace. Funnell (2009) notes that control of military finance changed after the Civil War and the Revolution of 1688 in England. Black (2015) studies three centuries of the British Army bookkeeping and clerical tasks. At a similar time, the Royal Navy was using basic costing procedures, recording of accounts and other techniques, including the purser's pound to control provisions on board ships (McBride, Hines, & Craig, 2016). Accounting techniques were intended to ensure accountability for public monies rather than to ensure efficiency. The Royal Navy established accounting rules and procedures to safeguard provisions, such as alcohol, which were controlled in terms of both cost and amount per sailor (McBride & Hines, 2019). Similar to the purser in this research, in the research carried out by Bowlin and Herda (2015) the Army sutler had regulations to control costs and credit to soldiers in the late 19th century. Other peacetime army costing is shown in the Victorian British Volunteer Army, with a basic analysis of variances (Talbot, 2000). This form of accounting control may have developed from the statistical accounting advocated then by Colonel Sykes at the Bass Brewery in Staffordshire (Talbot, 2010). There were also attempts to improve efficiency, in Spanish military hospitals (Sanchez-Matamoros & Funnell, 2015) and decision-making in Canada in the building of the Rideau Canal (Bujaki, 2010, 2015).

The findings of this study contribute to the literature on accounting in peacetime in focusing on accounting change after wars. It builds upon investigations into Governance in the Royal Navy between 1731 and 1808 (McBride, 2019). The Regulations for accounting records (Regulations, 1731, 1790, 1808) show that accounting prescription in the Navy changed very little during the period until 1808 when it became considerably more detailed, although remained single entry bookkeeping on a cash basis. There were external pressures for increased governance following the impeachment of Lord Melville, Treasurer and then First Lord of the Admiralty (McBride, 2019). After these initial attempts at modification, accounting was changed again and there were moves towards a 'New System' of accounting, double entry bookkeeping in the mercantile style was finally introduced in 1832 to the Navy (1844(364)),⁷ this was successful and implemented elsewhere (1845(520)). Some work has already been carried out in this area, which this paper builds upon, it contributes to that and to the theory of historical institutionalism.

Edwards et al. (2002) examine the conflict between the different viewpoints, after the decision to introduce the 'mercantile system of double entry' for keeping records and reporting the finances of the British government. They suggested that the battleground for the different forms of the double entry bookkeeping proposed were due to a conflict of ideology between the new capitalist classes and the gentry. Mann et al. (2016) contest these claims refuting that the conflict and delays in implementation were due not to the differences between prominent social classes but a mix of 'class interests, ideology, personal antipathy, professional intolerance and ambition' and backing of key people with strong liberal beliefs, particularly John Deas Thomson and Sir James Graham.

⁷ Reference to Parliamentary Papers, House of Commons sessional papers. These are the working documents of the government, parliamentary papers encompass all areas of social, political, economic and foreign policy, showing how issues were discussed and legislation was formed. These are referenced here with the date and reference number, see primary sources list.

This idea of influential individuals is developed in this paper. The narrative is extended to the previous change in accounting and the critical junctures, often after the huge expense of wars, increasing focus on finances is considered as an impetus for change. The conflicts arising between those advocating the different models of double entry bookkeeping are explored. The key personality advocating the change to double entry bookkeeping originally, Henry Parnell, is included in the study. Previous literature in this area, does not include consideration of the input of Dr John Bowring who during the conflict of ideologies for the different versions of double entry bookkeeping, assessed the bookkeeping of the other prominent Navies in Europe, those of the Netherlands, Belgium and France. Two variations of double entry bookkeeping had been proposed, one based on the then current record keeping of the Navy but extended to include a basic form of double entry bookkeeping, on a cash basis system (1829(290)). The second, a more developed double entry accounting following that used elsewhere in business, using an accruals basis of reporting (1829(325)). Dr John Bowring reported back very favourably on the double entry bookkeeping system in France, which was the same as that finally instigated in the Royal Navy and already trialled at the Royal Greenwich Hospital, the first introduction of the 'new system' or double entry bookkeeping in the Royal Navy.

3. Theoretical framework

3.1. Historical institutionalism

This paper considers accounting change in the Navy through the lens of historical institutionalism. Historical institutionalism views political change as arising from critical junctures, which extend or disrupt long periods of stability, when public policy receives new objectives and priorities, and different administrative and political partnerships arise (Pierson & Skocpol, 2002). The outcome depends upon the timings of these external factors, related to the institution's particular situation, e.g. level of bureaucracy, level of autonomy, or indeed professionalism, all of which are relevant to the Navy in the time period under investigation, when expensive periods of wars ceased and the focus was on control of finances and spending.

