Persuasion markers and ideology in eighteenth century philosophy texts (CEPhiT)[1]

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ABSTRACT

The aim of this paper is to analyse the presence of persuasion markers in the eighteenth century texts of the Corpus of English Philosophy Texts (*CEPhiT*), a sub-corpus of the *Coruña Corpus*.[2] It is also my intention to ascertain to what an extent the genteel, social and religious ideology of the period is present in both the texts and in prefaces to these works written by the authors themselves. The paper will be organized as follows. Section One describes the function of persuasion in the author-reader relationship of eighteenth century English-speaking countries, as well as the dominant ideological postulates which underpin it. Section Two

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[2] *CEPhiT* is one of the sub-corpus contained in a major project, *The Coruña Corpus: A Collection of Samples for the Historical Study of English Scientific Writing* (henceforth, CC). The CC has been designed as a tool for the study of language change and variation in English scientific writing in general as well as within the different scientific disciplines and contains texts produced between 1700 and 1900 excluding medicine and has been compiled rigorous principles of corpus compilation. (Moskowich and Crespo, 2007)

presents the methodology and the corpus material selected for the analysis, Biber's Multidimensional Analysis (MD henceforth) and *CEPhiT*, respectively. Section Three sets out the analysis of data, through which I offer a quantitative approach to persuasive strategies followed by a functional interpretation, paying special attention to the text-type/genre variable and comparing overall results with those that refer specifically to female authors. Conclusions and final remarks will be discussed in Section Four.

Persuasion is effected through the audience when they are brought
by the speech into a state of emotion; for we give very different
decisions under the sway of pain or joy, liking or hatred.

(Aristotle, 1932: 9 quoted in Biber, 2007: 122)

1. Persuasion, argumentation, ideology

Following Boyle's claims in the second half of the seventeenth century that scientific knowledge had to be transmitted in a concise and unornamented way, with experiments to be reported as objectively as possible, the language used to convey observations on nature by the new men of science gradually acquired the characteristics of clearness and simplicity of expository prose. Boyle himself professed to having a 'naked style of writing', and to avoiding a 'florid' style, since his intention was to write 'rather in a philosophical than a rhetorical strain'. Shapin (1984: 495) claims that "this plain, puritanical, unadorned (yet convoluted) style was identified as *functional*. It served the purpose of exhibiting, once more, the philosopher's dedication to community service rather than to his personal reputation", in consonance with the puritanical spirit of the times. The reliability[3],

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[3]   Credibility is also mentioned in present-day discourse of persuasion as a very relevant aspect in negotiations: " ... *Credibility* is achieved by detailed plans and visible contingency planning, and its major linguistic expression is competence-face building exactitude and reasoning" (Bülow-MØller, 2004, p. 35).

trustworthiness and indeed veracity of facts depended on other mechanisms used by the author, such as claiming witnesses or the use of reference to other works to support statements, rather than expecting them to be taken at face value. Yet, the author had to argue in defense of his opinions, findings and positions, and although no overt manifestation of his presence was permitted by the dominant canon of Bacon and Boyle's style, authors could resort to other subtle means to persuade their readership. Undoubtedly, the writer of science was in a position of at least tentative power: his view was expressed from a position of knowledge, for the reading public the highest position, but he was also writing for other writers. Therefore, the scholar had to address both two groups of the epistemic community: other authors and learners. He had to be convincing about his theories and findings for both elements in his target audience. Logic, deduction and reasoning were key concepts in the development of the new science, all of these contributing to the rationale behind persuasion and its corresponding strategies. Logic appeals to a person's sense of reason because the speaker or writer couches an opinion in such a way that it, rather than someone else's, seems to be the most rational solution. Deduction implies the use of a logical, well-justified method which clearly demonstrates how elements in nature, or claims about nature, are built up. It runs from the most general to the most specific, highlighting principles, shared assumptions, values and beliefs. All this induces a particular attitude or way of thinking (Allen, Qin & Lancaster, 1994). What the author wants to accomplish in his/her use of language, then, is a change in the perspectives of the audience. Texts that seek to encourage a certain attitude in the reader are not only audience-focused but also well-structured writings, making use of linguistic elements that act as rhetorical mechanisms of persuasion and argumentation in a more or less explicit way.

Biber (1995, p. 161) argues that in present-day English, professional letters and editorials show many more persuasive elements than press reviews or broadcasts; the former, then, reflect overt argumentation or persuasion more than the latter. However, official documents and academic prose occupy an intermediate position. This "neutrality" in persuasive strategies may be explained in terms of the degree of abstractness and the high objectivity of late twentieth century academic writing (Biber, 1995, p. 165). Biber's conclusions raise another issue: the type of text or genre employed by the author might be seen as an interesting variable to examine the persuasive style of eighteenth century men of science.

The arguments of the authors under survey here were supported by their position within society and the socio-cultural conventions of the time, pervaded as these were by religious connotations. Reformation England was a highly classist society in which the gentleman represented the moral values of honour, rectitude, truth, piety and wisdom, and who stood as the pillar of policy and power. We cannot forget that most of these writers moved in elite circles of power (members of the aristocracy, of the Church) as well as within and intellectual elite. Atkinson (1999, pp. 123-125) finds that there is a tendency towards a less overt expression of persuasion in the articles of the Philosophical Transactions of the Royal Society between 1675 and 1975. It is a linear progression in which the closer to contemporary English we come, the less numerous the number of persuasive devices. This trend may be seen in relation to the change from an author-centred to an object-centred kind of prose, and to the increasingly more abstract level of texts over time. However, "texts in the seventeenth and eighteenth centuries cluster at a moderately abstract level, while texts in the nineteenth and twentieth centuries are as highly "abstract" or passivized" (Biber, 1988). This clustering at two levels of "abstractness" represents quite a different pattern than those seen in other dimensions, suggesting major developments in this area between 1775 and 1825 (Atkinson, 1999, p. 126).

