

Queering Women's and Gender Studies

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Edited by

Begoña Crespo, Isabel Moskowich
and Carolina Núñez-Puente

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PROLOGUE

QUEER AS ODD: LANGUAGE, LITERATURE AND CULTURE AS CROSSROADS

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Women, gender, queer, language, culture, literature, society. This is the list of key semantic domains that permeate the pages of this book. All the concepts these words represent have been largely treated by academicians in a variety of works in an attempt to explain artistic creations, social by-products, theoretical constructs and even natural linguistic production. In this sense, the work presented here is a melting pot of views and undertakings where the combination of languages involved is nothing but a mirror of the enriching experience of knowing cultures in the surrounding reality.

When the editors of this book decided in December 2013 to bring all the work being done in the School of Philology at the UDC (University of A Coruña, Spain) to light in a three-day symposium, we did not intend to publish any written record of it. But the course of events made us change our minds. We thought it would be worth contributing to the myriad issues generally debated about women and gender studies with the critical thoughts that were put forward in this meeting. Two were the factors we considered as important reasons: on the one hand, the amount and quality of the works presented; on the other, that linguists in this university shared for the first time space and ideas with researchers working on the already interconnected fields of literature and culture. No doubt this favoured interdisciplinarity as did the fact of having specialists from three language traditions present their work. Spanish, Galician and English are the languages used in the pages that follow as a manifestation of this eclecticism and richness.

This book is addressed to readers with varying levels of familiarity with the study of gender, sexuality and communication, which are, in turn, delved into from several perspectives, namely, cultural, literary and linguistic. This is why we can claim the study of gender and sexuality is characterised, precisely, by the several approaches present in the volume and manifestly expressed in its underlying organisation. Three thematic sections can be identified: the first one corresponds to the linguistic approach to the study of sex. We claim it is not the gender perspective the authors are adopting here but that they are purely working with the concept of “sex” as is generally understood, that is, in biological terms. Yet, some twists in this interpretation can be outlined through the chapters. The authors of chapters 1 and 2, Leida Maria Monaco and Luis Miguel Puente Castelo, respectively, analyse sex as a sociolinguistic variable that contributes to the answer of a wider research question. This is the case of Monaco’s analysis of the levels of abstraction that can be measured in Late Modern English scientific writing in male and female authors with surprising results. When we come to Puente Castelo’s chapter, we find an insightful analysis of women writing philosophy texts in the eighteenth and nineteenth centuries, and of how they make use of conditional structures as an interpersonal communication strategy when compared to male colleagues. Both authors (members of the MuStE research group) make use of corpus linguistics as a methodology and as a discipline in itself. They have participated in the compilation of the *Coruña Corpus of English Scientific Writing* from which the texts written by women have been extracted. Likewise, both have selected one of the variables contained in the corpus metadata. The language of female scientific writers has been largely neglected as the history of science has more often than not ignored work done by women. Esperanza Morales’s interests, the author of chapter 3, are different. Following an ethnographic approach, she offers the discourses of women in Ecuador as a window through which one can see the power of language (and silences) as an instrument of social change.

Although parts have not been set as such in this book precisely to let links flow between different fields, a literary analysis is carried out in the second virtual part where chapters 4 to 6 have been included. In chapter 4, entitled “Masculinidades alternativas na literatura chinés-americana: Maxine Hong Kingston e Gish Jen”, Carolina Soria-Somoza proposes an analysis of the problems that the masculinity of Chinese-American authors can pose and the adoption of Western patterns in *The Woman Warrior: Memoirs of a Girlhood among Ghosts* (1975) and “Birthmates” (1995). In the first one, Soria-Somoza explores how typical masculinity can be

embodied by a woman; in the second one, she analyses the possibility of masculinities oriented to child care and love. It is worth noting that this paper on a social minority has also been written in a minority language spoken in Galicia, in the northwest of Spain. Galician is one of the four official languages of Spain, a Romance language with its own history, culture and literature. Chapter 5, however, “La mujer deseada y deseosa en Diez, de Juan Emar” by Sonia Rico Alonso, incorporates a new language into this assorted and multilingual treatment of women, gender and sex. Once again, it is the androcentric dominant interpretation of the text which is discussed by the author, especially when it is taken as the only and exclusive one.

