A corpus-based study on the distribution of complements and adjuncts in learner language: will we reveal <major findings> <in this study> or will we reveal <in this study> <minor findings>?

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The outline

- The goal
- The background
- The case study
- The data
- The analysis of the data
- The concluding remarks
- For further research
- The references

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The goal

• check the distributional tendencies affecting the placement of **adjuncts/modifiers** and **complements/arguments** in verb phrases (predicates)

Examples:

(1) Now I will deal [with the construction] [in a way which will lead to odd results].

(2) Now I will deal [in a way which will lead to odd results] [with the construction].

• determine whether the production of such constituents in English by non-native speakers is influenced or not by their first language (Spanish)

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The background

- learner corpora as bases for studies of learner interlanguage (from late 80s / early 90s): new corpora, new tools, new annotation conventions, new theoretical approaches
- 'interlanguage' approaches (Eubank et al. 1997)
- 'approximative linguistic systems' (Nemser 1971)
- in general, Granger's (1996) comprehensive 'Integrated Contrastive Model' (ICM; see Gilquin 2008: 6–8) of interlinguistic analysis:
  - component where **reference** (native/proficiency) data from one language is compared with **reference** data from another language
  - an additional module where **reference** language is compared with an **interlanguage** variety of the language

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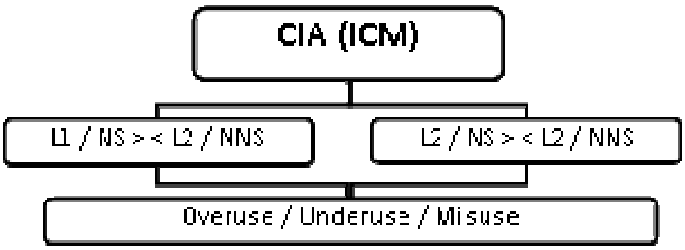
The background



Contrastive Interlanguage Analysis (CIA) (Granger 2002, 2009)

- CIA and the issue of comparability (later)

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The case study

- previous studies on word-order alternations in L1 Spanish and L1/L2 English: Lozano and Medikoetxea (2008, 2010), on subject-verb inversion.

  They consider:
  - type of predicate (verb)
  - end-weight
  - information structure

  They show that the differences between L1 Spanish and L2 English are not so striking.

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The case study

(1) Now I will deal [with the construction]$_{\textbf{complement}}$ [in a way which will lead to odd results]$_{\textbf{adjunct}}$.

versus

(2) Now I will deal [in a way which will lead to odd results]$_{\textbf{adjunct}}$ [with the construction]$_{\textbf{complement}}$.

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The case study

- **Complements**
  - semantically selected or subcategorised
    - Matthews (2007: 187): "unit in a construction either required or specifically taken by an individual member of a lexical category"
    - Matthews (1981: 124-127): impossibility of dropping (if dropped, then latent)
    - exclusion when the pattern is saturated
  - syntactic dependencies:
    - lexical restrictions or formal determination (Greenbaum et al. 1996: 76)
      {*deal*} + *with*-PP
      {*assume*, *hypothesise*} + *that*-clause
- **Adjuncts**
  - loose semantic connection between the adjunct and the head => not required

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The case study

- **Competing forces:**

  (i) syntactic: complements-first

  (ii) processing: end-weight

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The case study

(i) Syntactic force:

– Quirk et al. (1985: 49-50): 'Complements first'

– Hawkins (2007): 'Arguments precede X'

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The case study

(ii) Processing force:

– Quirk et al. (1985: 1398): End-weight

– Hawkins' (2004) 'Minimize Domains' or MiD:

> Given two or more categories A, B, [...] related by a grammatical rule R of combination and/or dependency, the human processor prefers to minimize the distance between them within the smallest surface structure domain sufficient for the processing of R. (Hawkins 2000: 234)

and Hawkins (2007) hypothesises that MiD is relevant especially to examples of complementation.

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The case study

- **So...**

(1) Now I will deal [with the construction] [in a way which will lead to odd results].

(2) Now I will deal [in a way which will lead to odd results] [with the construction].

(1) is claimed to be a better performance solution, on **syntactic** grounds, than (2) because the complement *with the construction* follows the verb (and precedes the adjunct).

(1) is claimed to be a better performance solution, on **processing** grounds, than (2) because of the amount of structure which has to be processed (between the head category and the second constituent in the (local) phrase).