2. Describing methodology and corpus of data

Biber's MD (1988) is the main methodological tool that will be used in the analysis. He limits the study of registers to five dimensions which are represented by a variety of linguistic features, the presence or absence of which can have a different functional interpretation. These five dimensions are: involved vs informational production, narrative vs. non-narrative concerns, elaborated reference vs situation-dependent reference, overt expression of persuasion, and impersonal vs non-impersonal style. From them I have chosen dimension 4, "Overt expression of persuasion", that is, argumentation which is made evident through the abundant use of infinitives, persuasive verbs, conditional subordination and modal verbs, predictive and necessity modals. No features with negative loadings are found in this dimension. However, from all the linguistic parameters

that form dimension 4, infinitives have been disregarded in the present study. This means that the analysis will consider the quantitative and functional evaluation of conditional subordinators, persuasive verbs, predictive and necessity modals. Absolute as well as normalized figures, when necessary, will be offered. The linguistic elements which form each of the parameters can be seen in Table 1 below:

Predictive modals	Necessity modals	Conditional subordinators	Suasive verbs
would	must	if	agree, allow, arrange, ask, beg, beg, command, decide, decree, demand, desire, determine, enjoin, entreat, grant, insist, instruct, intend, move, ordain, order, pledge, pray, prefer, pronounce, propose, recommend, request, require, resolve, rule, stipulate, suggest, urge, vote
shall	ought	unless	
will	should		
contracted forms[5]			

Table 1. Linguistic features

Negative contractions as well as both finite and nonfinite verbal forms have been included. After the general findings, the genre/text-type variable will be considered. Finally, women's persuasive usage will be compared with the overall figures and figures corresponding to works by men. Table 2 shows the authors and the corresponding texts which have been selected to form part of the 18th century section of *CEPhiT*. They constitute the corpus material of the present study.

AUTHOR	*TITLE*	NO. OF WORDS
Astell, Mary	*Some reflections upon marriage.*	10,077
Balguy, John	*The law of truth: or, the obligations of reason essential to all religion. To which are prefixed, some remarks supplemental to a late tract; entitled, Divine rectitude.*	10,040
Bolingbroke, Henry	*The Philosophical Works of the late Right Honorable Henry St. John, Lord Viscount Bolingbroke.*	10,023
Burke, Edmund	*Thoughts on the cause of the present discontents*. Dublin. [Dublin].	10,017
Butler, Joseph	*The analogy of religion, natural and revealed, to the constitution and course of nature. To which are added two brief dissertations: I. Of personal identity. II. Of the nature of virtue.*	10,049
Campbell, George	*The philosophy of rhetoric*. London.	10,007
Cheyne, George	*Philosophical principles of natural religion: containing the elements of natural philosophy, and the proofs for natural religion, arising from them*. London: printed for George Strahan.	10,060
Collins, Anthony	*A Philosophical Inquiry Concerning Human Liberty.*	10,012
Crombie, Alexander	*An essay on philosophical necessity.*	10,047
Dunton, John	*Athenianism: or, the new projects of Mr. John Dunton.*	10,059
Ferguson, Adam	*Institutes of moral philosophy. For the use of students in the college of Edinburgh.*	10,064
Greene, Robert	*The principles of the philosophy of the expansive and contractive forces. Or an inquiry into the principles of the modern philosophy, that is, into the several chief rational sciences, which are extant. In seven books.*	9,979
Hume, David	*Philosophical essays concerning human understanding. By the author of the essays moral and political.*	10,019
Hutcheson, Francis	*A system of moral philosophy, in three books.*	9,811
Kirkpatrick, Robert	*The golden rule of divine philosophy: with the discovery of many mistakes in the religions extant.*	10,045
Macaulay, Catharine	*Treatise of the immutability of moral truth.*	10,059

AUTHOR	*TITLE*	NO. OF WORDS
Reid, Thomas	*An inquiry into the human mind, on the principles of common sense.*	10,032
Smellie, William	*The philosophy of natural history.*	9,993
Turnbull, George	*The principles of moral philosophy.* *An enquiry into the wise and good government of the moral world:* *in which the continuance of good administration, and of due care about virtue,* *for ever, is inferred from present order in all things, in that part...*	9,571
Wollstonecraft, Mary	*Vindication of the Rights of Woman.*	10,058
Crombie, Alexander	*An essay on philosophical necessity.*	10,047

Table 2. Eighteenth century philosophy texts

All the linguistic features in Table 1 above have been searched for using the *CCTool*, an information retrieval tool which has been incorporated to the *Coruña Corpus of English Scientific Texts* (Crespo & Moskowich, 2010). All types represented by one or more than one token, then, have been automatically searched and stored in databases, which allows for the futher analysis of the material, given that findings have then been manually scrutinised to disregard tokens which did not coincide with the lexical category of the type selected. This is the case of *will*, for instance, for which an automatic search produced 692 instances but manual assessment reduced to 558. Example 1 below illustrates the use of the predictive verb *will*. Example 2, however, represents the noun *will:*

(1) ſelves and our actions but there is one argument which <will> always have weight with the wiſer and better part of (Cheyne, 1705, p. 40)

(2) ſhe has friendſhip enough to forgive one who had a <will> tho' not the power to draw her better but why (Dunton, 1710, p. 23)

On occasions disambiguation was also necessary for other lexical categories, such as participial adjectives (*-ed* forms) and *–ing* forms, either nominal, verbal or adjectival.

Tables 3 and 4 below show the number of words corresponding to the two selected variables that will be surveyed in the analysis: genre and sex, respectively.