Cultural Studies is the main focus of the remaining works. Different views have been adopted here, ranging from thorough research on texts by women on a particular national tradition or period or within a particular genre to writings by women from various racial, socio-economic and historical backgrounds. Multimedia representations of gender issues are also present in this part. The reader will find here some critical responses to these multimodal texts but also some feminist approaches to the always unclear-cut borderline between literature and culture. In “Legal aliens? Latina writers in New York”, chapter 6, María Frías focuses on immigration and acculturation processes by comparing Julia Álvarez's *How the García Girls Lost their Accent*, Cristina García's *Dreaming in Cuban* and Esmeralda Santiago's *When I Was Puerto Rican*. In spite of the privileged social position of the main characters due to their particular political status, which makes it smoother to emigrate from the Spanish-speaking Caribbean to New York, these women do not feel welcome or sheltered even after they reach legal status. This is followed by chapter 7, entitled “Dante vs Alice: Heroines and new masculinity in modern video games”, whose author, David Muiños, introduces other “culture” forms of our time, such as video games, video clips, and pieces of news where gender, stereotypes and roles are, sometimes, portrayed in unexpected ways. Chapter 8 is the last, and deals with “Trans-sexual memories, colonial subjects, and Caribbean mermaids”. Nelson G. Rodríguez-Avilez authors this work, in which he presents transsexuality from a novel perspective. As the author explains, “I will try to explore the regulations that affect the existence and appearance of a non-normative body in the world by referring to two narratives: *Middlesex* (2002) by Jeffrey Eugenides, and *Sirena Selena vestida de pena* (2000) by Mayra Santos-Febres” (p. 160). The main characters in these novels are straitjacketed by the dictates of the commonly accepted social paradigms and the aim of the chapter is “to destroy the closet by queering it, questioning our own

embodiment as a construction and showing ourselves as the result of biopolitical strategies” (p. 160).

Finally, Carolina Núñez-Puente has written an epilogue, which attempts to draw on the book’s intersubjective spirit to propose an academic dialogue not only among multiple disciplines but also among women, men, and all their possible gender manifestations.

We hope this book will reflect the eclectic nature of Queer, Women’s, and Gender Studies and their worldwide acceptance by the scholarly community. We also hope the quality of the works selected for the volume satisfies readers as they have satisfied the numerous national and international reviewers whose generous and anonymous contribution to improving the quality of the papers we want to thank.

We also want to express our gratitude to the several services in the University of A Coruña which made the celebration of this event possible: Oficina para a Igualdade de Xénero, Centro Universitario de Formación e Innovación Educativa (CUFIE) and Facultade de Filoloxía. Last but not least, our special thanks to the members of CLEU, a research group on cultures and literatures in the USA, who co-organised the seminar with MuStE, a team devoted to the investigation of language and its interactions with society at different levels; to the specialists who participated in the seminar and contributed their works to the present volume; as well as to The Maras (a student theatre group), the Senegalese dancer Fatou Fall and the musicians (from *Galu Teranga*, a folklore group) who collaborated in the event with performances that allowed attendants to enjoy their enthusiasm and artistic talent.

CHAPTER ONE

FEMALE ABSTRACT THINKING: THE USE OF ABSTRACT STYLE BY LATE MODERN ENGLISH WOMEN SCIENTISTS

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1. Introduction

This study explores some of the mechanisms used in scientific texts during the eighteenth and nineteenth centuries in the English-speaking world, comparing the language of male and female scientists. It has been demonstrated that scientific discourse is characterised by certain linguistic features that make it abstract or impersonal (Hyland1998; Gotti 2003). Through a multidimensional analysis of English registers, Biber (1988) showed that passive constructions, past participial clauses, conjuncts and certain adverbial subordinators are typically found in the academic register, thus making it more abstract. Further studies by Biber and Finegan (1989, 1997, 2001), Atkinson (1999) and Biber (2001) have shown that abstraction is also a characteristic of late modern scientific discourse.

Taking into account the prejudice against women scientists (and women in general) that characterised the patriarchal world of the late modern period, it is the aim of this study to analyse some of their writings in order to find out whether women reached the same level of abstraction in their texts as their male counterparts did. To this end, data has been taken from the *Coruña Corpus of English Scientific Writing*, which is arranged in different subcorpora, each of them corresponding to a different scientific discipline (Moskowich 2012). On this occasion, only texts from eighteenth-century philosophy and nineteenth-century life sciences have been looked at, using a methodology derived from Biber's (1988) multidimensional analysis to "measure" abstraction in the texts.

