EIGHTEENTH-CENTURY SCIENTIFIC WRITING IN THE CORUÑA CORPUS: ENGLISH "CULTIVATED BY INDUSTRIOUS AND GOOD HANDS"[1*]

Isabel Moskowich
Muste Research Group
Universidade da Coruña

Abstract

This paper aims at comparing the use of classical terms in eighteenth scientific writing in English once the patterns of Scholasticism have been abandoned and the new methods brought about by Empiricism are settled. The paper will focus on how two different disciplines, Philosophy as a representative of the Humanities, and Life Sciences, representing the observational sciences, make use of such forms as an indicator of their links to the past as well as one of the discursive traditions typical of each. The data to carry out this analysis will be taken from two subcorpora of the *Coruña Corpus of English Scientific Writing*, namely, the *Corpus of English Philosophy Texts* (*CEPhiT*) and the *Corpus of English Life Sciences Texts* (*CELiST*). Both quantitative and qualitative methods will be used.

Keywords: Classical terms, corpus linguistics, scientific writing.

Resumen

Este trabajo pretende comparar el uso de términos clásicos en la escritura científica en inglés en el siglo dieciocho una vez abandonados los modelos del escolasticismo y que se ha asentado el empirismo con sus nuevos métodos. El artículo se concentrará en cómo dos disciplinas diferentes, la Filosofía, como representante de las humanidades, y las Ciencias de la Vida, como representante de las ciencias observacionales, usan tales formas como indicadores de sus lazos con el pasado así como de las tradiciones discursivas típicas de cada una de ellas. Los datos usados para llevar a cabo este estudio se toman de dos sub-corpus del *Coruña Corpus of English Scientific Writing*, en concreto, del *Corpus of English Philosophy Texts* (*CEPhiT*) t del *Corpus of English Life Sciences Texts* (*CELiST*). Se usan tanto métodos cuantitativos como cualitativos

Palabras clave: términos clásicos, lingüística de corpus, escritura científica.

Revista Canaria de Estudios Ingleses, 71; December 2015, pp. 73-90; ISSN: 0211-5913

1. INTRODUCTION

Science written in English is generally considered to have become a well-established practice by the eighteenth century, the vernacular having replaced Latin as a vehicle of communication, the culmination of a process which started as early as 1375 (Taavitsainen and Pahta). The linguistic situation was so stable at the time that authors such as Tieken-Boon van Ostade (254) claim that "according to traditional accounts of eighteenth-century English, nothing much happened to the language during this period." One might expect to find that some words of a classical etymology would still be used in texts dealing with scientific issues (as is also the case today), although perhaps these not equally present across all disciplines. Indeed, even nowadays some fields of knowledge seem to be more prone to use such terms. A simple example will suffice here. In 2005 a new dinosaur fossil was discovered in Australia. After observing its characteristics palaeontologists immediately gave it a pseudo-Latin name, *Spinosaurus*, illustrating that Latin persists as a preference in the scientific register of this field.

It is the aim of the current paper to examine late Modern English scientific texts in order to ascertain whether scientific writing was wholly vernacularised, as claimed by some, and to what extent not only isolated terms but also expressions of Greek and Latin origin are still to be found in scientific works of different technical levels. A further goal here is to compare the behaviour of these forms in disciplines which today we would call hard or soft sciences. To this end, section two provides a short overview of the scientific and linguistic situation in the English-speaking world during the eighteenth century, and also sets out the initial working hypothesis for this study. Section three describes the material and methodology used, followed by a section presenting the findings of the analysis, both in general terms and in a more detailed way, offering a perspective on the kind of terms predominating in each of the disciplines analysed, plus their type and distribution. Finally, some conclusions will be presented.

2. SOME BACKGROUND

It is difficult to speak of eighteenth-century English science specifically, in that the field was in fact an international one. However, it is worth noting that English scholars did contribute greatly to scientific development in general and to the solutions to some of the most significant issues of the time, such as the separation and identification of gases and the nature of electricity, hugely important questions that English scientists such as Henry Cavendish (1730-1800) helped to resolve (Plumb 101).

---

[1] Douglas, 1707, in *CELisT.*

[*] I would like to express my gratitude to Anabella Barsaglini Castro for her help in collecting some of the data for this study and to Leida Maria Monaco for her valuable questions and comments.

The eighteenth century witnessed the emergence and development of the scientific method, and with it a new way of writing. However, we must bear in mind that some of the authors who encouraged the development of science just a century earlier in England, like Boyle, Newton and Bacon, were often inspired by their reading of Latin authors... in Latin (Silver).

Although there is no way of knowing definitively whether the new mechanical philosophy (replacing the old natural philosophy) appeared first in *Latin* or in a European vernacular (Gabbey 14), authors such as Garber (10) claim that it was Robert Boyle who introduced the term *mechanical philosophy* in English in the seventeenth century. Educated in Latin, Boyle nevertheless used English in his writings, a practice which had its parallel in the movement in France by which natural philosophers deserted Latin in favour of French and preferred small books that could be carried around with them instead of the huge tomes which had been the cornerstones of their education (Roux 68).

