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Accounting for accounting history:
an exploratory study through topic modeling approach

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Abstract. This paper contributes to the growing history of accounting history by analysing the contents of all papers published in Accounting History, one among the leading journals of the field, through a recent and promising analytical technique called Topic Modeling. Based on literature, we know what accounting history is about, but we know less how the accounting history field has evolved. By adopting Topic Modeling, an automated procedure for coding the content of corpus of text based on Bayesian statistic, the paper complements prior assessments of the accounting history literature by providing accurate measures about the relative prevalence of research areas and their evolution over time. The analysis highlights three sets of topics not uncovered by previous categorizations. In particular, the ‘Regulation’ topic, that refers to international accounting standards and auditing regulation, appears to be overlooked by previous reviews. In terms of dynamics we find that the ‘Technical core of accounting’ decreased in importance overtime in favour of more variegated and fragmented foci of research: this finding may substantiate the claimed shift from a conception of accounting as a technical practice to the one of accounting as a social practice, that is the transition from the so called ‘traditional’ to ‘new’ accounting history. Moreover, we see a pluralisation in the range of issues that are under the lenses of accounting historians. Finally, our analysis suggests that the way in which accounting history is presented or ‘talked about’ has not changed much in the last 20 years.

Keywords: Accounting history, Topic Modeling, Literature review, Journal

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JEL Classification Numbers: M40, M48, H83

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1. Introduction

This paper intends to contribute to the growing ‘history of accounting history’ (Zan, 1994), by analysing the contents of all papers published in Accounting History, one among the leading journals of the field, through a recent and promising analytical technique called Topic Modeling.

The study moves from three claims emerging from an initial appreciation of the extant body of accounting history research. First, we know (more or less) what accounting history is about: as we will show, there is indeed a somewhat consistent convergence on the main research themes that mark accounting history as a disciplinary area (e.g. Previts et al., 1990; Carnegie & Napier, 1996; Carmona & Zan, 2002; Fleischman & Radcliffe, 2005). Second, we know (less) about how the accounting history field has evolved. There are, in fact, only fragmented accounts about the dynamics of themes in accounting history research over time. Third, we don’t know (much) about why the field is changing. Based on these, our objective is twofold, namely:

• to explore the main themes accounting history research has been dedicated to (the what);
• to advance our knowledge on the dynamics of accounting history research themes (the how of the changes);

After having accomplished these two objectives, the ground will be set for future studies aiming at explaining these trends (the why), which is the ambition of our broader research agenda.

How do we do it? Essentially, we propose to apply a Topic Modeling approach (Blei et al., 2003) to the corpus of published accounting history research. Topic Modeling is an analytical technique that is based on Bayesian statistic and is able to analyse big corpora of texts. A Topic Model proceeds by iteratively analysing texts and grouping words if they co-occur together. These sets of words define ‘topics’ that constitute the unit of analysis. Being automatically generated, no personal bias can influence their development. At the same time, however, the inductive nature of the study is preserved, since the meaning of topics is completely devolved to researchers’ interpretation (Di Maggio et al., 2013). Topic Modeling has been used mainly by historians and scholars of digital humanities to make sense of the changing themes in a journal or research field by looking at huge amounts of archival materials - e.g. 100 years of papers published on Science (Blei & Lafferty, 2007); dissertation abstracts from 240 institutions between 1980 and 2010 (McFarland et al., 2013).
Based on the above, we believe that Topic Modeling can help us to pursue our objective of making sense of the vast amount of published research in accounting history. More specifically, this paper presents findings of a pilot study where we applied Topic Modeling to 338 papers published in Accounting History from the first issue, in 1996, to the first volume of 2015. Although the analysis is limited to one journal (for now), we believe that interesting results are already emerging and that they are worth being shared and discussed, before extending the research to a wider number of outlets.

The paper is structured as follows. We begin by critically analysing the most recent literature reviews on accounting history, starting from a mapping of the main approaches and styles and then devoting particular attention to the main research themes unveiled by previous reviews (what accounting history is about), and to how these have changed over time (accounting history dynamics overtime). Next, after an illustration of our research methodology, we present the main topics emerging from our analysis of 338 papers published in Accounting History between 1996 and 2015. We will thereon discuss the main patterns of accounting history research in terms of contents and dynamics, together with the study’s limitations and suggestions for future research.

2. Accounting history literature reviews: mapping approaches, contents and dynamics

Historical approaches to management research have been flourishing in recent years, following decades when they were seen as marginal (Kipping and Üsdiken, 2014). The accounting field is not only taking part to this trend, but it even anticipated it to some extent. Indeed, accounting history associations promoting research in this field have been operating for decades, both at the international (e.g. the Academy of Accounting Historians since 1973) and national levels (e.g. Società Italiana di Storia della Ragioneria since 1984 in Italy). International accounting research has long been producing studies investigating accounting practices in the past (e.g. Carmona et al., 1997), reconstructing the professionalization of accounting (e.g. Lee, 1995), reflecting on accounting disciplinary traditions and schools (e.g., Zan, 1994) and so forth. In parallel, a growing number of specialized journals, conferences, and courses featuring aspects of the history of accounting in degree programs appeared (Edwards & Walker, 2009). Besides, not only knowledge have been accumulating on the past of accounting, but also reviews of this very knowledge have been flourishing over the last twenty years or so (e.g. Previts, Parker & Coffman, 1990; Carnegie & Napier, 1996; Carmona & Zan, 2002; Fleischman & Radcliffe, 2005 – just to mention few). We start,
therefore, our study by critically assessing the approaches employed in previous reviews and their main findings.

2.1. Mapping approaches

The accounting history literature panorama has been surveyed with increasing frequency in the last twenty years for different, and sometimes overlapping, reasons. Authors are interested in understanding how the borders of the discipline have shifted throughout the years (Carnegie & Napier, 1996, 2012), in getting insight on how the research community has evolved (Carnegie and Rodrigues, 2007) and/or in highlighting strategies to improve the discipline itself (Gomes et al., 2011). In some cases, there is an interest in understanding trends within a specific journal and the contribution of the journal to the debate – for example to further consider enduring issues of research interest, lines of enquiry which have been largely abandoned, significant emerging themes, and under-researched areas (Bisman, 2012; Walker, 2008).

An initial mapping of the most recent literature reviews on accounting history reveals a plurality of foci and approaches. First, some reviews collect and analyse accounting history papers across different journals (e.g. Carmona et al., 1999; Carnegie & Potter, 2000), while others assess only contributions published on specific outlets – e.g. Walker's (2008) analysis of accounting history papers published on Accounting, Auditing and Accountability Journal, or Napier’s (2006) review of accounting history research published on Accounting, Organization and Society.

Second, some reviews have a specific geographical focus – see for instance the works of de Serra Faria (2008) on Portugal or Zan (1994) on Italy – while others share a more general interest on English speaking literature (e.g. Bisman, 2012). In this regard, Sanchez-Matamoros et al. (2015)’s paper is one of the few studies systematically comparing the authorship and contents of accounting history research published in different languages (Italian, Spanish and English).