Echoing other chapters in this volume (Puente Castelo), section 2 gives a brief overview of the academic context for women scientists in the 1700s and 1800s, while section 3 focuses on the characteristics of scientific discourse and introduces the notion of abstract style. The corpus material and the methodology used in this study are described in section 4, followed by a discussion of the results in section 5. Finally, section 6 offers some concluding remarks and suggestions for further study.

2. Science and women scientists between 1700 and 1900

As will be described in Puente Castelo (this volume), science was considered mainly, if not exclusively, a male activity before the twentieth century, despite the fact that already in the seventeenth and eighteenth centuries there were women who, albeit silently, made significant contributions to different fields of knowledge. Their efforts were rarely acknowledged while their thirst for knowledge was often frowned upon as the occupations of women at that time were supposed to be limited to their household and children. In spite of the major breakthrough that took place in Western science in the seventeenth century, bringing forth the abandonment of old scholastic traditions in exchange for a new kind of knowledge, enlightened through experience, the socio-cultural image of women as naturally inferior to men remained rather medieval throughout most of the late modern period (Torralbo 2010; Moskowich 2013).

However, although the general rule was that only men could study in universities and obtain a degree (Abir-Am and Outram 1987), scientists sometimes used their diligent and enthusiastic daughters, sisters or wives as assistants – though usually anonymous – in their own research (Schiebinger 1989, 2003), and some of those ladies, whether married or not, devoted much of their time to their own instruction and to the solitary exploration of the laws of nature and those of the nature of the human mind. If the seventeenth and eighteenth centuries brought to light outstanding female philosophers such as Margaret Cavendish (Barker-Benfield 1992), Catharine Macaulay or Mary Wollstonecraft, who openly resented the limitations imposed on their sex by the surrounding patriarchal society, many nineteenth-century housewives consecrated their lives to the study of botany while others became important figures in astronomy, mathematics and physics (Slack 1987; Shteir 1987, 2008; Richards 2008).

On the other hand, because women were not permitted to access higher education institutions, they were usually instructed at home, provided the socio-economic situation of their families allowed the hiring of a private

tutor. Consequently, educated women became concerned with the less favoured groups of society who could not afford private instruction (such as less privileged women or children), and that led them to write works of a didactic character. Contrary to what might be expected, this kind of “nurturing” activity was actually applauded. Moskowich (2013: 469) explains that “[f]rom the seventeenth century onwards there has been a contradictory movement regarding women and their participation in science as a public activity”, and that it can be perceived on two levels. Socially, women were banned from the public academic world but, on the other hand, encouraged to publish works of a presumably lighter kind, including treatises, essays and lectures on a variety of matters. This ambiguous situation is, in turn, manifested in their writings, where they “generally seem to adhere to the new patterns of empiricism” but, at the same time, also tend to “make reference to the moral values of the male society in which they live” (Moskowich 2013: 469).

Science transmitted in a sometimes explicit, sometimes implicit apologetic tone seems to positively respond to the medieval conception of female inferiority, which evolved in the Enlightenment into the general idea that women are “less capable of abstract reasoning”, as stated by Rousseau in his *Emile* (IV: 791; see Schiebinger 1989, 2003; Trouille 1997). Sociolinguistic studies comparing contemporary male and female speech (though typically not scientific discourse) appear to agree that women are more tentative and involved in their use of language while men tend to use a more direct and informational style (Lakoff 1990; Holmes 1995; Coates 1993, 1996; see Biber and Burges 2001). These generalisations based on empirical research, rather than on socio-cultural prejudices, suggest that the way women use language nowadays might be a long-lasting result of the way they were seen in the patriarchal societies of earlier times. It is well known that language often transmits not only knowledge but also shared knowledge about the knowledge (Van Dijk 2003). On the other hand, language also reflects the process of thought. Unlike the very much standardised scientific register we have been reading for the past century, shaped for a maximum efficiency in the transmission of information, the language used for the communication of science in the late modern period was much more transparent, reflecting the scientist’s reasoning process, the proposals of a research question and the search for an answer to that question.

Although an in-depth analysis of different processes of reasoning would be a rather complicated task and falls out of the scope of this study, it is our aim to compare the scientific discourse of women and men, published along the eighteenth and nineteenth centuries, in order to find

out whether the two sexes present differences in their capacity to use abstraction in their writings as manifested through a number of linguistic features. The linguistic features typically considered to convey a detached, impersonal, or abstract style are discussed in the following paragraphs.

