

Prosodic Phrasing and the Syntax of Noun Phrases

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CHC, University College London, 6 October 2006

Introduction

■ **Clauses** - Good understanding of the syntax of the clause and its prosodic phrasing. Good insights on the constraints mapping syntactic structure into prosodic phrasing (Selkirk, Truckenbrodt).

■ **NPs** - Little research on prosodic phrasing of nominal expressions involving Adj/Noun sequences. On-going debate over their underlying syntactic representation.

■ **Goal** - To determine the prosodic phrasing of Adj/Noun sequences via direct empirical testing, then use mapping constraints to reconstruct their syntactic representation.

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Crosslinguistic distribution of adjectives

■ English (Germanic languages):

- a. *A powerful prelate*
- b. **A prelate powerful*

■ Italian (Romance languages):

- c. *Un potente prelato* (a powerful prelate)
- d. *Un prelato potente* (a prelate powerful)

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Shared syntactic structure; Noun raising in Romance

■ Germanic and Romance:

[_{DP} A [*powerful priest*]

■ Romance only:

[_{DP} A [*priest* [*powerful priest*]

(Bernstein 1991, Cinque 1994, Laenzlinger 2000)

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Debate: NP- or N-raising?

■ NP-raising (Laenzlinger 2000)

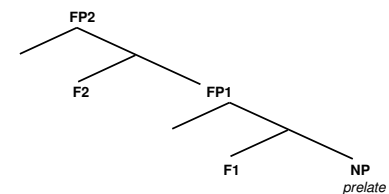
■ N-raising (Bernstein 1991, Cinque 1994)

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Both analyses

■ Functional layers above NP

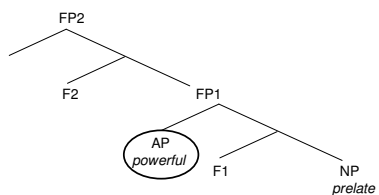


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Both analyses

■ Adj-Noun sequence

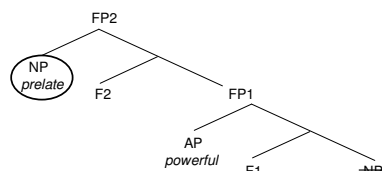


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NP-raising (Laenzlinger 2000)

■ Noun-Adj sequence

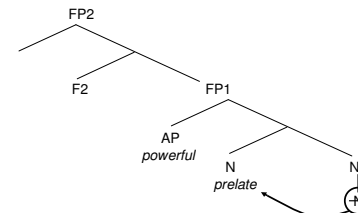


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N-raising (Bernstein 1991, Cinque 1994)

■ Adj-Noun sequence

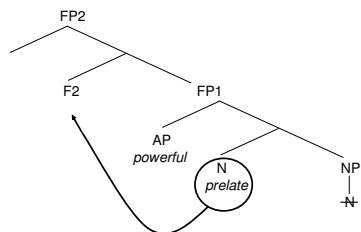


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N-raising (Bernstein 1991, Cinque 1994)

■ Noun-Adj sequence

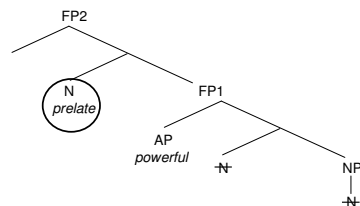


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N-raising (Bernstein 1991, Cinque 1994)

■ Noun-Adj sequence



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Prosodic consequences

- Proposed structures predict different prosodic phrasing for N/A sequences.
- We may test the prosodic phrasing of N/A sequences to determine the underlying syntactic structure.

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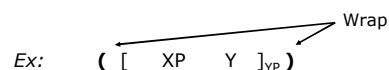
Mapping constraints

- AlignXP – The right edge of a lexical projection XP coincides with the right edge of a phonological phrase P (Selkirk 1995, 2000; Truckenbrodt 1995, 1999).

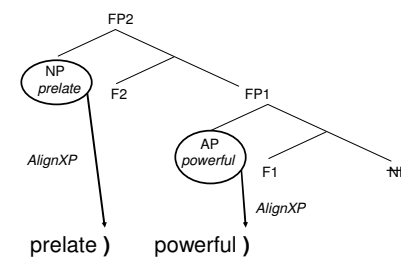


Mapping constraints

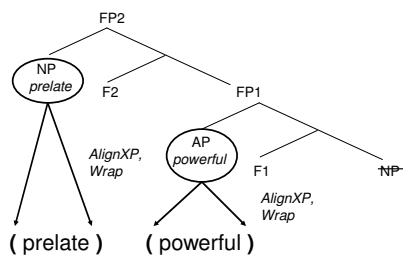
- Wrap – A lexical projection XP is contained in a phonological phrase P (Truckenbrodt 1995, 1999, Selkirk 2000).