Genre	No. of words
Essay	60,213
Treatise	129,745
Textbook	10,064

Table 3. Number of words per genre

Sub-corpus	Total no. of words	Male writing	Female writing	%
CEPhiT	200,022	169,828	30,194	15.09%

Table 4. Male vs female writing

In what follows all the data retrieved will be studied in detail.

3. Analysis of data

The analysis of data will involve the following steps: first, an overall presentation of results will be offered, specifying the number and percentages of each linguistic parameter. Each parameter will then be examined according to the genre variable, and after this the sex variable will be considered.

In a total of 200,022 words I have found 3,553 tokens (1.77%) with argumentative, persuasive implications, which are distributed as shown in Table 5:

Linguistic parameter	Number of tokens	Percentages
Predictive modals	1,208	33.99%
Conditional subordination	822	23.13%
Necessity modals	924	26.00%
Suasive verbs	599	16.85%
Total	3,553	

Table 5. Tokens per linguistic parameter

The percentages are seen clearly in Graph 1 below:
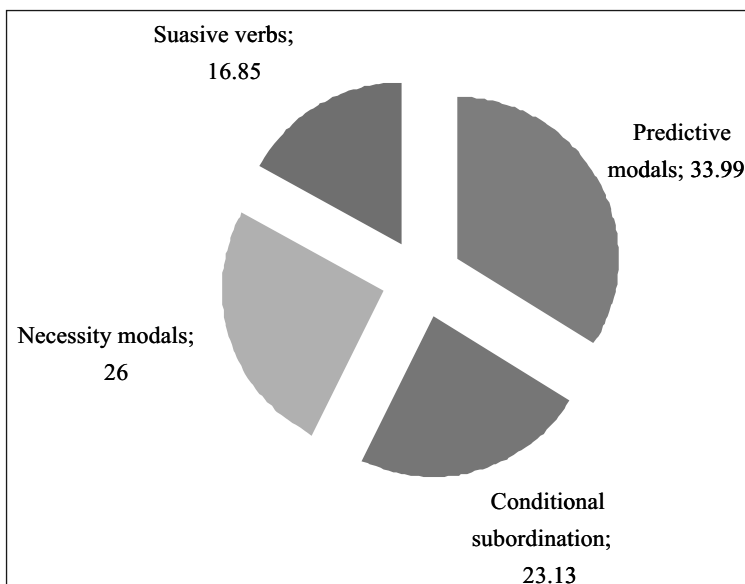
Graph 1. Linguistic parameters: general figures

Predictive modals exhibit the highest proportion of tokens indicating persuasion or argumentation. This is a content-based strategy to transmit information from the writer's point of view and to make the reading public process that information in the same way. It is the author's deliberate evaluation of the topics that is perceived by the reader, and this is done to reassure the truthfulness of the author's opinions. It can be seen clearly in example (3):

(3) one judgment on evident propoſitions it will follow that men <will> be ſo far
    irrational and by conſequence imperfeſt agents as... (Collins, 1717, p. 63)

The same strategy of trying to influence the reader's perception of the message applies also to the remaining set of modals, those indicating necessity, which occupy the second position. This is illustrated by example (4):

(4) depend on circumſtances peculiar to any age or nation but <muſt> be the reſult
    of human nature or the ſuggeſtion of... (Ferguson, 1769, p. 123)

Conditional subordination, with the emphasis on argumentation, illustrates how some structural elements of a complex syntax play a role in the expository prose in which principles, ideas or opinions are rightly and overtly expressed. It is the third linguistic feature in order of frequency. An example can be seen in (5):

(5) that the agent himſelf is the cauſe is saying nothing <unleſs> it can be proved that
    he chooſes one action rather... (Crombie, 1793, p. 18)

The last linguistic parameter is the one concerned with suasive verbs, which might be seen as the most obvious linguistic manifestation of persuasion/ argumentation. Nevertheless, it represents only 16.85% of all the parameters which have been taken into consideration, as in example (6):

(6) ... his deſires and appetites were well rul'd and did not <move> themſelves but by
   the comandment of reaſon and this reaſon... (Dunton, 1710, p. 331)

It appears, therefore, that persuasion was not as overtly or frequently present in 18ᵗʰ century philosophy texts as might have been thought. Rather, a more covert persuasion, one which favours a rhetorical form of argumentation, seems to emerge.

In the sections that follow I will analyse first each of the parameters separately, as a means of illustrating some remarks on the individual behavior of each of the features.

3.1. Linguistic parameters

3.1.1. Predictive modals

The distribution of the linguistic elements included in the predictive modals parameter is as follows:
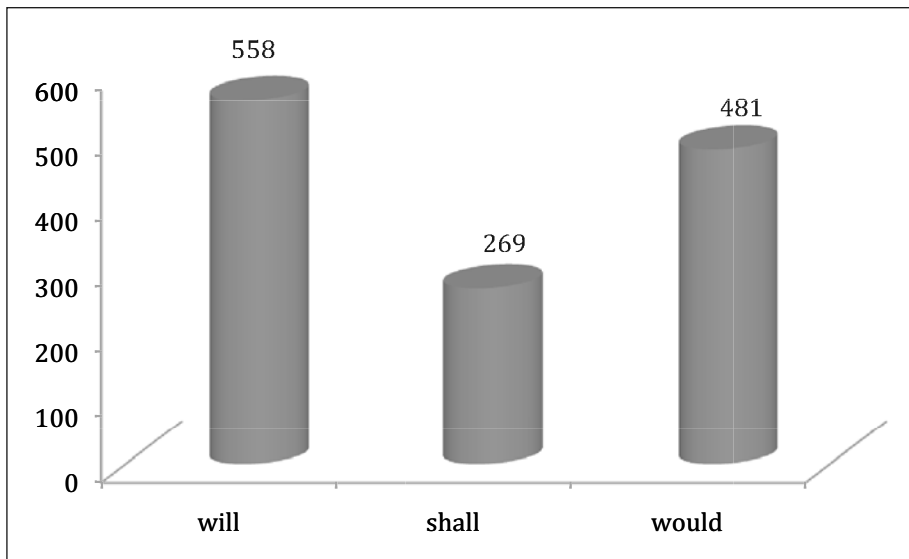
Graph 2. Predictive modals

