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New avenues of research to explain the rarity of females at the top of the accountancy profession

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ABSTRACT The rarity of females in leadership positions has been an important subject of study in economics research. The existing research on gender inequality has established that important variations exist across time and place and that these differences are partly attributable to the cultural differences regarding gender roles. The accounting research has also established that women are rarely promoted to the top of the Big Four audit firms (KPMG, Deloitte, PricewaterhouseCoopers and Ernst & Young). However, the majority of research in accountancy has focused on Anglo-Saxon contexts (the United States, the United Kingdom and Australia) or country case studies without explicitly considering the role that cultural variations may play. Because the Big Four are present in more than 140 countries, we argue that the accountancy research that attempts to explain gender disparities at the top of these organizations would benefit from considering cultural factors. Such research, however, faces a key methodological challenge—specifically, the measurement of the cultural dimensions that relate to gender. To address this challenge, we propose an emerging approach that uses the gender distinctions in language to measure cultural attitudes toward gender roles. The idea that language may capture gender roles and even influence their formation and persistence has been the focus of emerging research in linguistics and economics. To support our proposition, we follow two steps. First, we review the accounting research by performing a systematic query on the bibliographic databases of the accounting articles that study gender and language. Second, we present data regarding the diversity of the global boards of the Big Four and the diversity of the linguistic environments in which they operate. We find that half of the countries where the Big Four are present exhibit a sex-based grammatical system for their most-spoken language, while the other half of the countries do not exhibit this system. Our findings suggest that the use of language as a measure of culture is a novel approach in accounting research. We conclude by emphasizing some potential directions for future research, namely, studying the linguistic determinants of the rarity of females at the top of audit firms and exploring accountancy practices in countries with linguistically diverse environments, such as Canada or Belgium, among others. This article is published as part of a collection on the role of women in management and the workplace.

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Introduction

The scarcity of females in high positions at the so-called Big Four audit firms (Loft, 1992; Roberts and Coutts, 1992), as well as their higher turnover (Lehman, 1992; Browne, 2005), have been extensively documented in the accounting research¹. For example, in the United States, as of 2010 (Catalyst, 2011), at Deloitte and KPMG, women comprised 18.8% of the partners, while this number was 16.9% at PwC (and no data are provided for E&Y). The existing explanations for the lack of females in top accountancy positions in the related research include the suggestions that women may just be “different”, that they face barriers in accessing (and within) organizations, and more broadly, that they face societal-level barriers in terms of stereotypes and expectations. These explanations have been recently summarized (Dambrin and Lambert, 2012).

A majority of the research on gender and accountancy focuses on Anglo-Saxon contexts (that is, the United States, the United Kingdom and Australia), although the rarity of women at the Big Four has also been documented in the European context, for example, in countries such as France and Belgium (Lupu, 2012). Only several studies emphasize country-level factors or country case studies and the role of local factors (Komori, 2008). This deficiency contrasts with the existing research in economics that has documented substantial variations in gender outcomes across countries, which the UN Women (2015) report emphasizes. To explain the rarity of women in the profession, economists have emphasized the role that culture may play in shaping gender roles (Fernandez *et al.* 2004; Goldin, 2014).

Measuring culture is a difficult enterprise because we typically observe gender outcomes rather than the social norms that constrain behaviour. Because behaviour also depends on other factors such as institutional and economic incentives, it is difficult to empirically disentangle the impact of culture on economic outcomes. The nascent field of “linguistic relativity and economics” research proposes to address this challenge by using the grammatical structures of language to measure culture. Furthermore, language is also said to potentially influence the transmission and persistence of behavioural cultural norms (Mavisakalyan and Weber, 2016). Among the grammatical features of language that has received considerable attention from economists, gender distinctions in grammar figure prominently. These distinctions have been shown to correlate with inferior socioeconomic, political and managerial outcomes for women at the country level (Givati and Troiano (2012), Santacreu-Vasut *et al.*, (2013), Santacreu-Vasut *et al.* (2014), Mavisakalyan (2015)). Hicks *et al.* (2015) show that these patterns also exist at the individual level. In particular, the same researchers show that immigrant females from countries whose language relies on sex-based grammatical distinctions perform more housework and that gender norms are formed during childhood and persist throughout life. Galor *et al.* (2017) suggest that these sex-based grammatical distinctions reflect historical gender specialization in agricultural practices. Language may convey gender norms through gender-based grammatical distinctions and provide a unique measure of historical gender roles that have been transmitted to the present day.

