Pronouns as stance markers in the *Coruña Corpus*: An analysis of the CETA, CEPhiT and CHET[6]

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Abstract: It is now widely accepted that knowledge is negotiated and negotiation implies involvement on the part of both readers and writers. Since there seems to be some connection between involvement and stancetaking (Freeman et al. 2014: 1), it seems reasonable to argue that both of them have some relationship with knowledge negotiation. This paper aims at exploring how authorial presence is manifested in late Modern English scientific writing in the use of first person pronouns as involvement and, therefore, stance makers. The influence of variables such as subject-matter and sex will be analysed in order to ascertain to what extent they make that such linguistic feature is more or less frequently used by authors. In order to ascertain how different disciplinary discourse communities behave, texts from three different scientific fields written both by men and women will be scrutinised. The samples are the ones contained in the *Corpus of English Texts on Astronomy* (CETA), the *Corpus of English Philosophy Texts* (CEPhiT), and the *Corpus of History English Texts* (CHET), all of them subcorpora of the *Coruña Corpus of English Scientific Writing.*

Keywords: max. stance, involvement, personal pronouns, disciplinary discourse community, *Coruña Corpus*, late Modern English, scientific discourse.

1. Introduction

In recent decades, collaborative work has been much in vogue: schoolchildren are asked to use online collaborative tools (Stahl, 2003), university students often write joint projects, and researchers seem to be drawn to the "publish-together or perish" model. But collaboration requires negotiation, which in turn implies involvement on the part of both readers and writers. The relationship between stance taking and negotiation has been discussed widely (Hyland, 2005) and there seems to be a connection of some kind between high involvement and strong stances (Freeman et al. 2014: 1).

Stance, in the form of authorial presence as a possible expression of involvement, can be seen at work in many linguistic features, these having been enumerated in works on academic prose (see Chafe 1985, Biber 1988, Hyland 1996 and Atkinson 1999); and stance is perhaps best observed in the use of first person pronouns, which have been classified as "central" pronouns (Quirk et al, 1985; Chamonikolasová, 1991). At the moment, university guidelines for academic writing still tend to

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recommend never to give personal opinions or to use the pronoun I when writing essays, although many do recognise that the rules here are changing (UNC, 2016).

The idea, still pervasive, that scientific writing is highly impersonal (Hyland, 1998a) will be challenged again here, in that the aim of the present chapter is to look at how writers of science in late Modern English revealed themselves in their prose. I will also address the issue of whether there are any external constraints (such as subject-matter) or internal ones (such as sex) at play here. To this end, Section 2 will offer an brief overview of the theoretical tenets and practical applications of the study of involvement as part of stance taking. Following that, Section 3 will present the data used for the current study, these being samples of scientific writing of different kinds published between 1700 and 1900, a period in which science was beginning to be standardised in its mode of expression. Section 4 will present findings, followed by some concluding remarks in the final section.

2.   Stance, involvement and pronouns in late Modern English scientific writing

Alonso-Almeida and González-Cruz (2012: 324) refer to stance as an "umbrella term", since it has been used to refer to a wide range of authorial attitudes, these expressed through a range of different linguistic features including adverbial, adjectival, verbal and modal markers, plus others. The concept of stance in linguistics is closely related to the expression of sentiment or subjectivity, an internal mental or emotional state which itself corresponds to what Quirk et al (1985: 202) call expressions of a "private state". Thus, stance is generally considered to be the way in which speakers (or writers and readers) interact. This interaction may take different forms (Kokelman, 2004; Jaffe, 2009), such as evaluation, intentionality, epistemology or social relations. We can see, then, that the concept of stance has been used differently by different authors; it might be to describe pragmatic-related functions such as irony or role-playing, or the way the communicative goals of individual participants shape particular communicative interactions. There is yet another possible approach, one derived from Daniel Dennett's (1987) concept of intentional stance, that is, the way humans tend to assume certain intentions and mental states in their interlocutors. The influence of Bertrand Russell in the first half of the 20th century, and in particular his coining of the term "propositional verbs" (1956: 227), led to propositional attitude becoming one of the best-known notions of stance, with authorial stance understood as the position speakers or authors adopt regarding their own propositions (texts). The original philosophical treatment of stance as a manifestation of human thought has also been taken up in various fields of linguistics, both as it is manifested nowadays (Chafe 1986; Hunston 1994; Hyland 1996, Precht, 2000) and from a diachronic point of viewMeurman-Solin, 1993; Fitzmaurice 2002: Alonso-Almeida and Mele-Marrero, 2014). Also, following the publication of foundational papers such as Pang et al (2002) and Wiebe at al (2005), different corpus-based and corpus-driven studies have been published on sentiment and subjectivity, and these have even extended to the analysis of prosodic elements in a transcribed corpus of present day language use (Freeman et al, 2014).

Although some authors have noted differences between engagement and stance, others have tried to form a broad understanding of the issues here, especially as regards academic writing (Hyland, 2005: 173). Since elaborate negotiation may include citing personal knowledge or experience, personal pronouns are considered good indicators of stance taking for the purpose of such

research. The current paper argues that involvement may be seen as a manifestation of stance which, in turn, is linguistically expressed through features such as pronouns, especially those directly referring to the speaker/writer (I), the audience/readership (you) or both (we)[7]. According to Herriman and Aronsson (2009: 103) "the clauses with the first person singular pronoun subjects attribute the attitude they express explicitly to the speaker/writer and are thus subjective interpersonal metaphors". In this sense, we can establish a relation between pronouns, stance and involvement.