As can be seen, *will* and *would* are the two most frequently used modals indicating prediction and, hence, in the case of *will,* indicating also certainty of the action, process or event described by the lexical verb which it accompanies. *Would* is quite close in frequency of occurrence, but the meaning is not of certainty but of a hypothesis, conveyed through contingent clauses, often marked by the fulfillment of a previous action, and thus in close connection with the occurrence of conditional subordination. The low frequency of *shall* can be explained by a functional overlapping with *will*. Although in principle they differ in the use of person subjects, *will* indicates predictability with third person subjects whereas *shall* does so with first person subjects (Coates, 1983, pp. 184-194). The predominance of predictive modals implies a subtle authorial presence anticipating facts or statements that can be accepted as true.

3.1.2. Necessity modals

After automatic searching and manual disambiguation the occurrences found for necessity modals are set out in Table 6:

Necessity modals	Occurrences	Percentage
Must	503	54.43%
Ought	90	9.74%
Should	331	35.82%

**Table 6. Linguistic elements in the parameter of necessity modals**

As a result, *must* is the predominant type, followed by *should*. The striking finding here is that only 90 occurrences have been found for *ought*, which means there is a significant gap between *must* and *should* (54.43% and 35.82%, respectively), on the one hand, and *ought* (9.74%), on the other.

These findings underline the use of strong modality forms which reinforce authorial presence in texts with the aim of exerting an influence on the reading public (Hyland,1998; 2005), although this stands in obvious contradiction to the

so-called objectivity of scientific discourse implicit in the rhetorical and linguistic absence of the author (Vassileva, 2000, p. 9).

3.1.3. Conditional subordination

The two linguistic forms included here, *if* and *unless*, are distributed as shown in Graph 3:
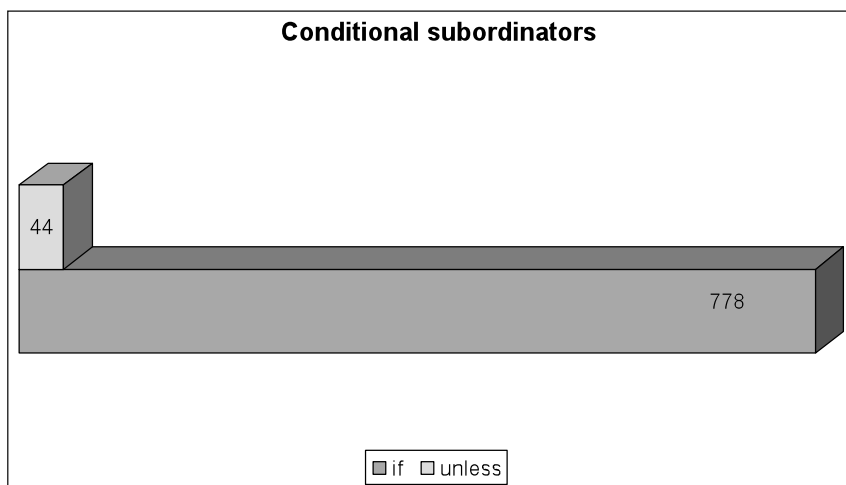
Graph 3. Conditional subordinators

Clauses of a conditional kind are useful to frame the discourse and for the author to leave a trace suggestion within the text about the probability or advisability of an event as a means of persuading the target audience, that is to say, the reading public (Biber, 1988). Conditional contingent clauses may contribute to change the addressee's view on a particular matter.

It should be noted that the use of *if* supersedes by far the use of *unless*. The syntactic role of *unless* as a conjunction is recorded in the *OED* as an obsolete form, with examples of use dating from the sixteenth century (www.oed.com:80/ Entry/215075>; accessed 26 May 2011).

The occurrence of the subordinating conjunctions *if* and *unless* also confers a tinge of predictability on a text, though they may contribute to a non-positive epistemic stance, especially in the case of *unless*. It is a form of covert persuasion of the addressee with presuppositions which place the author at a higher level of authority. When generating arguments either to support or refute a position, thinkers rely on two main strategies: addressing the truth of the conditional or arguing the merits of undertaking the action. Likewise, readers attempting to reason about a topic are quicker to adopt a deductive strategy if this is done mainly from the writer's point of view (Thompson et al., 2005). Therefore, the use of conditional subordination can be seen as a mechanism to persuade the readership while adding some sort of personal stance.

3.1.4. Suasive verbs

As mentioned above, suasive verbs form one of the parameters which have required substantial manual disambiguation. This is because the search has considered the different verbal forms of each suasive verb: base, *-ed*, *-ing* and *–s* forms. Therefore, manual disambiguation took place at the morphosyntactic level paying attention to the syntactic functions of the forms; and also at the semantic level, since some of the semantic features of the verbs could not coincide with a suasive meaning. Examples of the forms which have been discarded are (7) to (9) below:

(7) have taught us ſuch a neceſſary duty without any other <command> for it which altogether is but doing as you would (Kirkpatrick, 1730, p. 13).

(8) ſome kind of being or other was always taken for <granted> as a principle that could not poſſibly admit of doubt (Reid, 1764, p. 57).