This article argues that the study of existing gender disparities in top leadership accountancy positions across countries may benefit from using language to measure gender inequality. To support our claim, we proceed as follows. First, we perform a systematic literature review by tracing all published research papers from 1926 (the first issue of *The Accounting Review*) to October 2016 that address and connect gender, accounting and language issues. Second, we provide evidence for the diversity of linguistic environments in which the Big Four operate because of their worldwide presence. In this process, we also collect data on

the characteristics of the global boards of the Big Four in terms of gender diversity and size.

Our first finding shows the scarcity of papers that investigate gender in accountancy by using language to measure culture. We then show that the Big Four operate in highly diverse linguistic environments and that language may enhance our understanding of the cultural determinants of the rarity of a female presence in the Big Four across countries. Furthermore, our systematic literature search suggests that this approach is novel and may contribute to the existing body of knowledge on accountancy.

Literature review

Gender in accountancy. *Accounting, Organizations and Society* first published a special issue on gender and accounting in 1987. Five special issues on the topic have since followed². Dambrin and Lambert (2012) provide an analysis of the papers that have been published in accounting journals that address gender issues up to 2009, and they identify 156 papers. Together, *Accounting, Accountability & Auditing Journal* (AAAJ), *Accounting, Organizations & Society* (AOS) and *Critical Perspectives on Accounting* (CPA) account for two-thirds of all scientific work on gender studies in their selected journals, which indicates that the theme of gender predominantly attracts the interest of the accounting journals that can be classified as sociological and/or critical³.

As emphasized by Haynes (2008a), the fact that gender is addressed prominently in special editions and in journals that are critical in nature indicates that gender issues have not yet entered the mainstream accountancy research. Moreover, the topic of gender relations in accountancy firms remains under-researched (Anderson-Gough *et al.*, 2005; Czarniawska, 2008).

Hammond and Oakes (1992), Haynes (2008a) and Lehman (1992) present overviews of the theories and methodologies that are used in the academic accountancy articles that address gender issues, and they discuss their implications on research. Hammond and Oakes (1992) outlined three major streams of feminist theory and their applications to accountancy. Feminist empiricism focuses on the exclusion of women from professional positions and work and argues that these professions and their related functions are interpreted and developed through a masculine lens. Feminist postmodernism attacks the accountancy assumptions of rationality, objectivity, and generalizability and focuses on the role of language in building power relationships. Feminist postmodernism challenges the definitions of minority and subordinate groups from the people in power (Hammond and Oakes, 1992). Feminist standpoint theory challenges the masculine bias in accountancy towards neutrality and objectivity and asserts a unique and empathetic view of the world from which females can advocate new emancipatory forms of accountancy (Hammond and Oakes, 1992).

Walker (2008) provides a review of the extent to which accountancy historians have engaged with women’s issues and reviews some important papers that examine the historical role of gender in the accountancy profession (Kirkham, 1992; Lehman, 1992; Kirkham and Loft, 1993; Wootton and Kemmerer, 2000) and the potential influence of feminist theory on accountancy. Another line of research documents women’s participation and experiences in the profession and suggests that women face continuing gender discrimination (Haynes, 2008b; Kirkham, 1997; Whiting and Wright, 2001) and that motherhood and child-rearing present serious obstacles to women’s promotion prospects (Barker and Monks, 1998; Gallhofer and McNicholas, 1998; Dambrin and Lambert, 2008). This line of research also suggests that the practices in audit firms reproduce gender

domination (Anderson-Gough *et al.*, 2005; Kornberger *et al.*, 2010) and that gender is an important variable that explains the salary differentials in parts of the profession (Brennan and Nolan, 1998; Humphrey *et al.*, 2013).

Overall, the studies on gender and accountancy indicate that in both the public and private business and domestic arenas, accountancy has operated to reproduce gender inequality. Some researchers have suggested that the nature of accountancy itself represents masculine values, represses feminine qualities and fails to engage the emotional dimension (Hines, 1992; Broadbent, 1998).

However, the majority of research on gender and accountancy belongs to feminist empiricism or a “gender-as-a-variable” approach (Alvesson, 1997) that has examined Anglo-Saxon contexts (the United States, the United Kingdom and Australia). This research investigates the extent to which men and women differ in their orientations on various issues, such as ethics (Smith and Rogers, 2000), career drivers (Chia, 2003), job turnover intentions (Mynatt *et al.*, 1997), sexual harassment (Nichols *et al.*, 1997), behavioural attitudes (Lowe *et al.*, 2001), gender role stereotypes (Hull and Umansky, 1997), communication techniques (Gaffney *et al.*, 2001) and audit quality levels or audit fee premiums (Breesch and Branson, 2009; Hardies *et al.*, 2015).

