



Aiming to Feature Lectures: Diachronic Study of Code-switching and Borrowing in Scientific English.

Nuria Bello Piñón
Universidade da Coruña
(nbello@udc.es)
Poznan Linguistic Meeting 2007

Introduction

- This paper will follow Biber's (1989) criterion that text-types are characterised by its **internal linguistic features** by means of a multidimensional analysis.
- However, Taavitsainen's (2001:147) assertion that "the more focused the selection of linguistic features to be studied is, the more precise results we can obtain" will be considered for the purpose of this analysis.
- Thus, code-switching and borrowing may linguistically define lectures as text-types.



- The frequency of occurrence of code-switchings and borrowings found in samples of lectures will be contrasted against those found in samples of treatises.
- Therefore, we may be able to conclude whether lectures and treatises represent different text-types.

Text-type and Genre: a question of terminology?

- Lack of consensus regarding the definition of terms like: ‘text-type’, ‘genre’ and even ‘register’.
- Some corpora use ‘text-type’ in a literary sense (*The Helsinki Corpus of English Texts*) and others prefer other terms – such as domain – like the *British National Corpus*.
- ‘Genre’ is rather seen as a literary notion by some scholars (Wright, 1993:25; Moessner, 2001: 51)
 - Others agree that ‘genre’ is a concept to classify texts according to their function, topic or a combination of the two (Meurman-Solin, 2001: 241-42).



- Many authors use both terms indistinctively (Gotti, 2001: 221; Fries, 2001: 167).
- While some others identify ‘text-types’ with a kind of sub-genre (Nevalainen & Raumolin Brunberg, 1993: 62; Sönmez, 2001)
- Nonetheless, some scholars make a distinction between ‘genre’ and ‘text-type’ (Tannen, 1982: 1; Biber, 1989: 4; Trosborg 1997):
 - **Text-types:** are defined regarding the cooccurrence of linguistic features.
 - **Genres:** are characterised by their format, purpose and context.
- Finally, I subscribe to Taavitsainen (2001:140) that genres are “mental frames that realise in texts for certain purposes in a context”. So, text-types can be taken as that linguistic realisation.



Code-switching and Borrowing

- Code-switching and borrowing: phenomena resulting from languages in contact.
- Code-switching is an alternation from one language to another in the course of an utterance (Joshi, 1985; McCormic, 1994; Pahta, 2004), normally taking place in bilingual or multilingual communities.
- While some scholars (Joshi, 1985:190; Coulmas, 2005: 113) think that full competence in the languages involved is compulsory, others like Pahta (2004: 77) do not see it as a prerequisite for code-switching.



- Borrowing is a phenomenon used by either monolingual or multilingual speakers.

- Code-switchings and borrowings are two extremes of a continuum.
 - Borrowing is perceived as a diachronic phenomenon.
 - Code-switching is rather synchronic.
 - Code-switched items may become borrowed forms in time.



- The level of integration and the frequency of occurrence to differentiate them:
 - Code-switchings are less integrated into the language.
 - Borrowed items are more frequent in the matrix language.

- The function both processes perform also characterises them:
 - Borrowings enlarge the language word stock.
 - The use of code-switchings is determined by factors like: the setting, the participants, the purpose or the topic, etc.

The materials

Table 1: The samples of our corpus.

