

# The link between syntax and vocabulary in L2 acquisition

Vivienne Rogers

Swansea University  
v.e.rogers@swansea.ac.uk

Language Research Seminar 31 October 2012

# Outline

- 1 Rationale
  - Why examine vocabulary in relation to syntax?
- 2 Previous work
  - David, Myles, Rogers & Rule 2009
  - Rogers 2009
- 3 New study?

# Background

Traditionally vocabulary studies and syntax studies have not been linked.

- Vocabulary studies examined the mental lexicon in terms of word associations, slips of the tongue etc.
- Found that there is great systematicity (Schmidt 2010).

# Background

Traditionally vocabulary studies and syntax studies have not been linked.

- Vocabulary studies examined the mental lexicon in terms of word associations, slips of the tongue etc.
- Found that there is great systematicity (Schmidt 2010).
- Under early UG frameworks, syntax was considered a separate component of the mind (e.g. Chomsky 1986).
- With Minimalism, syntax is slimmed down and features are located in the lexicon (Chomsky & Lasnik 1995)

# Minimalism

Syntactic operations are limited to MERGE, MOVE and AGREE.  
These are dependent on features in the lexicon.

- Verbal features, e.g. person, number [ $\pm$  plural], tense [ $\pm$  present].
- Nominal features e.g. gender [ $\pm$  gender], number.

Emonds (2002) conceptualised what this 'new' lexicon might look like: features are present on individual lexical items.

# Minimalism

Syntactic operations are limited to MERGE, MOVE and AGREE.  
These are dependent on features in the lexicon.

- Verbal features, e.g. person, number [ $\pm$  plural], tense [ $\pm$  present].
- Nominal features e.g. gender [ $\pm$  gender], number.

Emonds (2002) conceptualised what this 'new' lexicon might look like: features are present on individual lexical items.

So what does this mean for acquisition?

L1 and L2 learners now need to specify abstract grammatical features on lexical items.

Supported by the idea of stages of development in both L1 and L2 (Brown 1973, Myles 2004)

Single words (usually nouns) >

L1 and L2 learners now need to specify abstract grammatical features on lexical items.

Supported by the idea of stages of development in both L1 and L2 (Brown 1973, Myles 2004)

Single words (usually nouns) > bare verbal utterances >



L1 and L2 learners now need to specify abstract grammatical features on lexical items.

Supported by the idea of stages of development in both L1 and L2 (Brown 1973, Myles 2004)

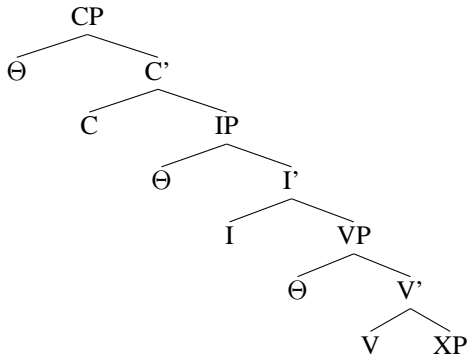
Single words (usually nouns) > bare verbal utterances > some tense and agreement on verbs >

L1 and L2 learners now need to specify abstract grammatical features on lexical items.

Supported by the idea of stages of development in both L1 and L2 (Brown 1973, Myles 2004)

Single words (usually nouns) > bare verbal utterances > some tense and agreement on verbs > complex utterances including questions and subordinate/relative clauses

# underlying sentence structure



## David, Myles, Rogers & Rule 2009

Part of the AHRC funded FLLOC project (ref. 112118) led by Prof Florence Myles & Prof Ros Mitchell ([www.flloc.soton.ac.uk](http://www.flloc.soton.ac.uk))

- Large project investigating vocabulary and syntactic development in instructed English learners of French.
- 2005-2008 project involved 17-18 year olds (year 12 & 13)
- Previous research involved years 7-11 (aged 11-16).

## David, Myles, Rogers & Rule 2009

Part of the AHRC funded FLLOC project (ref. 112118) led by Prof Florence Myles & Prof Ros Mitchell ([www.flloc.soton.ac.uk](http://www.flloc.soton.ac.uk))

- Large project investigating vocabulary and syntactic development in instructed English learners of French.
- 2005-2008 project involved 17-18 year olds (year 12 & 13)
- Previous research involved years 7-11 (aged 11-16).
- Participants tested on questions, story re-telling, pragmatic development, vocabulary development etc.
- All transcripts were transcribed according to the CHILDES conventions.
- X-lex was also administered as a receptive vocabulary measure.

# Method

- One task was analysed for the development of syntax - Question task.
- Participants were in year 8 (aged 12), year 10 (aged 14), year 12 (aged 17).
- 20 learners in each group.
- Learners asked questions based on photos and then were asked questions in past and future tenses.