From the moment at which the so-called Scientific Revolution erupted, objectivity was the main goal of all scientists. The experimental or scientific method favoured this search for objectivity, in that experiments were now to be described with sufficient precision that anyone could reproduce them and thus seek to confirm the findings. This form of making science also had an inevitable consequence on the way science was written. However, studies on discourse tend to view the second part of the eighteenth century as a period of reaction to this focus on objectivity and also as a reaction to Rationalism. It seems there is a continued shift, not only in scientific writing but in discourse in general, that goes from this object-centred world to a reality that is more deeply related to the inner self of authors (Adamson), such a shift finally giving rise to the Romantic Movement. Also, from the middle of the century onwards, the relation between language and its users began to be taken into consideration by authors such as Harris (1751) and Beattie (1783). Whereas it is true that certain linguistic features and constructions were associated with science during the eighteenth century, it is worth noting that other features denoting interpersonal interaction between writer and reader can also be detected in eighteenth-century scientific writing (Crespo; Alonso Almeida, "Sentential Evidential" and "An analysis"; Moskowich).

It may be true, as traditionally claimed, that not much happened to the language during the eighteenth century apart from the impulse of its speakers to search for purification of expression. Linguistic behaviour was part of social behaviour and language was used as a means of emphasising social exclusivity. Words of Anglo-Saxon origin were considered low and were often replaced by Latinisms because words derived from Latin were supported by the "authority" of classical writers (Gifford), which indeed was one of the controversies of the century.[2]

[2] Millward and Hayes (224-237).

Both the changes occurring in science and those occurring, if not to language itself then at least to people's conceptions of it, had an effect on its use. Latin had been the language of knowledge for a long time, but the transformation of science also provoked its widespread abandonment in face of the use of vernaculars. Latin was no longer considered the *lingua franca* of science, yet somehow it managed to persist for a considerable time. With all these changing attitudes to language as a vehicle for knowledge, our research question here is whether classical linguistic elements survived better in the Humanities or in other more observational, scientific disciplines. Looking at the evolution of scientific texts in English, it seems plausible to suppose that such lexical items and expressions would be more frequently found in the Natural, observational Sciences (an example of which is Life Sciences) than in the Humanities (the Philosophy texts used for this work). But is this in fact the case?

3. CORPUS MATERIAL AND METHODOLOGY

The data for this study, itself an empirical one, have been drawn from real eighteenth-century scientific texts. Two subcorpora of the *Coruña Corpus of English Scientific Writing* (*CC*, henceforth) have been used, the *CEPhiT* (*Corpus of English Philosophy Texts*) and the *CELiST* (*Corpus of English Life Sciences Texts*). Although the *CC* contains texts from 1700 to 1900, only those samples belonging to the eighteenth century have been considered in both disciplines for this study. *CELiST* eighteenth-century samples cover practically the whole century starting with a text by Douglas (1707) and finishing with one by Smith (1795). The samples in *CEPhiT* begin in 1700 with a text by Mary Astell and end in 1793 with one by Alexander Crombie. Complete lists of the texts analysed, their authors and year of publication, are provided in Appendices 1 and 2.

Following the principles that govern the *CC*, every sample contains around 10,000 words. Hence, the material used in the present analysis amounts to 400,244 words in all. Table 1 below shows the very similar distribution of these words across the two groups:

Table 1. Word count for the present study

Subcorpus	Number of words
CEPhiT	200,022
CELiST	200,220
TOTAL	400,244

Since this is a microscopic study, automatic analysis is very limited and manual disambiguation is relatively more important. In other words, it is essential in this type of study for texts to be considered as such, that is, to be read. Two wordlists were created for these data, with a two-fold purpose: on the one hand, to make sure no hidden manifestations (Köhnen) were missed; on the

other, to make it possible to revise every single term and apply the necessary criteria of analysis. Thus, not all classical-looking terms have been included. Non-classical proper names or place names have been disregarded, although Latinised in their form. Hence forms such as *Japonica*, *Matthiolus* and *Linneus* were excluded. On the contrary, proper names such as *Ponponius Mela* (who lived in the first century AD) have been considered since it is the prevalence of Greek and (mostly) Latin in English texts that we aim to describe. Other terms that have a clear Latin origin have also been disregarded since they already function as part of the English word stock in the same corpus. Such is the case of *ocular*, in the following example from *CELiST*:

> (1) from this Principle (for which we have **ocular** Demonſtration) I ſhall endeavour to ſhew how the Corpuſcles that compoſe the Secretions are formed in the Blood (Keill, 1717:103).

On occasions manual disambiguation revealed that certain terms could be both English and classical (mainly Latin), as in the case of *per*. In fact, our manual scrutiny of the automatically created word list showed that only one of the two instances of this form in *CELiST* (illustrated in the Latin expression in example (2) below) was actually classical, the other being unequivocally integrated in English (see example (3)):

> (2) ten per inſolationem (Blair, 1723: 23)
> (3) pence ſterling per gallon (Vancroft, 1769: 169)

So, a multi-method approach was used, since both automatic searches and manual disambiguation were required, thus combining corpus linguistics techniques with a philological treatment of the texts. This was only to be expected, given the nature of the data, and one of the tools and methods used was the Coruña Corpus Tool (CCT) (Moskowich et al). The CCT served a twofold purpose: to create one wordlist for each subcorpora, and to search for terms in the texts themselves in order to disambiguate uses and meanings. The first step involved the creation with CCT of one wordlist per discipline in order to obtain a closed list of the elements to be analysed.[3] After this, each list was saved separately in a spreadsheet. Figure 1 illustrates the initial, bare wordlist for the Life Sciences subcorpus before any editing or revision. Types are followed by number of tokens, which will, however, be subject to revision:

[3] Köhnen (139) claims that one of the problems in the study of language is that we do not always have a complete inventory of the forms to be considered, and thus we can miss what he calls hidden manifestations. In our study, wordlists are a fundamental means identifying any Latin or Greek terms which we might otherwise have overlooked.