Third, a division can be made between ‘narrative’ and ‘systematic’ approaches. In a narrative literature review, the author(s) classify and interpret previous studies on the basis of their own experience as researchers in the field. Reviews of this kind do not aim to analyse all papers within a specific sub discipline. They rely instead on a selection of studies that they believe are relevant in order to pinpoint main themes of research, trends in the evolution of the discipline, and new research areas (examples of this kind: Bisman, 2012; Carnegie & Napier, 1996; Fleischman, Radcliffe, & Fleischman, 2005; Napier, 2006; Walker, 2008). On
the other hand, systematic literature reviews detail the time frame within which the literature was selected and the methods used to evaluate and synthesize findings of the studies in question (examples of this kind: Bisman, 2011; Carnegie & Potter, 2000; Sanchez-Matamoros et al., 2015; Williams & Wines, 2006). In these reviews, descriptive statistics are usually developed to uncover patterns and variations in terms of authorship (single or multiple authors, authors’ affiliations, gender), period, country, and sectors under study. Moreover, in some systematic literature reviews (Carnegie & Potter, 2000; de Serra Faria, 2008; Williams & Wines, 2006) papers are sorted out in terms of areas of study, following already established classifications (e.g. Carnegie & Napier, 1996). Contrary to narrative literature reviews, in systematic reviews the interest is mainly on quantifying (rather creating) themes of research along five, ten or 15-year frames.

Among narrative accounting history literature reviews, the difference between ‘traditional’ and ‘new’ accounting history is a notion that is usually employed to make sense of the literature (Carnegie & Napier, 1996; Fleischman et al., 2005; Gomes, 2008; Walker, 2008). This refers, in general, to a different conceptualisation of the nature of accounting and change (Napier, 2006). On the one hand, traditional accounting history looks at accounting as a ‘bundle of techniques and procedures to satisfy information requirements’ (Gomes, 2008, p. 480). Studies sharing this view look at accounting change as progress or improvement, and assess accounting success in terms of whether new accounting practices fit or not the environmental requirements (Napier, 2006). On the other hand, the label ‘new’ accounting history refers to studies sharing a view of accounting as a social practice that can be understood only in the context where it takes place (Hopwood, 1987). The relationship between accounting and environmental change is, in this case, less straightforward. According to ‘new’ accounting historians, in fact, accounting has both a reflective and constitutive roles: accounting also works to shape the environment by helping making thinks visible in economic terms. Central to the new accounting history approach are the ideas of ‘pluralisation’ and ‘proliferation’ of methodology, the call for ‘research on heterogeneous range of issues’ (Miller et al. 1991, p. 396, and a ‘heterogeneous range of theoretical approaches’. Apparently, the new accounting history programmatic idea has been embraced by many. Starting from the end of the 1990s, in fact, theory has played a more relevant role in accounting history papers (Bisman, 2012; Fleischman et al., 2005) while at the same time the research agenda has indeed ‘broadened’ (Gomes, 2008) or ‘widened’ (Napier, 2006).
In the remainder of this section we assess the main findings of both narrative and systematic reviews aiming to understand what the current topics of research in accounting history are and how these have developed.

2.2. *What accounting history is about*

Efforts in defining and surveying the scope of accounting history research have increased hand in hand with the enlargement of the arena. Although the classification criteria employed in narrative literature reviews differ from author to author – unit of analysis, methodological approaches, topics, a mix of the previous ones – and despite, as reviews’ authors usually acknowledge, categories are often not mutually exclusive, an initial attempt can be made to provide a meta-classification of thematic areas based on different reviews.

A first area of interest refers to the study of the ‘technical core’ of accounting (Walker, 2008b) or focusing on the ‘business records’ (Carnegie & Napier, 1996). Studies in this area document changes in accounting practices that took place in the past. Why and how were accounting records produced? The interest is on ‘techniques and devices employed for the measurement and representation and communication of financial (and other) data’ (Edwards & Walker, 2009, p. 5).

The ‘history of professionalisation’ (Walker, 2008) or ‘institutional history’ (Bisman, 2012; Carnegie & Napier, 1996) or ‘the evolution of professional bodies’ (Napier, 2006) is a second theme that is pinpointed across different narrative reviews. Although with different nuances, studies listed under this label deal with the organisational and institutional practices put in place by individuals or groups to establish accountants as a professional group.

A third topical area is ‘historiography’ (Edwards & Walker, 2009; Previts, Parker, & Coffman, 1990; Walker, 2008b). The focus of historiography is the discipline itself, and, more specifically, how its institutions, topics, and methods had changed throughout the years (Edwards & Walker, 2009).

According to many, the ‘public sector’ or the study of the interrelation between accounting and the State have developed as an area of research on its own in the accounting history literature (Bisman, 2012; Carnegie & Napier, 1996; Edwards & Walker, 2009; Walker, 2008b). Perhaps more internally heterogeneous than previous topics, the public sector areas includes studies dealing with the use of accounting information in public sector reforms (Bisman, 2012), in accountability relationships between central and local government (Bisman, 2012; Walker, 2008b), or in government sub-field such as the military (Edwards & Walker, 2009).
Lastly, increasing attention has been paid to ‘exploring the interconnections of accounting, race, colonialism, marginalisation and oppression’ (Bisman, 2012, p. 18) or to the analysis of ‘accounting and accountability as softwares of imperialism, and as instruments in the governance, exploitation, assimilation and dispossession of indigenous people and their cultures’ (Walker, 2008, p. 305). These studies have been referred to as ‘accounting and the unfamiliar’ (Bisman, 2012), ‘socio-cultural histories of accounting’ (Walker, 2008), or studies of accounting pursuing ‘surprising and unpredictable directions’ (Carnegie & Napier, 1996).

2.3. Dynamics over time

Although efforts to explain the evolutionary dynamic of the topical areas are present in narrative literature reviews (Bisman, 2012; Carnegie & Napier, 2012), it is perhaps in systematic ones that we can find more accurate assessments concerning how the distribution of studies has varied across research themes over time. For instance, Carnegie and Napier’s thematic classification (1996) was applied systematically to papers published on Accounting Historians Journal; Accounting, Business and Financial History; Accounting History between 1996 and 1999 (Carnegie & Potter, 2000) or in Accounting History between 1996 and 2005 (B. Williams & Wines, 2006), showing an increase in studies focusing on business records, professionalization and public sector accounting. This is consistent with findings from narrative literature reviews (Bisman, 2012; Carnegie & Napier, 2012). Besides, systematic literature reviews offer relevant insights on the features of other easily classifiable aspects: authorship, period, country, and sectors under study. The work of Banos-Sanchez-Matamoros and Gutierrez (2010) is the most complete of this kind. The authors reviewed in fact 494 papers published from 2000 to 2008 on five accounting history journals (The Accounting Journal; Accounting, Business & Financial History; Accounting History, Rivista di Contabilita' e Cultura Aziendali, De Computis). The study confirms that, on average, accounting history authors are English speaking and conducting research on 19th or 20th century private organisations or institutions located in Anglo-Saxon countries. However, the study noticed also an emerging community of non-Anglo-Saxon authors studying new settings and periods.

