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Women scientific discourse: compiling a corpus, analysing the language.

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Muste group

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RESEARCH PROJECT funded by Xunta de Galicia:

WOMEN AND SCIENTIFIC DISCOURSE: SOCIAL
CONTEXT AND VARIATION IN ENGLISH (1700-1930)

Research team: 6 people (but actually 3 working on it)



- Rationale
- Main aim and procedure
- Corpus compilation
- Exploitation
 - Pilot Studies

Rationale

- Increasing number of studies claiming that women have contributed to the development of science ever since the very beginning
 - **no academic training**
 - domestic roles /roles of minor social consideration.

- **A male-dominant view of the history of science** has not always credited these women with their earned recognition (Solsona I Pairó, 1996; Schiebinger, 1989; 2006; Hunter, 1997, 2005; Hutton, 1997).

- **Social prejudices** of the times
 - worked with husbands or male relatives , publishing their works anonymously or with a pseudonym.

Aim and procedure I

- to study the characteristics of scientific English by female writers of science
(1700-1930)

HOW TO PROCEED

- compilation of two corpora:
 - □ **FeSciT**, *Female Scientific Texts*
works
 - □ **PreWoS**, *Prefaces by Women Scientists*
prefaces to texts

Procedure II

FeSciT, Female Scientific Texts

1. In-depth description of female scientific language (different levels of analysis, syntactic, morphological, semantic, discursive and pragmatic...)
2. *Coruña Corpus of English Scientific Writing*
Comparison between male and female scientific Writing.



Contribution to the history of

English for Specific Purposes **!!!**

Procedure III

PreWoS, Prefaces by Women Scientists

- Position of the scientist in society,
- relationship with the readership
- strategies used in the communicative process
- how the genre of the texts they precede may have an effect on the writer-reader relationship.



Contribution to the history
(of *science, women*)



Corpus compilation I

Principles

Time-span: 1700-1930

English-speaking women scientists:

- Authors/writers
- Scientific assistants to their husbands or other male relatives
- Editors and translators
- Botanic illustrators, collectors of fossils, etc.

SOURCES

The Biographical Dictionary of Women in Science (BDWS), (Ogilvie & Harvey, 2000)

Oxford Dictionary of National Biography (ODNB), (Several Authors, 2004)

International Women in Science (IWS), (Haines & Stevens, 2001).

Corpus compilation II

BasedeDatosMulleresWEB_25102013 [Modo de compatibilidad] - Microsoft Excel

	A	B	C	D	E	F	G	H	I
1	Author	Dates	Nationality	Discipline	Works	Source	Pages BDWS	Pages IWS	Comments
242	Brightwen, Eliza (Elder)	1830-1906	UK	Naturalist	Yes	BDWS, ODNB	180		
243	Britten, Lilian Louisa	1886-1952	SA	Botanist	No	BDWS	180-1		
244	Britton, Elizabeth Knight	1858-1934	US	Botanist	Yes	BDWS	181		
245	Broadhurst, Jean	1873-?	US	Bacteriologist	No	BDWS	181-2		
246	Bromley, Helen Jean (Brown)	1903-1982	US	Botanist	Yes	BDWS	183		
247	Bronner, Augusta Fox	1881-1966	US	Psychologist	Yes	BDWS	183-4		
248	Brooke, Winifred	1894-1975	UK	Botanical collec	1935	BDWS	184		
249	Brooks, Harriet T	1876-1933	Canada	Physicist	Yes	BDWS	185		
250	Brooks, Matilda (Moldenhauer)	1890-?	US	Physiologist	Yes	BDWS	185-6		
251	Brooks, Sarah Theresa	1850-1928	Ireland	Botanist	No	BDWS	186		
252	Broomall, Anna Elizabeth	1847-1931	US	Physician	Yes	BDWS	186-7		
253	Brousseau, Kate	1860s-1938	US	Psychologist	Yes	BDWS	187		
254	Brown, Charlotte Amanda Blake	1846-1904	US	Physician	Yes	BDWS	187-8		
255	Brown, Dame Edith Mary	1864-1956	UK	Physician	No	BDWS, IWS	188-9	45	
256	Brown, Elizabeth	1830-1899	UK	Astronomer	Yes	BDWS, ODNB	189		
257	Brown, Fav Cluff	1881-?	US	Physicist	Yes	BDWS	189-190		