In previous work on involvement in late Modern English scientific writing by women (Crespo and Moskowich, 2015), the idea was posited that there is some kind of power asymmetry, in Lakoff's (1990) terms, together with the one which a priori assigns a more involved or less informational style to female writers than to male ones. In other words, women are less detached than men (Argamon et al. 2003). Involvement has also been claimed to be the consequence of real interaction between speaker and listener (Biber, 1988: 43, Besnier, 1994: 280), that is, more typical of oral registers as opposed to no direct interaction in the written medium (Crespo and Moskowich, 2015: 77). Accordingly, scientific discourse should be the informational mode par excellence, even when written by women. However, other studies on present-day English (Argamon et al., 2003) seem to contradict this idea, in that they show that women writers tend to include in their written discourse features expressing involvement. My working hypothesis is that such claims for present-day academic prose (Biber, 1988) can also be applied to late Modern English scientific writing, and first person pronouns can undoubtedly be used as elements here, having the writer and/or the listener as extralinguistic referents.

Contrary to some general assumptions, I argue that academic writing is not just about conveying ideas, content or knowledge: it also in some way represents the writer and his/her place within a particular epistemic community. As suggested by Hyland in more recent work (2002: 1091), academic prose is not completely impersonal. On the contrary, writers gain credibility by projecting an identity invested with individual authority, displaying confidence in their evaluations and a commitment to their ideas. Academic authors can no longer hide behind scientific discourse, and there are quite a few linguistic features (Chafe, 1985; Biber, 1988; Hyland, 1996; Atkinson, 1999) through which their identity can be detected. Many of these linguistic features may be used more or less unconsciously, but this does not seem to be the case with first person pronouns.

There is general agreement that the use of first person pronouns expresses the presence of the writer. Zohar (2015), in line with Martín-Martín (2005), considers the use of the singular form a mark of confrontation in the dialogue (interaction) established in academic prose. However, other researchers have different approaches. Thus, Hyland (2001: 217) considers that the first person helps authors to set their own work apart from that of others. Myers (1992) argues that in present-day English writing the first-person pronoun is often used to help the reader identify an author's main claims. A similar viewpoint is that of Harwood (2005) who argues that authors resort to the first person to add a sense of novelty to their work, thus providing it with extra value in the field. Also, in a later work Hyland

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[7] In linguistics, then, authors such as Biber and Finnegan (1989: 93) have considered stance as "the lexical and grammatical expression of attitudes, feelings, judgments, or commitment concerning the propositional content of a message", and no doubt pronouns are one of these grammatical expressions.

claims that "over the past decade or so, academic writing has gradually lost its traditional tag as an objective, faceless and impersonal form of discourse and come to be seen as a persuasive endeavour involving interaction between writers and readers." (Hyland, 2005: 173). The plural forms of the pronoun have also been analysed in two opposing ways. First, they have been considered to minimise the presence of the author (Myers 1989: 14) and in this sense they seem to be used to express exactly the opposite stance, that is, modesty, although this does not completely explain their use in academic prose (Hyland, 2001); second, they have been seen as a claim of authority and communality (Pennycook (1994: 176). However, such functions and uses may not be so new to the language.

For the period under survey here, some other factors deserve consideration. With the Scientific Revolution of the 17th century, the scientific method was generally adopted. Objectivity was one of its main aims, and indeed scientists tended to describe everything in terms of facts and data, so that "experiments" could be repeated under the same conditions to confirm that the same results could be obtained (Moskowich, 2015). It seems that from the second half of the 18th century there is a reaction to this object-centred tendency, one which would culminate in the Romantic movement. Also, some authors (Harris, 1751; Beattie, 1793) began to address the idea of their own use of language. There were certain linguistic habits typically associated with science, but certain other features have also been detected in scientific writings from this period involving an interaction or dialogue between the reader and writer (Crespo, 2011; Alonso-Almeida, 2012). Language as a system may not have varied much in terms of syntax or morphology, but the concern of speakers for its correct use as a tool for social advancement was undoubted. And such concerns were also present in scientific writing, perhaps as a response to Boyle's early claims about the language of science, now free of the tyranny of the object-centred perspective.

As noted in Moskowich and Crespo (2014: 101), both cultural and academic life were strongly influenced by Positivism and Romanticism. Whereas the former was the natural heir of Empiricism, with experimentation, observation and data as central elements, the latter focused on the individual and his or her expression of ideas and opinions. In that study, we argued that "One of the ways of manifesting such personal opinions is the incorporation of stance adverbs into one's discourse." (Moskowich and Crespo, 2014: 101), and I will argue here that the role of personal pronouns in this respect is no less notable. "The use of first and second person pronouns is undoubtedly one of the devices used by authors either to involve the reader, or to show their own involvement with and proximity to both the message conveyed and the readership" (Crespo and Moskowich (2015: 78). In what follows I will aim to establish a relationship between the use of pronouns, the sex of the author, and the field of knowledge of texts, in order to see the extent to which these two factors play a role in language modelling.

3. Corpus material and methodology

Although personal pronouns have been said to become "a carrier of some irretrievable information (contrast, selection, emotiveness) and acquire a high degree of CD (communicative dynamism)[8] "

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[8] My parenthesis.