In conclusion, the present paper intends to complement previous critical assessments of the published literature by identifying the research themes, and, more importantly, by quantifying their relative prevalence and measuring their evolution over time.
3. Method

3.1. Topic Modeling as an analytical technique

In order to study the field of accounting history, we relied on Topic Modeling (Blei et al., 2003; TM hereafter) to analyze themes developed in the field. TM provides an automated way for coding the content of a corpus of texts into a set of ‘topics’, that are containers of meaningful words (Mohr & Bogdanov, 2013). In other words, topics are constituted by words that co-occur together and form themes.

TM combines four important features. First, topics are explicit and other researchers may reproduce the analysis, thus improving its reliability. Second, TM can analyze corpuses of texts that would be impossible to deal with for a human being because of their amounts or length. Third, the inductive nature of the research is preserved, as TM does not require the imposition of a-priori categories. In fact, once topics are automatically produced, they need to be interpreted. Fourth, TM recognizes the relativity of meanings, as it treats terms as varying in meaning across different contexts and recognizes that the meaning of a word depends on the surrounding words (DiMaggio et al., 2013).

The most diffused implementation of TM uses an algorithm called Latent Dirichlet Allocation - LDA (Blei et al., 2003). LDA is based on Bayesian statistics and allows the development of topics in a completely automatized way. There are, however, two decisions that the researcher should take before running the model. The first one concerns the number of topics that the model should produce. The second concerns whether topics should contain an equal number of words or not. Based on these parameters, the model returns the probabilities of words being used in a topic, as well as an account of the distribution of those topics across the corpus of texts. To put it more simply, the model places together terms that appear in the same texts more frequently than one would expect by chance. The idea is that each word of the corpus is assigned to a topic in an iterative process.

To perform the TM we used Mallet, an open-source software developed by University of Massachusetts Amherst that works through command line in ms-dos. In the next paragraphs we describe how we selected the sample of texts included in the analysis, the outputs of the analysis, and the steps of our interpretative process.

3.2. Sample and TM outputs

We downloaded 338 articles published in Accounting History since its first issue in 1996 to 2015 (last issue excluded because it was not published at the time of the data collection). We
did not download book reviews, call for papers, publication list/ad hoc referees list, and announcement. These documents are, therefore, excluded from our analysis. Before analyzing the articles with Mallet, we ‘cleaned’ them by removing the authors’ names and affiliations, the acknowledgement, and the reference lists. We developed then a stop-word list (i.e. the list of the word that the software has to ignore) including articles, prepositions, adverbs, and other words with scarce substantive meaning. After removing the words included in the stop-word list we obtained a corpus of 1,273,904 words: this is the sample\(^2\) of our analysis (descriptive statistics are presented in Table 1).

<table>
<thead>
<tr>
<th>Year</th>
<th>Issues</th>
<th>Papers</th>
<th>Words</th>
<th>Special issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>2</td>
<td>10</td>
<td>31,647</td>
<td></td>
</tr>
<tr>
<td>1997</td>
<td>2</td>
<td>11</td>
<td>33,725</td>
<td></td>
</tr>
<tr>
<td>1998</td>
<td>2</td>
<td>11</td>
<td>46,351</td>
<td></td>
</tr>
<tr>
<td>1999</td>
<td>2</td>
<td>10</td>
<td>30,982</td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td>2</td>
<td>12</td>
<td>48,186</td>
<td>Accounting in Crises</td>
</tr>
<tr>
<td>2001</td>
<td>2</td>
<td>11</td>
<td>36,046</td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td>2</td>
<td>12</td>
<td>36,372</td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td>2</td>
<td>12</td>
<td>40,684</td>
<td></td>
</tr>
<tr>
<td>2004</td>
<td>3</td>
<td>17</td>
<td>53,427</td>
<td></td>
</tr>
<tr>
<td>2005</td>
<td>3</td>
<td>17</td>
<td>63,765</td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td>4</td>
<td>22</td>
<td>75,855</td>
<td>Accounting and Religion</td>
</tr>
<tr>
<td>2007</td>
<td>4</td>
<td>19</td>
<td>74,122</td>
<td>International perspectives on race and gender in accounting’s past</td>
</tr>
<tr>
<td>2008</td>
<td>4</td>
<td>20</td>
<td>71,729</td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td>3</td>
<td>21</td>
<td>78,709</td>
<td>Accounting in other places, accounting by other people Perspectives and Reflections on Accounting’s Past in Europe</td>
</tr>
<tr>
<td>2010</td>
<td>4</td>
<td>22</td>
<td>83,849</td>
<td>Accounting and the military</td>
</tr>
<tr>
<td>2011</td>
<td>4</td>
<td>24</td>
<td>89,315</td>
<td>Histories of accounting research</td>
</tr>
<tr>
<td>2012</td>
<td>3</td>
<td>22</td>
<td>94,209</td>
<td>Accounting and the state</td>
</tr>
<tr>
<td>2013</td>
<td>4</td>
<td>21</td>
<td>84,201</td>
<td>Accounting and accountability in local government</td>
</tr>
<tr>
<td>2014</td>
<td>3</td>
<td>25</td>
<td>113,246</td>
<td>The emergence of accounting as a global profession</td>
</tr>
<tr>
<td>2015</td>
<td>*</td>
<td>3</td>
<td>87,474</td>
<td>Innovation in accounting thought and practice</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>58</td>
<td>338,04</td>
<td>1,273.904</td>
</tr>
</tbody>
</table>

| Table 1: Our sample – Accounting History 1996-2015 |

*Last issue not included in the analysis

At this point, when using TM the researcher has to determine the number of topics that the software (Mallet in our case) should create (DiMaggio et al., 2013). We asked the

\[^{2}\text{It is interesting to note that the mean number of words per article increases quite homogeneously from 3.164 words in 1996 to 4.603 words in 2015}\]
software to produce models with seven, ten, 15, 20 and 25 topics of the same dimension\(^3\). Each model produced three outputs:

- **a list of words per topic** displaying the highest-ranked terms for each topic, where the prevalence of each word within a topic is adjusted for its prevalence within the corpus as a whole. We focused on the 40 highest-ranked terms.

- **a breakdown of the topics comprising each paper.** Thanks to this output it is possible, for instance, to observe that in the 20-topic model, Maran (2014)’s paper is composed for the 47.9 per cent by Topic 19, the 22.4 per cent by Topic 8, the 11.1 per cent Topic 3 and so on;

- **a list describing how each word has been coded in each paper.** The list always comprised 1,273,904 words, no matter the model we asked the software to produce (with 7, 10, 15, 20 or 25 topics).

For each model we analysed the list of words and the titles of three most representative papers for each topics (this means that we looked at 21 papers’ titles for the 7-topic model, 30 titles for the 10-topic model and so on). Based on these operations, we made a first attempt at labelling the topics produced by each model. This allowed us to compare the models and chose the one that better fitted our analytical and interpretative purposes (Blei and Lafferty, 2009). More specifically, we selected the model with 20 topics for several reasons. The 7 or 10-topic models produced topics that were too aggregated and, therefore, difficult interpret in a univocal way. Conversely, the 25-topic solution created topics that were too specific and unstable. We preferred the 20-topic solution over the 15 one because the former helped us solving some interpretative issues by unpacking certain topics further.

