

Introduction

Context of the Study

As the ENAC organises English training for France's air traffic controllers and must comply with ICAO language proficiency requirements, it has specific needs in terms of English teaching. Consequently, it has initiated, in collaboration with the linguistics laboratory CLLE-ERSS, a study of the usage of English by French controllers and international pilots.

Research Project

The aim of this research project is to draw up a panorama of the different types of usage made of the English language in radiotelephony communications and bring their differences and similarities to light in order to have a better idea of the notions of *phraseology* and *plain language*.

Method of Analysis

The method of analysis consists of a comparative study between 2 corpora: one representing the prescribed norm and the other representing the real uses made of it.

Phraseology

What is Phraseology?

Phraseology is the specialised language used by pilots and controllers to conduct unambiguous and effective radiotelephony communications. It was created and has been continually up-dated by the ICAO to cover the most common and routine situations encountered in air navigation in order to optimize and ensure safety in radiotelephony. It is therefore subject to simplified syntactic, lexical, semantic and phonetic rules.

Its characteristics have been previously described as (Philps, 1989; Mell, 1992; DGAC, 2007; Rubenbauer, 2009):

- the omnipresence of the imperative form in controller's messages
- the rarity of the interrogative and negative forms
- the almost complete absence of modals
- the deletion of determiners, subject pronouns and prepositions
- the deletion of auxiliaries be and have in be + past participle forms, be + -ing forms and have + past participle forms
- the nominalisation of verbs
- a highly specialized, univocal and finite lexicon (less than 1000 words)
- an alphabet proper to the aeronautical domain
- the specific spelling and pronunciation of numbers

Example

C: Citron Air 3 2 4 5, multidirectional departure runway 2 8, at 800 feet turn Right heading 3 1 0, climb 3000 feet QNH.

A Limited Communication Tool

Phraseology is however limited since it has been created to cover a certain number of air navigation situations. Thus, when facing situations for which phraseology does not exist, pilots and controllers must resort to a more natural language known as "*plain language*" (ICAO, 2001: 5.1.1.1).

Plain Language

What is Plain Language?

Plain language has recently been defined as the "spontaneous, creative and non-coded use of a given natural language, although constrained by the functions and topics (aviation and non-aviation) that are required by aeronautical radiotelephony communications, as well as by specific safety-critical requirements for intelligibility, directness, appropriacy, non-ambiguity and concision" (ICAO, 2010: 3.3.14).

- It is a requirement in many everyday situations (ibid.: 3.3.17).
- It cannot replace phraseology (ibid.: 4.3.3).
- When required, it should be "delivered in the same clear, concise and unambiguous manner as standardized phraseology" (ibid.: 4.3.4) in order to "achieve the same goals as phraseology" (ibid.: 5.3.3.3).
- It should not be interpreted as permission to chat or ignore the protocols that govern the use of standardized phraseology (ibid.: 4.3.4).

A Complex Relationship with Phraseology and Natural Language



- PL: less restricted than phraseology but not as natural as everyday speech
- In real air-ground communications, a more natural language is often used in situations for which phraseology is provided.

Corpora Under Study

Definition of Corpus

A corpus is a large collection of texts or utterances gathered in electronic form according to a specific set of criteria in order to serve as a data-base for linguistic descriptions and analyses (Bowker & Pearson, 2002).

Constitution of the Reference Corpus (RefC)

→ examples in English from 2 phraseology manuals: one edited by the ICAO (2007) and the other by the French government (DGAC, 2007)

Constitution of the Real Usages Corpus (UseC)