(Chamonikolasová, 1991: 60), the data I will be using are drawn from texts written during the late modern English period contained in the *Coruña Corpus of English Scientific Writing* (henceforth CC). The CC is complied in such a way that each subcorpus is formed by text samples representing the same scientific discipline. In this sense, they are valid for the survey of the use of first person pronouns as regards subject-matter, the first variable under consideration here. Although this may imply some difficulties in reconciling the prototypical characterisation of disciplines and the compilation principles that govern the CC (Puente-Castelo and Monaco, forthcoming), such an organisation has proved useful for comparative studies.

Three of the subcorpora of the CC have been used here: the *Corpus of English Texts on Astronomy* (CETA), the *Corpus of English Philosophy Texts* (CEPhiT) and the *Corpus of History English Texts* (CHET). The texts compiled therein were published between 1700 and 1900 and written directly in English by English-speaking authors.[9] Since all samples in the CC contain around 10,000 words, with 20 samples from each century, this means each discipline is more or less equally represented by a total of ca. 400,000 words. Thus, a total of 1,211,749 words has been used for the study of the use of pronouns. Word counts are as shown below:
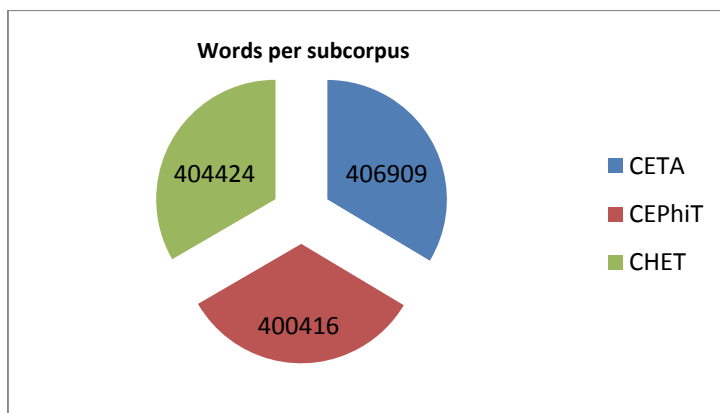

Words per subcorpus

404424   406909

400416

■ CETA
■ CEPhiT
■ CHET

Figure 1. Word count in the three corpora (per discipline)

Since the second variable we will consider here is that of the sex of the author, it should be noted that, as expected, not many female writers are included in the data, since they are also significantly few in the CC. As a small-scale representative sample of scientific language as used in late Modern English society, the corpus contains relatively few texts written by women (as well as fulfilling the other criteria set by the compilers (Moskowich, 2012)) and their number varies depending on the discipline and century. Thus, there are only two samples written by women in Astronomy, none at all during the 19th century for Philosophy (although several for the previous century), and yet a greater abundance in texts of history or historiography, with eight samples.

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[9] For a detailed account of the compilation principles governing the Coruña Corpus, see Moskowich, 2012, 2016.
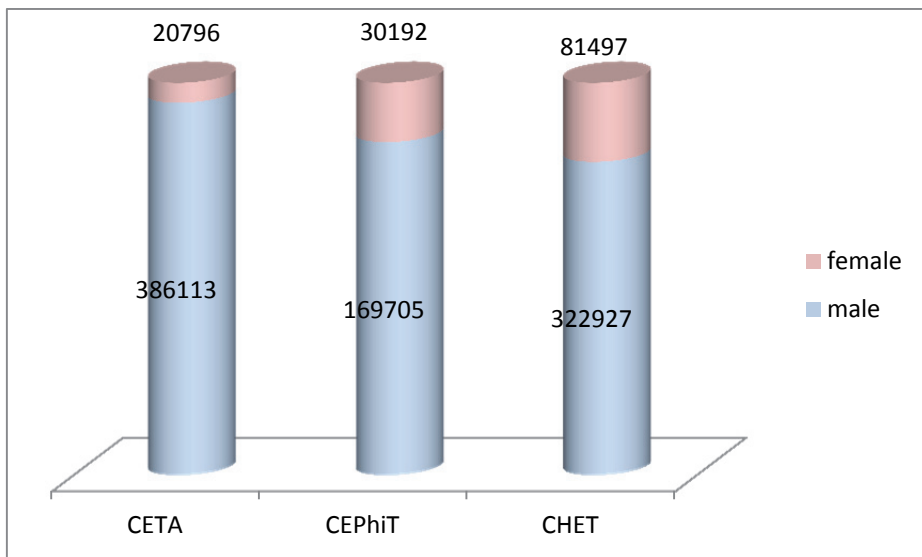
Figure 2. Word count per sex of author

The eleven different forms that were searched for in the material are those corresponding to the first person pronoun, both singular and plural, as these might have different uses and functions. The complete list is set out in Table 1, in alphabetical order:

Table 1. List of forms searched[10]

Singular	Plural
I	Our
I´m	Ourselves
I´ll	Us
I´d	we
Me	We'll
My	We'd
Myself	We're

As we will see below, not all these types occur in the data.

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[10] The forms here included represent all variants of pronouns in the corpus. We, thus, register subject pronouns, obliques and contracted forms.

4. Analysis of data

The Coruña Corpus Tool was used to conduct the searches, and, as noted above, not all the forms in Table 1 were found. For example, data from CHET contained none of the contracted forms, which is surprising since they were much in use in the written register during the eighteenth century, although nowadays they are considered typical of everyday speech and informal writing EGT, 2016).