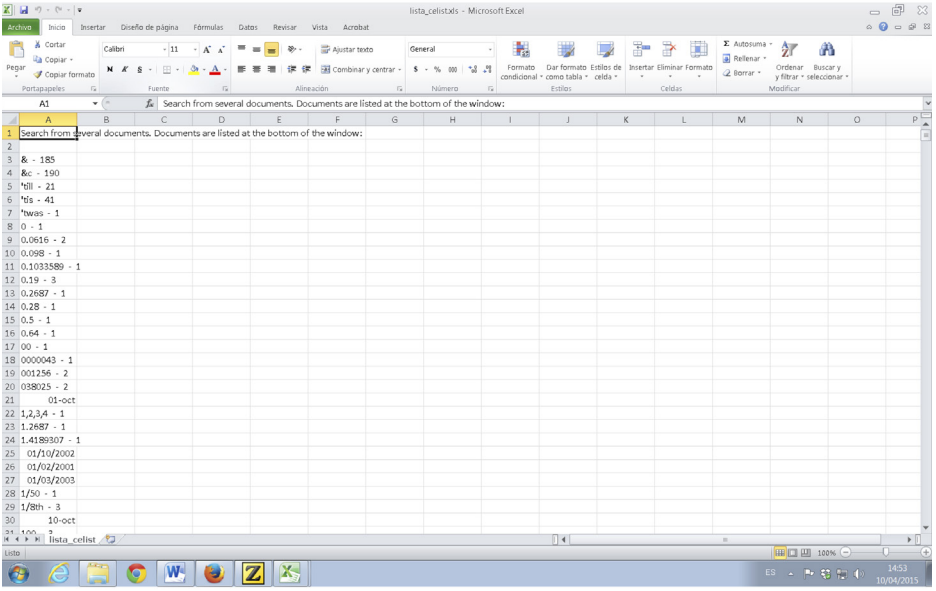


Figure 1. Initial word list for *CELiST*.

The two initial lists were manually revised and cleaned, eliminating all those types that were clearly non-classical and leaving any which would need to be searched for in a second stage. The types in the list were then cleaned manually again, this time eliminating all forms that were not of a classical etymology or that, although classical in origin, were already adapted and completely integrated into the language (often with phonological and spelling adaptations). The online version of the *Oxford English Dictionary* (*OED*) was useful here since the dates of introduction of the terms and the language through which they had come into English could also be taken into account.

A second revision of the two lists was made to make sure only the tokens of a particular type that were really either Latin or Greek remained (as exemplified with *per* in (2) and (3) above). The remaining terms were classified into five groups: technical terms, technical expressions, proper names, work titles and place names. Technical terms here often refer to names of objects or living beings in nature (plants, anatomical parts, etc.), and have been treated independently from proper names that refer only to people. Technical expressions are multi-word constructions that cannot be considered as compound nouns and that fulfil a special role in a particular jargon. Examples (4) to (8) below provide an example of each of these five categories respectively:

(4) Technical term: bell-polypus, or hydra **ftentorea** (Smellie, 1790: 47)

(5) Technical expression: When we come to a **ne plus ultra** in any chain of reaſoning, we... (Macaulay, 1783: 43)
(6) Work title: In the Flora Anglica this plant is marked as biennial (Smith, 1795: 241)
(7) Placename: Alcmæon of **Croton**, [Segm]. 83. was alſo an Auditor of Pythagoras (Greene, 1727: 12)
(8) Proper name: Nor are capital puniſhments without their uſe among beaſts and birds. **RORARIUS** tells us, that Quod bruta... (Collins, 1717: 97).

Once all these steps were taken for each subcorpus, the resulting elements were analysed, as described in the following section.

4. ANALYSIS OF DATA

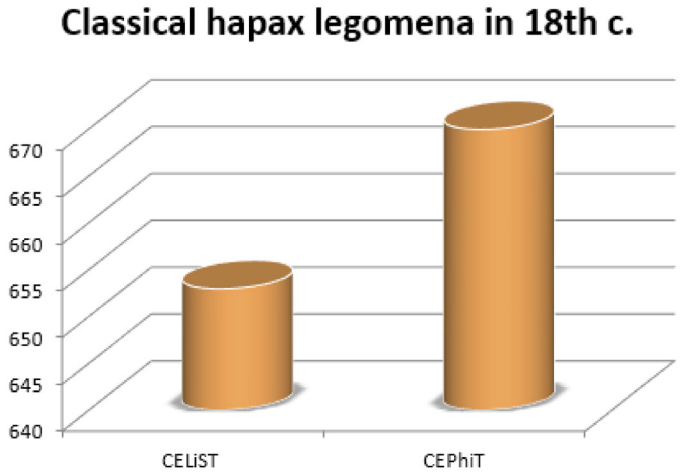
Although my data contain approximately the same number of words (200,000) for each of the two fields of knowledge under study, it is worth noting that the final material to be scrutinised, that is, terms and expressions taken from Greek and Latin, is not at all equally distributed. On the contrary, of the 2,936 types of classical origin, those texts belonging to the Natural Sciences contain 1,530, whereas texts dealing with Philosophy contain only 406. That is to say, of the total of Latin or Greek forms recorded, only 13,82% appear in Philosophy texts, which is surprising since our counts include proper names and ancient authors (authorities) which are mentioned often in the samples.