### 3.3. Interpretation

Starting from the outputs of the 20-topic model, additional effort was put into refining the topics’ labels and investigating their meanings. More specifically, we explored the topics both qualitatively and quantitatively.

Our qualitative investigation was based on the list of words per topic (see Table 2 in appendix), a reading of the abstracts of the most representative papers for each topic, and a

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\(^3\) Topics can be composed by the same or different number of words. Generally speaking, if one allows the existence of topics of different dimensions she will end up with few very big topics, that capture the more relevant issue in the debate, and several smaller topics that deal with the nuances. Forcing the existence of topics of the same dimensions breaks the main issue of the debate into their main sub-dimensions.
more detailed analysis of the words in the abstracts of the most representative papers for each topic.

From a quantitative point of view, we monitored three indicators of topic prevalence (see Table 3):

- the mean presence of each topic across the sample;
- the number of times each topic appears among the three most ‘used’ topics in a paper;
- the number of times each topic is the most ‘used’ one in a paper.

We then monitored the longitudinal trend of each topic along the period 1996-2015 based on the mean value per year.

By combining qualitative and quantitative analyses and moving abductively back and forward from the categories developed in prior studies (e.g. Bisman, 2012; G. D. Carnegie & Napier, 1996; Fleischman, Radcliffe, & Fleischman, 2005; Napier, 2006; Walker, 2008), we were able to develop and progressively refine the interpretation of each topic and label them in a (as much as possible) univocal way. Once we were confident with our interpretation of the topics, we aggregated them in sets based on similarities in terms of contents and prevalence.

4. Findings

Our aim is to elicit topics that permit us to describe and analyze themes constituting the field of Accounting History and their development over time. Table 3 displays the eight sets in which we aggregated the 20 topics obtained from Mallet. Data about the prevalence of the topics are also presented in the same table. More specifically we identified:

- one set composed by topics that reflect the narrative flavour of this body of literature (topic 8 ‘Historical genre’, topic 14 ‘Micro-histories’, and 13 ‘Synthetizing the literature’);
- two topics qualifying the technical core of accounting: topic 0 ‘Financial accounting techniques’ and 9 ‘Cost accounting’;
- two related to regulation practices: topic 2 ‘International accounting standards’ and topic 5 ‘Auditing regulation’;
- two topics concerned with the issue of the accounting profession: topic 18 ‘Accounting firms’ and topic 15 ‘Professional bodies’;
• three topics discussing **State-related** issues: topic 1 ‘Taxation’, topic 16 ‘Public sector accountability’, and topic 19 ‘Accounting as a technology of government’;

• three topics reflecting interests for **specific industries**: topic 6 ‘Infrastructure’, topic 7 ‘Trade’, and topic 17 ‘Mutual aid’

• two topics concerned with specific **countries**: topic 11 ‘Spain and Portugal’ and topic 12 ‘Rest of the world’;

• a set of topics related to **specific thematic debates**: topic 10 ‘Accounting treatises’, ‘women in accounting’ (topic 3) and ‘Race’ (topic 4).

In the following paragraph we will describe each of these sets and analyse their trends.
<table>
<thead>
<tr>
<th>Set</th>
<th>Topic number: Topic label</th>
<th>Mean</th>
<th>Times among 3 most relevant topics</th>
<th>Times first</th>
</tr>
</thead>
<tbody>
<tr>
<td>Narrating history</td>
<td>8: Historical genre</td>
<td>22.5%</td>
<td>330</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td>13: Synthetizing the literature</td>
<td>11.4%</td>
<td>105</td>
<td>69</td>
</tr>
<tr>
<td></td>
<td>14: Micro-histories</td>
<td>5.9%</td>
<td>78</td>
<td>8</td>
</tr>
<tr>
<td>Technical core</td>
<td>0: Financial accounting</td>
<td>5.3%</td>
<td>50</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>9: Cost accounting</td>
<td>3.6%</td>
<td>36</td>
<td>10</td>
</tr>
<tr>
<td>Regulation</td>
<td>5: Auditing regulation</td>
<td>5.1%</td>
<td>34</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>2: Intern. accounting standards</td>
<td>4.5%</td>
<td>38</td>
<td>14</td>
</tr>
<tr>
<td>Profession</td>
<td>15: Professional bodies</td>
<td>4.4%</td>
<td>37</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>18: Accounting firms</td>
<td>3.5%</td>
<td>32</td>
<td>9</td>
</tr>
<tr>
<td>State-related</td>
<td>1: Taxation</td>
<td>4.1%</td>
<td>32</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>19: Account. as technology of government</td>
<td>4.1%</td>
<td>34</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>16: Public sector accountability</td>
<td>3.5%</td>
<td>25</td>
<td>16</td>
</tr>
<tr>
<td>Industry related</td>
<td>7: Trade</td>
<td>3.4%</td>
<td>22</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>17: Mutual aid</td>
<td>2.3%</td>
<td>17</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>6: Infrastructures</td>
<td>2.3%</td>
<td>15</td>
<td>12</td>
</tr>
<tr>
<td>Country related</td>
<td>11: Spain and Portugal</td>
<td>2.6%</td>
<td>25</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>12: Rest of the world</td>
<td>1.8%</td>
<td>14</td>
<td>6</td>
</tr>
<tr>
<td>Specific thematic debates</td>
<td>3: Women in accounting</td>
<td>4.1%</td>
<td>34</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>4: Race</td>
<td>3.0%</td>
<td>24</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>10: Accounting treatises</td>
<td>2.7%</td>
<td>25</td>
<td>9</td>
</tr>
<tr>
<td><strong>Mean</strong></td>
<td><strong>5.0%</strong></td>
<td><strong>50.7</strong></td>
<td><strong>16.9</strong></td>
<td></td>
</tr>
</tbody>
</table>

Table 3: Sets of topics

4.1. Narrating history: topic 8, 13 and 14

Topics 8, 13, and 14 have very high prevalence in the sample and refer, in our interpretation, to three ways of narrating history rather than to specific research themes.

Words coded under topic 8 comprise the terminology that, in our view, is used to position a specific phenomenon in its socio-historical contexts. More specifically, verbs like made, provide, means, support, understanding reflect the efforts made by authors in presenting links between events or explaining cause-effect relationships. Attempts to place accounting in its social context are then reflected in words like social, economic, context. Lastly, words like time, change, historical, present, future mirror (unsurprisingly) the relevance of time in historical narrations.
After reviewing the list of terms, the next step in interpretation is to examine texts that exhibit Topic 8 with the highest probability. The first three studies - ‘Accounting history and accounting progress’ (Napier, 2001); ‘Historiography for the new millennium: adventures in accounting and management’ (Lee, 1999); and ‘What is (accounting) history?’ (Gaffkin, 2011) - would be categorized under ‘historiography’ in prior literature reviews (Edwards & Walker, 2009; Previts et al., 1990; Walker, 2008b). However, by further exploring the quantitative features of topic 8, we noticed that although the topic is always among the first three most relevant topics (330 times in 338 papers), it is usually ranked second or third, thus suggesting that the topic concerns the jargon shared by all articles, rather than a specific conversation. Indeed, historiography can be looked at as a discipline interested in positioning the study of history in its socio-cultural context. Besides, from a longitudinal point of view, topic 8 constantly outperforms the others, thus confirming the idea that this topic represents the backdrop of all the papers published in Accounting History, no matter what their specific research question is. (To stretch the argument further, in a more quantitative oriented journal, one would expect topic 8 to be equally constant but including words like hypothesis, testing, correlation).