Araujo and Harrison (2002) suggest that there are two types of sequences in which events occur: *reactive sequences*, which cause change, and *self-reinforcing sequences*, which do not. Path dependence (Ertman, 1997; Huber & Stephens, 2001) and the idea of pivotal choices and their legacies (Collier & Collier, 1991) explain historical institutionalism. The idea is that outcomes at a particular juncture can critically cause self-reinforcing actions or indeed inactions that ensure that there is the reoccurrence of a particular set of actions into the future (Pierson & Skocpol, 2002). In considering history, path dependent sequences can, not only be self-reinforcing but also reactive, there is a focus on development of processes, sequences and outcomes over long periods of time (Mahoney, 2000). Development of policy over time can be viewed as a discrete, rather than continuous process (Peters, Pierre, & King, 2005). Djelic and Quack (2007) explain ideas of path transformation and path dependence. They suggest that where path dependency is strong, it is unlikely there will be path transformation unless external shocks lead to 'rare radical ruptures and re-orientation' (p.162) which will lead to path transformation or change within the organisation. A lack of change is explained by Mahoney (2000) as being related to the 'formation and long term reproduction of a given institutional pattern' (p.508). Such as the lack of change in Navy accounting during the long period leading up to the early 1800s and in the 1808 increase in those Regulations and Instructions (McBride, 2019).

The institutions defined within this theory include organisations (formal or informal) with rules (also formal or informal) which determine the conduct of the organisation. The Navy at this time was one of the largest business enterprises in Britain (Fox, 2007) and subject to various Regulations and Instructions, thereby meeting this definition of an organisation. This theory arising from Political Science elucidates the need to understand

'The institutions that are at the center of historical institutional analysis ... can shape and constrain political strategies in important ways, but they are themselves also the outcome (conscious or unintended) of deliberate political strategies, of political conflict, and of choice' (Thelen & Steinmo, 1992 p.10).

Indeed, historical institutionalism perceives entities or institutions as longstanding organisations that cannot spontaneously or readily be changed, it clarifies the distinctive situation governing change within an organisation and aids in comprehending the procedures, both social and institutional facilitating that change (Mahoney, 2000).

Imperative to the theory of historical institutionalism, is the idea of 'critical junctures'. This concept espouses the idea that institutional development consists of long periods of path-dependent stability within the institution, interrupted occasionally by short periods of institutional instability when more radical institutional change may occur (Capoccia & Kelemen, 2007). The alternative routes taken after these critical junctures effectively close off alternative choices and thereby lead institutions to follow self-reinforcing or path-dependent processes. Pierson (2004) clarifies this, in stating, 'Junctures are "critical" because they place institutional arrangements on paths or trajectories, which are then very difficult to alter' (p.135), having previously suggested that 'analyses of historical sequences may focus precisely on the dynamic downstream consequences of particular patterns of institutionalization following a critical juncture.' (p.52). Agency based accounts of critical junctures clarify that the choices that decision makers have available to them should be set within the historic, social and political context in which they are operating and the historical availability of the different possibilities needs to be carefully reconstructed (Mahoney, 2000). Capoccia and Kelemen (2007) define critical junctures as, 'relatively short periods of time during which there is a substantially heightened probability that agents' choices will affect the outcome ... a situation that is qualitatively different from the "normal" historical development of the institutional setting of interest.' (p.348).

In this paper it is suggested that historical institutionalism alone cannot be a complete approach to understanding change and persistence in accounting (Peters et al., 2005). Historical institutionalism is combined with the influence of key actors, those suggesting and motivating change, the interactions between key players and the decisions made by influential actors. These interests, interactions and influences are explored via a historical narrative and analysis and viewed through the lens of historical institutionalism.

4. Historical narrative and analysis

Mahoney (2000) proposes that a historical narrative 'offers an especially useful method for making sense of the multiple steps in a reactive sequence. Through a narrative account, 'the analyst can provide "a scene by scene description of the particular causal paths" through which an initial breakpoint leads to a final outcome' (p.530). Historical institutionalism is impacted by key influential actors who have 'the will and ability to change institutions in favour of new ideas' (Steinmo, 2008, p. 131), their influence can be illustrated through the narrative.

This section of the paper presents a narrative of Naval and political events from 1790 to 1830, in a manner consistent with historical institutionalism, and examining the development of accounting practices over a long period. This is linked with the reactions of key actors, within and external to the organisation, to explain the choices made.

4.1. Historical narrative leading to the first critical juncture

The Navy, from the 1700s to the early 1800s, had spent many years at war, including the American Wars of Independence (1774–82) and wars with France (1803–1815). The focus had been more on financing wars, rather than on financial control and governance. In the 1780s, an expensive arms race took place between Britain and France (Rodger, 2004). British politics changed with the election of Pitt the Younger as Prime Minister in 1783.⁸ Navy finances were managed by means of close links between Pitt and Rear Admiral Charles Middleton (Comptroller of the Navy, 1778–1790).⁹ In 1790, Middleton reported there were about 90 ships of the line available with stores ready to go when needed (Morris, 2011). (See Fig. 1 below, this is the start of the 'timeline' leading to the first critical juncture.)