Recent studies provide evidence that goes beyond the Anglo-centric view of previous research by focusing on specific countries. Dambrin and Lambert (2008) and Lupu (2012) study the scarcity of women at the highest levels of French auditing. Komori (2008) considers the experience of Japanese women and argues that women have changed accountancy practices by applying a feminine approach to their work. The unfamiliarity of the Japanese culture is reflected in Komori’s work. A limited but growing literature on gender-differentiated audit quality (for example, Hardies *et al.*, 2014; Ittonen *et al.*, 2013) has emerged from European contexts. An exploratory study by Ittonen and Peni (2012) using a small sample of firms from Finland, Denmark and Sweden finds that audit fees are higher for female auditors. Hardies *et al.* (2015) provide evidence from the Belgian market that clients pay higher audit fees to female auditors. They state that this fee premium may exist because of gender differences in knowledge, skills, abilities, preferences and behaviours or because of supply-side factors (for example, a demand for diversity, gendered perceptions regarding audit quality, or client satisfaction).

Overall, most of the research on gender and accountancy uses a “gender-as-a-variable” methodology; this research focuses on the Anglo-Saxon context and studies the accounting profession, especially auditing. Different explanations have been advanced in accounting research, but they are not sensitive to the variations in the cultural factors that relate to gender norms.

Gender economics: using language to measure culture. In contrast with accounting, economics research has studied the role that culture plays in either obstructing or promoting progress in diminishing gender disparities worldwide because gender inequality has been shown to potentially impact long-term economic growth (Agénor and Canuto (2013)). Moreover, gender inequality has been documented in several realms of economic life in both developed and developing countries (UN Women, 2015). For example, the incidence of poverty is higher among females, even among women who work (Duflo, 2012). In the labour market, female labour force participation has increased throughout the last century. However, despite a narrowing gender gap in some countries, there has been a lack of full convergence (Goldin, 2014). In the household, gender influences both marriage market outcomes and the amount of time that is spent on housework (Grossbard-Shechtman and Neuman, 1988).

To understand the determinants of gender inequality, economists have traditionally considered explanations that are based on the role of preferences (including taste-based discrimination), the impact of institutions and culture. However, measuring culture and disentangling the role of culture from other factors has been a challenging exercise, mostly because gender norms are difficult to observe. Furthermore, because formal institutions coevolve with informal institutions, an empirical identification of the causal relations between culture and gender inequality is extremely difficult. To address these issues, economists have used an epidemiological approach (Fernandez, 2008) that consists of studying the behaviour of US immigrants to disentangle institutional from cultural aspects. For example, US immigrants share an institutional environment but have different countries of origin with different cultures. The study of migrants has also allowed economists to study the intergenerational transmission of norms, including gender norms (Fernandez *et al.*, 2004).

Gender disparities have also been explored by using experimental approaches that include both field experiments (Duflo and Bertrand, 2016) and lab experiments (Croson and Gneezy, 2009). These approaches have documented different levels of risk aversion and preferences for competition between genders and investigated group dynamics in all males, all females and mixed groups. The economics of identity, which was pioneered by Akerlof and Kranton (2000), has also proposed a conceptual framework to understand the consequences of gender in the economic and institutional realms (Bertrand *et al.*, forthcoming).

Overall, a mixed picture emerges that shows that gender disparities evolve over time but that the long-term persistence of institutional, historical and cultural factors are preventing society from closing the gender gap. However, the results also seem to suggest that understanding the emergence and persistence of gender roles is an important field of research. In this line of enquiry, a nascent field of research, “linguistic relativity and economics”, studies the role that language grammatical structures may play in influencing economic behaviour. (For a review of this emerging literature, see Mavisakalyan and Weber (2016) and Giuliano (2016)). Language may therefore be used as both a measure of culture and as a potential factor that shapes the formation and persistence of attitudes and beliefs (Gay *et al.*, 2016).

Various grammatical features of languages have been shown to be correlated with economic outcomes. For example, Luigi Guiso and Zingales (2006) show that trust among the inhabitants of different countries is influenced by the degree of commonality in their languages. Tabellini (2008) uses the grammar of pronouns as an instrumental variable to distinguish degrees of morality to identify the causal impact of these values on institutions. Chen (2013) investigates whether future time references in language influence intertemporal decision-making.

Among the grammatical features of language that has received the most attention from economists, gender distinctions in grammar figure prominently. Givati and Troiano (2012) use gender marking in pronouns as an instrumental variable for maternity leave laws. Gay *et al.* (2013) show that women who live in countries where grammar is sex-based face barriers in accessing labour, land, and credit markets, and Santacreu-Vasut *et al.*, (2013) find that these women face barriers in the implementation of gender political quotas. Hicks *et al.* (2015) show that migrant households that speak languages with sex-based grammar are more likely to allocate household labour on the basis of gender. Similarly, Gay *et al.* (2016, 2017) find that female migrants who speak languages with sex-based grammar are less likely to supply labour.