3. Abstract style in scientific discourse

If we try to characterise present-day scientific discourse, it is likely that we will come up with terms such as *formal*, *precise* or even *rigid*. In fact, scientific discourse has a number of conventional characteristics that make it easily distinguishable from other types of discourse. For instance, contemporary research papers usually follow the widely accepted *IMRD* structure – Introduction, Method, Results and Discussion. Likewise, academic writing manuals and textbooks, developed as guides for scientists, contain a number of suggestions for an appropriate use of the language, which sometimes varies depending on the scientific discipline under study or on the working format chosen. And although such conventions may appear to have been established *ad hoc*, it is more likely that they were developed by practice of writing science along the past years, decades, or even centuries.

One of the characteristics of scientific writing is that it usually presents a very high frequency of passive constructions and, consequently, a relatively low use of personal pronouns and verbs in active voice. This appears to be the reason scientific discourse is often characterised as *abstract* or *impersonal* (Bazerman 1984; Biber 1988; Hyland 1998; Gotti 2003). Biber and Finegan (1989, 1997, 2001) and Atkinson (1999) observed that medical and other scientific prose developed this abstract style gradually while this scientific discourse became more and more specialised along the past four centuries. But it was already in the seventeenth century, when English began to emerge as the language of science, that Robert Boyle established five basic rules for its writing: brevity, lack of assertiveness, perspicuity, simplicity of form and objectivity (Gotti 2001, 2003, 2005), while Bacon, Sprat and Wilkins argued in favour of “removing” the scientist – and, hence, the first person – from scientific reports (Bazerman 1984), thus making it necessary to use the passive voice instead.

The passive voice can be expressed through a number of syntactic structures, and it has been demonstrated that various kinds of passive structures usually cluster together in the discourse. In a study of variation across several contemporary English spoken and written registers, called multidimensional analysis, Biber (1988) discovered that the different

characteristics of the different registers occurred on a number of different “dimensions” of linguistic variation, each associated to a particular function of discourse. As Biber was using a very large corpus of computerised texts which were processed through specialised corpus software, he counted the frequencies of sixty-seven different linguistic features for each of those texts and then used a multivariate statistic technique known as factor analysis. Leaving aside technical details, which are not relevant for our study, the function of factor analysis is to unveil shared variation by transforming a large set of variables (in this case, linguistic features) into a much smaller set of variables, or “common clusters” of linguistic features. In Biber’s (1988) study, the sixty-seven linguistic features were reduced to seven factors, or sets of linguistic features that tend to appear together because they all have a shared discursive function. Based on that function, each factor was then interpreted as a “dimension” of variation, with the following resulting labels:

- Dimension 1: “Involved vs. Informational Production”
- Dimension 2: “Narrative vs. Non-Narrative Discourse”
- Dimension 3: “Elaborated vs. Situation-Depended Reference”
- Dimension 4: “Overt Expression of Persuasion”
- Dimension 5: “Abstract vs. Non-Abstract Style”
- Dimension 6: “Online Informational Elaboration”
- Dimension 7: “Academic Hedging”

Having established these dimensions, Biber (1988) then “measured” the different registers against each dimension. In other words, he calculated their “dimension scores”, or standardised frequencies for each dimension (which are the sum of the frequencies of all the linguistic features that form each dimension), in order to characterise them with respect to all seven dimensions. Thus, it was shown that some registers, such as novels, are more narrative than others in that they have particularly high scores on Dimension 2. Some are very informational (e.g., press reports, legal documents) while others are much more involved (e.g., personal letters, telephone conversations), presenting higher or lower scores on Dimension 1, respectively. And it was also discovered that some registers, including academic prose, have particularly high scores on Dimension 5, which is the dimension that we will be dealing with in the present study.

Dimension 5 is formed by a set of six linguistic features which tend to appear together, conveying a rather detached, impersonal or abstract style

to the discourse. These features are, mainly, passive structures – agentless passives, *by*-passives, past participial WHIZ-deletions (or post-nominal modifiers), and past participial clauses – that usually occur in the company of conjuncts and certain adverbial subordinators which often act as logical connectors. The six above-mentioned features are illustrated in examples (1–6) drawn from the *Corpus of English Philosophy Texts (CEPhiT)* or from the *Corpus of English Life Sciences Texts (CELiST)*, which are the object of our analysis (see section 4 below):

- agentless passives

(1) ...a philosophical term is *employ'd* without any meaning or idea (Hume 1748: 28)