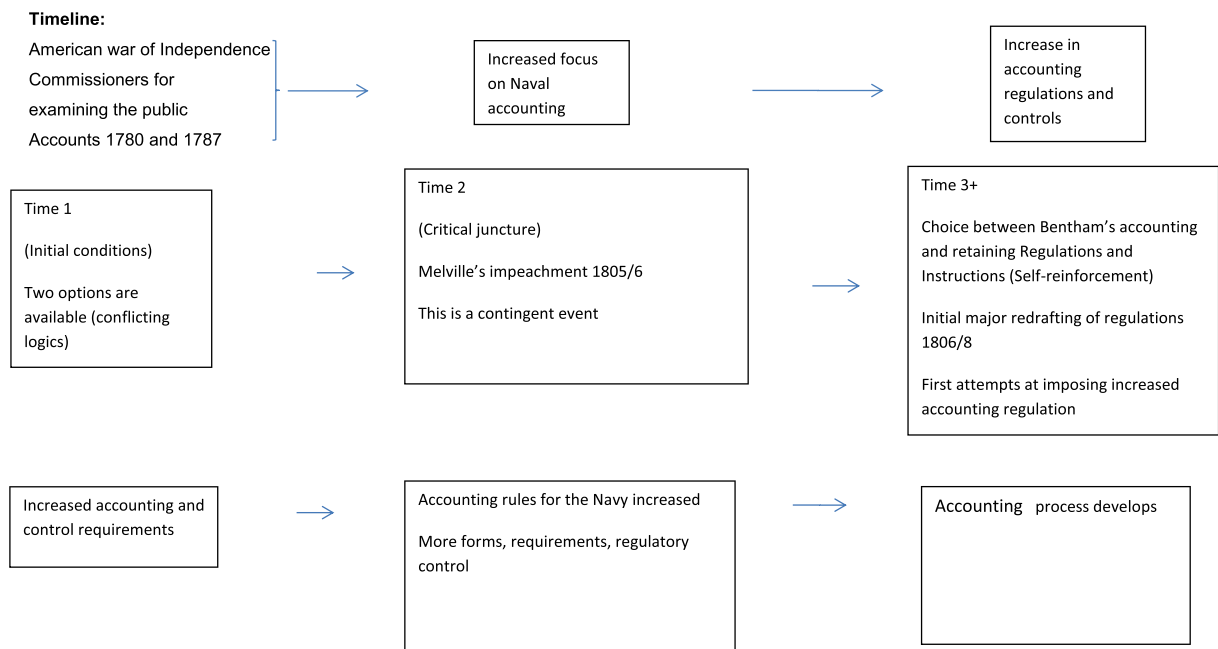


Fig. 1. First critical juncture: Melville's Impeachment.

⁸ William Pitt the Younger (28 May 1759–23 January 1806) was a prominent British Tory and Whig politician of the late 1700s and early 1800s. He was the youngest UK Prime Minister in 1783, aged 24. He left office in 1801, but returned as Prime Minister from 1804 until his death (1806). Whilst Prime Minister he was also Chancellor of the Exchequer.

⁹ Charles Middleton (14 October 1726–17 June 1813) was Comptroller of the Navy between 1778 and 1790, he succeeded Melville as First Lord of the Admiralty in 1805 and became 1st Baron Barham. In 1806, he drafted the greatly expanded 1808 edition of the Regulations and Instructions relating to his Majesty's Service at Sea (ADM 7/971).

In the ten years between the end of the American war and the commencement of the French Revolutionary War (1793), Pitt proceeded to institute financial reforms to achieve financial stability. A financial crisis in 1797 was clearly linked with the Navy, seamen mutinied for more pay (Spithead and Nore mutinies) and this resulted in some reform of the Navy Estimates. There were £14 million of Navy and Ordinance Bills outstanding in 1784. This was converted into Government Stock in the following year, reinstating the short-term credit of the Navy. Pitt instituted an extraordinary vote to secure funding for £2.4 m for the building of more ships. Pitt introduced the first Income Tax in 1799, which assisted in resolving the financial problems of the Government.

(See Fig. 1 above, these are the 'initial conditions'.)

Viscount Melville (or Henry Dundas) was Treasurer of the Navy from 1782 to 1800. There were those, however, who believed that the Navy's administration was corrupt. After Earl Spencer (First Lord of the Admiralty 1794–1801) who was popular and courteous, there was the appointment of Earl of St Vincent as First Lord. St Vincent was a supporter of economic reform. He believed that all government expenditure led to corruption and so sought to discover that corruption. He set up a Commission of Naval Enquiry in 1802, this reported that some public money had been kept in a private bank account. This was contrary to an Act of Parliament sponsored by Melville when he had been treasurer of the Navy. A commission of enquiry was appointed in 1805 (HL Rep 1805).

In 1804, with the return of Pitt as Prime Minister, Lord Henry Dundas, now Viscount Melville, was appointed as First Lord of the Admiralty (until May 1805). The enquiry resulted in an announcement of Melville's impeachment in 1805 (HL Sit 1805) on ten charges of misappropriation of public money. The hearing in 1806 into these charges ended in a finding of formal negligence and an acquittal on all charges and nothing more than negligence was found against him (HC Deb, 1805; HC Deb, 1806; HC Rep 1806). Melville never held Naval office again.

(See Fig. 1 above, Melville's impeachment is a 'contingent event'.)

The impeachment related to financial affairs at a time when the Navy was facing public criticism of the handling of its finances. The commission of inquiry which led to Melville's impeachment and resulted in reforms at the Admiralty; were a key critical juncture for Naval accounting, leading to increases in accounting governance and control. At this critical juncture, choices needed to be made between enhancing the then current accounting outlined in Regulations and Instructions or changing the accounting to a different system, such as the accounting system developed by Bentham at Portsmouth.