## Method

- One task was analysed for the development of syntax - Question task.
- Participants were in year 8 (aged 12), year 10 (aged 14), year 12 (aged 17).
- 20 learners in each group.
- Learners asked questions based on photos and then were asked questions in past and future tenses.
- Vocabulary measure was for density (Guiraud).
- Syntactic analysis included:
  - Gender (DP)
  - Verbs (VP)
  - Tense & Agreement in terms of finite verbs with subject clitic pronouns (IP)
  - embedded clauses (CP)

# Results

- Significant correlations between
  - vocabulary density and MLU ( $r = .619$ ,  $n=60$ ,  $p < .001$ )
  - vocabulary density and number of verbless utterances ( $r = -.258$ ,  $n=60$ ,  $p < .05$ ) (VP measure)
  - vocabulary density and production of embedded clauses ( $r = .633$ ,  $n=60$ ,  $p < .001$ ) (CP measure)



# Results

- Significant correlations between
  - vocabulary density and MLU ( $r = .619$ ,  $n=60$ ,  $p < .001$ )
  - vocabulary density and number of verbless utterances ( $r = -.258$ ,  $n=60$ ,  $p < .05$ ) (VP measure)
  - vocabulary density and production of embedded clauses ( $r = .633$ ,  $n=60$ ,  $p < .001$ ) (CP measure)
- No significant correlations between
  - vocabulary density and gender (DP measure)
  - vocabulary density and the use of subject clitics with finite verbs (IP measure)

# Conclusions

- Learners increase their syntactic complexity with increasing vocabulary.
- Results suggest problems with IP and DP, which are uninterpretable (abstract) syntactic features.

# Conclusions

- Learners increase their syntactic complexity with increasing vocabulary.
- Results suggest problems with IP and DP, which are uninterpretable (abstract) syntactic features.
- BUT problem with the measure of IP.
- If IP results discounted then problem lies in the acquisition of gender, which English doesn't have.

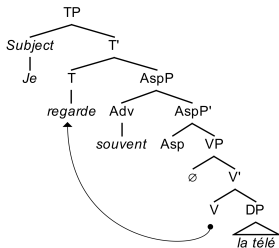
# Rogers 2009

Re-analysis of PhD data.

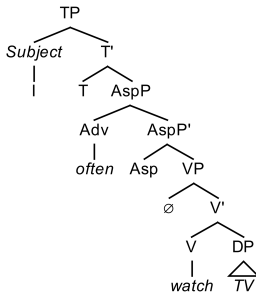
- PhD examined the acquisition of verb movement (IP) in terms of negation, adverbs, subject & object clitics.
- Included oral production, comprehension and acceptability judgement data.
- Receptive vocabulary measure (X-Lex) included as a pre-test
- Only oral production data was re-analysed.

# Underlying phrase structure (adverb), Pollock 1989, Cinque 1999

French.



English



# Subjects

- 5 groups of 15 instructed English native speakers learning French in UK school and university environments
- high advanced students had all spent at least 5 months residency in France
- 10 native speaker controls (ERASMUS students in UK)

	begin	low-int	high-int	low-adv	high-adv
N	15	15	15	15	15
years of study	1	4	6	8	10
age	12-13	15-16	17-18	19-20	21-23

## Example of negation task

Student had to give a short sentence saying the person was not doing the activity.  
Target: Elle ne joue pas au golf.

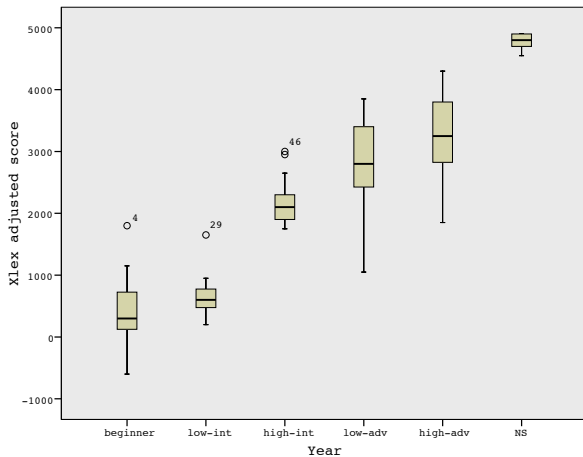


## Receptive vocabulary results

group	Median	Lowest	Highest
beginner	300	-600	1800
low-int	600	200	1650
high-int	2100	1750	3000
low-adv	2800	1050	3850
high-adv	3250	1850	4300
NS	4800	4550	4900



# X-lex graph



## Verb movement (IP) results

Overall measure of verb movement calculated based on 15 obligatory contexts for each of the 4 structure. Total possible score is 60.

# Verb movement (IP) results

Overall measure of verb movement calculated based on 15 obligatory contexts for each of the 4 structure. Total possible score is 60.

	begin	low-int	high-int	low-adv	high-adv	NS
N	15	15	15	15	15	10
Median	1	2	30	35	39	47
Range	0-4	0-20	4-41	15-45	14-43	26-51

## Verb movement (IP) results

Overall measure of verb movement calculated based on 15 obligatory contexts for each of the 4 structure. Total possible score is 60.

	begin	low-int	high-int	low-adv	high-adv	NS
N	15	15	15	15	15	10
Median	1	2	30	35	39	47
Range	0-4	0-20	4-41	15-45	14-43	26-51

Spearman's correlation between vocab measure and IP shows a strong positive correlation ( $r = .836$ ,  $p < .01$ )

## New research

- Taken together these studies suggest that there may be a link between the acquisition of vocabulary and the specification of syntactic features in the lexicon.
- PROBLEM: each study has its own limitations.
- Need for a comprehensive study that incorporates the best of vocabulary acquisition and a full range of syntactic features.

## Next steps

Either many cross-sectional groups or longitudinal.

Vocabulary	Syntax
Productive measure	Range of features
Receptive measure	DP, IP and CP

## Possibly L1 Chinese L2 English?

Feature	Chinese	English
DP	[-Number] [-Def]	[+ Number] [+Def]
IP	[-Tense] [-Verb movement]	[+Tense] [+ verb movement]
CP	[-Question word movement]	[+Question word movement]

Thank you  
Any questions?