Year	Work	Discipline
samples of Lectures.		
1818	<i>Eight Familiar Lectures on Astronomy: Intended as an Introduction to the Science: for the Use of Young Persons and Others not Conversant with the Mathematics.</i> By William Phillips.	Astronomy
1835	<i>A Course of Lectures Introductory to the Study of Moral Philosophy: Delivered in the University of Oxford, in Lent Term, 1835.</i> By Renn Dickson Hampden.	Philosophy
1863	<i>On the Origins of Species, or, The Causes of the Phenomena of Organic Nature: a Course of Six Lectures to Working Men.</i> By Thomas H. Huxley.	Biology
1894	<i>Biological Lectures and Addresses.</i> By Arthur Milnes Marshall	Biology
Samples of treatises		
1822	<i>An Elementary Treatise on Astronomy. In two Parts. The first, containing a Clear and Compendious View of the Theory. The Second, a Number of Practical Problems.to which are Added, Solar, Lunar and Some other Astronomical Tables.</i> By John Gummere.	Astronomy
1831	<i>A Treatise on Light and Vision.</i> By Humphrey Lloyd.	Physics
1860	<i>Popular Astronomy. A Concise Elementary Treatise on the Sun, Planets, Satellites and Comets.</i> By Mitchel Ormsby McKnight	Astronomy
1893	<i>An Elementary Treatise on Fourier's Series and Spherical, Cylindrical, and Ellipsoidal Harmonics with Applications to Problems in Mathematical Physics.</i> By William Elwood Byerly.	Mathematics
Total of words:		32,000

The analysis

Table 2. Amount words selected from the total of analysed items.

	Lectures	Treatises
Borrowings	1,606	2,213
Code-switchings	42	3
Total of words	32,000	

- Borrowings: only nouns with Latin origin have been regarded.

Table 3: *Total of borrowings and code-switchings.*

Lectures			Treatises	
	#	%	#	%
Borrowings	1,606	10.03%	2,213	13,83%
Code-switches	42	0.26%	3	0.02%
Total of words:	16,000		16,000	

Table 4: *Distribution of borrowings and code-switches.*

Lectures			Treatises	
	Lemmata	Occurrences	Lemmata	Occurrences
Borrowings	490	1,606	317	2,213
Code-switches	33	42	3	3

- Following Pahta's (2004) classification of code-switchings, the following can be found in our corpus:

- **Insertional Switches:**

1. The intensity of the light on each will be inversely as the space over which it is diffused, *i.e.* inversely as the surfaces themselves (...)
(Lloyd, 1831: 8)
2. The degree of illumination of each point of this object will be, *cæst. par.*, proportional to the quantity of light incident on the unit or surface.
(Lloyd, 1831: 10)
3. Solomon had made a personal study of the several groups of animals mentioned – *i.e.*, that he was a zoologist.
(Marshall, 1894: 4)
4. Witness the famous “Sum of Theology,” of Thomas Aquinas; of which the most important constituent is the portion familiarly known by the name of the “*Secunda Secundae*” (...).
(Hampden, 1835: 14)



■ Intertextuality:

5. The following table exhibits the relative quantities of matter or masses of the sun and planets as given by Laplace in the fourth edition of his *Systeme Du Monde*.

(Gummere, 1822: 216)

■ Indexicals of group membership:

6. The dark spots are commonly termed *maculae*, the fainter, *faculae*.

(Phillips, 1818: 47)

7. He divided the animal kingdom into four main groups, which he named as follows:

1. *Animalia terrestria*.

2. *Animalia aquatilia*.

3. *Volucres*.

4. *Animalia insecta*.

(Marshall, 1894: 7)



■ **The switched term is followed by a paraphrase or description:**

8. Animals with red blood and a backbone. . *Vertebrata*.

(Marshall, 1894: 6)

9. You need not bother yourselves with this “*Equus caballus*” written under it; that is only the Latin name of it [...] It simply means the common Horse.

(Huxley, 1863:9)

- There is a bigger number of code-switches in the lecture samples than in treatises. Lectures may be more instructive, although some treatises refer to the “student community” as portrayed below:

10. This problem was solved by Hipparchus, and before proceeding to examine the reasoning of the old Greek, let the student exercise his own genius..