(See Fig. 1 above, these two options are 'conflicting logics')

Samuel Bentham¹⁰ implemented systems of accounting and accountability in the Navy dockyards between 1801 and 1805. He was Inspector General of Works, in command of the Naval Works department. This was a small but skilled group, set up in 1796, tasked with technological innovation and administrative efficiency. Bentham was instrumental in founding the Portsmouth steam factory with Marc Isambard Brunel and Henry Maudsley. This factory manufactured timber blocks for ships and was 'the first large-scale plant to use machine tools for mass production' (Hamilton, 2011, p. 13). On his appointment, the six Navy dockyards in England were still following the regulations and instructions originally issued by the Duke of York in 1662 (ADM 7/827; ADM 2 1733; ADM 7/639), consolidated in February 1731 (Regulations 1731) and updated at intervals until 1790 (Regulations 1790). However, Bentham considered these inefficient and advocated radical reforms (Ashworth, 1998). Bentham favoured a new form of management whose

'objective was first to design the most controllable, and thus visible, way to perform an activity and second to ensure that the specified work was completed at the desired speed and quality. This required a system accessible to a form of accounting and therefore a labour process that was transparent' (Ashworth, 1998, p.65).

This approach was prevalent elsewhere in British industry (Fleischman, Hoskin, & Macve, 1995; McKendrick, 1970; Roll, 1968). Accounting change occurred (Boyns & Edwards, 2012; Edwards & Newell, 1991) it was later considered by accounting historians, as more prevalent and sophisticated than previously had been believed (Fleischman & Tyson, 1993, 1998; Fleischman & Parker, 1990, 1991). Accounting had significant influence in the formation of the modern organisation (Gallhofer & Haslam, 1993; Toms & Shepard, 2017).

Bentham's brother (Jeremy) was a philosopher and critic of double-entry bookkeeping (Goldberg, 1957). Together, the brothers designed their own system of accounting, Samuel implemented this at the dockyards, particularly in areas within his jurisdiction. He was appointed Inspector-general of works in 1796, when he drew up plans for improvement of management of the dockyards and new sets of accounts for activities in the yards, particularly for control of timber, the most important material used. When the Commissioners of Naval Inquiry examined these arrangements in the dockyards in 1803, they saw this system in place and reported favourably on the control of timber and the records (Hume, 1970).

The Navy Board were opposed to Bentham's changes. They preferred to administer the dockyards in the traditional way. They abolished his role as Inspector General and demoted him to a junior position in the Navy Board (Morris, 2014).

(See Fig. 1 above, Bentham's system was not the path followed.)

¹⁰ Samuel Bentham (11 January 1757–31 May 1831) was apprenticed to the Navy at Woolwich Dockyard, and served there and at Chatham Dockyard, before finishing his training at Portsmouth Naval Academy. Bentham was appointed Inspector General of Naval Works in 1796, he travelled and formulated many suggestions for improvements for the dockyards, introducing steam power and mechanisation of many of the production processes to improve efficiency – including the production of the many wooden pulley blocks used on ships.

In 1805, after Melville's impending impeachment was announced, Middleton became First Lord of the Admiralty. Middleton was fervent about Government reforms, having been Comptroller of the Navy during the 1780s, he believed more accounting was the solution. With the increased external pressure to show enhanced financial control, in 1806 he started to redraft the Regulations and Instructions, the guidelines for the Navy's accounting and control. To prove the governance of the expenses and financing of the Navy, Middleton drafted a greatly expanded 1808 edition of the Regulations (McBride, 2019). These constituted 683 pages; the previous edition in 1790 had been only 237 pages (Regulations, 1790 and 1808, ADM 7/971). The increased pages being additional instructions and forms to be completed. These radically redrafted Regulations sought to legitimise the finances of the Navy, providing a control and check on expenses, a self-reinforcing sequence.

(See Fig. 1 above, with the influence of Middleton, a key actor, this 'self reinforcement' makes Bentham's accounting no longer an option).

4.2. Further historical narrative leading to the second critical juncture

In the late 1820s and early 1830s there were debates on the degree to which government accounts should use the 'mercantile system of double-entry' for public accounts (Hume, 1970). This led to moves towards a general change in accounting within the Navy after 1829 (ADM 114/1).

During the wars with Napoleon (1803–15) the Navy was the standard setter for other European Navies being at the height of naval efficiency (Rodger, 2004). These wars were expensive and their financing led to financial crisis and demands for government reforms (See Fig. 2 below, this is the start of the 'timeline' leading to the second critical juncture.). Henry Parnell, a supporter of Bentham, was also a strong advocate of governmental financial reform, he tabled resolutions in the House of Commons in 1819, suggesting the use of mercantile accounting. He chaired parliamentary committees and later documented his ideas in a pamphlet on financial reform (Parnell, 1832). During the 1820s, there was an increasing focus on the finances of the Government in Britain. A select committee was appointed to consider the most effective way of simplifying the accounts laid before the Government (1822(618)). The select committee observed that the main drawback of the extant form of accounts was that they did not show a balance between the income and the expenditure for the year. This, along with an increased demand for control of those finances (1828(110); 1828(420)) resulted in investigations of the use of double entry bookkeeping in the method of the 'mercantile system'.