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The data

- difficulties of exploring syntactic strategies in spoken language:
  - **simpler**: Brown et al. (1984: 17-18): "the spoken language produced by the majority of young people, as indeed by the majority of the population, consists of relatively simple sentence structures – often just sentences and incomplete sentences, strung together"
  - **restricted**: Miller and Weinert (1998: Chapter 3): study of (syntactic) constructions, many of them subordinate => in spontaneous oral language a number of these constructions which appear in written texts were missing from their oral data or appeared in a very low percentage

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The data

Learner corpus:

- **VICOLSE** (Vigo Corpus of Learner Spoken English), produced by Spanish University students of English (Tizón-Couto 2013), 100,000 words

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The data

L1 corpora:

- **LOCNEC** (Louvain Corpus of Native English Conversation, Université Catholique de Louvain –Centre for English Corpus Linguistics–); 162,000 words; as the English native control corpus
- **ADESSE** (University of Vigo, http://adesse.uvigo.es): syntactic database of (native) Spanish; 1.5 million words; as the Spanish native comparable database
- (**PPCMBE** (Penn Parsed Corpus of Modern British English), 1 million words; 1700-1914; written English)

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The data

- **VICOLSE**:
  - elicitation oral techniques, as regards medium:
    - retelling a story (they were asked to read the first part of *Little Red Riding Hood* and then tell the remaining part of the story in their own words and with their own ideas)
    - describing a picture-based real-world scene (first picture: John Barnet's front room, August 5th at 11am; second picture: the same place at 12 noon on the same day)
    - commenting on a familiar/current topic (current topics such as education, a famous TV show, a film or a book, music, etc.) and giving personal opinion
  - broad trawl, as regards the kind of tasks and variety of the data expected
  - narration and argumentation, as regards genre

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The data

- **VICOLSE**:
  - participants:
    - 86 undergraduate students of English, University of Vigo
    - consented recording
    - sociological-cultural questionnaire => XML header

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Variable	Value	#	%
Age	19	34	40%
	20-21	32	37.64%
	> 21	19	22.09%
Gender	Female	70	81.39%
	Male	16	18.60%
Mother Tongue	Spanish	46	52.87%
	Galician	7	8.04%
	Both	32	36.78%
	Other	2	2.29%
Speak Galician	Never	7	8.13%
	Sometimes	60	69.76%
	At home/university	15	17.44%
	Always	4	4.65%
Place of residence	Vigo	45	52.32%
	Other	41	47.67%
Years Learning English	< 10	15	17.44%
	10-15	62	72.09%
	> 15	9	7%
Study other foreign languages	French	60	58.82%
	German	19	18.62%
	Other	15	14.70%
	None	8	7.84%
Have visited English-speaking country	Yes	43	50%
	No	43	50%
Have English native friends or relatives	Yes	36	41.86%
	No	50	58.13%
Reason or motivation to study English	I like it	77	81.91%
	Crucial	14	14.89%
	Other (e.g. work)	3	3.19%

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The data

- **VICOLSE**:
  - transcription (c100,000 words)
    - text
    - sound indications (laughing, breathing, vocalic clicks, hesitations, etc.)
    - LINDSEI conventions

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[Task 1]

Little Red Riding Hood *ah* continued ahead (tch) and *ah* through the forest and then he arrived to a little house a wooden house (tch) which was her grandma's one *ahm* once she was there she knocked on the door (tch) and *ahm* her grandmother's voice said *eh* come in . she went in and *mm* she (..) kissed her grandmother and then she said *eh* here you have a gift some things I've bought for you like honey and *ah* cakes and whatever *ah* the grandmother was very happy and *ah* yeah *ah* the problem was that she was in bed cause she was quite ill and *ah* Little Red Riding Hood *ah* (..) started to ask her why was she so so ill in bed (tch) *ahm* (..) then the the grandmother said *aom* I'm very ill because *m* I have a cough (tch) and the the little *child child *started saying *mm* yeah I *?? I think I'm starting to notice some kind of strange features on on your face like for instance you're your eyes they they *really look bigger than they usually *aren't they and then the grandmother said *mm* yes but you know is (tch) they are for for seeing you better and the child and the child continued and he said ok *mm* what about your ears they rel= they are really big and the grandmother said yes because you know I I've bought them in order to hear my beloved niece better (tch) *ah* that's great but and about your hair is (..) h= it is not white as as usually

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The data

- **LOCNEC**:
  - 162,000 words
  - spoken production by 50 British (most undergraduate) students, aged 18-30, at Lancaster University
  - LOCNEC as the native control corpus for LINDSEI
  - LOCNEC as the comparable corpus to VICOLSE

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The data

- comparability in CIA: VICOLSE – LOCNEC
  - same design of tasks and topics
  - practically identical transcription conventions (inherited from the LINDSEI project)

but…

  - as regards participants, the subjects in VICOLSE are (Spanish) non-native university students of English and those in LOCNEC are British native university students => LOCNEC as the comparable database
  - as regards modality, in LOCNEC the tasks are carried out in the form of an interview, while VICOLSE consists of monologic recordings