Perhaps the first notable feature of the comparison of the two lists is that only 39 types are common to both disciplines. In other words, Philosophy and Life Sciences seem to have inherited independent sets of lexical terms that are, one supposes, characteristic of the respective disciplines. The fact that we have fewer types in texts dealing with Philosophy may also be a result of the fact that many of the terms there were excluded from the analysis because they were already perfectly integrated in the language and anglicised after a long period of continued use in philosophical writing. Such is the case of the word *panacea*, recorded as early as 1548 according to the *OED*, and whereas a high-level word, was not considered to be Latin proper. A similar effect can be seen in the word *data* (ironically excluded from this work based on data) since it appeared in texts as early as 1645.

Those types occurring in both subcorpora are mainly terms referring to nature and was at the time labelled Natural Philosophy. This is the case with words such as *parenchyma* (with 5 hits in *CEPhiT*, all of them in the text by Smellie, 1797, a text about natural history, and only 1 in *CELiST*) and *strata* (with 1 case in *CEPhiT* and 4 in *CELiST*). As already noted, this may point to an already independent development of both fields, even though *natural phi-*

losophy and *natural philosopher* were still in use to refer to *science* and *scientist,*[4] respectively. Curiously, the word *scientist* is recorded only three times in this corpus, with both *sciences* and *scientific* occurring just once.

Types, however, are little more than indices of lexical richness and, to some extent, millstones left by traditional learning within each field. When we turn to the issue of tokens, however, something different emerges. The samples in *CEPhiT* contain 991 tokens and those in *CELiST* 3,487, in a proportion that could be expected. The presence of hapax legomena differs, with 999 types occurring only once in Life Sciences and 272 in Philosophy. However, once these raw frequencies are normalised (to 1,000), we find that Philosophy texts are richer from a lexical point of view with 669.95 types, whereas texts from *CELiST* contain 652.94 unique types (see graph 2 below):



Graph 2. Hapax legomena of classical origin.

Such a finding is not easy to explain. Life Sciences might be expected to contain a wider variety of vocabulary if we consider that most samples belong to catalogues describing elements of nature, as in:

> (9) At the **Os ſeſamoidæum** of the firſt Joint, each divides into two Tendons (Douglas, 1707: 121).

Although *hapax legomena* help us see the degree of lexical variety in the samples under survey, the fact that certain other types appear repeatedly might

[4] The term *scientist* is in fact coined by Whewell (1794-1866), one of the authors whose work is sampled in the *CC*. This term came to replace expressions such as *natural philosopher* and *man of science*.

also be revealing. That the proper name *Plato* is mentioned 51 times in Philosophy texts whereas it does not appear at all in Life Sciences should not be much of a surprise. However, the word with the greatest frequency here is *genus*, recorded in the *OED* in 1551, with 67 occurrences. Looking at the other four most frequent words in each discipline, whereas in Life Sciences these are *os*, meaning "bone" (56), *vertebrae* (39), *calyx* (30) and *major* (27), in Philosophy the most frequent types are *vacuum* (35), *Philomela* (29) *genius* (29) and *Cloris* (27). No doubt this tells us something about the overall use of Latin (more abundant than Greek in my material) in English scientific texts, but it also tells us something about how these Latin words are used as indicators of the transmission of knowledge specific for each discipline. Thus, in the eighteenth century, philosophy seems still to be at the point of resorting to the established authorities and their works (as indicated by the types *Plato*, *Philomela*, *Cloris*) whereas Life Sciences seems to have moved on to the description of new things.

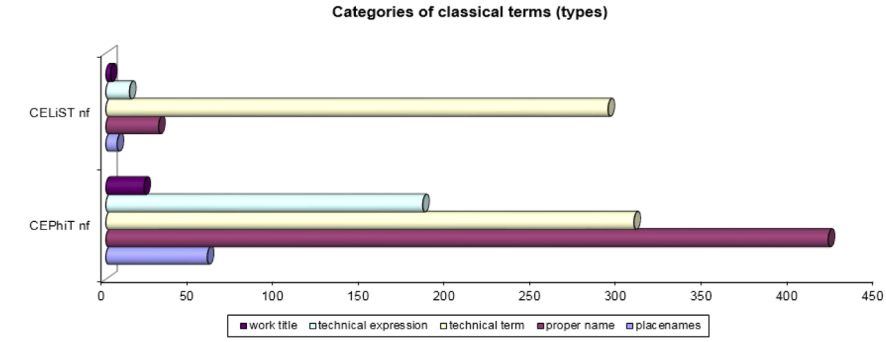
More detailed information about the distribution of types in the two subcorpora under analysis can be seen both in table 2 and graph 3 below:

Table 2. Distribution of types per category and discipline

Types	CEPhiT	CELiST	CEPhiT nf	CELiST nf
Placenames	24	10	59.11	6.53
Proper name	171	47	421.18	30.71
Technical term	125	448	307.88	292.81
Technical expression	75	21	184.72	13.72
Work title	9	4	22.16	2.61

Both table 2 and graph 2 confirm that the most frequent category in Philosophy samples in terms of types is proper names (171 types, 421.18 nf), as noted above in discussing the five most frequent types. The number of types grouped as technical terms is certainly high in Life Sciences (448), yet the normalised frequency here (292.81) is not as high as that for proper names in Philosophy. Technical terms come second in *CEPhiT* and are not very far from the most abundant category. In general, we can say that types are more equally distributed in the five categories in Philosophy than in Life Sciences where we can see a big difference between the most prevalent (the 292.81 nf for technical terms) and the other four: proper names (30.71), technical expressions (13.72), place names (6.53) and work titles (2.61). This irregular distribution is set out graphically in graph 3 below, where the more regular distribution of classical lexical items in Philosophy samples can be observed. Philosophy has a more frequent use of classical multiword (technical) expressions (184.72 nf) followed by place names (59.11). Although work titles is the category in

which fewest types were found, the analysis also reveals that authors writing Philosophy follow the tradition of naming previous works (22.16 nf) whereas those writing about subjects we could include in the Life Sciences refer less often to work titles (2.61 nf) and in this way seem to want to indicate some kind of break with the past.



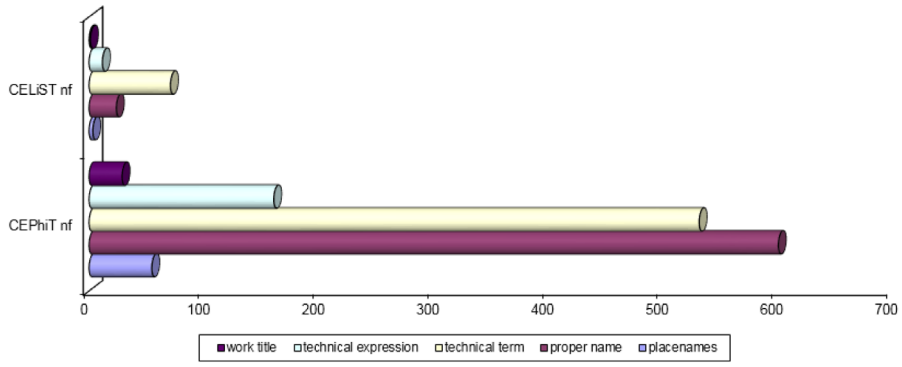
Graph 3. Distribution of types per category

A closer look at the five categories established in terms of tokens may perhaps also shed some light on both disciplines and their textual traditions. This information is provided in table 3 below, where both absolute and normalised frequencies can be observed, and in graph 4, where the proportions of the terms present in the five categories can be seen.

The lexical richness of the material reflected in the use of different types above is reinforced by the way in which types materialise in tokens. However, we can also perhaps claim that whereas all categories present fewer tokens in each, that is to say, fewer repeated items, the samples in *CELiST* seem to have a richer vocabulary. This can again be seen in table 3 and graph 4:

Table 3. Distribution of tokens per category and discipline

Tokens	CEPhiT	CELiST	CEPhiT nf	CELiST nf
Placenames	38	11	54.597	3.18
Proper name	418	82	600.57	23.71
Technical term	370	245	531.60	70.87
Technical expression	112	40	160.91	11.57
Work title	20	4	28.73	1.15



Graph 4. Distribution of types per category

All this broad, quantitative analysis seems to require some complementary discussion of particular cases. One interesting example is from the text sample by Doddd (1752: 36) in *CELiST*, in which we find apparently technical terms such as *caca* (from the colloquial Latin verb *caco*), not recorded at all in the *OED*, that pertain to the realm of Latin profanity, that is to say, to those elements of the lexicon that were not considered fit to be used in public and were often relegated to familiar circles. Some of these terms, though, have come down to us thanks to satirical authors such as Martial.

Although I have resorted to the *OED* to establish direct etymological origin and date, I have used this information simply as reference, since I have also come across terms in my corpus that were not recorded in the *OED* at all. This is the case with the form *chollic*, as in:

> (10) Serapius, an Arabian Phyſician says, that Spinage creates Wind; so that thoſe who are troubled **Chollic** had better not eat it. (Blackwell, 1737: 13).

This form appears in the *OED* spelt *cholic* and with the meaning "Of or pertaining to bile. Cholic acid n. an acid ($C_{24}H_{40}O_5$) discovered in 1838, which is produced from the nitrogenized acids of bile during its putrefaction. Sometimes called *cholalic acid*; the name *cholic* having been formerly given to *glycocholic acid*." The date provided for this entry could well make us wonder whether Elizabeth Blackwell was referring to something else in her text.