Arguments for accounting change resulted in a heated debate in the House of Commons (HC Sit 1822), Sir Henry Parnell promised to set up a select commission for the next session. A Finance Select Committee was set up in 1828 (chaired by Sir Henry Parnell), to inquire into public income and expenditure and to consider the regulations and checks for establishing control in receiving, controlling and spending public money. The Committee formed an impression that the Navy Board followed an independent and expensive path (Hamilton, 2011).

(See Fig. 2 below, these are the 'initial conditions'.)

A Treasury minute, dated April 18, 1828, documents the setting up of a Commission to enquire into the different methods of keeping the public accounts, in The Second Report of the Select Committee, chaired by Parnell (1828(420)). The particular

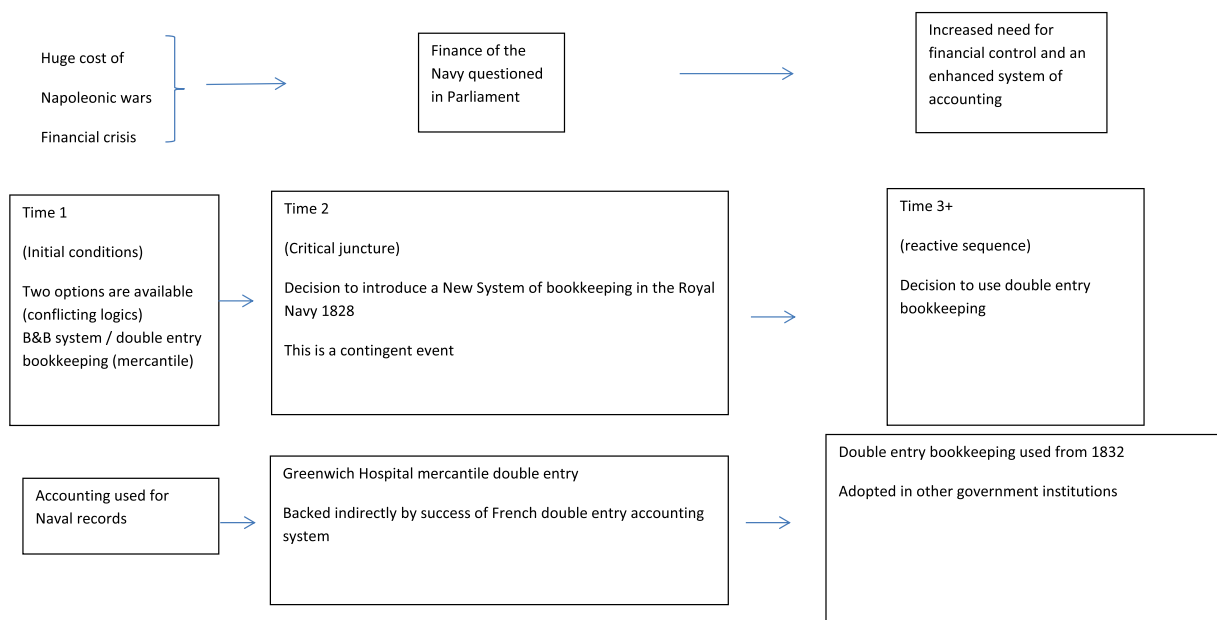


Fig. 2. Second critical juncture: Decision to introduce a 'new system' of bookkeeping.

note of the committee was to 'consider how far it may appear to be practicable and advantageous to employ the mercantile system of double entry in the keeping of the Public Accounts, in preference to the official system now in use.' (1828(420) p.473). Three commissioners appointed in this Report, were to investigate using this method of bookkeeping, Thomas C. Brooksbank (Treasury Office) Samuel Beltz (a pay officer in the Commissariat department, ADM 106/1473) and Peter Abbott an accountant. All three considered the accounts of the Navy.

(See Fig. 2 above, the decision to introduce double entry bookkeeping is a 'contingent event'.)

Already, there were some attempts at ensuring thorough bookkeeping methods in the Navy, for example at Portsmouth, where Bentham's system of accounting was still used. Henry Parnell interviewed the accountant in charge of the stores at Portsmouth, Plymouth and London. Parnell queried whether it was the mercantile system of double entry that had been introduced, to which the accountant responded that it was not. When asked further, he agreed that he would have 'no objection' to using that method, particularly if was an 'improvement in the modes of doing business' (1828(420) Minutes p37).

When the accountant at Greenwich Hospital died with the records incomplete, the accounts were completed, after the start of their commission in 1828, by one of the commissioners. Abbott, 'a professional accountant' (1829(290) p.32) introduced a 'New System' (1829(290) p.32) of accounts following the mercantile system of double entry bookkeeping (1829(290)). Therefore, in 1828 this system was already in operation in one of the departments of the Navy (1828(420) and 1831(50)).

The three commissioners could not agree, or even work together. Before May 26, 1828 (1829 (290)) they had commenced their investigations, with Brooksbank and Beltz working separately from Abbott (1830(159)). They produced two separate reports on their findings. Brooksbank and Beltz presenting their findings to parliament on June 1, 1829. Abbott presented his on June 12, 1829 ((1830379)).

The two commissioners' reports agreed on the need to use a double entry system of bookkeeping in the manner of the mercantile system. Abbott (1829(325)) gave advice on the principal books needed to be used in implementing a better system in the Navy. He recommended a cash book, a ledger and a journal and observed that these 'should enable an inspector to collect for himself, without the aid of verbal explanation, or much reference to the supplementary books, every feature of the transactions they record' (1829 (325) p.326).