(9) plants renders it probable that the leaves of all vegetables <move> or are agitated by the rays of the ſun though (Smellie, 1790, p. 8).

Following the disambiguation process, 599 tokens of suasive verbs remain from the initial 1,075. Table 7 shows the number of tokens corresponding to the different types, which have been subsumed under the base form for the sake of simplicity:

Suasive verbs	No. of tokens	Move	14
Agree	28	Ordain	1
Allow	88	Order	2
Arrange	1	Pledge	1
Ask	29	Pray	4
Beg	8	Prefer	19
Command	8	Pronounce	9
Decide	3	Propose	25
Decree	2	Recommend	18
Demand	6	Request	2
Desire	30	Require	79
Determine	91	Resolve	26
Enjoin	4	Rule	2
Entreat	1	Stipulate	6
Grant	20	Suggest	12
Insist	12	Urge	11
Instruct	8	TOTAL	599
Intend	29		

Table 7. Suasive types and tokens

Determine (91)*, allow* (88) and *require* (79) are the most frequently used suasive verbs. If we analyse in detail the meaning of these verbs we will understand the importance of incorporating them into the discourse of Philosophy texts. In the case of *determine,* the most frequent type, the verb may refer to:

a) *Logic.* To limit by adding differences; to limit in scope.

b) To bring a dispute, controversy or some doubtful matter to an end; to conclude, settle, decide, fix.

c) To lay down decisively or authoritatively; to pronounce, declare, state.

   This last meaning is an obsolete use from the 15th and 16th centuries which might have remained in the previous meanings. However, the most appropriate content in relation to its condition of suasive verb is that of:

d) To ascertain definitely by observation, examination, calculation, etc. (a point previously unknown or uncertain); to fix as known.

The first quotations in the *OED* date back to 1650. Curiously enough, this coincides with the change from the old to the new model in science.

Suasive verbs are only present in 16.85% of all instances collected for dimension 4 in this study. It is a low percentage, which signifies the diminishing of authorial presence, engagement and responsibility addressed to the reader (Sokol, 2006). As a previous study has demonstrated (Crespo, forthcoming), when compared to other disciplines, Philosophy is the one that contains the greatest number of strategies for overt expression and persuasion, as might be expected. Even though philosophy texts are the ones with the highest indicators for this dimension, and given that it is a vindicative genre *par excellence*, suasive verbs are the least represented linguistic feature, as we have already seen, which leads us to believe that the expression of persuasion is not in itself an overt feature of scientific writing in the eighteenth century. Predictive modals are the most frequent linguistic device, followed by another class of modals, those referring to necessity. Hence, the expression of modality is the mechanism to which our authors recur with the greatest frequency.

All these strategies are used in support to the author's particular point of view, even introducing logical alternatives which reinforce argumentation. (Biber, 1995, pp. 162-163). After a general presentation of findings, I will analyse the

data retrieved from the corpus according to each of the proposed variables: genre and sex.

3.2. The genre variable

In all the eighteenth century Philosophy texts only three genres have been recorded: textbook, treatise and essay, as Graph 4 below illustrates:
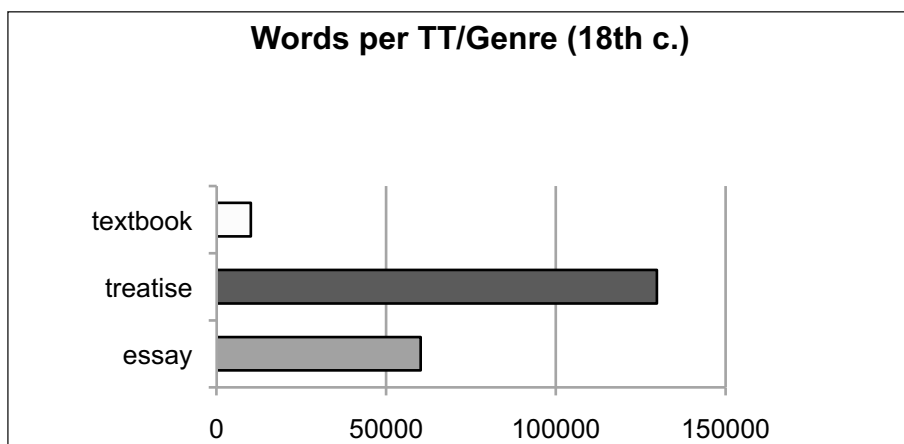
Graph 4. Genres in CEPhiT

The vast majority of texts (13) are treatises. This predominance might be justified by the sort of discipline we are looking into. Philosophy implies discussion and argumentation as its basic tenets, as well as logical thinking and reasoning. A definition of treatise was put forward by Olmsted (1841) in his preface to Letters on *Astronomy, addressed to a lady in which the elements of the science are familiarly explained in connexion with its literary history,* where he relates that in a treatise "the deepest research is united with that clearness of exposition which constitutes the chief ornament of a work intended for elementary instruction". Maybe this interpretation of treatise as a work "intended for elementary instruction" would explain the extremely low presence of textbooks at the time,

there being only one among the works collected for the Philosophy discipline in the eighteenth century. In addition, the organisation of a research text is believed to be governed by the internal requirements of scientific exposition and by the nature of the matter under analysis (Duszak, 1997, p. 12). There seems to be, then, a relationship between genre and discipline, which will be discussed later on.

Six of the texts belong to the category essay. Sometimes the classifications have followed the authors' own indications, as was the case with Hume's *An Essay concerning human understanding*. I have also resorted to Görlach's classification of text-types and to the definitions provided by the *OED* as reference points to be considered for the classification of texts. Görlach (2004, p. 88) defines each of these genres as follows:

- Treatise: discussion of some topic including some methodological issues.
- Textbook: book used as a standard book.
- Essay: short prose composition, first draft.

