A flexible theory of the syntax-prosody interface

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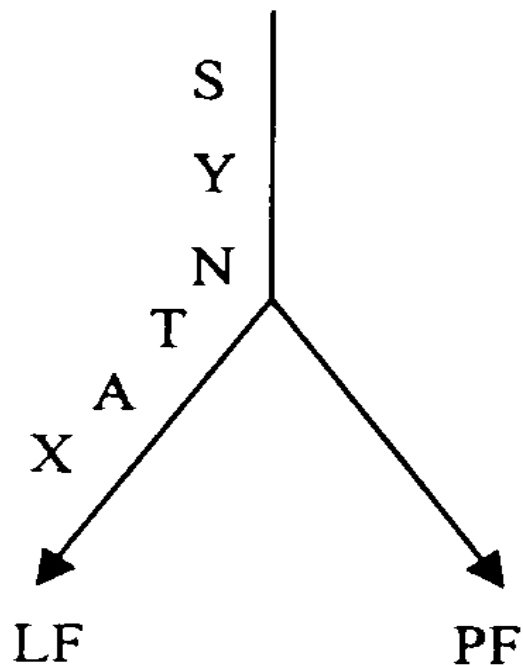
Graz Summer School in Prosody

17-21 Sep 2018

This lecture is based on a long-standing collaboration with Fatima Hamlaoui.

Fatima and me with Emelyne Umunoza, one of our Kinyarwanda informants, in Kigali, Rwanda.

T-model
(Chomsky 1995)

- explains phonology-free syntax (Zwicky 1969)

'we thus adopt the (nonobvious) hypothesis that there are no PF-LF interactions relevant to conver-gence' (Chomsky 1995: 220)

(1) *Stress-focus correspondence* (Reinhart 1995; 2006):
The focus of an utterance always contains the prosodically most prominent element of the utterance.

Parallel architecture
(Jackendoff 1997, 2002)

| SYNTACTIC STRUCTURE | ⟺ | PROSODIC STRUCTURE |
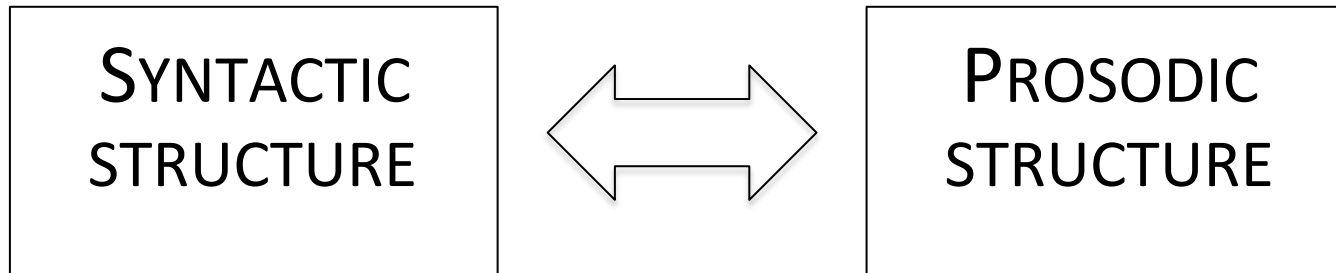
- Allows for direct PF-LF correspondence

Challenge: mapping between modules must be specific and deterministic to facilitate parsing and language acquisition

Focus and the syntax-prosody interface

Syntax-prosody mapping

syntactic head	X^0	⇔	prosodic word	ω
syntactic phrase	XP	⇔	prosodic phrase	φ
syntactic clause	???	⇔	intonational phrase	ι

IP (Zerbian 2006)

CP (Truckenbrodt 2005, Henderson 2012)

vP/CP (Downing & Cheng 2009, Downing 2011);

complement of $Force^0$ and complement of C^0 (Selkirk 2011)

A flexible approach

(1)*Syntax–prosody mapping of clauses* – to be revised (Szendroi 2001)

a. Align the left edge of the largest extended projection of the V with the left edge of an ι.

b. Align the left edge of an ι with the left edge of the largest extended projection of the V.

c. Align the right edge of the largest extended projection of the V with the right edge of an ι.

d. Align all the right edges of the ι with the right edge of the largest extended projection of the V.

Syntax-to-prosody

"Phonological [...] boundaries are inserted as leftmost and righmost immediate constituents of every root S node [...]." "A root sentence is any sentence which is not dominated by a predicative sentence." Downing, (1970: 30-31) See also Truckenbrodt (2014).

Motivation: What helps a listener is that the sense units correspond to intonational units.

(2)   *Syntax-prosody mapping of 'clauses'*

(Hamlaoui & Szendrői 2015:82, ex.4):

a. Syntax-to-prosody mapping

i.   ALIGN-L (HVP-ι):

Align the left edge of the highest   projection whose head is overtly filled by the root V, or verbal material, with the left edge of an ι.

ii.   ALIGN-R (HVP-ι):

Align the right edge of the highest projection whose head is overtly filled by the root V, or verbal material, with the right edge of an ι.

Truckenbrodt (2005)

(1) Hat der Mond geschienen? Ist es kalt gewesen?