Sex-based distinctions in grammar may result from selective cultural evolutionary pressures (Johansson, 2005) and may be a

marker for historically inherited gender roles. Gay *et al.*'s (2016, 2017) decomposition exercise suggests that two-thirds of the relationship between sex-based distinctions in language and female labour force participation among migrants to the United States "can be explained by correlated cultural factors, with about one third potentially explained by language having a causal impact". Interestingly, Galor *et al.* (2017) show that gender-based grammatical distinctions correlate with gender specialization in historical agricultural practices. Gender-based grammatical distinctions may therefore provide a unique measure of historical gender roles that have been transmitted up to today. In addition, these distinctions may directly influence cognition and behaviour, as some experiments in cognitive psychology suggest (Boroditsky *et al.*, 2003). It is also possible that the correlation between language and gender outcomes is driven by the co-evolution of language and culture, as Roberts and Winters (2013) and Roberts *et al.* (2015) note. Finally, the interaction between language and behaviour may itself depend on the institutional environment, as Gay *et al.* (2016, 2017) emphasize.

The nascent research in language and gender economics thus suggests that language may serve as a measure of culture, which can be used to capture cultural variations regarding the gender norms of behaviour across countries. Because the Big Four are present throughout the world and may therefore operate in diverse linguistic environments, we propose that using language to measure culture may help explain the rarity of females at the top of the Big Four across countries. In the next section, we further describe how language may facilitate our understanding of the rarity of women in the accounting profession.

New insights from language. How would the existing explanations of the rarity of women in the Big Four change if we consider language? In this section, we address this question by revisiting the existing explanations from gender in accountancy as summarized in Dambrin and Lambert (2012).

Dambrin and Lambert (2012) present existing "stories" that rationalize the lack of women in powerful positions in the accountancy profession that are derived from different research approaches. Accordingly, they emphasize the value of following a reflexive stance and show how the discourse behind these "stories" helps to perpetuate women's unfavourable position.

The first explanation, "Just give it time", states that women lag behind because they entered the accounting profession later than men. This timeline may actually be country-specific because of varying histories of women in accounting, as Czarniawska (2008) suggests. Therefore, it would be interesting to track the dynamic evolution of women who enter the accounting profession across countries as a function of the cultural and linguistic environment.

The second explanation, "Women are different", argues that differences in preferences, ability, motivation and personality lead women to make choices that are oriented toward the creation of "family-centered lifestyle choices". These choices may explain the lack of women's advancement in accountancy. Indeed, experimental economics (Croson and Gneezy, 2009) documents the existence of gender disparities in the degree of risk aversion, social preferences and competitiveness. Interestingly, Gneezy *et al.* (2009) explore whether nature or nurture explains these gendered preferences by comparing preferences for competition in an experimental setting in both matrilineal and patrilineal societies. They find that gendered preferences vary across cultures. Because language sex-based distinctions have been shown to correlate with gender roles and preference formation (Hicks *et al.* 2015), the explanation that "Women are different" may be nuanced and enriched by considering the linguistic environment.

The third explanation, "Jobs are for the boys" establishes that women face barriers to entry into the accountancy profession. These barriers can be informal, such as segregation in social professional networks, or formal, such as inflexible working conditions. Kornberger, Carter and Ross-Smith (2010) present a case study of one of the Big Four firms that has undertaken major changes in its work organization to increase flexible working hours. As the authors show, language played a crucial role in the outcome of the reform because "language is not a neutral representation of reality". Their findings suggest that the language that was used to frame the program reinforced gender as a "socially differentiating mechanism" in a "limiting, naïve and stereotypical" fashion. This finding suggests that the discourses of organizations are as important as the actual policies in place because they shape both the actual barriers and the possible solutions to overcome them. Therefore, an analysis of organizational barriers must focus not only on how human resource (HR) policies may help or hurt women's advancement but also on how language is consciously or unconsciously reinforcing or undermining organizational changes concerning gender. Furthermore, because this linguistic environment may constrain the potential discourses that are built within organizations, this analysis must consider the linguistic environment of the country or society that is under study.

The explanation that "Men are managers; women are mothers" argues that the barriers that women face are broader than the barriers that they encounter exclusively within the organizational realm. In particular, these barriers are shaped at the societal level, partly by culturally determined notions of masculinity and femininity. However, these ideas vary across time and place. As Gay *et al.* (2013) show, gender inequality is highest in countries where the grammar of the dominant language marks gender more intensively. Incorporating the characteristics of the language that is spoken at the societal level may provide clues concerning the extent to which culture imposes traditional gender roles on women. Researchers and accountancy firms would therefore benefit from increasing their awareness of the societal obstacles that are produced by language.