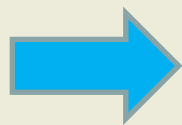
Hoja1 | Hoja2 | Hoja3

13:09 03/03/2015

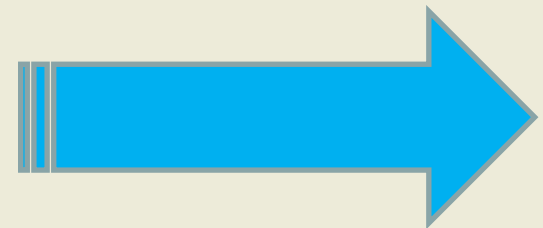
What can we do with all these
data?

create a **webpage** containing information about these women (lives and works)

Create a search tool with keywords



sociolinguistic information.



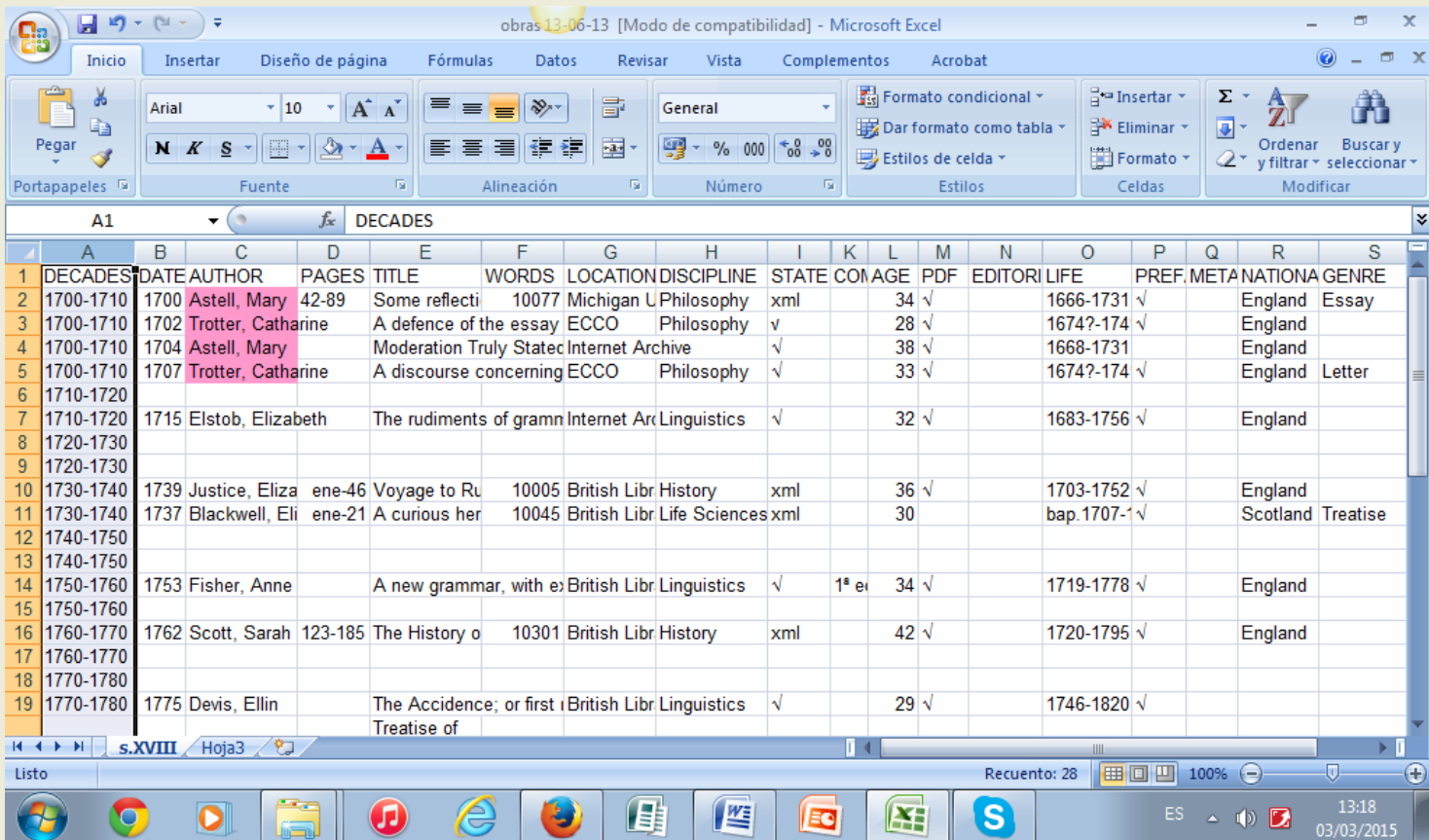
Surname, married (single)	
Name	
Birth and Death	
Place of education 1	
Place of education 2	
Manner of education	
Post/occupation	
Connection with science	
Family: father's occupation	
Mother's occupation	
Single/married	S/M
Marriages	
Husband's name	
Husband's occupation	
Children	Y/N
Science writer	Y/N
Field/discipline	
Contacts, mentors...	
Titles of works	
Work selected	
Discipline	
Year of publication	
Place of Publication	
Genre	
Preface	Y/N
Dedicatory	Y/N
Introduction	Y/N
Foreword	Y/N
Additional information	
Source	