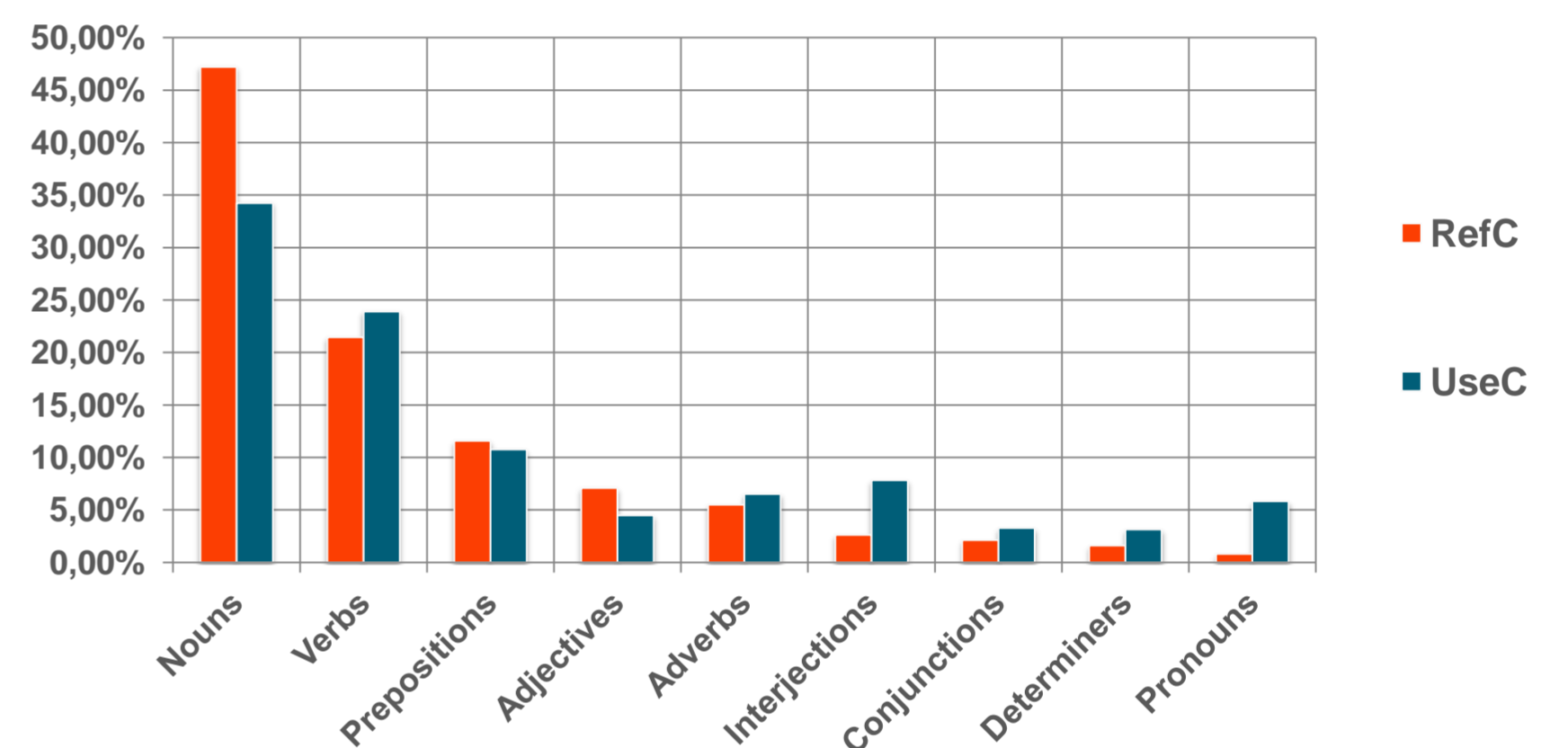
→ transcription of about 22 hours of recording of real air-ground communications from 2 French en-route centres and 1 major airport

Quantitative Data

	Reference Corpus			Real Usages Corpus			
	ICAO	DGAC	Total	Centre 1	Centre 2	Airport	Total
Token	5303	6540	11,844	15,498	11,127	22,395	49,020
Types	526	625	805	699	541	796	1238

Comparative Study

Discrepancies between the 2 Corpora



Example: the Modals (Verb Category)

	Verb Types	Modal Types	%	Examples
RefC	193	3	1,55	can, will, should
UseC	173	14	8,09	can, can't, cannot, could, must, may, might, will, 'll, won't, would, 'd, shall, should

P: **can** you say the frequency again please? [vs. in RefC: say again]

C: **could** you repeat please, I didn't catch your call-sign. [vs.: say again your call-sign]

C: roger, -huh- you **may** climb level 3 4 0 sir, climb level 3 4 0. [vs. climb level 1 1 0.]

P: [...] I **would** appreciate your confirmation. [vs.: confirm squawk/level/etc.]

Example: the Interjection Category

Reference Corpus (2,63%)		Real Usages Corpus (7,84%)	
roger	35,98%	bye	35,87%
wilco	14,29%	good bye	11,42%
negative	11,11%	thank you	8,76%

→ 61% of all interjection tokens in UseC = politeness, greeting and farewell markers (bye, good bye, thank you, hello, welcome, please, etc.)

Conclusion

- A general pattern of similarities between the 2 corpora has been observed.
- Yet, differences have been found: the use of natural language in situations covered by phraseology can be explained by the speakers' need to customize and 'humanize' air-ground communications and their prevailing repetitive linguistic tasks (modals and politeness markers can be seen as subjectivity markers which insist on the presence of an individual speaker reminding us that pilots and controllers are humans, not machines).
- A more detailed analysis of the corpora will help us have a better idea of the way the English language is used by controllers and pilots and the results obtained can be used to improve English radiotelephony teaching.

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