Of the total of 1,211,749 words, that is, taking male and female texts together, only 12,621 (1.04%) are forms of the first person pronoun. This may not seem very high. However, it can be accounted for by the fact that the dissemination of scientific knowledge is primarily concerned with the transmission of ideas, concepts or the communication of inventions, in which nouns and noun phrases play a dominant role, this being one of the largest and most important lexical categories in scientific terminology (Nevalainen, 1999). However, personal pronouns appear to be more common when, as in the current study, authors from both sexes are considered together; Crespo and Moskowich (2015), for example, reported the use of these pronouns in women to be just 0.74%.
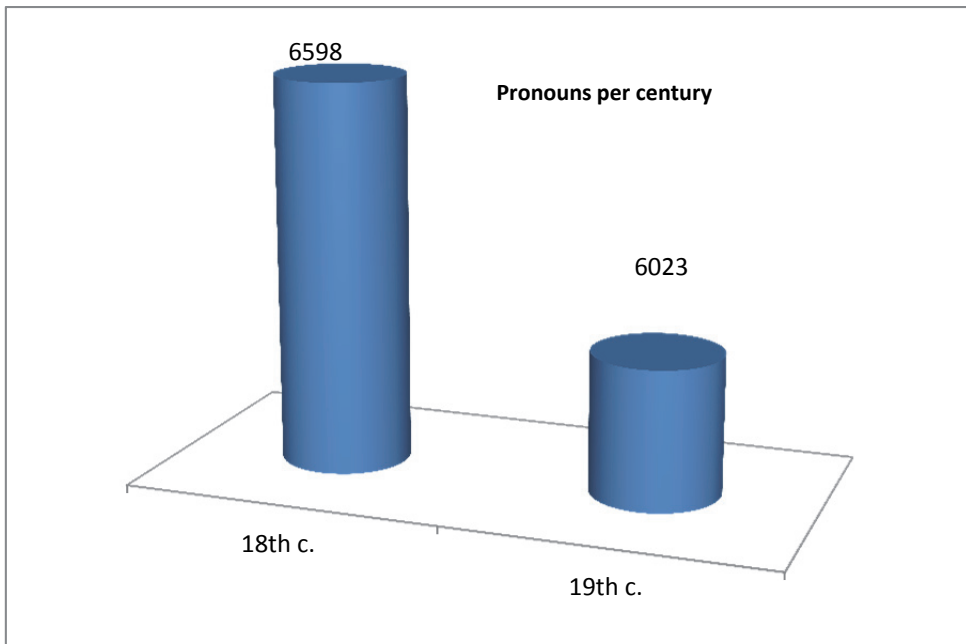

Figure 3. First person pronouns per century

We observe an important decrease in the use of first person pronouns in the 19th century, despite the fact that the Romantic movement was flourishing at the time. However, the importance of Rationalism, as well as the development of national academies of science, may have had a greater impact on writing standards, in particular on the avoidance of personal references in favour of objective observation.

4.1. Subject-matter

Subject-matter, discipline, field and domain are terms often used synonymously to refer to the set of concepts, ideas and conventions that are considered typical of an area of knowledge. Although lines between such fields were fuzzy in the past, they are becoming more and more clear, if not for knowledge itself (in that interdisciplinarity is currently seen as indispensible for the advancement of humanity) then very much so for the ways in which knowledge is conveyed. The Writing Centre at the University of North Carolina, for instance, recognises different kinds of language use for different fields of knowledge. Specifically for the use of personal pronouns in the Social Sciences, it states:

> Ask your instructor whether you should use "I." The purpose of writing in the humanities is generally to offer your own analysis of language, ideas, or a work of art. Writers in these fields tend to value assertiveness and to emphasize agency (who's doing what), so the first person is often—but not always—appropriate. Sometimes writers use the first person in a less effective way, preceding an assertion with "I think," "I feel," or "I believe" as if such a phrase could replace a real defense of an argument. While your audience is generally interested in your perspective in the humanities fields, readers do expect you to fully argue, support, and illustrate your assertions. Personal belief or opinion is generally not sufficient in itself; you will need evidence of some kind to convince your reader.

If this is so, it is because each discipline shares mechanisms of intercommunication among its members, especially in professional journals and scientific conferences. The community's members have an in-depth familiarity with the types of texts that are unique to that community (Swales 1990: 24-25).

My counts for the three subcorpora (each of which represents a different discipline) seem to confirm this. Raw numbers rather than normalised frequencies are used here, since all samples are ca 10,000 words, with the same number of texts for each discipline and century. As Figure 4 shows, there are notable differences in the number of first person pronouns used in each case.
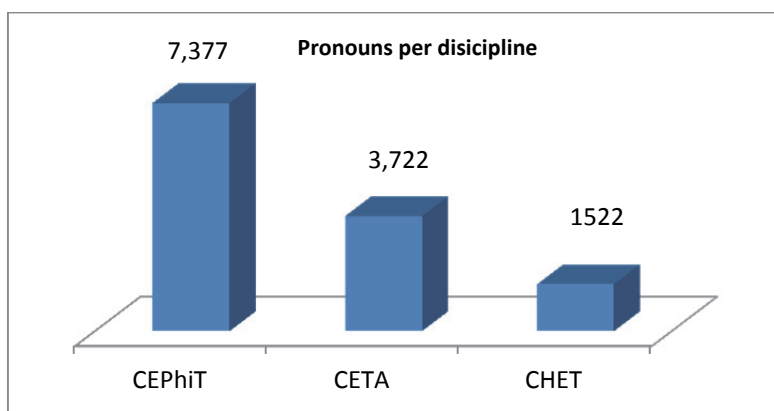