The next topic included in the set ‘narrating history’ is Topic 14, which we labelled ‘micro-histories’. In our view, topic 14 appears whenever the narration involves the use of archives to understand how ‘people behaved in their world’ (Williams, 1999, p. 62), namely their thoughts, actions, and feelings. In fact, words associated with this topic can be clustered into two groups. The first comprises words related to individuals or groups: john, mr, man, William, club. The second refers to archival sources, such as collection, letter, record, book. Indeed, studies where the topic is prevalent include an article on the use of accounting within early colonial New Zealand settlements (Fowler, 2010), a study using financial data to understand the history of an Australian football club (Halabi et al. 2012), and a paper using accounting artefact to gain insights on the lives of a Creek Chief and a Lieutenant-Colonel (Francis & Samkin, 2014). Similarly to topic 8, also topic 14 is frequently among the three most used topics (78 times), but it is the most used one only eight times. This suggests that micro-history is a more general way of narrating history rather than a specific accounting (history) research area. Looking at categories developed in prior literature reviews, we can observe overlapping between topic 14 (‘micro-histories) and what Carnegie and Napier (1996) would define biographical and prosopographical approaches.

The last topic included in this set is topic 13 (‘synthesizing the literature’). Words coded under topic 13 appear when authors attempt to systematise previous studies. This is supported
by three main evidences. First, words associated with the topic include *paper, journal, authors, published*. Second, studies where the topic is more prevalent are ‘systematic literature reviews’. For instance, topic 13 constitutes the 76 per cent of Sánchez-Matamoros and Hidalgo (2011)’s study on publishing patterns in accounting history research, and the 75 per cent of Bisman’s (2011) analysis on accounting history through citation analysis of specialist journals. (Indeed most the words of the paper we are writing would probably be coded under topic 13). Lastly, topic 13 is the most prevalent topic among editorials. This is consistent with our interpretation as the function of an editorial is to introduce the papers included in each issue (this also explains why topic 13 is the first topic 69 times).

![Figure 1: Mean value per year for topics 8, 13, and 14](image)

4.2. **Technical core of accounting: topics 0 and 9**

We grouped under this label topics 0 (‘financial accounting’) and 9 (‘cost accounting’). In our interpretation, they reflect discussions about the technicalities of accounting as opposed to discussions around the role of accounting in its social contexts. This recalls previously developed categories such as the ‘technical core’ of accounting (Walker, 2008b) or studies of the ‘business records’ (Carnegie & Napier, 1996).

The first of these, ‘financial accounting’ comprises terms related to the information contained in and the users of financial reports. Examples of words coded under this topic are *assets, profit, shares, dividends*, and *shareholders, companies, directors, investors*. Other terms reinforce this interpretation: *sheet, period, year*. The three articles in which this topic is prevailing (more than the 60% of the paper’s text is coded as ‘topic 0’) deal with diverse
financial accounting techniques or issues: dividend and depreciation policy (Pitts, 1998); accounting errors (Baldwin & Berry 1999); and equity valuation (Rutterford, 2010).

Topic 9 (‘cost accounting’) focuses instead on accounting information produced for internal purposes. Unsurprisingly, the most highly ranked term in this topic is cost. The topic also comprises words about the object of costing procedures - labour, production, products – and the locus of the analysis: the factory. Indeed, titles of articles in which more than 60 percent of assigned words were assigned to Topic 9 included ‘Cost accounting practices at precious metal mines: a comparative study, 1869–1905’ (Vent, 1997) and ‘Cost accounting in eighteenth century Spain: the Royal Textile Factory of Ezcaray’ (Prieto-Moreno & Larrinaga-Gonzalez 2001).

Interestingly enough, topics comprising the technical core of accounting follow a decreasing trend over time (see figure 2). For instance, discussions about the technicalities of financial accounting constituted the 13 percent of all the papers published in Accounting History in 2001. Fourteen years later they account for just the 2 percent.

Figure 2: Mean values per year for topics 0 and 9

4.3. Regulation: topics 2 and 5

Two topics deal, in broad terms, with regulation in the corpus of Accounting History articles. Topic 2 includes discussions related to the development and diffusion of ‘international accounting standards’. Beyond the term regulation itself, many words associated with this topic justify its inclusion in the ‘accounting regulation’ set: law, rules, standards, principles. Besides, the international nature of the standards under discussion was suggested first by the
presence of words such as countries, state, and nation in table 2 in appendix, and confirmed later by looking more carefully at the abstracts of the most relevant papers in which this topic was strongly represented. More specifically, representative papers reported findings concerning the adoption of international accounting standards across different Countries (i.e Buhr, 2012), or in a specific Country (see Fulbier & Klein, 2015, on the impacts of standards in Germany or Rammal & Lee, 2012, on the ‘compromise and accommodation between national religious culture and a global financial environment’ in Pakistan).

Topic 5’s focus is still on regulation. However, in this case the role played by national legislation in the practice of auditors is at a central stage. Indeed, Topic 5 is dominated by words such as auditors, auditor, auditing (on the one hand), and law, act, legal, court (on the other). Almost all articles in which Topic 5 is prevalent discuss auditing regulation issues such as the origin of auditor liability to third parties (Baker & Prentice, 2008) or the impacts of the Companies Act 1879 on bank auditing regulation (Walker, 1998).

All in all, discussions about regulation appear to be quite heterogeneous given the diversity of the topics included within this set. This is also confirmed by the trends reported in Figure 3. While discussions about auditing regulation were strong at the beginning (more than the 18 percent of all words were associated to this topic in 1998) and fade out more recently, the debate on ‘international accounting standards’ shows a less clear dynamic. In any case, despite an apparent growth in the last few years, it never accounts for more than the 10 percent in the period under analysis.

![Figure 3: Mean values per year for topics 2 and 5](image-url)
4.4. Profession: topics 15 and 18

The professionalization of accounting has been recognised by many as a key theme within accounting history (Walker, 2008; Bisman, 2012; G. D. Carnegie & Napier, 1996; Napier, 2006). This area of study is reflected in two topics within our model: Topic 15 (‘professional bodies’) and Topic 18 (‘professional firms’).

Terms included in Topic 15 make it clear that the topic pertains to professional associations: *profession, members, chartered, institute, society*. It is interesting to note the word *british* among the ten most relevant terms of the topic. Indeed, many studies on professionalization in the sample under analysis are concerned with the diffusion of accounting knowledge and qualifications across the British Empire (see Parker, 2005, 2014; Verhoef, 2014).