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Parameter	VICOLSE	LOCNEC	Degree of Comparability
Speech type/elicitation	Voluntary, untimed, unprepared	Voluntary, untimed, unprepared	HIGH
Size (words)	100,663 (76,337 words without story telling)	118,398 (B turns only)	AVERAGE
Age of stdts (Average age)	19-32 (20.59)	18-30 (??)	HIGH
Year of studies	First, second, third and fourth year	Mainly first and second, also third, fourth and postgraduate	AVERAGE
L2 proficiency	Intermediate - Upper intermediate –advanced	Native	AVERAGE
Tasks	Picture description, storytelling, set topic, free discussion	Picture description, set topic, free discussion	AVERAGE
Topics	A favorite book or film, a famous TV show, your education, music, important decisions in your life, etc.	A country you have visited, an experience which has taught you something, a book or play you have liked/disliked	AVERAGE
Genre	Monologue	Guided monologue (Dialogue)	LOW/ AVERAGE
Time of completion	2001-2008	1995-2006 (unreleased)	AVERAGE

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The data

- **ADESSE**:
  - syntactic and semantic database of Present-day written and spoken Spanish
  - annotation of arguments and adjuncts:
    - syntactic function (subject, object, etc.)
    - syntactic category (noun phrase, adjective phrase, clause, etc.)
    - semantic information (animate, concrete, abstract, etc.)
    - semantic/thematic role (agent, theme, patient, etc.)
  - This paper: spoken Spanish (in Spain): 207,948 words.

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The analysis of the data

- Examples (from VICOLSE):
  - verb + complement + adjunct:
    - they **have** ehh eh [important cds or important records] [in the shops]
    - I **knew** [a a good eh English teacher] [eh in in my sixth year eh of primary school]
    - they **earn** [a lot of money] [with the taxes that the the the sell selling of tobacco]
  - verb + adjunct + complement:
    - I think that no-smokers **complained** [all the time] [about this this theme]
    - he decided to wai-- **wait** [there] [to for for Little Red *Riding Hood]
    - I just **met** [a couple of weeks ago] [ah one of my ah friends of school]

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The analysis of the data

(i)
Syntactic principle
'Complements-first'

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The analysis of the data

- Distribution of complement-first/last constructions in the spoken corpora:

	compl-first	compl-last		%(compl-first)
Vicolse	263	46		85,11326861
Locnec	342	4		98,84393064
Adesse	306	195		61,07784431

- Comparison with a comprehensive written Modern English corpus (PPCMBE; Pérez-Guerra and Martínez-Insua 2010)

	compl-first	compl-last		%(compl-first)
PPCMBE	13084	2579		83,53444423

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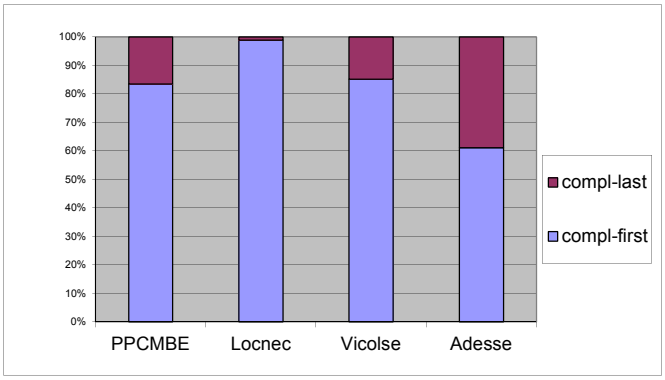
The analysis of the data



•Statistical significance for variation LOCNEC-VICOLSE: yes (P<.0001)
•Statistical significance for variation VICOLSE-ADESSE: yes (P<.0001)
•Statistical significance for variation PPCMBE-LOCNEC: yes (P<.0001)

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The analysis of the data

- Syntactic principle of complements-first:
  - very strong (99%) in native spoken English (LOCNEC)
  - –strong (85%) in non-native (Spanish-L1) spoken English (VICOLSE)
  - actually not strong (61%) in native spoken Spanish (ADESSE)
  - strong (83%) in native written English (PPCMBE) [written modality is not a positive factor]
- So… both English syntax and Spanish syntax exert significant influence on learners' productions (99%>85%, 61%>85%)

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The analysis of the data

(ii)
Processing principle
'End-weight'

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The analysis of the data

Times the second constituent is longer than the first one in the whole corpora:

Length_first_constituent (whole corpus)				
	min	max	mean	
Vicolse	1	10	1.94174757	
Locnec	1	10	2.10115607	
Adesse	1	8	2.15677966	
Length_second_constituent (whole corpus)				
	min	max	mean	#_2nd>1st
Vicolse	1	19	3.68608414	2.52572816
Locnec	1	19	3.37540453	2.18835673
Adesse	1	18	4.0403397	2.45954146

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Apparently, the global results are similar.