Figure 4. Use of first person pronouns per discipline

There are 7,377 such forms in the Philosophy texts, followed by 3,722 in Astronomy and only 1,522 in the texts on History (even though there are some samples here written in the first person, such as the travelogue by Elisabeth Justice11). Disciplinary variability can be observed, in that some disciplines seem to require a higher proportion of pronouns than others, this no doubt depending on the discourse patterns negotiated by the discourse (disciplinary) community. At the same time, the idea cited above from the University of North Carolina's Writing Centre is not borne out, even for this period; indeed, this was shown in a previous study (Crespo and Moskowich, 2015) where we found very significant differences in the use of pronouns in Life Sciences, Astronomy and History; Life Sciences was the discipline with by far the highest frequency of use of first and second pronominal forms, followed at a considerable distance by Astronomy and History, where first and second person pronouns were almost absent. It was thought in that study that the low level of technicality in some of the Life Sciences samples (they are basic, introductory texts) might have provoked this difference; authors seeking to instruct were sympathetic to those readers who wanted learn, and this, we argued, was the reason for their frequent use of first and second person pronouns. Also in that study, History texts had a more detached style than the other samples. In the present study too, History is the discipline exhibiting the lowest numbers, and this perhaps leads us to consider it as the result of some sort of over-reaction. That is, disciplines that had a long and respected tradition such as Philosophy, or others, like Astronomy, which had been accepted as good examples of the observational sciences, did not have to prove their validity or that of their discourse. History or historiography, on the other hand, was heavily influenced by the Positivist ideas of Auguste Comte (1798-1857) throughout the 19th century, and the objective description of facts tended to be the primary concern of writers. Perhaps in order to be respected by other discourse communities, authors of history had to adopt the supposedly objective perspective that had been so successful in other fields.

However, this difference may be also due to the evolution of discursive patterns over time, and for this reason I will analyse each discipline in the two centuries separately. As Figure 5 shows, the frequency with which authors use first person pronominal forms decreases in Astronomy texts (in CETA, 1,951 instances for the 18th and 1,771 for the 19th century) and in History texts (in CHET, 1,184 for the 18th and only 338 for the 19th century). Those authors who write about Philosophy, however, exhibit a different approach, and their use of first person pronouns does not decrease, but rather increases slightly (from 3,463 to 3,915 uses in CEPhiT). This may be due to the influence of the discipline itself and its contents. The late Modern period was heavily influenced by Berkeley, who defended the idea that objects only existed in as much as the self could perceive them, and by Kant, whose transcendental idealism also reinforced the notion of the self and the way in which the mind directly knows only ideas. The Romantic movement may also have had some influence on the writing style of many of these authors, who were not so thoroughly subject to the standards of the observational sciences.

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[11]Elisabth Justice. 1739. *A Voyage to Russia: describing the Laws, Manners, and Cuſtoms, of that great Empire, as govern'd, at this preſent, by that excellent Princeſs, the Czarina. Shewing the Beauty of her.* York: printed by Thomas Gent.
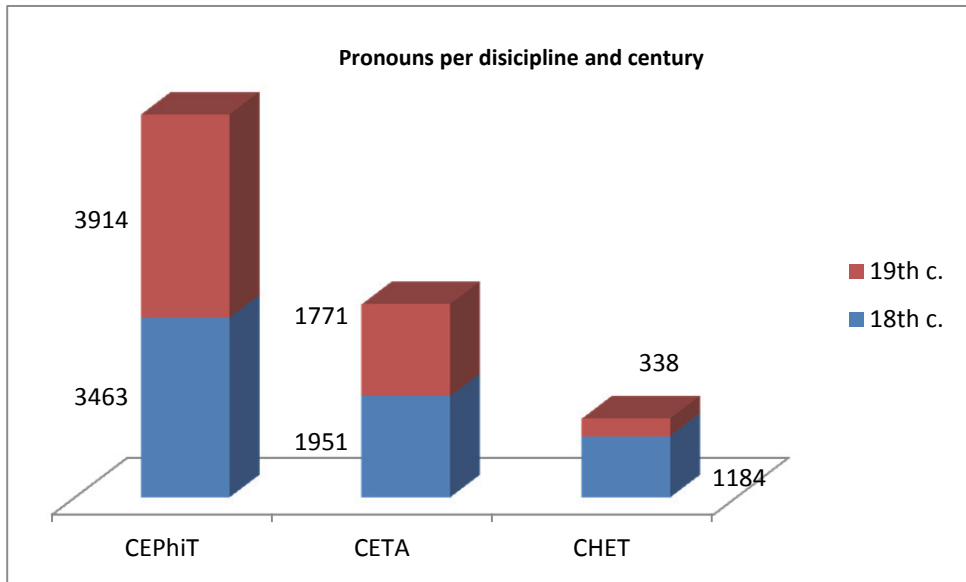
Figure 5. Use of pronouns per discipline and century