Differently from Topic 15, Topic 18 includes discussions concerning professional accounting firms rather than professional bodies. Articles in which this topic is strongly represented include studies of organisational change performed among accounting firms. For instance, Wootton et al. (2003)’s study analyses mergers and acquisitions among accounting firms in the USA throughout the twentieth century.

Topics included under the set ‘profession’ follow a similar trend over time. It must be noted, however, that the topic ‘professional bodies’ is constantly ‘heavier’ than the ‘professional firms’ one (see Figure 4). Both topics peak in 2014, when the special issue ‘The emergence of accounting as a global profession’ was published. This validates further our interpretation of the two topics as well as the choice of including them under the same set.

![Figure 4: Mean values per year for topics 15 and 18](image-url)
Among the topics elicited by the software, we identified eight topics that deal with context-specific debates, ranging from State-related settings, to specific industries and specific geographical areas. In general, these topics are less prevalent than the previous ones, yet with some exceptions. We will start by introducing the State-related set of topics.

The interrelation between accounting and the State had already been identified as an area of research on its own in the accounting history literature (Bisman, 2012; Carnegie & Napier, 1996; Edwards & Walker, 2009; Walker, 2008b). Our analysis confirms this finding and further specifies that the literature on the history of public sector accounting is characterized by three main topics. Quite surprisingly, more than 14 per cent of words in the corpus of texts under analysis are assigned to state-related topics, making it the most prevalent set after ‘narrating history’. This finding requires further investigations as it is usually taken for granted that the public sector is under investigated compared to the private one.

The first topic in this set is ‘Taxation’ (Topic 1). This topic is characterized by the co-occurrence of terms such as government, state, tax, taxation, income, and the like and it refers to fiscal policies in different times, sectors and places – for example the changing practices for funding social services (Cordery, 2012) or income savings in New Zealand throughout the 20th century (Marriot & Fowler, 2007), or the taxation policy to fund the American Civil War (Giroux, 2012), just to mention the three most coded articles to this topic.

The State-related debate in accounting history is not limited to tax-related issues. There is, in fact, a critical accounting vein that has been gaining more relevance within the State-related debate: ‘Accounting as a Technology of Government’ (Topic 19). The most important words in this topic include accounting, accountability, state, administration, similar to other State-related topics (thus justifying their grouping under the same set), but also distinguishing terms as power, control, foucault which induce us to associate this topic to the tradition of critical studies and governmentality. Examination of the articles that exhibit the highest proportion of the words assigned to this topic confirms our interpretation that the topic focuses on the power of accounting to govern societies, explored in remote times. Quite interestingly, the three most coded articles to this topic all focus on Italian settings: power relations and accounting practices as control systems among a 15th century Corte in Italy (Maran & Vagnoni, 2011), a 14th century ecclesiastic institution in Siena (Riccaboni et al., 2006), the State of Abruzzo in the 16th century (Sargiacomo, 2009). However, since no word
referring to the Italian context features among the most relevant words to the topic, we believe that the geographic dimension is not crucial in this topic. Lastly, the smallest topic in this set is ‘Public sector accountability’ (Topic 16). It comprises terms related to accounts, accounting, audit, efficiency, treasury, together with others related to the public sphere, such as public, government, parliament, province, and to the term reform. Taken together, this topic reflects the trajectory of introduction and change of the practices of accountability in the public sector. Indeed, among the most coded articles to this topic feature a study on the rise of public financial accountability in England under the American Independence War (Funnell, 2008), a study on the rise of public sector audit in the UK as part of the Victorian focus on economy and parsimony (Funnell, 2004) and one about the reform of civil engineering training in India in mid-1800, which included education in public sector accounting (Barnes, 2011).

Looking at the dynamics of these topics over time (Figure 5), no linear trend can be found. In general, we can say that a State-related discourse in accounting history has always moderately featured in the years under consideration, but with alternating stops and goes. Yet topics of taxation (Topic 16) and the critical approach (Topic 19) have progressively gained some relevance in the debate, pushed by the special issues ‘Accounting and Religion’ in 2006 and ‘Accounting and the State’ in 2012, which have increased the attention in critical approaches and ‘taxation’ respectively.

![Figure 5: Mean values per year for topics 1, 16, and 18](image-url)
4.6 Industry-related topics: topics 6, 7, 17

Accounting history has developed in and around very heterogeneous domains of human activity, yet three industries emerge as three consistent topics of interest: trade (Topic 7), infrastructure investments in wartime (Topic 6) and mutual aid (Topic 17). These themes are very specific, and account for a small number of words, that is respectively 3.4, 2.3, and 2.3 per cent of the total.

The fact that trade constitutes a consistent area of interest in accounting history research shouldn’t perhaps surprise, considering that it is widely acknowledged that accounting theory and practices emerged and stabilized within the activity of commerce in different epochs and places. Among the most characterizing terms of this topic indeed appear account, books, records, and credit, assets, cash, period, entries referable to the technicalities of bookkeeping and financial accounting, but also trade, trading, transactions, sales, store, inventory, merchants clearly referring to the sphere of commerce. Indeed, titles of articles with a prevalence of assigned words to Topic 7 include ‘The Elting and Hasbrouck store accounts: a window into eighteenth-century commerce’ (Hollister & Schultz, 2007) and two articles on the development of management accounting practices at the Hudson’s Bay Company in two different periods of time: 1670-1820 (Sprakman & Wilkie, 2000) and 1860 to 1914 (Sprakman & Davidson, 1998).

Topic 6 (‘Infrastructures’) is a small but clearly defined research area dedicated to accounting for infrastructure investments, mainly in wartime. Words composing this topic are related to the infrastructure industry (canal, railroad, construction, building) and the military sphere (as the generic terms war, military, or as specific references to some nations or sites of conflicts, e.g. soviet, kuwait, british, canada. An analysis of the articles that are most represented by this topic confirms our interpretation. For example, two of the most coded articles to this topic are about budget estimates and cost-benefit analysis practices in the construction of the Rideau Canal in Ontario for defensive purposes (Bujaki, 2010, 2015), and one is about corporate reporting at American railroad during the Civil War (Heier, 2010).

Finally, mutual aid is another industry that seems to have attracted the attention of accounting history researchers. This topic is characterized by terms explicitly referring to mutual aid or insurance sphere, such as: insurance, mutual, societies, life, agents, agencies, bankrupt, bankruptcy, lloyd. It is most present in papers specifically dedicated to the analysis of change among mutual aid societies, e.g. ‘Welfare or politics? The identity of Italian mutual aid societies as revealed by a latent class cluster analysis of their annual reports’ (Di
Like the other topics included in this set, mutual aid is a very specific debate, being the most important topic among only eight papers.

No clear-cut pattern is shared by these idiosyncratic debates (Figure 6). We can, however, conclude that, in general, research in Accounting History tends to focus on specific industries and that each industry-related debate periodically re-emerges every few years. More specifically, interest in trade seems to pre-date infrastructures and mutual aid. On the other hand, infrastructures in wartime and mutual aid have become progressively more researched. In passing, the recent increase of interest for the Topic 6 (see three subsequent and growing peaks in 2003, 2010 and 2015) could be explained as a rising interest for accounting and the military (see special issue devoted to this in 2010 and edited by Funnell and Chwastiak), focusing on the enduring importance of the political imperative in accounting for armies and navies, but also for the major infrastructure projects related to wartime.