Finally, the explanation "A never-ending story? How discrimination is perpetuated" argues that expectations play an important role in perpetuating gender roles in and outside organizations. Language may be one of the channels through which these expectations are conveyed.

Therefore, language may play an important role in perpetuating traditional gender roles, contributing by preventing women from accessing top leadership positions in society. As Butler (2006) explains, "the alteration of gender at the most fundamental epistemic level will be conducted, in part, through contesting the grammar in which gender is given".

Methodology

Literature search methodology. In this section, we describe the methodology that is used to trace the accounting research that studies gender issues and language. We ran several queries in October 2016 in the bibliographic database EBSCO Business Source Premier. We selected papers in all English-language journals (that is, "Source" contains "accounting") that contained "gender" or "women" and "language" in the title, abstract or keywords. Our most recent query allows us to review the papers that were published (or still in press but available online) up to October 2016. To triangulate our data with the fields that appeared to be non-accounting but were likely to contain research that included both gender and accounting issues, we also conducted computer-based surveys of six organizational journals (*Academy of Management Journal*, *Academy of Management Review*, *Administrative Science Quarterly*, *Organization Science*,

Organization Studies, and *Work and Occupations*) and two feminist sociological journals (*Gender, Work and Organization* and *Feminist Economics*). Except for one paper that was published in *Organization Science*, in the organizational and feminist journals, not one paper contained the words accounting, gender (or women) and language in all combinations in the title, abstract or keywords.

Big four: description and data collection. The Big Four are the four largest international accountancy firms as well as the four largest professional service networks that offer audit, assurance, tax, consulting, advisory, actuarial, corporate finance and legal services. The Big Four handle the vast majority of audits for publicly traded companies and for many private companies. Studies suggest that the Big Four audit 99%⁴ of companies on the FTSE 100 and 96% of the companies on the FTSE 250 Index. The Big Four are E&Y, Deloitte, KPMG and PwC.

The Big Four rely on a very clear hierarchy and have adopted a very standardized career path, which is described as the “up or out” model (Dambrin and Lambert, 2008). This system promotes upward mobility on the basis of merit (Grey, 1998) and forces individuals to either progress or quit their jobs (Ramirez, 2003). The Big Four are organizations where accounting practices “emerge, become standardized and regulated” and where “professional identities are mediated, formed and transformed” (Cooper and Robson, 2006: 416). At the same time, the Big Four face high and costly turnover rates (Browne, 2005) and have developed employment plans to counteract inequality—which are related to minority groups and women—and to communicate their initiatives intensively.

Although our aim is not to provide a complete empirical analysis of the place of women at the Big Four, we collect preliminary evidence that supports our proposal that the Big Four are a suitable setting to conduct research on language, gender and accountancy. Accordingly, we collected data regarding the Big Four presence around the world as follows. First, we collected data using the Big Four global websites as of 2016. These sources allowed us to gather information regarding the number of countries where each of the Big Four was present in 2016. We also collected data regarding the characteristics (size and gender diversity) of their global boards, which is the highest instance of decision-making.

Language data: description and sources. We also gather information concerning the linguistic environment in which the Big Four operate. We focus on the dominant language, which is classified as the most spoken language (Britannica, 2010).

Regarding the gender distinctions in language, we use the classification from Corbett (2013) concerning whether a given language grammar makes sex-based distinctions. These data are available in the World Atlas of Language Structures (WALS; Dryer and Haspelmath, 2011), which is the most comprehensive source of linguistic structures data.

In linguistics, a grammatical gender system is a set of rules of agreements that depends on nouns of different types. These types can be based on sex (female and male or gender as commonly used) or on other social constructs (that is, animate or inanimate, human compared with non-human and so on). With this data, we then compute the percentage of countries where the Big Four are present and where the dominant language has a sex-based system.

As discussed in the previous section, this measure has been used by economists (Gay *et al.*, 2013; Santacreu-Vasut *et al.*, 2013); Hicks *et al.*, 2015; Gay *et al.*, 2016, 2017, among others) to document that women who live in countries where the grammar is gender-based face stronger barriers to economic participation

and are more likely to behave according to traditional gender norms of behaviour.