But not all forms of the pronoun are used with the same frequency in the data, as shown in Figure 6.
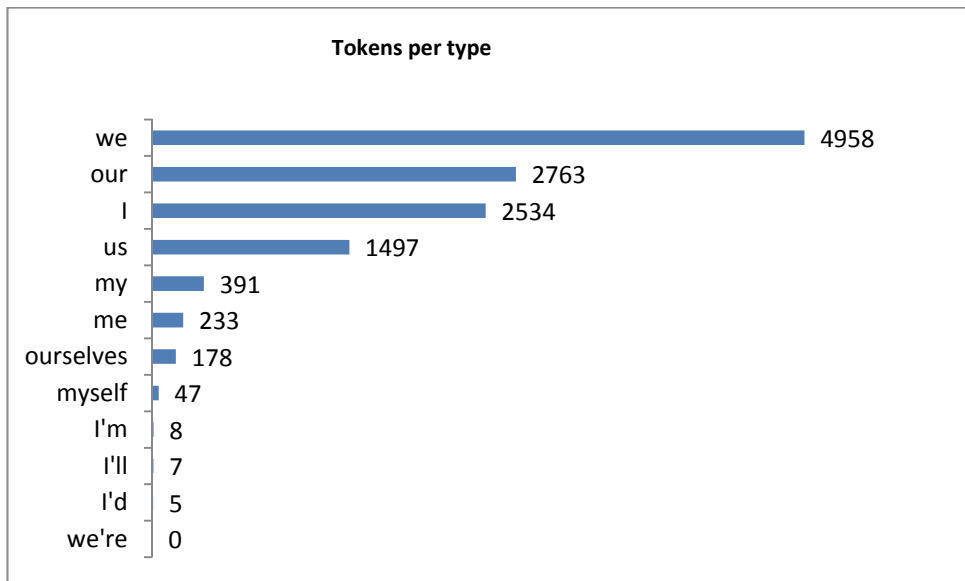

Figure 6. Frequency of occurrence for each type

The first thing we observe here is that there is one type that is not been recorded at all in the data, the contracted form we're, even though all sorts of contraction can be found in English 18th-century writing generally. The most abundant type is we with 4,958 tokens, followed by our with 2,763; contracted and reflexive forms, by contrast, appear at far lower frequencies. Meanwhile, the plural ourselves, with 178 instances, surpasses notably the singular myself (47). The explanation for this large difference in use can be better understood if we turn to the distribution of these forms according to specific variables, with notable differences in terms of both discipline (as reflected in each subcorpus) and century. Table 2 sets out the data for this more detailed analysis:

Table 2. Pronominal forms per discipline and century

Corpus	CHET		CETA		CEPhiT	
Century	18th	19th	18th	19th	18th	19th
I	400	28	486	160	818	400
I'm	2	0	4	0	2	2
I'd	0	0	0	0	5	0
I'll	0	0	3	0	4	0
me	45	5	51	7	73	45
my	58	3	59	18	160	58
myself	5	1	5	7	10	5
our	287	85	398	340	788	287
ourselves	2	4	13	9	60	2
us	120	29	258	248	378	120
we	265	183	674	982	1165	265
we're	0	0	0	0	0	0

CHET is the subcorpus with the greatest number of types registering no occurrences. Excluding the contraction we're that is not present at all in the material, there are five absent forms in History texts overall, two in the 18th century (I'd and I'll) and three in the 19th (the same two plus I'm). The texts on Astronomy show a greater use of pronominal forms. In this case, the forms which are used also occur more frequently, and there are only five types that are not represented at all, I'd in both centuries and I'm and I'll for the 19th. The case of CEPhiT is again different in the sense that almost all types are present, with the only exceptions of I'd and I'll for the 19th century. If we accept Pahta and Taavitsainen's (2010: 551) assumption that "a typical research article intended for professional readers with a great deal of shared knowledge has a highly conventionalised macro-structure and is characterised by a high frequency of discipline-specific terms, complex sentences containing subordination, and an impersonal style created by frequent use of passive constructions, extended noun phrases describing nominalised actions and a low frequency of first- and second-person

pronouns"12, then the texts in CEPhiT might have been intended for (and addressed to) a different readership. However, an examination of the prefatory material to these works makes it clear that this was not the case, and the reason for the abundant use of first person pronominal forms must be sought elsewhere. The cultural atmosphere of the times is perhaps a valid place to start.

4.2. Sex

The second variable I will consider in the analysis is the sex of the authors, in that the consideration of gender as a social construct may have more relevance here. Information in the texts themselves, or in the metadata accompanying them, can of course provide no clues here beyond mere biological sex, and this is all that we can use to establish the division between male and female authors. As mentioned above, the low number of texts written by women is a mirror of the state of things in late Modern English-speaking countries. It is probable that women wrote more than we know, but they often did so under a pseudonym or acted as research assistants. The CC contains works by women which were published under their own name, which explains why, as Figure 7 shows, only 132,485 words (11%) are by women, whereas 1,079,264 (89%) are by men across the three disciplines.
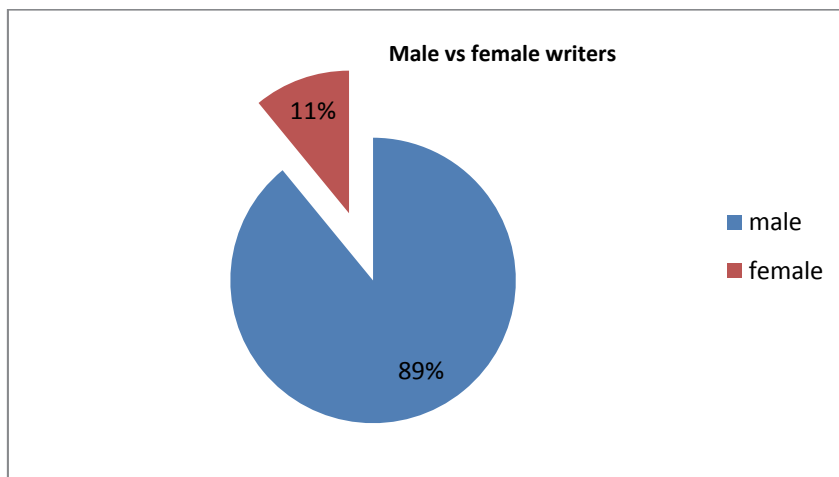