'A journal is deemed essential for the balancing of accounts, to write up the ledger, as many transactions do not pass through cash and to explain corrections and cross entries. It is noted that 'Balancing books is not confined to an agreement of the cash; the correctness of every other book is ascertained by a general balance of the Ledger, and the correct balancing of books kept by double entry must include, not only the money actually expended, but also the liabilities of the establishment, and this I conceive to be a very essential point.'(1829(325) p.325).

Whereas Brooksbank and Beltz were more in favour of a double entry bookkeeping method where

'the *Account Current*, is indispensable, as the foundation of any other Account, and as the only correct mode of striking a Balance; though it must include all payments made within the year by The Principal and by the Imprest Accountants, whether such payments belong to the services of the current year, or to any former one.'(1829(290) p.6).

A cash basis for accounting was required rather than an accruals basis, with this current or descriptive account reflecting written evidence of the discharge of financial obligations. This reflected the old system of charge and discharge accounting, of stewardship, individual accountability and patronage (Edwards et al., 2002). The original call for the simplification of the accounts and the investigation by Sir Henry Parnell (1828(420)) had sought a more substantial change in accounting approach. The idea was that annual accounting would ensure officers accounted for finances, considered ideas for savings and that the system would assist them in reducing any abuses of finances (Funnell, 2008).

(See Fig. 2 above, these two options for the double entry bookkeeping are 'conflicting logics')

Having initially agreed to introduce the books of account recommended by Brooksbank and Beltz into the relevant departments, in a minute of July 14, 1829. These implementations were suspended verbally by the first Lord of the Admiralty on August 15, 1829. A letter dated November 28, 1829 from the Admiralty Office refers to reports from the Victualling Board and the Paymaster of the Marines on their attempts to introduce the Brookbank and Beltz new system of keeping the public accounts. The Victualling Board had sought further explanations of the system and its requirements, they observe that one object of the Commissioners is to include in the accounts only the actual payments made, and to bring within the year as much of the expenses incurred in that year as possible, but note that most supplies in the Navy are paid by 60-day bills which would interfere with this objective. They conclude 'that the new system will inevitably occasion more trouble than the present one; that no greater dispatch to the public business will be given than the present system affords; and that the establishment of a separate branch is contemplated for the purpose of introducing the new one' and request an exemption. The Paymaster of the Marines also makes the observation about bills, that the bills of exchange 'balances, the debits and credits affected by it, both here and at the Bank of England, appear as they really stand' again favouring an accruals basis. Subsequently, on December 17, 1830, another Treasury minute was issued which read that it was directed 'that the application of the new system of accounts as recommended by Messrs. Brooksbank and Beltz, to any public department in which it is not already introduced in practice, be suspended till further orders.' (1831(50) p.48).

(See Fig. 2 above, Brooksbank and Beltz's system was not the path followed.)

On July 8, 1831, the first report of the (1831(313)) the Commissioners of the Public Accounts, led by Sir Henry Parnell, recommended important changes. They agreed with the previous commissioners in their view of the importance of double entry bookkeeping,

'feeling with them the necessity of "recommending the abolition of ancient practices, which were thought by our ancestors absolutely necessary for the protection of the King's Revenue,"' (p.23).

They observed

'The peculiar excellency of what is denominated the Mercantile system of bookkeeping by double entry, consists in the facility with which it embraces accounts, however complex, various and extensive; giving to all their differences of detail a unity of result, and concentrating them at last in the most condensed shape, while it enables the examiner to trace them without difficulty to their remotest ramifications. In the initiatory or auxiliary books-of account; a correct system will admit of all the modifications suited to the particular service; but as soon as the principal or double entry books take possession of the facts of an account. However intricate and varied, they become subjected to its general and harmonious law.' (p.17)

and arguing that

'Several of the Governments of Europe have adopted this method after repeated and vain attempts to accommodate by other means the dissimilar usages of their various public offices to one general system; and' there is no instance of any Government having abandoned the mercantile practice, after having once employed it.' (p.18).¹¹

In October 1831, Dr John Bowring was remunerated for services inquiring into, and reporting on, the mode of keeping the Public Accounts of France, and in May 1832, for reporting on the public accounts of the Netherlands and Belgium (1831–32(512); 1840(295)). According to his autobiography, in 1828 he had been recommended to be the third commissioner 'we would have been the 3 Bees' (Bowring, 1877, p. 291) because of his practical experience, but was turned down by the Duke of Wellington for being a Radical. Abbott was chosen instead. Later in 1828 he was sent to the Netherlands to 'examine into the state of the national accountancy' (Bowring, 1877, p. 149). These investigations appear to have taken place at the same time as the commissioners were examining the accounts in the UK.

Dr Bowring was enthusiastic about the double entry system of accounting to be found in France (1831(78 289), 1831–32(586)). The double-entry system had first been introduced into the administration of the Treasury there in 1808 (directed by a decree in of March 31, 1791) ((183178 289). He observed

'France has succeeded in founding a System of General Accomptancy, which has had no parallel in any other nation, and which is consulted as a model by the most enlightened Governments of Europe.' ((183178 289) p.189).