The mechanisms that explain the associations between sex-based distinctions in language and the gender inequality that is found in gender economics research remain an active area of research (Mavisakalyan and Weber 2016). These mechanisms may operate at two levels. First, language may shape thought, which is famously known as the Sapir-Whorf hypothesis (Whorf, 1956). Although the strong version of this hypothesis according to which language determines thinking and action has been currently questioned, the extant research studies the weak version of this hypothesis according to which language shapes thought. This hypothesis has received some support in cognitive science. For example, concerning gender distinctions in language, Boroditsky *et al.* (2003) study whether sex-based distinctions in grammar shape individual perceptions of the characteristics of objects and their femininity and masculinity. Another possible mechanism is that sex-based distinctions capture historical gender roles that are transmitted through language, as Galor *et al.* (2017) seem to suggest. This possibility implies that sex-based distinctions in language grammar can serve as a measure of culturally and historically determined gender roles. Interestingly, as the linguist Corbett (2013) mentions, “Finally, for those interested in language and gender in the sociological sense, these direct reflections of biological sex in many languages, with the ‘control group’ of languages with similar gender structures but without the sex component, should provide a valuable source of data”. Finally, the idea that “women are different” also has a long tradition in gender and language circles (for example, the work of Deborah Tannen (1990, *You just don’t understand: Women and Men in conversation*) or of Deborah Cameron (2007, *The Myth of Mars and Venus: Do men and women really speak different languages?*)).

This article does not attempt to explain the causes for the relation between sex-based distinctions and gender inequality. However, we believe that an investigation of whether these distinctions have an impact on the female presence at the top of the accountancy profession in fairly homogeneous organizations such as the Big Four, which operate in different countries, may enrich the existing research in accountancy.

Results

Literature search results. Table 1 presents the papers that we found from our computer-based survey. We first notice that very few papers in accounting investigate gender with the length of the language. Only fourteen papers were identified by our database over the period that is under study, even after we triangulated our data with fields that appear to be non-accounting. *Accounting Education, Issues in Accounting Education* and *AAAJ and CPA* account for 49% of all scientific production that links gender studies and language, which indicates that bringing language to gender studies essentially attracts the interest of accounting journals that can be classified as educational or sociological and/or critical.

In the second step, we read the abstracts of the 14 published papers and find that four of these papers were not relevant. One of these papers (Brinn and Jones, 2007) is a study of the editorial boards’ composition at accounting journals using gender as a variable but without reference to language. Two studies that are published in *AAAJ* (Carnegie *et al.*, 2003) and in *Career Development International* (2008) do not use language as a methodological tool but merely refer to the English language. Finally, the fourth paper (Walter *et al.*, 2009) investigates language as a course compared with an accounting course.

Table 2 describes the ten relevant papers according to their authorship, title, journal, publication date, area of research and

Table 1 | Research publications on accounting, gender and language

	Number of articles	Freq.	Dates of publication
<i>Accounting Auditing and Accountability Journal</i>	2	14%	2013, 2003
<i>Accounting Education</i>	3	21%	2006, 2004, 1998
<i>Accounting Forum</i>	1	7%	2007
<i>British Accounting Review</i>	1	7%	2015
<i>Career Development International</i>	1	7%	2008
<i>Critical Perspective on Accounting</i>	1	7%	2016
<i>Issues in Accounting Education</i>	1	7%	1987
<i>Journal of Accountancy</i>	1	7%	1996
<i>Organization Sciences</i>	1	7%	2012
<i>Pacific Accounting Review</i>	1	7%	2008
<i>Revista Brasileira de Gestão de Negócios</i>	1	7%	2009
Total	14	100%	

methodological use of language and gender. Six papers investigate the issue of accounting education and use gender and language as the control variables in their assessment of teaching and student performance. All of these studies use data from English-speaking countries (that is, the United Kingdom, the United States, Australia and New Zealand). The last four papers investigate gender inequality and/or diversity in the accounting profession and emphasize the role that language can play to explain the persistence of gender inequality. We see from this examination of the published papers that language has never been used in the accounting research as a variable that captures gender norms through sex-based grammatical distinctions. However, the Big Four audit companies may provide a unique setting to study the influence of language on gender inequality in the accounting profession, as proposed at the conclusion of the literature review, in the section “Literature review”.

The big four: their worldwide presence and global boards. The first and second columns of Table 3 show the number of countries where the Big Four are present and the percentage of these countries where the dominant (most-spoken) language is sex-based. In the third and fourth columns, we show the size and the percentage of females on the board, respectively.

As Table 3 shows, half of the countries where the Big Four firms are present exhibit a sex-based grammatical system for their most-spoken language, while the other half do not exhibit this system. Regarding the number of women on the Big Four global boards, the collected data suggest that although there is variation across the Big Four, this number is overall below 25%, which is consistent with the literature on gender in accounting. Interestingly, although the presence of the Big Four is worldwide, heterogeneity exists in the composition of the global boards across the Big Four both in terms of size and gender diversity, which suggests that network-specific factors may also play a role.