- *by*-passives

(2) ...the mind that has never been *engroffedby* one object wants vigour (Wollstonecraft 1792: 59)

- past participial WHIZ-deletions (or past participial post-nominal modifiers; the noun modified is underlined)

(3) ...he should make frequent and infolent claims of an authority fo well *establi'h'd* and *us'd* with such moderation (Astell 1700: 45)

- adverbial past participial clauses

(4) ...the corolla is above an inch long opening like a mouth when *pressed* between the finger and thumb (Lankester 1879: 110)

- conjuncts

(5) ...another important point seems very obscure, *namely*, whether they are generated by the common mass (Dalzell 1848: 162)

- certain adverbial subordinators

(6) ...these are a natural appendage originating from the bark, *while* the thorn may be found connected with the wood (Lincoln 1832: 298)

Although *by*- and agentless passives have different thematic functions (Thompson 1982; Weiner and Labov 1983), they also appear to share a basic function in that they report actions in a distant, somewhat uninvolved manner. The same can be said about past participial WHIZ-deletions and past participial clauses as both structures highlight the patient of the verb rather than the agent (Biber 1988: 122), also acting as mechanisms of syntactic compression and thus conveying a rather dense, compact kind of discourse which often characterises scientific writing (Chafe and Danielewicz 1987; Greenbaum 1988; Granger 1995). Conjunctions and adverbial subordinators, in turn, help to organise the multiple logical connections in a densely passivised discourse (see Ochs 1979; Biber 1988: 112, 239; Atkinson 1999: 125).

In this study we are going to consider all six linguistic features described above. Rather than focusing on each feature separately, our aim is to deal with the set as a whole in order to measure the levels of “abstraction” in our texts as shown on Biber’s (1988) Dimension 5. The corpus analysed and the methodology employed are explained in what follows.

4. Corpus and methodology

The samples analysed in our study are taken from the *Coruña Corpus of English Scientific Writing* (hereafter *Coruña Corpus*), a project developed by the Research Group for Multidimensional Corpus-based Studies in English (MuStE¹, University of A Coruña) for the study of variation and change in Late Modern English scientific discourse. As is described in Puente Castelo (this volume), the *Coruña Corpus* covers a period of two hundred years (1700–1900) and consists of several subcorpora, each containing around forty texts from a particular scientific discipline (with 20 texts per century), and each text containing approximately 10,000 words. To date, the *Coruña Corpus* has four subcorpora, with texts on astronomy, philosophy, life sciences and history. The texts are selected to ensure maximum representativeness and balance,² and include samples from a variety of genres written by male and female authors (whenever samples of the latter are available).

In the present study, we have included forty texts from two subcorpora of the *Coruña Corpus*: the eighteenth-century part of the *Corpus of English Philosophy Texts* (hereafter *CEPhiT*; see Moskowich and Crespo, 2015; Moskowich et al., 2016),³ and the nineteenth-century part of the *Corpus of English Life Sciences Texts* (hereafter *CELiST*, currently in a beta version; see Lareo and Esteve-Ramos 2008). The nineteenth-century

part of *CEPhiT* and the eighteenth-century part of *CELiST* were discarded because they contain no (or almost no) texts written by women, whereas the parts we have selected present sufficient texts from both sexes – albeit a male majority and a female minority, representative of the reality of the period to which they belong – for a comparative analysis (see table 1-1).

	18 th -century <i>CEPhiT</i>		19 th -century <i>CELiST</i>	
	Number of texts	Number of words	Number of texts	Number of words
Male	17	169,828	14	139,208
Female	3	30,194	6	62,946
Total	20	200,022	20	202,154

Table 1-1. Distribution of male and female authors in 18th-century *CEPhiT* and 19th-century *CELiST*

The distribution of the different genres represented in these two corpus samples is presented in table 1-2, the term *genre* being used in the *Coruña Corpus* as a synonym of *text type* according to the taxonomy of Görlach (2004), which considers the formal characteristics of the texts and the audiences for which they were written.