![Figure 6: Mean values per year for topics 6, 7 and 17](image)

**4.7 Country-related topics: topics 11 and 12**

The third set of context-specific topics focuses on geographical areas. The topics comprising this set are very small: just the 2.6 and the 1.8 per cent of the words in the sample are coded under topic 11 and 12 respectively. The words composing Topic 11 comprise geographic references to Spain and Portugal: *spanish*, *spain*, *portuguese*, *portugal*, *seville*, *lisbon*. Although investigating different issues (e.g. the relationship between accounting and
architecture, bookkeeping practices, accounting education), the three articles with prevalent presence of topic 11 focus on Spain or Spanish domination (Mussari & Mussari, 2006; Donoso Anes, 2002) and Portugal (Lima et al., 2007).

Topic 12 is a residual and small topic that looks very heterogeneous in nature. Interestingly enough, several countries feature among the highest ranked words constituting this topic: france, french, sri lanka, italy and also other terms clearly referable to the Italian accounting school: zappa, economia, aziendale. Our interpretation is thus that Topic 12 reflects the research on accounting practices and traditions in places other than Spain and Portugal and the Anglo-Saxon world. Indeed words related to English speaking countries appear across most other topics, thus confirming critics on the Anglo-centric nature of accounting history research (Carmona and Zan, 2002).

Looking at Figure 7 we can appreciate high variability over time for these topics and no dominant trend in terms of the geographical contexts that accounting history research is mostly dedicated to. Peaks in these cases can be associated with specific papers, such as articles written by Spanish authors in the case of topic 11.

![Figure 7: Mean values per year for topics 11 and 12](image)

4.8 Specific thematic debates: topics 3, 4 and 10.

We included in this set three specific and relatively small topics, namely Women in accounting (topic 3), Interface between race and accounting (topic 4), and Accounting treatises (topic 14).

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4 Topic 1: zealand; Topic 3: australian; Topic 6: british; Topic 15: british; Topic 16: canada; Topic 18: american
Our interpretation for topic 3 and 4 was mainly based on the list of the most relevant words, which included gender-related terms for topic 3 (i.e. women, female, gender) and race-related words for topic 4 (i.e. maori, aboriginal, slave, black). The presence the words men (topic 3) and white (topic 4) suggests that these debates deal with the struggles of disadvantaged groups vis a vis more powerful ones. The word list offers also insights about the locus of these battles: the accounting profession in the case of topic 3 and the plantation in topic 4. These two topics were already identified in previous literature reviews under the labels ‘accounting and the unfamiliar’ (Bisman, 2012) or ‘socio-cultural histories of accounting’ (Walker, 2008). Interestingly enough, conversations about women in accounting are as prevalent as discussions about professional bodies and more prevalent than cost accounting.

Compared to the other two topics included in this set, the interpretation of topic 10 was less straightforward. The topic is small (it constitutes on average the 2.7 per cent of the corpus of texts under investigation) and it refers, in our interpretation, to discussions around accounting treatises written in the past. This reading was suggested by a looking at the papers that contributed most to the topic. The first one analysed the relationship between the principle and Chinese writing and accounting (Ji & Lu, 2013). The second investigated the evolution of bookkeeping methods in China by looking at accounting treatises (Lu & Aiken, 2004). The third presented an analysis of Pacioli’s Summa de Aritmetica (McCarthy et al., 2008). Differently from topic 0 ‘financial accounting techniques’, words coded under topic 10 are associated to discussions around how accounting techniques were codified and taught rather than their practical use among companies. Indeed, relevant words in topic 10 are book, textbook, education, methods. As far as this topic is concerned, some similarities with Bisman’s (2012) category ‘Accounting thought, accounting ‘firsts’, accounting education’ can be noticed.

Trends for topics 3, 4, and 10 are presented in Figure 8 below.
4.9 General overview

To conclude the exploration of the outputs produced by Mallet, we divided the period under analysis in three seven-year phases and observed the variation of the sets accordingly (see Figure 9. To help the reading of the figure, consider, as an example, that values for ‘Technical core’ 1996-2001 were obtained by adding the average value of ‘financial accounting’ 1996-2001 plus average value of ‘cost accounting’ in the same phase). Without considering the set ‘Narrating history’, which has a very high prevalence across the three phases, few remarks can be made on the overall development of the debates in Accounting History. More specifically,

- The first period (1996-2001) is dominated by two sets: technical core and regulation (audit in particular). In a sense, we can claim that, at the beginning, the focus of the journal reflected the ‘traditional’ interests of the accounting discipline.
- The second period (2002-2008) is characterized by fragmentation. In fact, no set clearly outperforms the others in this period (although ‘Specific thematic debates’ is the only set above 10 per cent).
- In the third phase fragmentation persists, yet the ‘State-related’ topics emerge compared to others.
In this paper we presented the preliminary results of an explorative topic modeling of the ‘history of accounting history’ research. Our broad goal was to develop a more comprehensive understanding of accounting history literature, exploring contents and delving into its dynamics.

This is a pilot study limited to all of the published papers of one of the leading journals in the field (Accounting History). An extension of the study to other outlets is in progress, in order to appreciate the evolution of accounting history at a field level. Despite the limits in scope that the present analysis necessarily bears for its pilot nature, we believe that several interesting results are already emerging and are worth being shared. Additionally, we believe that the particular technique that we employed – Topic Modeling – is proving to be solid and powerful in making sense of the vast literature under analysis, thus offering a considerable potential for the advancement of our knowledge.

We will organize the discussion as follows. First, we will review and discuss our main findings, pointing out both their consistency with previous interpretations and the emergence of less expected novel issues that deserve more attention by the community of scholars (discussing the substance). Second, we will discuss our particular analytical technique, also in relation to other approaches to literature reviews (discussing the method).
5.1 Discussing the substance

Focusing on the question of what accounting history research has been dedicated to, the first thing that we can say is that there is a substantial consistency between our findings and previous thematic categorizations of accounting history research developed with other reviewing and interpretive approaches. Indeed, circling back to our review of the reviews, we can note that five of the eight sets of topics that we identified resonate well with the most established categorizations (Table 4).