(Mitchel, 1860: 23)

11. Here is another problem for the examination of the student.

(Mitchel, 1860.24)

- Some examples of borrowings found:

- **in samples of treatises:** *velocity, value, motion, intensity, illumination, function, gravity, equation, degree, discovery, distance, case, crescent, article.*
- **in samples of lectures:** *account, action, classification, condition, course, definition, digestion, existence, globe, interest, labour, part, process, sort, spine, support, virtue, votary.*

Conclusions

- Taking into account Biber's (1989) definition of text-types according to the maximal coincidence of linguistic features, the samples regarded in this analysis may prove that:



Lectures represent a different text-type than that of treatises



However, the analysis of only two linguistic phenomena is not sufficient to make such an statement.



- This study intends to be a contribution for featuring lectures as a potential text-type and the results obtained in this analysis support this theory.
- However, further research must still be carried out.



References

Primary Sources

■ Lectures:

1818. Phillips, William. *Eight Familiar Lectures on Astronomy: Intended as an Introduction to the Science: for the Use of Young Persons and Others not Conversant with the Mathematics*. New York: Clayton & Kingeland. 46-86.
1835. Dickson Hampden, Renn. *A Course of Lectures Introductory to the Study of Moral Philosophy: Delivered in the University of Oxford, in Lent Term, 1835*. 1-68
1863. Huxley, Thomas H. *On the Origins of Species, or, The Causes of the Phenomena of Organic Nature: a Course of Six Lectures to Working Men*. Glasgow University Library. Library Research Annexe. [Call no. H17-f.15.] 7-40
1894. Marshall, Arthur Milnes *Biological Lectures and Addresses*. Glasgow University Library. Library Research Annexe. [Call no. H17-f.23] 1-40

■ Treatises:

1822. Gummere, John. *An Elementary Treatise on Astronomy. In two Parts. The first, containing a Clear and Compendious View of the Theory. The Second, a Number of Practical Problems to which are added, Solar, Lunar and Some other Astronomical Tables*.
1831. Lloyd, Humphrey. *A Treatise on Light and Vision*.
1860. Ormsby McKnight, Mitchel. *Popular Astronomy. A Concise Elementary Treatise on the Sun, Planets, Satellites and Comets*.
1893. Elwood Byerly, William. *An elementary treatise on Fourier's series and spherical, cylindrical, and ellipsoidal harmonics with applications to problems in mathematical physics*.



Secondary sources.

- Aarts, J., de Haan, P. & Oostdijk, N. Eds. 1993. *English Language Corpora: Design, Analysis and Exploitation*. Amsterdam: Rodopi.
- Anderson, J. 1992. *Linguistic Representation: structural analogy and stratification*. Berlin/New York: Mouton de Gruyter.
- , 1997. *A Notional theory of Syntactic Categories*. Cambridge: Cambridge University Press.
- Anderson, J. & F. Colman. 2000 "The Importance of being Leofwine Horn". In Dalton-Puffer C. & Ritt, N. Eds. 7-17.
- Biber, D. 1993. Representativeness in Corpus Design. *Literary and Linguistic Computing* 8: 241-257.
- Coulmas, Florian. 2005. *Sociolinguistics. The Study of Speakers' Choice*. Cambridge: CUP.
- Dalton-Puffer, C. & Ritt, N. eds. 2000. *Words: Structure, Meaning, Function*. Berlin/New York: Mouton de Gruyter.
- Dowty, David R. & Karttunen, Arnold M. Zwicky. Eds. 1985. *Natural Language Parsing. Psychological, Computational, and Theoretical Perspectives*. Cambridge: CUP.
- Ervin-Tripp, Susan M. 1964. "An analysis of the Interaction of Language, Topic and Listener". In Gumperz, John J. & Dell Hymes. Eds. 86-102
- Fries, U. 2001. "Text Classes in Early English Newspapers". *European Journal of English Studies*, 5:2, 167-180.
- Gardner-Chloros, P. 1995. "Code-switching in Community, Regional and National Repertoires: the Myth of the Discreteness of Linguistic Systems." In Milroy, Lesley & Muysken, Pieter. Eds. 68-89.
- Gotti, M. 1992. "The Development of a Scientific Language in the 17th Century". In Nocera, C. et als. Eds. 321-343.