In the *OED* a more specific definition of essay, for instance, can be found:

> Composition of moderate length on any particular subject or branch of a subject; originally implying want of finish, an irregular undigested pieces, but now said of a composition more or less elaborate in style though limited in range (*OED*, online version, 2nd edition, accessed October 25th 2010).

Essays as well as letters were intended to allow for the discussion of any topic at the epistemic community level. As a consequence, it could be said that the essay was a suitable genre for philosophical reflections. Yet, since treatise is the genre that stands out, figures will be normalised in reference to the quantity of persuasive strategies in this genre/text-type.

a) *Predictive modals*

The distribution of predictive modals according to the genre variable yields the following results:
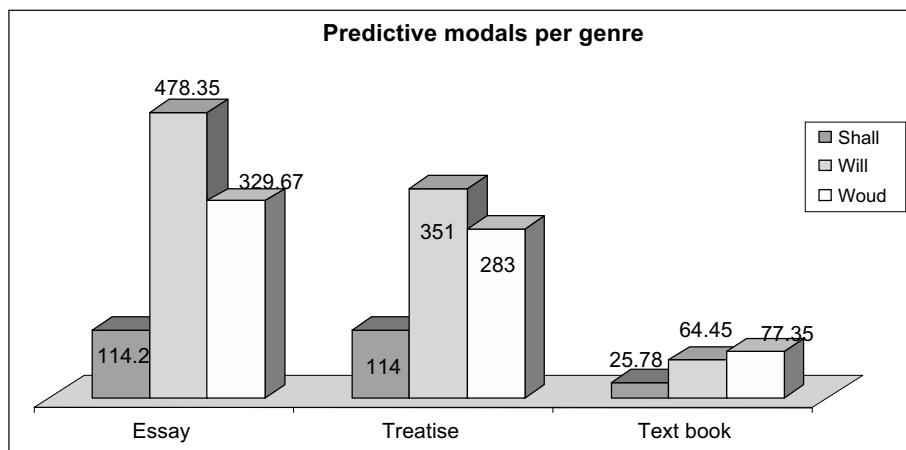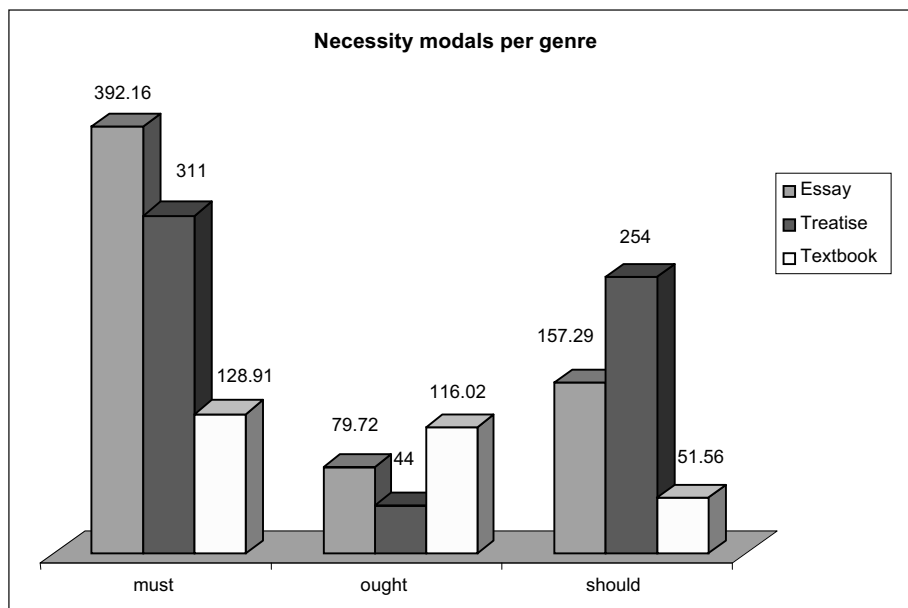
Graph 5. Predictive modals per genre

Both *will* (893.8) and *shall* (253.98) express the epistemic meaning of prediction, though *will* is more connected to the concept of futurity, a notion that cuts across the distinction between mood and tense according to Lyons (1968, p. 310). If *will* can be interpreted as a marker of predictability for actions or states in the present time, *would* (690.02) represents the same argumentative notion of prediction but referring to past time and focusing on the hypothetical nature of the situation.

The point is that these predictive modals are more abundant in the essay category. Treatise comes second, followed by textbook. Treatises on particular topics within a discipline seem to be more impersonal or neutral. On the contrary, in essays one can find more authorial implication, in the sense of using strategies to persuade the target readership. As we have seen, they are short compositions but elaborate in style with a personal touch on the author's part. A textbook, on the other hand, does not require argumentation but presentation of facts, events or ideas. Their only goal is to persuade the learner to accept the veracity of the propositions.

b) *Necessity modals*

According to the type of necessity modal analysed, the predominance of a particul,pes, followed by *should* and *ought*. This frequency scale, once more, is in consonance with the different levels of modality: from strong to weak modality. It is also worth mentioning that *must* (128.91) and *ought* (116.02) exhibit almost the same number of tokens in the textbook sample. In a genre in which the main aim is to instruct, advice or recommend on the grounds of some initially truthful propositions, the abundant presence of *ought* with the meaning of expressing what is proper, correct, advisable, befitting, or expected (*OED*) seems to be logical. This information can be observed in Graph 6 below:

Necessity modals per genre

392.16
311
128.91
79.72
44
116.02
157.29
254
51.56

must   ought   should
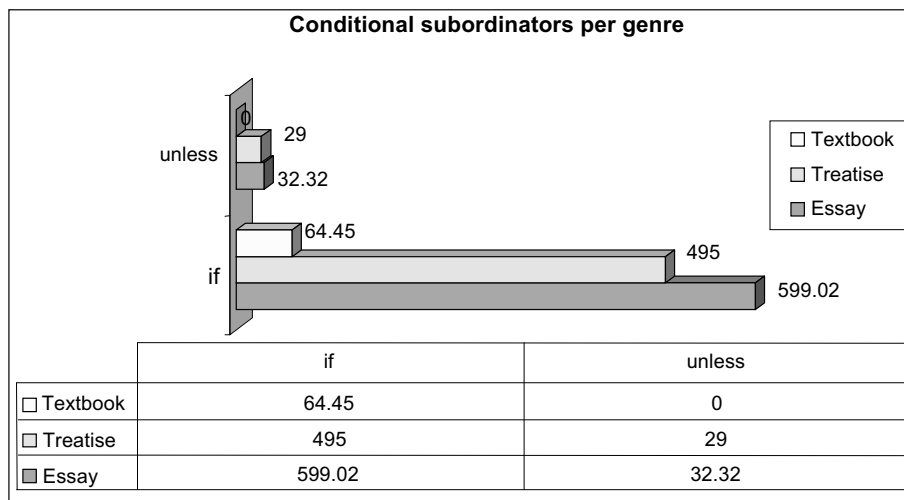
Essay
Treatise
Textbook

Graph 6. Necessity modals per genre

The next parameter of dimension 4 is concerned with conditional subordinators.

c) *Conditional subordination*

All the information gathered from the computerised and manual scrutiny of the material selected is shown in Graph 7:

Conditional subordinators per genre

	if	unless
☐ Textbook	64.45	0
☐ Treatise	495	29
☐ Essay	599.02	32.32

Graph 7. Conditional subordination

As was the case with the two previous parameters, essay is the genre here that contains the highest number of subordinating conjunctions, mainly *if* forms. This is the only type present in the textbook genre since *unless* is limited to essays and treatises and, in fact, the gap between the frequency of occurrences in both text-types is not significant (32.32 and 29 instances, respectively). All in all, the use of *unless* in treatises and essays may be explained on account of the very nature of the texts themselves, which are addressed to a specialised audience and, consequently, make use of a more complex kind of syntax, writing thoughts and ideas even from a non-positive epistemic stance.

d) *Suasive verbs per genre*
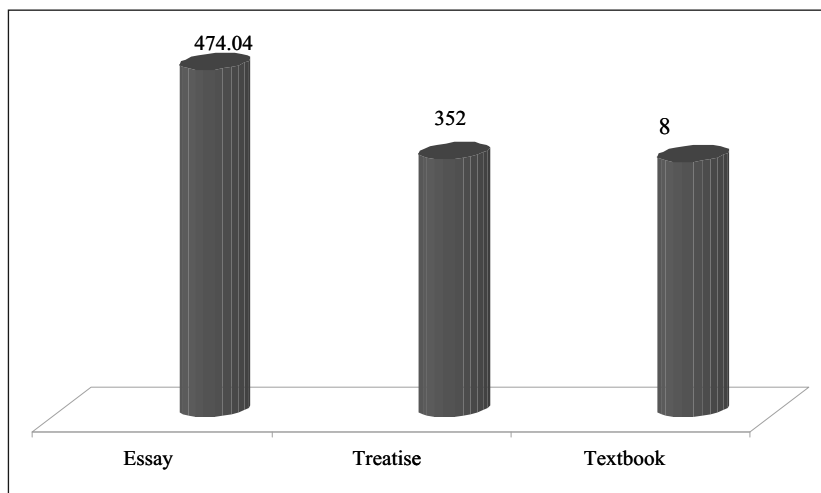
Graph 8. Suasive verbs per genre

As dealt with above for other linguistic features, after figures have been normalized, the counts reveal that essay is the genre containing the highest number of suasive tokens (474.04), followed by treatise (352) and, very close to it, textbook (348.08). Assuming that suasive verbs can be seen as overt markers of persuasion, the striking finding here is the frequency of occurrence of these forms in textbooks, since in fact it is the first parameter of dimension 4 to be observed in great frequency in this text-type within the Philosophy discipline. This might be explained on account of the persuasive strength and the argumentative force that is necessary in works produced for instruction. There is no subtle commitment, but clear evidence of how ideas flourish and are transmitted and of how certain the author is in his exposition of ideas.

After careful analysis of the four linguistic features characteristic of dimension 4 according to the genre variable, I can conclude that essay is the predominant genre in the four parameters. However, some other remarkable findings are also worth mentioning: in essays and treatises, the

number of occurrences of uses of *would* are similar; the form *ought* is the first necessity modal used in textbooks where the subordinating conjunction *unless* does not occur at all; the high number of occurrences of suasive verbs found in textbooks is also of paramount importance because it may characterize the function of the text-type.