18 th -century <i>CEPhiT</i>			19 th -century <i>CELiST</i>		
Genre	Number of texts	Number of words	Genre	Number of texts	Number of words
Treatise	13	129,745	Treatise	10	99,442
Essay	6	60,213	Lecture	4	40,012
Textbook	1	10,064	Textbook	3	30,172
			Letter	2	22,757
			Article	1	9,771
Total	20	200,022	Total	20	202,154

Table 1-2. Distribution of genres in 18th-century *CEPhiT* and 19th-century *CELiST*

In order to measure the levels of abstraction in these samples, the six linguistic features listed in section 3 were retrieved from each subcorpus with the help of the *Coruña Corpus Tool* (hereafter *CCT*) (Moskowich and Parapar 2008; Camiña-Rioboo and Lareo, 2016), a concordance programme which permits wildcard searches and the generation of frequency lists, as well as the processing and displaying of corpus metadata. As neither *CEPhiT* nor *CELiST* was tagged for grammatical categories at the time

this study was conducted, the occurrences obtained automatically with the *CCT* were later manually disambiguated and the tokens which did not coincide with the linguistic category searched for were disregarded. The four passive structures – agentless and *by*-passives, past participial WHIZ-deletions and past participle clauses – were retrieved after disambiguating all the regular past forms (i.e., those ending in *-ed*, as well as *-’d*, or *-t*, taking into account spelling variants in the Late Modern English period) and all the irregular past participles recorded in Quirk et al. (1985: 115–120), while conjuncts and adverbial subordinators were retrieved by following the closed lists proposed by Biber (1988: 236, 238; see Appendix).

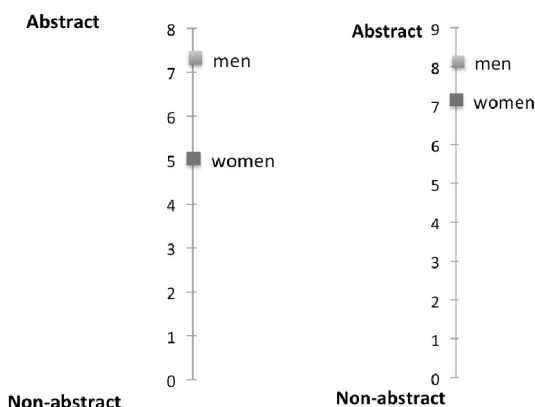
After the disambiguation, the occurrences of each feature were counted and then normalised to frequencies per 1,000 words. Following Biber (1988), Biber and Finegan (1989, 1997, 2001) and Atkinson (1999), these normalised frequencies were then standardised to a mean of 0.0 and a standard deviation of 1.0, using the following formula:

$$z = (x - \mu) / \sigma^4$$

Standardisation was performed in Biber’s (1988) original study so that the frequency of a feature in a particular register would appear always as relative to its mean frequency in the corpus, and has been followed in the present study as a standard procedure. For this purpose, descriptive statistics have been taken from Biber (1988: 77, 255). Finally, the standardised scores of the six linguistic features were summed to obtain the mean dimension scores for each text, each dimension score being a unit to measure abstraction. Results were then classified using the sex and genre variables.

5. Results and discussion

Figures 1-1a (left) and 1-1b (right) below show the mean scores for Dimension 5 “Abstract vs. Non-Abstract Style” by sex in eighteenth-century philosophy and nineteenth-century life sciences, respectively:



Figures 1-1a and 1-1b: 18th-century Philosophy (left) and 19th-century Life Sciences (right) on Dimension 5; results by sex

In eighteenth-century philosophy, there appears to be quite a wide gap between women and men, the latter achieving the highest scores on the axis while the former appear to have a moderately abstract style. In nineteenth-century life sciences, in turn, both women and men occupy higher places on Dimension 5, overall presenting a higher index of abstraction than eighteenth-century philosophers. However, despite these differences, male scientists appear to have a more abstract style than their female counterparts in both disciplines and in both centuries.

At first sight, these results may seem to confirm the judgements of Rousseau and his fellow-thinkers on women's limited capacity to achieve the same levels of abstract reasoning as men – and, especially, this can be said of those women scientists who appear in the *Coruña Corpus* and who were Rousseau's contemporaries, even though the 1800s show a slightly different picture. Still, before allowing such a generalisation, we have decided to have a second look at our results, this time from a different perspective – that of genre, taking into account both the genre and the sex variables.

The case of eighteenth-century philosophy will be analysed first. Figure 1-2 shows mean dimension scores for the three genres present in the subcorpus (Treatise, Essay and Textbook), including both male and female authors.