Figure 7. Proportion of words by male and female authors

Figure 8, below, shows how the material is distributed per sex across the subcorpora, with CHET containing the most female authors, with a total representation of 81,497 words, followed by CEPhiT with 30,192, and CETA with 20,796. At first sight the findings for this variable are as surprising as those for discipline; History is the field where least pronominal forms occur, and is the discipline in which female authors are more numerous in the data. This merits further attention, and thus I will now analyse the use of pronouns by sex and discipline.

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12 They ground this claim on Biber (1988) and Swales (1990, 2004), among others.
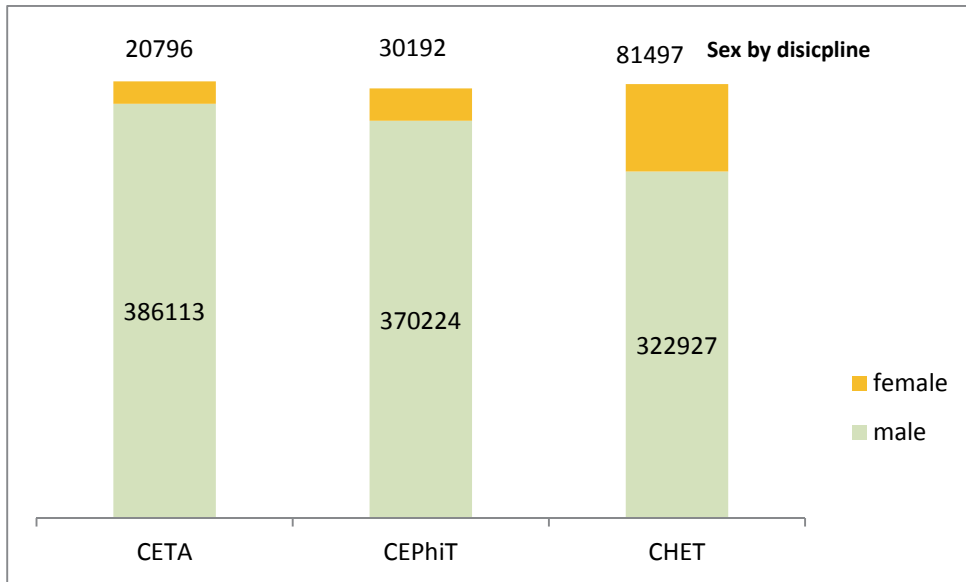
Figure 8. Words per sex and discipline

The use of pronouns must be considered an important linguistic device, and in previous work on hedging and stance taking (Crespo and Moskowich, 2015) we saw that this was the second most frequently used device by women, after private verbs. It is my intention now to see whether this is still true when compared to male writers within the same discipline, and in this way to ascertain whether the use of pronouns as stance taking markers is due to discipline constraints or, rather, is related to the sex of authors; we note that in other studies (Koppel, Argomon and Shimoni 2002; Argamon et al. 2003) personal pronouns are seen to be favoured by females whereas noun determiners are favoured by males as significant indicators of author gender. Herring and Paolillo (2006: 445) also identify personal pronouns as a preferentially female feature.

Raw numbers for the use of pronominal forms per sex in each discipline are set out in Figure 9 below. As can be seen, in general terms it seems that women use fewer pronominal forms than men in all subcorpora (for CHET 354 by women vs. 1,078 by men; CEPhiT 336 by women vs. 7,010 by men; for CETA 218 by women vs. 3,352 by men). Hence, women writing on Astronomy tend to use such forms least frequently.
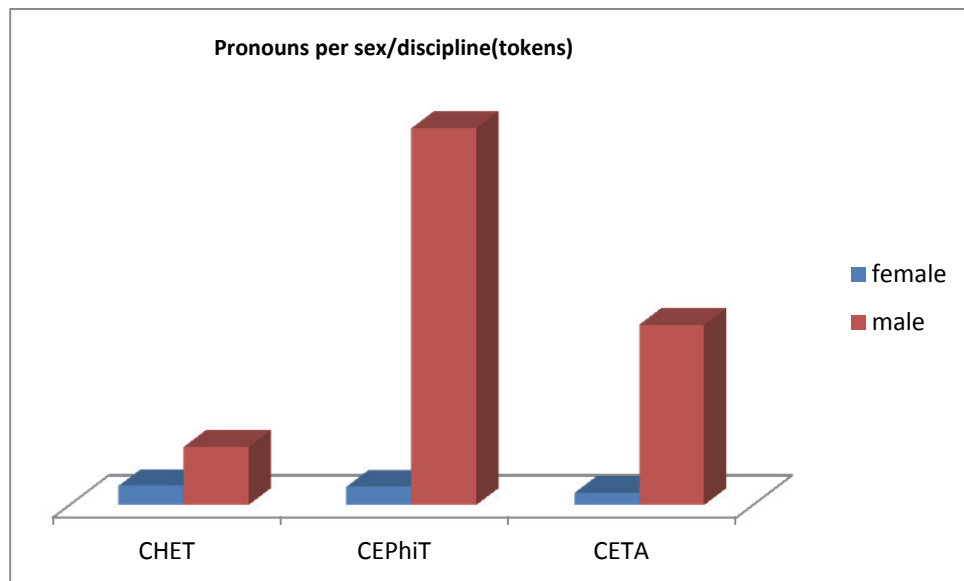
Figure 9. Raw frequencies for the use of first pronoun forms by men and women in each discipline