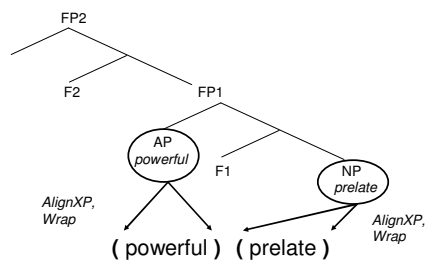
NP-raising, N-A



NP-raising, N-A: separate phrases



NP-raising, A-N: separate phrases

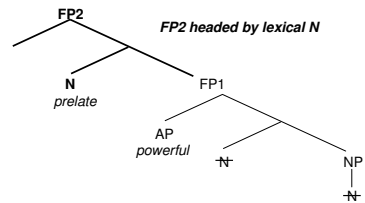


Phrasing predicted by NP-raising

- Separate phrases necessary

- (Noun)_P (Adj)_P
- (Adj)_P (Noun)_P

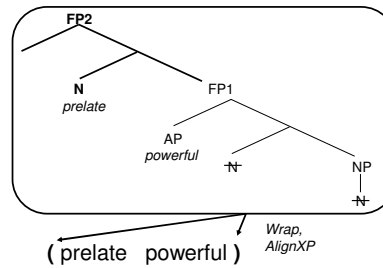
N-raising: FP2 becomes lexical, hence subject to Wrap



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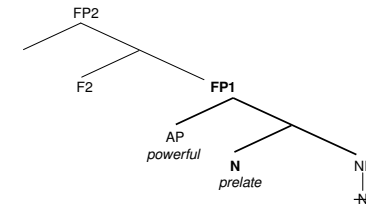
N-raising, N-A: single phrase



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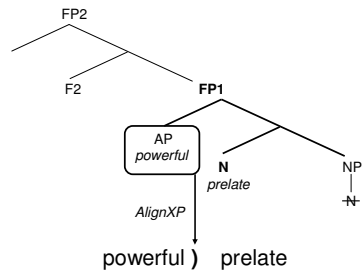
N-raising, A-N: FP1 becomes lexical



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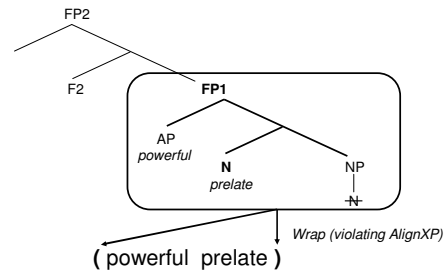
AlignXP: separate phrases



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Wrap: single phrase



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Phrasing predicted by N-raising

- Single phrase necessary for N-A and possible for A-N.
- a. (Noun Adj)_p
- b. (Adj Noun)_p if Wrap >> AlignXP

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Results

- A-N and N-A both parsed into a single phrase.
 - a. (Adj Noun)_p
 - b. (Noun Adj)_p
- Wrap>>AlignXP ranking for Italian.
- Strong independent support for N-raising.

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Experimental study

- Reading experiment:
Materials included A N / N A sequences in two syntactic environments (subject/object)
- Experiment designed to test prosodic phrasing in NPs as reflected in final lengthening effects:

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Final lengthening:

- Lengthening of domain-final syllable/word:
 - regardless of whether stressed or unstressed, the final syllable in a prosodic domain will often be lengthened (e.g., Cruttenden 1997)
 - Italian (Nespor & Vogel 1986): the domain of Final Lengthening is the prosodic phrase → relates to full words at the end of p-phrases
- Lengthening of stressed syllable in phrase-final word:
 - "Final Lengthening (FL) is a phonological rule that lengthens the vowel bearing main stress in a φ-final phonological word". (Ghini 1993)

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Separate phrases (NP-raising):

- Predicted phrasing:

powerful prelate

A>N: (potente) (prelato) (...)

N>A: (prelato) (potente) (...)

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Separate phrases (NP-raising):

- Final syllable in prosodic phrase (A):

A>N: (potente) (prelato) (...)

N>A: (prelato) (potente) (...)

→ PREDICTION: no difference in length

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Separate phrases (NP-raising):

- Final syllable in prosodic phrase (N):

A>N: (potente) (prelato) (...)

N>A: (prelato) (potente) (...)

→ PREDICTION: no difference in length

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Separate phrases (NP-raising):

- Lengthening of vowel bearing main stress (head of p-phrase):

A>N: (potente) (prelato) (...)

N>A: (prelato) (potente) (...)

→ PREDICTION: no difference in length

Separate phrases (NP-raising):

- Lengthening of vowel bearing main stress (head of p-phrase):

A>N: (potente) (prelato) (...)

N>A: (prelato) (potente) (...)

→ PREDICTION: no difference in length

Single phrase (N-raising):

- Predicted phrasing:

powerful prelate

A>N: (potente prelato) (...)

N>A: (prelato potente) (...)

Single phrase (N-raising):

- Final syllable/word in prosodic phrase (A):

A>N: (potente prelato) (...)

N>A: (prelato potente) (...)

→ PREDICTION:
phrase-final syllable/word longer than
phrase-internal one

Single phrase (N-raising):

- Final syllable/word in prosodic phrase (N):

A>N: (potente prelato) (...)