We can also observe in the data that Life Sciences authors are often very careful to provide minute explanations of ideas and terms, thus expanding the amount of technical vocabulary to be found in *CELiST* as compared to *CEPhiT*. This is the case with Boreman (1730: 19), who seems to be concerned with terminology. Hence, he writes:

(11) THE **MANTICORA**, (or, according to the Perſians, Mantiora) a Devourer, is bred among the Indians.

In the above example two terms, rather than one, have been recorded, both *manticora* and *mantiora* and in fact both existed in the literature of the time to refer to present-day English *manticore*. The *Etymological Dictionary Online* says that this word, referring to a fabulous monster (half man, half scorpion), was originally Greek although it entered English through Latin. For Boreman's example I have only considered the first of the terms since the author himself attributes the second to the Persians.

In terms of a qualitative analysis of the present material, that is, in approaching the texts themselves by reading them in some depth, I have also observed that some authors do not only use some classical words but go as far as to create names and expressions, such as in the case of Douglas in *CELiST*, from whose sample we take the following example:

(12) The Brachiæus externus, and the Biceps externus, or Gemellus, make but one ſingle Muſcle with three Heads, to which I give the name of Triceps Cubiti, or Extenſor Cubiti magnus triplici principio natus. (Douglas, 1707: 105).

5. FINAL REMARKS

The texts sampled in the *Coruña Corpus of English Scientific Writing* date from a period in which Western Philosophical knowledge and its transmission had already undergone a long and complex process of development. In fact, it is not very long ago that what we have labelled Life Sciences could be considered to have gained a certain level of independence from their origins in "natural philosophy". This relatively new field, as represented in the *Corpus of English Life Sciences Texts*, can be seen striving to come of age, and, like a teenager struggling for legitimacy, does so by opposing its parents, in this case mother science. The way in which knowledge is transmitted in Life Sciences can be seen to be radically different from that of Philosophy, at least at certain levels of analysis, one of these being the shift in writing traditions, and particularly the way in which classical languages are used within the discipline. My findings seem to indicate that whereas Philosophy is more traditional and continues to resort to the authorities, as seen in the continued abundance of the names of classical authors, Life Sciences have already moved towards being an object-centred rather than an author-centred discipline, thus abandoning the clichés of Scholasticism and adopting the new observational techniques fostered by the Scientific Revolution.

In sum, the present findings on the richness of the vocabulary found in texts, looking at both types and tokens, have revealed that authors who followed the new tendencies seem to use Latin terms with the intention of being precise and objective, as was demanded by the times. Philosophers, who tended to write about more speculative subjects, seem to have lingered in the old pre-Modern patterns, although a thorough quantitative study here, including samples for

the nineteenth century, would give us a fuller portrait of the discursive (and, therefore, epistemic) patterns in the different fields and their evolution.

Reviews sent to author: 30 May 2015. Revised paper accepted for publication: 1 August 2015.

WORKS CITED

Adamson, Sylvia. "Literary Language." *The Cambridge History of the English Language, vol. IV: 1776-1997.* Ed. Suzanne Romaine. Cambridge: Cambridge University Press, 1998. 589-685.

Alonso Almeida, Francisco. "Sentential Evidential Adverbs and Authorial Stance in a Corpus of English Computing Articles." *Revista Española de Lingüística Aplicada*. Monograph: Conversing Ways of Applying Corpus Linguistics (2012a): 15-31.

—— "An Analysis of Hedging in Eighteenth century English astronomical texts." *Astronomy 'playne ansimple': The Writing of Science between 1700 and 1900.* Ed. Isabel Moskowich & Begoña Crespo. Amsterdam: John Benjamins, 2012b. 199-220.

Beattie, James. *Dissertations Moral and Critical.* London: W. Strahan, 1783.

Crespo, Begoña. "Persuasion Markers and Ideology in Eighteenth-Century Philosophy Texts (CEPhiT)." *Lenguas para Fines Específicos* 17 (2011): 191-228.

Gabbey, Alan. "What was 'Mechanical' about the 'Mechanical Philosophy'?" *The Reception of the Galilean Science of Motion in Seventeenth-Century Europe.* Ed. Carla Rita Palmerino. Dordrecht/New York: Springer Science & Business Media , 2004. 11-23.

Garber, Daniel. "Remarks on the Pre-history of the Mechanical Philosophy." *The Mechanization of Natural Philosophy.* Ed. Garber, Daniel & Sophie Roux. Dordrecht/New York: Springer Science & Business Media. 2012. 3-26.

Gifford, Katya. "The English Language in the 18th Century," Humanities Web. Org., 2002. 5 Feb 2015. Web http://www.humanitiesweb.org/spa/rai/ID/1261.

Harris, John. *Hermes or a Philosophical enquiry concerning universal grammar.* London: J. Nourse and P. Vaillant, 1751.

Köhnen, Thomas. "Text Types and the Methodology of Diachronic Speech Act Analysis." *Methods in Historical Pragmatics*. Ed. Susan Fitzmaurice & Irma Taavitsainen. Berlin: Mouton de Gruyter,, 2007. 139-166.

Millward, Celia H., & Mary Hayes. *A Biography of the English Language* (3rd edition). Boston: Cengage, 2012.