Future empirical analysis may exploit this variation to study whether country-level linguistic gender marking predicts the degree of gender diversity at the Big Four. The Big Four operate in heterogeneous linguistic environments, but they share common strategic goals because they are part of a network. The above descriptive statistics suggest that studying the determinants of females’ rarity at the top of the accounting profession at the Big Four by considering country-level factors such as the linguistic environment may therefore be a worthwhile area of future research. We next discuss the future research in detail.

Future research

Our preliminary analysis of the Big Four shows that these organizations are present around the world and that although they use the same business model, they operate in diverse gender-

specific linguistic environments. However, as emphasized in the section “Gender in accountancy”, most studies of gender diversity in accountancy are conducted in an Anglo-Saxon context or in specific countries (for example, Dambrin and Lambert, 2008 and Lupu, 2012 for France; Komori, 2008 for Japan). Furthermore, our systematic literature search suggests that studying gender, accounting and language is a relatively unexplored area of research. Thus, we think that studying the rarity of females at the top of audit firms, specifically at the Big Four that operate in different countries and linguistic environments, is a fruitful avenue of research. This approach is similar in spirit to Drori *et al.* (2016) who study female outreach in the microfinance organizations that belong to the same international network as a function of the linguistic environment of the countries where they operate.

Furthermore, because language diversity exists not only across countries but also within countries, it may be productive to explore the accounting practices in countries with linguistically diverse environments, such as Canada or Belgium. Along these lines, Willenkens and Gaeremynck (2005) document lower audit fees for auditors with a French-speaking affiliation.

Regarding audit fees, recent studies document the existence of a female audit fee premium (for example, Ittonen and Peni, 2012; Hardies *et al.*, 2015). This result emphasizes an interesting paradox for the Big Four accounting firms and the audit market. If an audit firm can charge higher audit fees when the auditor is a woman, why do we observe such a low percentage of women at higher levels of the audit profession? Future research on audit pricing may analyze whether this premium varies across cultures and languages, which may help to explain the causes that are behind the female audit fee premium.

The recent trend towards international harmonization within the Big Four also provides an interesting context to study the international mobility of Big Four employees from different cultures who speak different languages. This mobility may face organizational barriers (which relate to country regulations, certification and accounting rules) and cultural and linguistic barriers (which relate to gender roles). The international harmonization of accounting standards may boost the international mobility of auditors and allow female auditors to overcome country-specific barriers. Studying whether this is the case and the type of expatriate flows that this situation generates are interesting avenues of future research.

International harmonization within the Big Four may also concern HR and corporate social responsibility (CSR) policies. Therefore, it would be interesting to compare organizations that share similar HR and CSR policies that relate to gender but that operate in different cultural environments where women face different informal barriers.

Table 2 | Papers in the accounting research that use language and gender

Authors	Title	Journal	Date	Area	Country sample	Methods
Duff A and Mladenovic R	Antecedents and consequences of accounting students' approaches to learning: A cluster analytic approach	<i>British Accounting Review</i>	2015	Accounting Education	Australia	Language and gender are used as variables to control for assessing accounting teaching methods.
Edgley C, Sharma N and Anderson-Gough F	Diversity and professionalism in the Big Four firms: Expectation, celebration and weapon in the battle for talent	<i>Critical Perspectives on Accounting</i>	2016	Accounting Profession	The United Kingdom, the United States and Canada	Language is an institutional factor that explains the lack of diversity.
Belliveau M	Engendering inequity? How social accounts create vs. merely explain unfavourable pay outcomes for women.	<i>Organization Sciences</i>	2012	Accounting Profession	The United States	Accounting is seen as a language, and gender is a dichotomous variable.
Nouri H and Douglas Clinton B	Gender, media presentation, and concern with the correct use of words—testing a three way-interaction.	<i>Accounting Education</i>	2006	Accounting Education	The United States	Language and gender are used as explanatory variables.
Tan LM and Laswad F	Impact of prior content and meta-cognitive knowledge on students' performance in an introductory accounting course	<i>Pacific Accounting Review</i>	2008	Accounting Education	New Zealand	Gender and language are determinants of teaching performance.
Borthick A and Clark R	Improving Accounting Majors' Writing Quality: The Role of Language Analysis in Attention Directing Inside AICPA	<i>Issues in Accounting Education</i>	1987	Accounting Education	The United States	Language and gender are variables.
		<i>Journal of Accountancy</i>	1996	Accounting Profession	The United States	Language and gender are studied as variables.
Haynes K	Sexuality and sexual symbolism as processes of gendered identity formation. An autoethnography of an accounting firm.	<i>Accounting, Auditing and Accountability Journal</i>	2013	Accounting Profession	The United Kingdom	Language is a variable to understand gendered power.
Jackling B and Anderson A	Study mode, general ability and performance in accounting: a research note	<i>Accounting Education</i>	1998	Accounting Education	Australia	Gender and language are variables that explain student performance.
Weil S, Oyelere P and Rainsbury E	The usefulness of case studies in developing core competencies in a professional accounting programme: a New Zealand study	<i>Accounting Education</i>	2004	Accounting Education	New Zealand	Language and gender are variables.