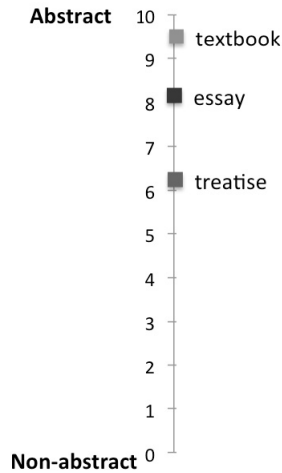


Figure 1-2: 18th-century Philosophy: results by genre (male and female authors)

It appears, from what we can see in figure 1-2, that Textbook is the genre with the highest level of abstract style, with Essay coming next (about a score lower), and Treatise being the least abstract of the three genres, two scores below Essay and almost three-and-a-half scores below Textbook. These results appear to establish a clear hierarchy among these three genres with respect to their levels of abstraction, or passivisation, without differentiating between male and female authors, and shows that, in eighteenth-century philosophy, the most didactic genre – Textbook – is the one that presents the most abstract, or impersonal, style, followed by Essay, which is more formal than Treatise.

However, if we now bring the sex variable to the picture, we will see that it changes quite radically as far as order is concerned. Figure 1-3 below presents the scores corresponding to women's texts only, also arranged by genres.

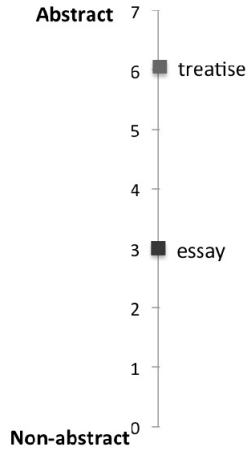


Figure 1-3: 18th-century Philosophy: results by genre (female authors)

In figure 1-3, the genre Textbook is not present because the only textbook that we have in eighteenth-century *CEPhiT* is written by a man. As for Essay and Treatise, they appear to now have an inverted hierarchy. Despite the fact that the latter has scarcely varied its position with regard to figure 1-2, showing a similar score (slightly above 6.0), the former is now closer to the lower end of the scale. This suggests that essays written by women, or, in this particular case, the essay written by Mary Astell (*Some Reflections Upon Marriage*, 1700) has a markedly less abstract style than that of her male contemporary philosophers. However, it also shows that the treatises written by female philosophers were, on the whole, just as abstract as those written by men, with very little difference between the scores of the two sexes. This particular piece of evidence also appears to suggest that Treatise was probably an established genre already in the eighteenth century, with little flexibility in terms of passivisation, or abstract style, compared to Essay, which accepted both a very high and a very small presence of abstraction (between 8.0 and 3.0 on the Dimension 5 axis).

On the other hand, the early date of publication of this essay – 1700 – indicates that its author, Mary Astell, was a pioneer in writing openly about certain controversial topics; in this case, on the vulnerability of women in a patriarchal society, their lack of education, and its dreadful consequences. It might in this case not be very surprising that her style is considerably more involved than that of the male philosophers of her time, for whom writing was not necessarily a challenge and who did not need to

convince the rest of the world that their voices were worth hearing. At the same time, the urge to convince other women that they need to receive an equal education to that of men may have also played a crucial role in the choice of a tone that transmits implication rather than detachment.

As for nineteenth-century life sciences, the genres under study are slightly different: Treatise, Textbook, Lecture and Letter. In the light of what has just been seen with eighteenth-century philosophy (Figure 1-2), one might expect the two didactic genres – Textbook and Lecture – to be the most formal ones, presenting the highest levels of abstraction, and Treatise to occupy the third place as treatises are supposed to be more formal than letters, which typically have an involved, personal character. The actual results by genre can be seen in figure 1-4.

Contrary to what was expected, Treatise appears to be the genre with the highest abstraction score in nineteenth-century *CELiST*, with the didactic text types – Textbook and Lecture – following almost two and two and a half scores lower on the scale, respectively. Curiously, the former does not reach the same level in what concerns impersonal style in nineteenth-century life sciences as it did in philosophy a hundred years before. These changes in genre hierarchy suggest not only that treatises apparently became more formal in the nineteenth century, while textbooks followed the opposite direction, but also that each scientific discipline presents its own pragmatic and discursive panorama.

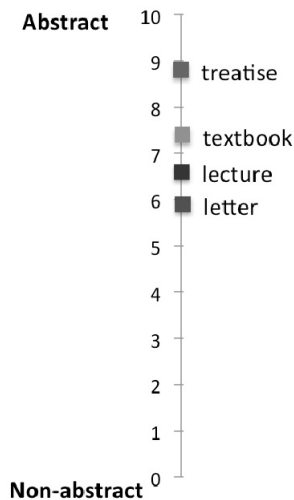


Figure 1-4: 19th century Life Sciences: results by genre (male and female authors).