Moskowich, Isabel. "Eighteenth Century Female Authors: Women And Science in the *Coruña Corpus of English Scientific Writing*." *Australian Journal of Linguistics* 33-4 (2013): 467-487.

Moskowich, Isabel, Begoña Crespo García, Inés Lareo Martín & Gonzalo Camiña Rioboo. *CETA (Corpus of English Texts on Astronomy).* CD-ROM. Amsterdam: John Benjamins, 2012.

Online Etymological Dictionary. http://www.etymonline.com/index.php 2 April 2015.

Oxford English Dictionary. http://www.oed.com/ 11 February 2015.

Plumb, John H. *England in the Eighteenth Century (1714–1815)*. London: Pelican Books, 1950.

Roux, Sophie. "An Empire Divided: French Natural Philosophy (1670–1690)." *The Mechanization of Natural Philosophy.* Ed. Daniel Garber & Sophie Roux. Dordrecht/New York: Springer Science & Business Media, 2012. 55-95.

Silver, Brian L. *The Ascent of Science*. Oxford: Oxford University Press, 1998.

Taavitsainen, Irma & Päivi Pahta. "Vernacularization of Medical Writing in English: A Corpus-Based Study of Scholasticism." *Early Science and Medicine* 3 (1998): 157-185.

Tieken-Boon van Ostade, Ingrid. "English at the Onset of the Normative Tradition." *The Oxford History of English.* Ed. Lynda Mugglestone. Oxford: Oxford University Press, 2006. 240-273.

APPENDIX 1. *CELIST* SAMPLES FOR STUDY

YEAR	AUTHOR	WORK TITLE
1707	Douglas, James	Myographiæ comparatæ specimen: or, a comparative description of all the muscles in a man and in a quadruped... To which is added an account of the muscles peculiar to a woman, etc.M.D.
1707	Sloane, Hans	A Voyage to the islands Madera, Barbadoes, Nieves St Christophers and Jamaica; with the Natural History of the Herbs and trees, four footed Beasts, Fishes,Bbirds, Insects, Reptiles, &c. of the last of those Islands. To which is prefix'd an introduction, wherein is an account of the inhabitants, air, waters, diseases, trade, &c. of that place, with some relations concerning the neighbouring continent and islands of America. In Two Volumes. Vol. I.
1717	Keill, James	Essays on several parts of animal oeconomy. Essay IV: Of Animal Secretion.
1720	Gibson, William	The Farriers new Guide: containing first, the anatomy of a horse, being an exact and compendious discription of all his parts; with their actions and uses: illustrated with figures curiously engrav'd on copper plates. Secondly, an account of all the diseases incident to horses, with their signs, causes, and methods of cure; wherein many defects in the farriers practice, are now carefully supply'd, their errors expos'd and amended, and the art greatly improv'd and advanc'd, according to the latest discoveries. The whole interspers'd with many curious and useful observations concerning feeding and exercise, &c.
1723	Blair, Patrick	Pharmaco-botanologia: or, an alphabetical and classical dissertation on all the British indigenous and garden plants of the new London Dispensatory. In which their genera, species, characteristik and distinctive notes are methodologically described; the botanical terms of art explained; their virtues, uses, and shop-preparations declared. With many curious and useful remarks from proper observation.
1730	Boreman,Thomas (bookseller)	A description of three hundred animals; viz. beasts, birds, fishes, serpents, and insects. With a particular account of the whale-fishery. Extracted out of the best authors, and adapted to the use of all capacities; especially to allure children to read.
1737	Blackwell, Elizabeth	A Curious Herbal, containing five hundred cuts, of the moſt uſeful plants, which are now uſed in the practice of Physick. Engraved on folio copper plates after drawings, taken from the LIFE. To which is added a short description of ye plants and their common uses in PHYSICK. In Two Volumes. Vol. I.
1737	Brickell, John	The Natural History of North-Carolina. With an account of the trade, manners, and customs of Christian and Indian inhabitants. Illustrated with copper-plates, whereon are curiously engraved the map of the country, several strange beasts, birds, fishes, snakes, insects, trees, and plants, &c.
1743	Edwards, George	A NATURAL HISTORY OF Uncommon BIRDS. And of some other rare and undescribed animals, quadupedes, fishes, reptiles, insects, &C. Exhibited in two hundred and ten copper-plates, from designs copied immediately from Nature, and curiously coloured after life. With a full and accurate description of each figure. In Four Parts. Part I.