The results of this work can be seen in
www.womenscientistsudc.com



Corpus compilation III

Second database (min. two authors per decade)



DECADES	DATE	AUTHOR	PAGES	TITLE	WORDS	LOCATION	DISCIPLINE	STATE	COMAGE	PDF	EDITOR	LIFE	PREF.	META	NATIONALA	GENRE
1700-1710	1700	Astell, Mary	42-89	Some reflecti	10077	Michigan U	Philosophy	xml		34	√	1666-1731	√		England	Essay
1700-1710	1702	Trotter, Catharine		A defence of the essay		ECCO	Philosophy	v		28	√	1674?-174	√		England	
1700-1710	1704	Astell, Mary		Moderation Truly Statec		Internet Archive		√		38	√	1668-1731			England	
1700-1710	1707	Trotter, Catharine		A discourse concerning		ECCO	Philosophy	√		33	√	1674?-174	√		England	Letter
1710-1720	1715	Elstob, Elizabeth		The rudiments of gramn		Internet Ar	Linguistics	√		32	√	1683-1756	√		England	
1730-1740	1739	Justice, Eliza	ene-46	Voyage to Ru	10005	British Libr	History	xml		36	√	1703-1752	√		England	
1730-1740	1737	Blackwell, Eli	ene-21	A curious her	10045	British Libr	Life Sciences	xml		30		bap.1707-1	√		Scotland	Treatise
1750-1760	1753	Fisher, Anne		A new grammar, with es		British Libr	Linguistics	√	1 st ed	34	√	1719-1778	√		England	
1760-1770	1762	Scott, Sarah	123-185	The History o	10301	British Libr	History	xml		42	√	1720-1795	√		England	
1770-1780	1775	Devis, Ellin		The Accidence; or first i		British Libr	Linguistics	√		29	√	1746-1820	√			

Corpus compilation IV

COMPILATION PRINCIPLES

Both *FeSciT* and *PreWoS* share most compilation principles:

1. Women who wrote and published between 1700 and 1930.
2. Only English-speaking women (educated in English).
3. Any scientific discipline according to the UNESCO classification of sciences.
4. Journal articles have been disregarded for the compilation of *Prewos*.
5. As a starting point, two texts as well as prefaces per decade have been selected and they have been included in toto

Coruña Corpus

- Edited and printed prose texts only
- First editions or others within 30-years period (Kytö, Rudanko and Smittenberg's 2000: 92)
- No translationsL

Exploitation

Technical considerations

As we have access to texts and conveniently save them in the format in which we find them (pdf, txt., html).