However, since samples by women are numerically far fewer than those by men, proportions will give us a better portrait of how this linguistic feature was employed by authors from both sexes during the late Modern English period. Thus, normalised frequencies show a slightly different situation.

Table 3. Normalised frequencies for use of pronouns per sex and discipline

	male nf13	female nf
CHET	333.8	43.4
CEPhiT	189.4	111.3
CETA	86.8	104.83

The normalised frequencies, as shown in Table 3 above, reveal that in general, and contrary to what has been generally claimed, female authors tend to use the first person less frequently than male writers, especially in history (for women 43.4; for men 333.8), and overall it is the CHET subcorpus in which the first person is most abundant. The scant numbers here for female writers and the abundance for their male counterparts can perhaps be accounted for by their attitude towards what

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[13] Frequencies have been normalised to 10,000 words.

they are writing: it may again be that women over-react and try to disappear as authors in order to sound objective and scientific, that is, to be taken seriously, whereas men may not feel the need to do so and thus can express themselves more overtly. CEPhiT reflects this tendency, the second subcorpus in terms of the use of pronouns here, and again females tend to make less use of them (for women 111.3; for men 189.7), probably for the same reason, or perhaps due to the fact that this is a language-conscious discipline, as we can observe in the following example from the corpus:

> The moment that, in consequence of such an impression, a sensation is excited, we learn two facts at once; —the existence of the sensation, and our own existence as sentient beings: —in other words, the very first exercise of my consciousness necessarily implies a belief, not only of the present existence of what is felt, but of the present existence of that which feels and thinks; or (to employ plainer language) the present existence of that being which I denote by the words I and myself (Stewart, 1810: 8.)

Not surprisingly, the Astronomy subcorpus shows itself to be the discipline where such linguistic forms are least abundant: it seems that the observational sciences, such as Astronomy, are well settled by the late Modern English period and their discourse patterns are not easily influenced by movements seen as being from outside the scientific domain (such as Romanticism and its influences). What is surprising, nonetheless, is the fact that it is the only discipline of the three in which women do not seem to be especially shy as authors, and although we only have one sample for each century (this underrepresentation typical of published work in Astronomy at the time) it is unwise to make any sort of generalisations. Perhaps female authors wanted to exhibit their own point of view as a means of intentionally claiming their place in a disciplinary community dominated by men. According to Cegala (1989) highly involved communicators use more immediate language, speak with greater certainty, and use more relational pronominal references than their less involved counterparts. And this may be happening here. Whatever the case, "there is no universal means of structuring knowledge above the social practices of the particular disciplinary communities which bestow meaning, legitimacy and appropriacy on discourse forms" (Hyland, 1998b: 448).

5. Concluding remarks

This study has sought to address separately how subject-matter (or discipline) and an author's sex can be considered as two variables, acting independently and having an influence on how scientific texts from the 18th and 19th centuries used personal pronouns. Nevertheless, scrutiny of the text samples contained in the CC used here, namely, those from the *Corpus of English Texts on Astronomy*, the *Corpus of English Philosophy Texts* and the *Corpus of English History Texts*, has revealed that these variables do not operate independently, and in fact the discipline seems to have a greater bearing than that of sex of the author in the three subcorpora.

In Crespo and Moskowich (2015: 78) we claimed that "the use of first and second person pronouns is undoubtedly one of the devices used by authors either to involve the reader, or to show their own involvement with and proximity to both the message conveyed and the readership." On the other hand, Herring and Paolillo (2006: 454), in discussing findings on gender in Argamon and Koppel (2003), argue that female writing tends to be more interactive whereas that of men is more

informative, and that this could also be extended to genre. According to the data and analysis in the present study, it can be argued that "interactivity" and "informativity" are also influenced by discipline. In other words, it is not only that women tend to be more interpersonally involved and men more informative in their communicative orientation. Herring and Paolillo claim that "interactivity" and "informativity" are properties of genres, and I argue that they are also discipline-dependent, since each discourse community imposes its uses and patterns on language, and these are not easily changed. If differences in the distribution of pronouns are wider across disciplines than between gender, this may be because it is mostly the discursive requirements of the discipline, and only partially the sex of authors, that dictates such usage, a point we also made in Crespo and Moskowich (2015: 79); in that study, also using the CC, we found that discipline could exert a significant influence on the writer's use of language, that is, subject-matter could indeed impose certain constraints on linguistic choices made, as seems to be the case here.

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