The analysis of the data

Times the second constituents is longer than the first one in complement-first cxns:

Length_first_constituent (complement-first)				
	min	max	mean	
Vicolse	1	10	1.90874525	
Locnec	1	10	2.10526316	
Adesse	1	8	2.2543554	
Length_second_constituent (complement-first)				
	min	max	mean	#_2nd>1st
Vicolse	1	19	3.53612167	2.51070976
Locnec	1	19	3.39473684	2.19640769
Adesse	1	18	4.1048951	2.32891986

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The analysis of the data

Times the second constituents is longer than the first one in complement-last cxns:

Length_first_constituent (complement-last)					
	min	max	mean		
Vicolse	1	6	2.13043478		
Locnec	1	3	1.75		few ex
Adesse	1	8	2.00540541		
Length_second_constituent (complement-last)					
	min	max	mean	#_2nd>1st	
Vicolse	1	12	4.54347826	2.6115942	
Locnec	2	3	2.25	1.5	few ex
Adesse	1	15	3.94054054	2.66218147	

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The analysis of the data

Summing up…

times the second constituent is longer than the first one:

	compl-first	compl-last
PPCMBE	1,55	9,91
Locnec	2,19640769	1,5
Vicolse	2,51070976	2,6115942
Adesse	2,45954146	2,66218147

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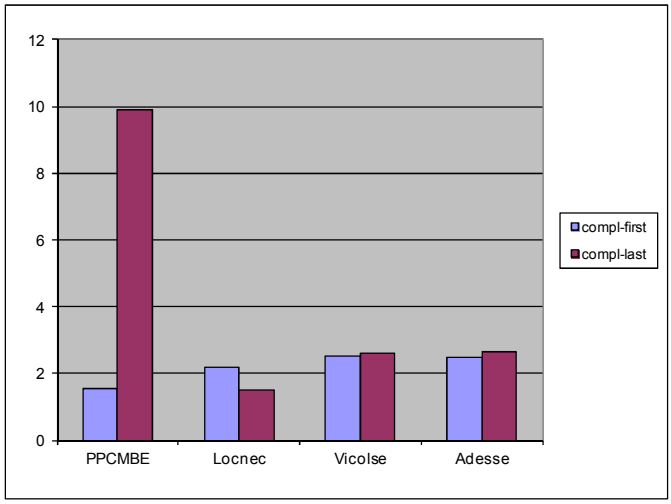
The analysis of the data



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The analysis of the data

- L1 Spanish (VICOLSE, ADESSE):
  - end-weight explains complement-first/last cxns
  - no differences between complement-first/last cxns
- L1 English:
  - end-weight explains complement-first/last cxns
  - spoken (LOCNEC): no (statistically significant) differences between complement-first/last cxns
  - written (PPCMBE): end-weight is very strong in complement-last cxns => end-weight explains the distribution when the syntactic principle of complements-first is not at work, that is, in complement-last cxns, in native written English

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The analysis of the data

- So…
  - end-weight is at work in learner and native corpora
  - transfer is not relevant to the results of spoken language
  - in L1 English: written modality is a positive factor in favour of end-weight

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The concluding remarks

- Syntactic principle (complements-first):
  - Transfer issue:
    - L1 Spanish: 61,07%
    - Learner: 85.11%
    - L1 English: 98,55%
  - Written modality is not a positive factor in L1 English.

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The concluding remarks

- Processing principle (end-weight):
  - At work in learner and native data
  - No transfer differences
  - Written modality is a positive factor in L1 English in complement-last cxns =>
    complements-first > end-weight

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The concluding remarks

- So…

  In native English…

  "the biggest single predictor of relative orderings (…) is syntactic weight" (Hawkins 2000: 232)

  … is **not** strictly correct since, according to the (written) data, syntax (complements-first) seems to be a bigger predictor (end-weight comes into play only when the syntactic principle fails).

  ["in general the light-heavy distribution [end-weight] is no longer a major factor in English word order" (Traugott 1992: 276)]

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For further research

- Analysis of written L1 Spanish:
  - Hypothesis I: There are minor differences between complement-first/last cxns in L1 written Spanish than in L1 written English:
    "The relative 'free' word order in Spanish (...) means that the principle of end-weight may be less noticeable" (Lozano and Medikoetxea 2008: 96)
  - Hypothesis II: elaboration (written versus spoken) determines end-weight compliance both in L1 (i.e., input-based elaboration) and L2 (transfer-based elaboration) codes:
    "correlation between complexity and proficiency: (...) phrasal composition increases in complexity with developmental level" (Lozano and Mendikoetxea 2010: 491)

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For further research

- Data from a Present-Day English corpus
- Analysis of other types of phrase:
  (3) the author [of this book] [from London] //
  the author [from London] [of this book]
  (4) keen [on music] [to a large extent] //
  keen [to a large extent] [on music]
- Influence of information structure (given-new)

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Thank you!