- , 2001. "The Experimental Essay in Early Modern English". *European Journal of English Studies*, 5:2, 221-239.
- Görlach, M. 1995. *New Studies in the History of English*. Heidelberg: Universitätsverlag C. Winter.
- Gumperz, J. J. & D. Hymes. Eds. *The Ethnography of Communication*. *American Anthropologist*. 66:6, part 2 (Special Issue).
- Halmari, Helena. 1997. *Government and codeswitching: Explaining American Finnish*. Amsterdam: John Benjamins. (Studies in Bilingualism Series, Vol. 12).
- Haugen, Einar. 1972. *The Ecology of Language*. California: Stanford University Press.
- Joshi, Aravind K. 1985. "Processing of sentences with intrasentential code switching". In Dowty, David R. & Karttunen, Arnold M. Zwicky. Eds. 190-205.
- Kohnen, T. 2001. "On Defining Text Types within Historical Linguistics: The Case of Petitions/Statutes" *European Journal of English Studies*, 5:2, 197-203.
- Lass, R. ed. 1992. *The Cambridge History of the English Language*. Vol. III. Cambridge: CUP.
- Lee, D. 2001. "Genres, Registers, Text Types, Domains and Styles: Clarifying the Concepts and Navigating a Path through the BNC Jungle. *Language Learning & Technology*, 5:3, 37-72.
- Meurman-Solin, A. 2001. "Genre as a Variable in Sociohistorical Linguistics" *European Journal of English Studies*, 5:2, 241-256.
- Moessner, L. 2001. "Genre, Text Type, Style, Register: A Terminological Maze?" *European Journal of English Studies*, 5:2, 131-138.
- Myers-Scotton, C. 1993. *Duelling Languages. Grammatical Structure in Codeswitching*. Oxford: Clarendon Press.
- Nevalainen, T. 1992. "Early Modern English Lexis and Semantics". In Lass, R. ed. 332-458.
- Nevalainen, T. & Raumolin-Brunberg, H. 1993. Early Modern British English. In Risannen *et al.* Eds. 53-73.
- Pahta, P. 2004. Code-Switching in Medieval Medical Writing. In Taavitsainen, I. & P. Pahta. eds. 73-99.



- Ramoulin-Brunberg, H. et al. Eds. 2002. *Variation Past and Present. Varieng Studies on English for Tertu Nevalainen*. Helsinki : Soci t  N ophilologique.
- Risannen, M.; M. Kyt  & M. Palander-Collin. Eds. 1993. *Early English in the Computer Age. Exploration through the Helsinki Corpus*. Berlin and New York: Mouton de Gruyter.
- Sankoff, David & Poplack, Shana. 1980. "A Formal Grammar for Code-switching". *Centro de Estudios Aurtorrique os Working Papers*, 8:1-55.
- S nmez, Margaret J.-M. 2001. "Oaths, Exclamations and Selected Discourse Markers in Three Genres". *European Journal of English Studies*, 5:2, 151-165.
- Taavitsainen, I. 2001. "Changing Conventions of Writing: The Dynamics of Genres, Text Types, and Text Traditions". *European Journal of English Studies*, 5:2, 139-150.
- Taavitsainen, I., Pahta, P., Leskinen, N., Ratia, M., & Suhr, C. 2002. "Analysing Scientific Thought-Styles: What an Linguistic Research Reveal about the History of Science". In Ramoulin-Brunberg, H. et al. eds. 251-270.
- Taavitsainen, I. & P. Pahta. eds. 2004. *Medieval and Scientific Writing in Late Medieval English*. Cambridge: CUP.
- Tannen, D. 1982. "Oral and Literate Strategies in Spoken and Written Narratives". *Language* 58, 1-21.
- Trosborg, A. 1997. "Text Typology: Register, Genre and Text Type". *Text Typology and Translation*. 3-23.
- Wright, S. 1993. In Search of History: English Language Corpora: Design, Analysis and Exploitation. In Aarts et al. Eds.