But what was the case with the writing style of the nineteenth-century women who dedicated their lives to the study of nature? It has already been demonstrated that the levels of abstraction achieved by female philosophers range from low in essays to average, or moderately high, in treatises, reaching in this latter case the scores of their male counterparts. Figure 1-5 shows results by genre and sex, focusing now on female nineteenth-century life scientists who used three genres for their works – Treatise, Lecture and Letter.

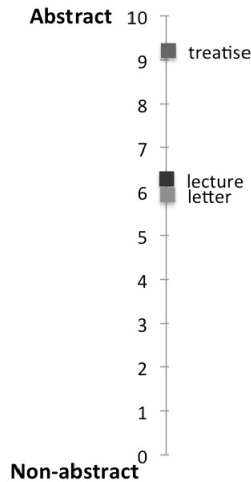


Figure 1-5: 19th-century Life Sciences: results by genre (female authors).

While the genre Textbook is, once more, absent from the female part of the corpus, this picture reveals no major surprises with regard to the one we have seen in figure 1-4, showing an almost identical distribution of the three remaining text types along the axis. Still, there has been some movement both downwards and upwards, the genre Lecture being now closer to letters (and, on the scale of abstraction, both clustering around the score of eighteenth-century philosophy treatises – see figures 1-2 and 1-3). This suggests that lectures written by female scientists in the 1800s had a more personally involved character, possibly reflecting the caring or nurturing attitude educated women maintained towards the most vulnerable groups of society, such as children or other women, who did not have very many opportunities to get an education. This nurturing attitude, which started at the end of the seventeenth century, persisted until the last decades of the nineteenth century when this

conscience of the necessity of women's education had spread to the point that women began to be admitted into some higher education institutions, albeit most of them only for women, and finally into universities.

The treatises written by nineteenth-century women life scientists, on the contrary, occupy a higher place on the abstraction scale than those written by their male fellow-naturalists, with a difference of almost half a score (9.2 vs 8.8, respectively). This appears to prove, on the one hand, that women were fully capable – and certainly as capable as men – of conveying an abstract style in their discourse. On the other hand, this high level of abstraction in a genre which is not primarily didactic but more strictly scientific is also likely to be a reflection of the rise of women's level of instruction by the end of the late modern period, when they show a command of the genre as perfect as that of any male scientist.

6. Concluding remarks

In this study we have seen that, despite the prejudices of the patriarchal society of the time, both eighteenth- and nineteenth-century women scientists were indeed capable of thinking and writing in abstract terms, at least in the two scientific disciplines we have analysed – philosophy and life sciences. The level of their education and the facility to obtain it were not the same at the beginning and at the end of the late modern period, and this may be reflected in the way they used language for the transmission of knowledge. While eighteenth-century female philosophers ranged from a rather personal, or involved, to a moderately abstract, or impersonal style, in their writings, nineteenth-century women scientists shifted from a moderately abstract language in didactic genres to a highly impersonal and detached style in the Treatise genre, which itself appears to be rather abstract during that period, whether used by women or men. Thus, this study has also shown the apparent behaviour of certain genres when used by male and female scientists in two different centuries. A further study might include a close-reading analysis of the text samples in order to illustrate our findings.

On the other hand, as two different scientific disciplines cannot be compared across time, it would be necessary to look at the same scientific discipline over a longer period of time in order to be able to analyse the diachronic evolution of those genres. A further diachronic analysis of a particular scientific discipline, including both genre and sex variables, would be an interesting way to trace the evolution of the language of men and women within a branch of science. In the case of the *Coruña Corpus*,

this entails that both centuries should include a sufficient number of samples from both sexes that would allow reliable comparison.

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Notes

¹ <http://www.udc.es/grupos/muste>

² The compilation principles of the *Coruña Corpus*, such as representativeness, corpus size, time span, etc., may be found in Moskowich and Crespo (2007), Moskowich and Parapar (2008), Lareo (2009), and Crespo and Moskowich (2010).

³ For more information on *CEPhiT*, see Crespo (2011, 2016); Moskowich (2011, 2016); Camiña-Riobóo (2013).

⁴ Normalised frequency minus reference corpus mean, divided between the reference corpus standard deviation.

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