He was less enthusiastic about the double-entry accounting system in the Netherlands, and the similar system in Belgium (1831–32(236)). In the Netherlands

'The Royal Decree of 24th October 1824, contains a general "règlement" for the administration of the Finances ... which develops the fundamental principles on which the Public Accounts are constructed.' (1831–32(236) p.3)

Dr Bowring proceeds to observe

'On a general survey of the Public System of Account in Holland, though it cannot be deemed entitled to unqualified praise, yet many of its parts are worthy of approval and adoption.

The books are admirably kept, according to commercial usage, and by double entry.' (1831–32(236) p.143).

For Belgium he notes 'The public accounts of Belgium have received some slight modifications, borrowed from the Accomptancy of France.' (1831–2 (236) p. 144).

The First Report of the Commissioners of Public Accounts 1831, inquired into the way in which 'Public Money is received and paid, and the Accounts thereof kept, with the view of introducing a clear and uniform System of Public Accounts.' (1831(313) p.2). They acknowledged the description given by Brooksbank and Belz, in their Report on the Public Accounts (1829(290)), of the way in which money was issued for the Army, Ordinance and Navy. They do not include their recommendations for a cash based double entry accounting system, or any observation on the accruals system already in place at Greenwich Hospital, introduced and reported on by Abbott (1829(325)) and negatively reported on by Brooksbank and Belz (1829(290)). Instead, they observe that

'As we have not the slightest hesitation in advising the employment of the Commercial system of Book-keeping ... The peculiar excellency of what is denominated the Mercantile system of book-keeping by double entry, consists in the facility with which it embraces accounts however complex, various and extensive ... ' (1831(313)p18).

and noting

'we have only to refer to Mr Bowring's Report on the Public Accounts of France, for irresistible proofs of its value, practicability, comprehensiveness, clearness and efficiency.' (1831(313) p.18).

The preferred method of accounting moved not only from single entry bookkeeping to double entry bookkeeping, as the previous commissioners had agreed, but also to a system of accrual accounting rather than cash-based records and reporting.

¹¹ Research shows that double entry bookkeeping had been introduced to central government in Portugal in 1761 (Gomes, Carnegie, & Rodrigues, 2008).

The method introduced in the Greenwich Hospital and advocated by Abbott, as used in mercantile accounting was effectively the same as that recommended in preference to the modified form of mercantile accounting advocated by Brooksbank and Beltz. The decision on the double entry system to be implemented, was that originally advocated by Sir Henry Parnell, one of mercantile accounting, but with its success evidenced by its use in France.

(See Fig. 2 above, with the 'reactive sequence' of the influence of Parnell and Bowring, key actors, self reinforcement makes Brooksbank and Beltz's accounting no longer an option).

In 1844, in 'A Statement of Changes' which had been introduced into public departments in the system of bookkeeping (1844(364)) the accountant general of the Navy (J.T.Briggs) reported that

'The system of bookkeeping in practice at the Admiralty is the Italian method, or double entry in its most improved form.

This system, though partially in force at the late Navy Office, previous to the Report on the Exchequer in October 1831 (not in 1832), was extended so as to embrace the whole of the naval departments when the Navy and Victualling Boards were abolished ... (June 1, 1832)' (p.3).

In the same document the Office of Woods reports that the Treasury recommended (after a report in 1831 on their accounts (1831 (40)) that they give 'authority to Mr. Abbott, an accountant who has before been occasionally employed by this Board, to devise a system of accounts for the purpose, and to instruct him to superintend the working of that system for the first 12 months' and that 'The system of double entry was then adopted upon his recommendation, and has ever since been acted upon.' (1844(364) p.29). This document shows that other public departments also adopted the mercantile system of double entry bookkeeping.

5. Discussion and conclusion

The theoretical framework of this paper is based on the historical institutional ideas of path dependency and stability and of critical junctures, external influences that disrupt. At a critical juncture a decision is made between competing alternative scenarios. Junctures are deemed 'critical' when a point is reached, after which the previous alternative options for proceeding become increasingly more difficult to implement (Mahoney, 2000). A particular institutional arrangement is then followed, reinforced and maintained. Of the choices made, one may be that of continuing with the original course of action. Once the choice is made, and a particular decision is followed, the alternative will cease to be available.

The paper establishes links between the ideas of historical institutionalism and the roles of influencers and the paths chosen by them. Once a critical juncture is reached the organisation and influential actors determine the path it takes with consideration of the impact of the choices with which the organisation is faced. This maybe a result of the influence of one main actor with the power to make changes, such as in the case of the first critical juncture in this paper, where increased regulations, instructions and forms were the result of changes implemented by Middleton (ADM 7/971). Alternatively, it may be as a result of discussion, argument and negotiation, such as in the case of the second critical juncture in the paper, the introduction of double entry bookkeeping, where influential actors emerged rather than pre-existed the situation.

In peacetime, accounting assists the military in its main objective of preparing for further wars and ensuring funding for the next conflict, with uncertainty as to when this may happen. This paper considers these gaps between wars and suggests that the ends of wars and the impacts of the costs of them can act as critical junctures for change. During times of peace, there are more opportunities to focus on the day-to-day processes of accounting rather than the more frenetic focus of serving the military in providing for conflict and war. Developments may take place over longer periods, there is more consideration and debate of the changes, than the decisions on accounting made during war. Indeed, the ends of wars with their huge costs can lead to a refocusing and rethinking about financing and accounting.