1750	Hughes, Griffith	The Natural History of Barbados. In Ten Books.
1752	Dodd, James Solas	An Essay towards a Natural History of the Herring.
1758	Borlase, William	The Natural History of Cornwall. The Air, Climate, Waters, Rivers, Lakes, Sea and Tides; Of the Stones, Semimetals, Metals, TIN, and the Manner of Mining; The Constitution of the Stannaries; Iron, Copper, Silver, lead, and Gold, found in Cornwall. Vegetables, Rare Birds, Fishes, Shells, Reptiles, and Quadrupeds: Of the Inhabitants, Their Manners, Customs, Plays or Interludes, Exercises, and Festivals; the Cornish Language, Trade, Tenures, and Arts.
1766	Pennant, Thomas	The British Zoology. Class I. Quadrupeds. II. Birds.
1769	Bancroft, Edward	An essay on the Natural History of Guiana, in South America. Containing a description of many curious productions in the animal and vegetable systems of that country. Together with an account of the religion, manners and customs of several tribes of its Indian inhabitants. Interspersed with a variety of literary and medical observations. In several letters from a Gentleman of the Medical Faculty during his residence in that country.
1774	Goldsmith, Oliver	An History of the Earth, and animated Nature: In Eight Volumes. Vol VIII.
1776	Withering, William	A botanical arrangement of all the vegetables, naturally growing in Great Britain. With the descriptions of the Genera and species, according to the system of the celebrated Linnaeus. Being an attempt to render them familiar to those who are unacquanted with the learned languages. Under each species are added, the most remarkable varieties, the natural places of growth, the duration, the time of flowering, the peculiarities of structure, the common English names; the names of Gerard, Parkinson, Ray and Baubine. The uses as medicines, or as poisons; as food for men, for brutes, and for insects. With their applications in oeconomy an din arts, with an easy introduction to the study of botany. Shewing the method os investigating plants, and directions how to dry and preserve specimens. In Two Volumes. Vol. I (ver comentario).
1786	Speechly, William	A Treatise on the Culture of the Pine Apple and the Management of the Hot-house. Together with a Description of every Species of Insect that infest Hot-houses, with effectual Methods of destroying them by William Speechly. To which is added A method to preserve peach and nectarine trees from mildew &c. by Robert Browne. With plates. Book I.
1789	Bolton, James	An History of Fungusses, growing about Halifax. With forty-six copper-plates; or which are engraved sixty-four species of funguses, Including the Seven following GENERA, viz. CLATHRUS, HALVELLA, PEZIZA, CLAVARIA, LYCOPERDON, SPHAERIA, and MUCOR. Wherein their various appearances in the different stages of growth, are faithfully exhibited in about three hunded figures, copied with great care from the PLANTS, when newly gathered and in a state of perfection. With a particular DESCRIPTION of each SPECIES, in all its stages. From the first appearance to the utter decay of the plant; with the time when they were gathere; the soil and situation in which they grew; their duration; and the particular places mentioned, where all the new or rare species were found. The whole being a plain recital of FACTS, the result of more than twenty years observation. In Three Volumes. Vol. III.

1794	Donovan, Edward	Instructions for collecting and preserving various subjects of natural history: as animals, birds, reptiles, shells, corals plants, &c.: Together with a treatise on the management of insects in their several states: selected from the best authorities.
1795	Smith, Sir James Edward	English Botany; or coloured Figures of British Plants with their essential Characters, Synonyms, and Places of Growth. In Thirty Six Volumes. Vol. IV.

APPENDIX 2. CEPHIT SAMPLES FOR STUDY

Year	Author	Work title
1700	Astell, Mary	Some reflections upon marriage. London: John Nutt.
1705	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.
1710	Dunton, John	Athenianism: or, the new projects of Mr. John Dunton.
1717	Collins, Anthony	A Philosophical Inquiry Concerning Human Liberty.
1727	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. By Robert Greene. Cambridge : printed at the University-Press, by Cornelius Crownfield, and are to be sold by him, E. Jefferys, and W. Thurlbourne booksellers in Cambridge, and by J. Knapton, R. Knaplock, W. and J. Innys, and B. Motte, London, 1727.
1730	Kirkpatrick, Robert	The golden rule of divine philosophy: with the discovery of many mistakes in the religions extant.
1733	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.
1736	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. Dublin: Printed by J. Jones. For George Ewing, 1736.
1740	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... London. Printed for J. Noon.
1748	Hume, David	Philosophical essays concerning human understanding. By the author of the essays moral and political.
1754	Bolingbroke, Henry	The Philosophical Works of the late Right Honorable Henry St. John, Lord Viscount Bolingbroke. Published by David Mallet, Esq; Volume I. London : printed in the year, 1754.

1755	Hutcheson, Francis	A system of moral philosophy, in three books. Glasgow, printed and sold by R. and A. Foulis.
1764	Reid, Thomas	An inquiry into the human mind, on the principles of common sense. Edinburgh : printed for A. Millar, London, and A. Kincaid & J. Bell, Edinburgh.
1769	Ferguson, Adam	Institutes of moral philosophy. For the use of students in the college of Edinburgh. By Adam Ferguson, LL.D. Edinburgh: printed for A. Kincaid & J. Bell, 1769.
1770	Burke, Edmund	Thoughts on the cause of the present discontents. Dublin. [Dublin] : London: printed for J. Dodsley. Dublin: reprinted for G. Faulkner, J. Exshaw, H. Saunders, W. Sleater, D. Chamberlaine, [and 8 others in Dublin], 1770.
1776	Campbell, George	The philosophy of rhetoric. London : printed for W. Strahan; and T. Cadell; and W. Creech at Edinburgh, 1776.
1783	Macaulay, Catharine	Treatise of the immutability of moral truth. London: Printed by Hamilton, Jun.
1790	Smellie, William	The philosophy of natural history.
1792	Wollstonecraft, Mary	Vindication of the Rights of Woman.
1793	Crombie, Alexander	An essay on philosophical necessity. London : printed for J. Johnson, 1793.