<table>
<thead>
<tr>
<th>Categories from previous literature reviews</th>
<th>Sets of topics emerging from our analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical core of accounting (Walker, 2008b)</td>
<td>Technical core of accounting (topics 0 and 9)</td>
</tr>
<tr>
<td>History of professionalization (Walker 2008)</td>
<td>Professional (topics 15 and 18)</td>
</tr>
<tr>
<td>Institutional history (Bisman, 2012; Carnegie &amp; Napier, 1996)</td>
<td>Narrating history (topics 8, 13, 14)</td>
</tr>
<tr>
<td>The evolution of professional bodies (Napier 2006)</td>
<td>State related (topics 1, 19, 16)</td>
</tr>
<tr>
<td>Historiography (Edwards &amp; Walker, 2009; Previts, Parker &amp; Coffman, 1990; Walker 2008b)</td>
<td>Specific thematic debates (topics 3, 4, 10)</td>
</tr>
<tr>
<td>Public sector (Bisman, 2012; Carnegie &amp; Napier 1996; Walker 2008b) Polity (Edwards &amp; Walker 2009)</td>
<td></td>
</tr>
</tbody>
</table>

Table 4: Comparing interpretations

As we saw, previous literature identified accounts of the evolution of theory and practice of financial and management accounting in the past as a consistent body of accounting history research. This is confirmed by our analysis, where topics reflecting the ‘Technical core’ of accounting research clearly emerge. Professionalization is another established category of accounting history research according to many interpretations,
including our own analysis, as far as two topics grouped terms that we related to professional bodies and accounting firms in the past. Besides, the category of historiography is included in our overarching set of ‘Narrating history’ that, in our interpretation, reflects the underlying historical approach of our corpus of texts. Public sector is recognized as a specific area of accounting history and this clearly emerges from our analysis as well. Finally, previous reviews identify a somewhat residual category clustering together researches on the relation between accounting and race, colonialism, gender, and the like, which can be at least in part related to our set of ‘Specific thematic debates’. At the same time, however, three of our sets of topics are not specifically covered by previous categorizations (Regulation, Country-specific and Industry-specific topics). While the absence of categories that could be matched with ‘Industry-specific’ and ‘Country-specific’ topics can be explained by the small dimension of these topics, it is suprising that the set ‘Regulation’ has not been captured in prior literature reviews. Hence, taken together, the comparison with established categorizations tells us that our analysis is solid (ample convergence in the findings) and that there is something that has been overlooked by previous reviews: the history of accounting regulation.

Within our study, exploring and confirming what accounting history is about constituted the first step to investigate how this body of research is changing, i.e. its longitudinal dynamics. We believe that here lies the biggest contribution of our research.

In terms of dynamics, one of the most notable findings is that the ‘Technical core of accounting’ decreased in importance as a set of topics overtime in favour of more variegated and fragmented foci of research (recall Figure 9). This finding is very interesting to call out because it may substantiate the claimed shift from a conception of accounting as a technical practice (a bundle of techniques and procedures to satisfy information requirements) to the one of accounting as a social practice (how accounting shapes the environment and how the environment shapes accounting) (Gomes 2008). As our findings would suggest, conceiving accounting as a social practice goes hand in hand with increasing fragmentation of topics, as this approach brings to the centre how accounting works in different contexts (where the public sector and gender-related struggles can be indentified as the more prevalent’contexts’ within Accounting History). In other words, the decreasing attention in the ‘technical core’ may be explained by referring to the transition from the so called ‘traditional’ to ‘new’ accounting history (Carnegie & Napier 1996, Fleishman et al., 2005, Walker 2008).

Moving from that, the set of topics identified and their dynamics over time can help problematizing the type (and the amount of) ‘pluralisation’ that the new accounting history
approach has brought about in the accounting history debate. Referring back to Miller et al. (1991), we can see a pluralisation in the range of issues that are under the lenses of accounting historians. However, whether there has been a proliferation of methodology and theoretical approaches is less clear. Concerning methodology, our analysis suggests that the way in which accounting history is presented or ‘talked about’ has not changed much in the last 20 years (recall the stability of the set ‘Narrating history’ in table 9). Besides, the fact that only one out of 20 topics is theoretically grounded (Topic 19 ‘Accounting as a technology of government’) suggests that theory does not stand out as a crucial feature of the papers published in Accounting History. Although a supplement of research is needed to confirm these trends by looking closely to our topics, it may be suggested that the pluralisation advocated by Miller et al. (1991) has been partial at best.

5.2 Discussing the method

In a recent discussion about future trends in accounting history research, Carnegie and Napier (2012) insightfully pointed out that Facebook posts, Twitter threads, and email conversations might constitute the archives of the future. Although whether these evidences will be conserved or not is uncertain, it is undeniable that the diffusion of digital forms of communication and coordination will make the issue of how to analyse enormous amount of data pressing and pressing for historians (Rosenzweig & Grafton, 2011) and social scientists of the future – see also the recent debate on big data in management and accounting research (George et al., 2014; Vasarhelyi et al., 2015). Similarly, the research practices of academics are changing given the (almost) unlimited material available just one click away on Google Scholars or similar search engine on any area of knowledge. Understanding how an academic conversation has evolved and where it is heading increasingly requires scholars to deal with hundreds of papers published on different outlets. As we enter the age of abundance, we need to understand whether new methods can be employed to make sense of increasingly huge amounts of materials.

These considerations backed our choice to employ Topic Modeling (TM) as a means to explore, make sense of, and inductively theorize on a large amount of textual data that constitute a field of research. Based on the findings that started to emerge from our analysis, we feel confident in sharing the view according to which ‘topic modeling provides a valuable method for identifying the linguistic context that surrounds social institutions’ (Di Maggio et. al, 2013: 570). Let us highlight here some of the advantages that we think our application of TM to a review of the field of accounting history research bears.
The first obvious advantage is that TM potentially allowed us to analyze the whole universe of research in this area, as opposed to traditional review approaches that prove to be impractical when the corpus of text is large. As we stated, we started from an analysis of all published papers in one of the leading journals of accounting history, but the analysis is intended to be enlarged to the whole field, something that would be impossible to process without an automated aid.

Another advantage is that in TM topics are created according to words’ probabilities and not to a researcher’s presumption of what is worth finding in the texts before having analysed them, leaving thus the subjectivity to the immediately subsequent interpretation phase. In mapping the dominant reviewing approaches in accounting history, we had identified a certain dichotomy between narrative literature reviews: narrative literature reviews tend to create themes, systematic ones to count them. Through TM we blended both approaches in a way: we inductively created topics, while quantifying their relevance; we rested on researchers’ subjectivity in interpretation, while retaining the systematic robustness of statistical descriptions. We thus think that findings can be very strong both in depth and scope, at the same time.

Even more importantly, TM allowed us to keep depth in interpretation and scope of the analysis along a third dimension: temporality. As we saw, the biggest potential for contribution lies in the possibility to account for and explain longitudinal dynamics of topics overtime (not only what accounting history is about, but also how it has been changing, opening up to speculations on why so), which may bear important insights in the evolution of a discipline.

Another feature distinguishing our approach from previous reviews is that in TM the unit of analysis is not the paper, but the topic. What TM captures are networks of meaning across papers. So, rather than assigning texts to particular topics, TM views texts as mixtures of topics. This has important consequences, because it means that no paper is coded univocally to a topic, recognizing that there are different discourses within each paper. Therefore, we were are able to capture not only thematic areas (such as professional bodies), but also approaches or features (such as the general historical genre, or the context-specificity) across papers and thematic areas. Ultimately, this allowed us to more freely reason in terms of changes over time.
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Note to Table 2: Table 1 displays the 20-topic solution we opted for, listing the 40 highest-ranked terms for each topic. Topic order has no
meaning at all. The first row is the topic ID (from 0 to 19), the second row is the label we assigned to each topic. The list of the most important words starts on the third row. One word can appear in different columns because of polysemy: the same word, in fact, can have different meanings in different context.