Conversion to txt. files.

These can be easily uploaded into one of these search engines: **CQP web**, **wmatrix** and **antconc**.

wmatrix-3: the semantic tagging of texts.



To create an interface with the two corpora, use *CC* as a *reference corpus*

Pilot Studies

➤ Puente Castelo, Luis Miguel & Leida María Monaco. 2013. "Conditionals and their functions in Women's Scientific Writing". *5th International Conference on Corpus Linguistics- CILC 2013*. Universitat d'Alacant. In *Procedia Social and Behavioral Sciences*, 95: 160-169.

Material: women authors writing texts on astronomy, philosophy, life sciences and history during the period from 1700 to 1900

Findings: statistically significant reduction in the use of conditionals

They also classified the functions of conditionals in the text using Warchal's (2010) typology,

and found that the majority of conditionals were epistemics (conditionals represent a process of reasoning).

Replicated

➤ Puente Castelo, Luis Miguel. "Conditional constructions and their uses in eighteenth-century philosophy and life sciences texts". *CILC 6*. ULPGC. 2014. 22-24/5/

Material: eighteenth-century male and female-authored philosophy and life sciences texts

Findings:, it was found that content conditionals

were much more frequently used by men than by women,

Pilot Studies

➤ Crespo García, Begoña & Moskowich-Spiegel Fandiño, Isabel . “The Corpus of English Philosophy Texts (CEPhiT) and a Study on Persuasion Strategies”. *36 Congreso Internacional de la Asociación Española de Estudios Anglo-Norteamericanos*. Universidad de Málaga. 14-16/11/2012.

Research question: persuasion/argumentation

Four linguistic strategies: Conditional subordinators, Suasive verbs, Predictive modals and Necessity modals

Material: Texts in CEPhiT: 18th c.

Findings: Different kinds of persuasive strategies

- male: modality
- female: conditional and suasive verbs (more subtle)

➤ Crespo García, Begoña. 2014. "Women's authorial voice: Discursive practices in scientific prefaces" In Gotti, Maurizio, and Giannoni, Davide S., *Corpus Analysis for Descriptive and Pedagogical Purposes*. 189-202. Bern: Peter Lang. ISBN: 978-3-0343-1516-6

PILOT STUDIES

Research question: Involvement in prefaces

Material: Eighteenth & nineteenth c. prefaces to scientific texts by women

Linguistic features: contractions, first-person pronouns, pronoun *it*, second person pronouns, *not*-negation, demonstrative pronouns, emphatics, causative subordination, discourse particles, indefinite pronouns, hedges, amplifiers, private verbs, other adverbial subordinators and possibility modals.

Findings: most abundant feature personal pronouns > followed by the pronoun *it*, possibility modals and private verbs in descending order. ACTIVE INVOLVEMENT

➤ overt authorial presence in these texts manifesting the importance of reasserting themselves and interacting with the reader.

➤ combination of first person pronouns with private verbs (for the expression of attitudes, feelings and inner thoughts) strengthens the writer's personal commitment with her scientific work.

➤ Closeness to the reading public ➤ use of colloquial and general proforms such as *it* in seeking the reader's confidence and reliability.

PILOT STUDIES

➤ At close range: prefaces and other text types in the *Coruña Corpus of English Scientific Writing* (Crespo and Moskowich)

Research question: Involvement in prefaces and texts

Material: Eighteenth & nineteenth c. prefaces to scientific texts by women

Findings:

overall proportion of features expressing involvement in main texts surpasses that of cases found in front matter

predominance of involvement features in the main texts, creating a sense of closeness between author and reader ???

Texts: *wh*-words, private verbs and 1st and 2nd person pronouns appear in this order.

Prefaces: order is reversed, 1st and 2nd person pronouns are the most abundant elements, followed by private verbs and *wh*-words.

Thank you for you attention!

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