N>A: (prelato potente) (...)

→ PREDICTION:
phrase-final syllable/word longer than
phrase-internal one

Single phrase (N-raising):

- Lengthening of syllable bearing main stress (head of p-phrase) (A):

A>N: (potente prelato) (...)

N>A: (prelato **potente**) (...)

→ PREDICTION:
phrase-final stressed syllable longer than
phrase-internal syllable

Single phrase (N-raising):

- Lengthening of syllable bearing main stress (head of p-phrase) (N):

A>N: (potente **pre**lato) (...)

N>A: (prelato potente) (...)

→ PREDICTION:
phrase-final stressed syllable longer than
phrase-internal syllable

(A N / N A) Materials:

1. A N, Subj:
[Un potente prelato]_{NP} può imporre il suo punto di vista anche al papa.
(A powerful prelate can impose his point of view even to the pope)
2. N A, Subj:
[Un prelato potente]_{NP} può imporre il suo punto di vista anche al papa.
3. A N, Obj:
Abbiamo contattato [un potente prelato]_{NP} con il permesso del papa.
(We) have contacted a powerful prelate with the permission of the pope.)
4. N A, Obj:
Abbiamo contattato [un prelato potente]_{NP} con il permesso del papa.

Materials and method:

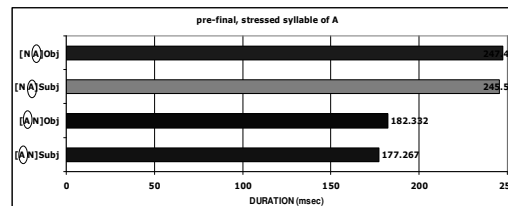
- Overall:
 - 11 sets of target items (4 NP, 7 VP), 5 items each (= 55)
 - 46 filler sentences
 - (+ 5 practice items)
- Pseudo-randomised list (usual restrictions)
- Power Point
- Carried out in Berlin with 12 native speakers of Italian (4 male, 8 female)
- Participants were asked to produce sentences in as natural a way as possible at a normal speech rate
- Example:

Data treatment & analysis:

- 240 sentences (4 sets x 5 sentences x 12 speakers), 60 sentences in each set (15 errors)
- length of all target syllables (4 per item) and words measured, mean values calculated
- mean durations in msec entered the analysis
- analyses of variance (scores pooled over speakers and items):
 - Position (N A vs. A N)
 - Constituent (Subj vs. Obj)

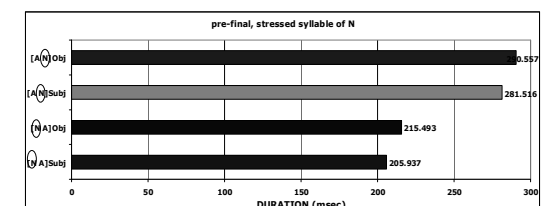
Results (Adj): stressed, prefinal syllable longer in N>A

- prelato **potente** / potente prelato :
Noun Adj / Adj Noun



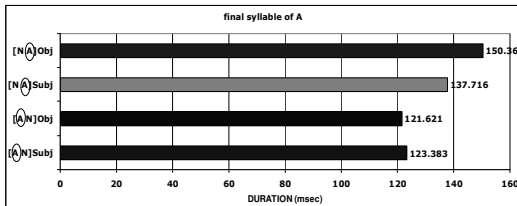
Results (Noun): stressed, prefinal syllable longer in A>N

- potente **pre**lato / prelato potente :
Adj Noun / Noun Adj



Results (Adj): final syllable longer in N>A

- prelato potente / potente prelato :
Noun Adj / Adj Noun

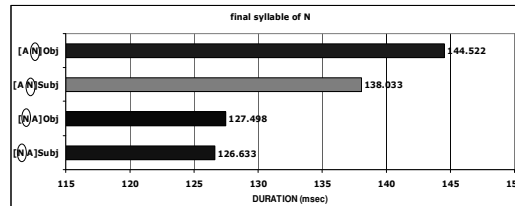


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Results (Noun): final syllable longer in A>N

- potente prelato / prelato potente:
Adj Noun / Noun Adj



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Summary & Conclusion: Prosody

- Evidence for prosodic phrasing from lengthening effects:

- Adj Noun:
 - (Adj Noun)_p (potente prelato)_p
 - *(Adj)_p (Noun)_p *(potente)_p(prelato)_p
- Noun Adj:
 - (Noun Adj)_p (prelato potente)_p
 - *(Noun)_p (Adj)_p *(prelato)(potente)_p

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Summary & Conclusion: Syntax

- NP-raising (Laenzlinger 2000):
separate phrases necessary
 - a. (Noun)_p (Adj)_p
 - b. (Adj)_p (Noun)_p
- N-raising (Bernstein 1991, Cinque 1994):
single phrase necessary for N-A, possible for A-N
 - c. (Noun Adj)_p
 - d. (Adj Noun)_p if Wrap >> AlignXP

- → this analysis strongly supported

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