In the case of Royal Navy accounting, the critical junctures ascertained occurred in times of peace after major war expenditure, when change was imperative, but also when there was the time to implement change. The first critical juncture, Melville's impeachment, resulted in an attempt at improvement of the accounting system and rules and regulations to meet calls for improved governance and control of finances. The second critical juncture, financial crisis, resulted in a change to a 'New System' of accounting, 'mercantile' double entry bookkeeping to meet parliamentary calls for the simplification, clarification and improvement of accounts, and for controlling public expenditure.

When critical junctures arise there is discourse leading to the deconstruction of the existing institutional logic and the construction of a new logic from competing logics (Lounsbury, 2002). Giddens (1984) clarifies that ideas alone are insufficient to create political change, they should be articulated by knowledgeable actors using political debate and that idea is extended here. Actors external to and within the institution construct new sets of rules to stabilise the institution, offering discourses and explanations and thereby the creating opportunities for other practices and procedures, as in the examination of the genus of accounting used for tighter financial control. Also in the public debates around Melville's impeachment in 1806, and later around government accounting and public accounts in the 1820's.

As shown, the system of accounting remained the same in the Navy until external pressures to control finances, resulted in a choice, or critical juncture, political change leading via influential actors to pivotal choices, path transformation or path dependence. After the first critical juncture of Melville's impeachment, the choice of whether to improve the accounting in the Regulations and Instructions or implement Bentham's system of accounts already used in parts of the dockyards.

Middleton implemented change in the form of enhanced Regulations and Instructions in 1808, these were an enhanced, reworked and extended version of the Regulations and Instructions.

A second critical juncture of financial crisis after the huge cost of the Napoleonic wars has been identified. At this juncture, the choice was whether to adopt Brooksbank and Beltz's modified double entry bookkeeping adapted to fit with the cash based model already in use within the Navy or the mercantile accrual based double entry bookkeeping, proposed and implemented at Greenwich by Abbott. Parnell implemented change in the form of double entry bookkeeping following a mercantile system, this corresponded with his original request in 1819 and was as observed and recommended by Bowring having seen this in operation in France.

Capoccia and Kelemen (2007) focus on analysis of institutions. They suggest that critical junctures arise in a situation where the structural influences on political action are reduced significantly for a brief period, resulting in possible choices to decide upon, the consequences of which are significant for the institution and its development. This was the situation in peacetime and increased confidence in the Navy after Trafalgar, Melville's impeachment, and public pressure for improved accounting for controlling finances. A situation occurring again in peacetime after the Napoleonic Wars, financial crisis and public deliberations about improved accounting for public accounts.

In this paper historical institutional ideas frame change in the accounting practices within the Navy and the requirements demanded of them. Accounting change is implemented and with time, going back to the previous alternatives becomes impossible. Processes then reinforce policy paths and self-reinforcing actions. Reactive sequences are the strong responses that move the path of the system in a new direction (Mahoney, 2000), that is the change in accounting policies in reaction to political change and strengthening of controls on finances within the Navy. Once accounting procedures and processes are implemented, it becomes difficult to reinstate the previous procedures, particularly if they have been publicly deemed inadequate such as with an impeachment or a financial crisis.

The study found that accounting within the Navy should be viewed in the context of political events, for much of the period under consideration Britain was at war and Navy accounting remained relatively unchanged, following the dependent paths determined. At the beginning of the 1800s, after the battle of Trafalgar, political events saw Melville's Impeachment. The Battle of Trafalgar victory prevented Napoleon from invading Britain securing peace and bolstering British sea-lanes for Maritime trade and affirming the strength of the Navy. During this confident time for the Navy in general, the finance function was called into question with the impeachment of the First Lord of the Admiralty, H. Dundas, 1st Viscount Melville. Bentham was trialling his system of accounting. Accounting change was implemented by Middleton, who confident in the existing Navy system of accounting, aimed to improve that system of accounting, regulations and governance, a self-reinforcing sequence. In the 1820s and 1830s, after the battle of Trafalgar and the end of the Napoleonic Wars, there was financial crisis and a call for governmental accounting to be revised, leading to discussions over the use of double entry bookkeeping. Consideration was given to changing accounting in the Navy, resulting in the adoption of a 'new system' of accounting (ADM 106/3510) within the Navy. Accounts are not available to confirm the system, this may be a limitation of the research, however the reporting of its implementation in 1832 is comprehensive (1844(364)).

This paper has two main contributions. In a development of theory, the lens of historical institutionalism is used to consider historical accounting change and is combined with the consideration of key actors who influenced this change. Historical narrative highlights key critical junctures for change in accounting practice within the Navy, identifying the options available at these points and the pivotal choices made due to influential actors.

The second contribution of this work is to the literature on accounting change and development, to accounting history literature on the military and on the political nature of accounting. It is noted that accounting change often takes place after wars, in times of financial crisis from the expense of those wars. Future research could consider further investigation of the personalities involved in these developments of accounting, a prosopographical study of the various characters and their roles, looking at this group of actors in this historical context.

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