Table 3 | Big four: gender and language

Big Four	Number of countries	Countries with a sex-based dominant language	Size of the global board	Percentage of females on the global board
Deloitte	142	55%	N/a	18.75%
E&Y	150	52%	18	22%
KPMG	151	49%	23	4%
PwC	160	47.5%	18	11%

Footnotes: Data for the number of countries where each Big Four is present is for the year 2016 and was collected directly from the Big Four global websites. The dominant language is the most-spoken language, and the classification regarding whether the dominant language gender marking system is gender-based comes from Corbett (2013). **PwC Global Board** is defined as "The Board represents the interest of all members of the PwC Network. It has overall responsibility for the governance of PricewaterhouseCoopers International Limited and the PwC Network and for oversight of the Network Leadership Team." **KPMG Global Board** is defined as "The Global Board is the principal governance and oversight body. The key responsibilities of the Board include approving long-term strategy, protecting and enhancing the KPMG brand, and approving policies and regulations". **E&Y Global Executive** is defined as "The Global Executive is our most senior management body and focuses on strategy, execution and operations. Its membership brings together all the elements of our global organization, including the leaders of our geographic Areas and service lines". For **Deloitte Global Board**, we did not find any information regarding the exact composition of the board.

Finally, future work can use experiments at the organizational level regarding the use and alteration of gender-related linguistic categories to provide new insights into how language affects the perpetuation of gender stereotypes in organizations. Of course, these studies would need to consider the cultural and societal contexts in which these experiments are performed.

More broadly, from a methodological perspective, exploiting the interplay between organizational networks and the country-level factors that relate to culture and language can provide new insights on the study of the determinants of gender inequality. This approach can also help to overcome the limitations of existing methodological approaches. For instance, cross-country research is plagued with omitted variable concerns (which reduces the internal validity of such analyses), and experimental approaches tend to have low external validity. Analyzing gender disparities in similar organizations, such as the Big Four, that operate in different countries can provide a middle ground between these two approaches.

Conclusion

This article draws on the recent research in gender economics that considers language as a measure of gender roles to propose new avenues of research in studying the rarity of females in the top positions at the Big Four accounting firms. The existing research on gender in accounting has mostly been conducted in Anglo-Saxon contexts or single countries (such as France, among others). However, the Big Four operate around the world and are therefore facing heterogeneous cultural and linguistic environments, which have been shown to shape gender norms across countries. Thus, we propose that the use of language to measure culture may contribute to an explanation for the rarity of females at the top of the Big Four across various countries.

We substantiate our proposal by performing a thorough and systematic literature review on gender, accountancy and language and by collecting data on the presence of the Big Four throughout the world, including their linguistic environments and the characteristics of their global boards.

We find that the research that links gender in accountancy to the linguistic environment is scant and that the Big Four indeed operate in diverse linguistic environments. These findings allow us to suggest a set of avenues of future research, which we discuss in detail. We also revisit the existing explanations in the gender and accountancy literature and show how considering language can contribute to nuance and enrich some of the existing explanations.

Notes

1 The Big Four refers to the four largest auditing firms, namely, Deloitte, PricewaterhouseCoopers (PwC), KPMG and Ernst & Young (E&Y).

- 2 These issues include the following: *Accounting, Organizations and Society* (1992), vol. 17(3/4), "Feminist Perspectives in Accounting Research"; *Accounting, Auditing and Accountability Journal* (1992), vol. 5(3), "Gender and Accounting"; *Critical Perspective on Accounting* (1998), vol. 9 (3); and *Accounting, Auditing and Accountability Journal* (2008), vol. 21(4), "Gender and Accounting Revisited".
- 3 Dambrin and Lambert query JAR, JAL, JAE, MAR and JMAR and find no results. *The Accounting Review* yields 14 references, and two of these are book reviews; the other references are articles that date back to 1971.
- 4 Mario Christodoulou (2011-03-30). "U.K. Auditors Criticized on Bank Crisis".

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Data availability

All data analysed as part of this study are contained in the paper.

Additional information

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