The second variable to be considered will help us distinguish the behaviour of the four selected parameters of dimension 4 both in male and female writings.
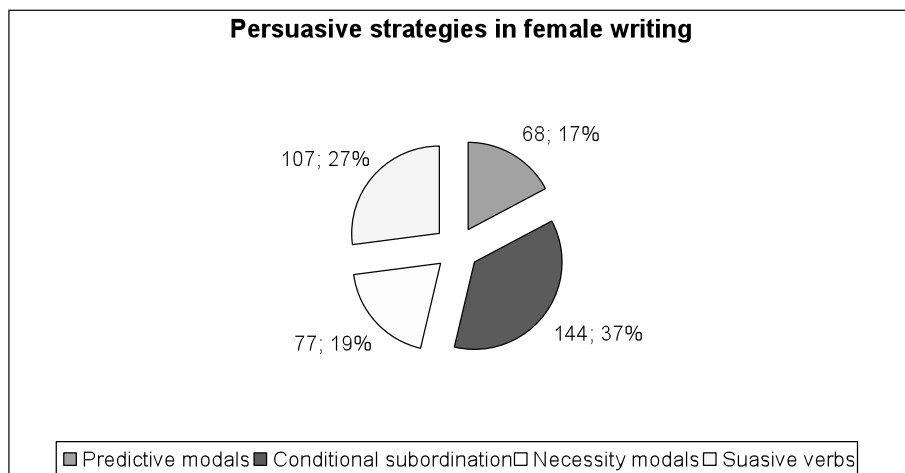
3.3. The sex variable

From a total of 200,022 words under survey, only 30,194 belong to female authors. Only 15.09% of the material included in the eighteenth century section of *CEPhiT*, then, was written by women. The female authors included are the following:

Author	Date	No. of words
Mary Astell	1700	10,077
Katharine Macaulay	1783	10,059
Mary Wollstonecraft	1792	10,058
	Total	30,194

Table 8. Number of words per female writer

From these 30,194 words we have found 396 (1.31%) tokens which are indicative of argumentation or persuasion, as seen in Graph 9:

Persuasive strategies in female writing

107; 27%

68; 17%

77; 19%

144; 37%

☐ Predictive modals ☐ Conditional subordination ☐ Necessity modals ☐ Suasive verbs

Graph 9. Strategies of persuasion in female works

If we compare these results with the findings from works written by men, amounting to 169,828 words, we find 3,157 tokens, that is, 1.85% of persuasive strategies. Normalised figures, as shown in Table 9 below, demonstrate that the occurrences of persuasive strategies in female writing amount to 7.37% whereas in male writing the percentage goes down to 1.85%.

	Total number of words	Tokens	Normalised figures	Percentages (total no. of words)
Male	169,828	3157	3157	1.85%
Female	30,194	396	2227.32	7.37%

Table 9. Male vs female persuasive strategies

This overall presentation of the data extracted from *CEPhiT* confirms the tendency for the use of more persuasive strategies on the part of female authors

than on the part of male ones. Still, we can go into further detail and compare each individual feature so as to ascertain whether any more specific tendencies in the use of these strategies are present:

Features	Male strategies	Norm. figures	Female strategies	Norm. figures
Predictive modals	1,140	1,140	68	382.47
Conditional subordination	678	678	144	809.93
Necessity modals	847	847	77	433.09
Suasive verbs	492	492	107	601.82

Table 10. Comparison of each linguistic strategy

As the normalized figures demonstrate, female writers are more likely to include complex syntax of the subordinating kind, that is, conditional subordination with contingent and hypothetical clauses as well as a higher number of suasive verbs, which brings about the overt manifestation of authorial presence. In contrast, male preferences revolve around modality devices, mainly strong modality, which seems to modulate the writer's presence in their works.

Focusing the analysis on the genre variable within women's writing, the results we obtained are set out in Table 11:

	Predictive	Norm. figures	Necessity	Norm. figures	Conditional sub.	Norm. figures	Suasive verbs	Norm. figures	TOTAL
Essay	8	15.97	23	45.91	61	121.77	37	73.86	257.51
Treatise	60	60	54	54	83	83	70	70	267

Table 11. Each parameter according to genre in women's philosophy writings

In female works the number of persuasive strategies is almost the same in essays and treatises. However, it is worth noting that this number is higher in essays in the case of conditional subordination and suasive verbs. As a consequence, persuasion or argumentation is not modality-bounded in the case of essays written by women but, as can be attested, it is treatises that express this function employing a higher number of quantity of modals, mainly predictive modals.

4. Conclusions

From a general standpoint, the predominant persuasive or argumentative strategies are predictive and necessity modals, that is to say, modality dominates scientific discourse in eighteenth century Philosophy texts. Used less are conditional subordination devices and, even less, the number of suasive forms the authors resort to. In each of the parameters, however, there is a predominant linguistic element. Such is the case of *will* in predictive modals; *must*, in necessity modals; *if*, in conditional conjunctions and *determine, allow* or *require* in the group of suasive verbs.

In this respect, and in contrast to what might generally be expected, suasive verbs are the least represented linguistic feature, which may corroborate the assumption that persuasion or argumentation, if any, is not as overtly represented as we might anticipate. Since predictive and necessity modals are the most frequent devices used to display the author's argumentative force, one could be led to think that the tendency is to present any kind of persuasive mechanism in a more subtle and covert manner.

As for the variables under scrutiny, essay is the genre containing the highest proportion of the proposed strategies, probably because of the very nature and requirements of this sort of text, which, additionally, are a good fit for the kind of argumentative discourse found in works of Philosophy. It is also noticeable that the study of the sex variable sheds some light on the different linguistic uses of men and women in the eighteenth century. More strategies of persuasion have been recorded in female (7.37%) than male (1.85%) writing. Moreover, the distribution of linguistic features also differs: female writing has been attested to employ more conditional subordination and suasive verbs that male writing where modality of both predictive and necessity meanings are the prominent

linguistic devices. At variance with findings overall, there seems to be a balance in the number of strategies that have been detected in both essays and treatises, the only genres used by women, with a slight predominance of linguistic elements in the category treatise.

In sum, we can say that eighteenth century scientific discourse, as attested in the discipline of Philosophy, makes a moderate use of persuasive or argumentative strategies, especially of visible strategies with an obvious preference for a particular type of text. Nevertheless, this does not mean that it is altogether uniform. There are gender differences which seem to point to opposite views on how to treat and convey scientific information.

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