Did the moon shine? Was it cold?

a. [$_{CP}$ Der <u>Mond</u> hat *sicher* geschienen] — und [$_{CP}$ es ist *wahrscheinlich* <u>kalt</u> gewesen]

'The <u>moon</u> *certainly* shone, and it *probably* was <u>cold</u>.'

b. [$_{CP}$ Der <u>Mond</u> hat *ja* geschienen] — und [$_{CP}$ es ist *wohl* <u>kalt</u> gewesen]

'The <u>moon</u> shone*, as we know*, and it was <u>cold</u>*, supposedly*.'

a'. * [$_{CP}$ Der Mond hat *sicher* geschienen] <u>und</u> [$_{CP}$ es ist *wahrscheinlich* kalt gewesen]

'The moon *certainly* shone <u>and</u> it *probably* was cold.'

b'. * [$_{CP}$ Der Mond hat *ja* geschienen] <u>und</u> [$_{CP}$ es ist *wohl* kalt gewesen]

'The moon shone, *as we know*, <u>and</u> it was cold, *supposedly*.'

(2)

iii. SPA$_{-\iota}$

    Each Speech Act is contained in a single ι .

(Hamlaoui & Szendrői 2017:7, ex.7; following Downing 1970)

Prosody-to-syntax

- Motivation: infant language acquisition; Identification of prosodic boundaries is directly used by infants to make generalisations about syntactic structure (Hirsch-Pasek et al., 1987; e.g. German, Schmitz, 2008, Japanese, Hayashi and Mazuka, 2002; also Nazzi et al., 2010 and Soderstrom et al., 2005).

→ Avoid prosodic boundaries that do not match syntactic boundaries.

(2) *Syntax-prosody mapping of 'clauses'*
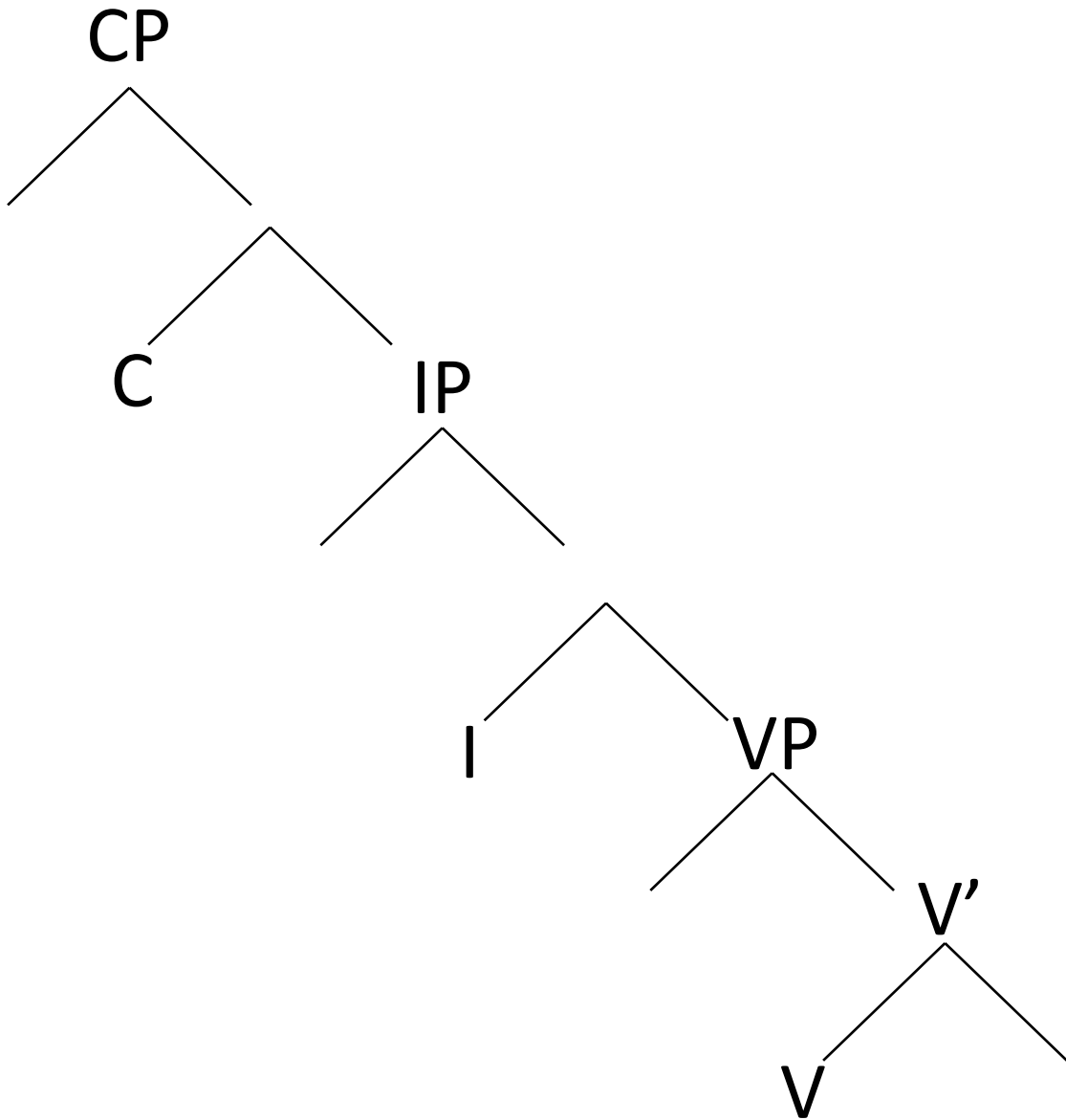
(Hamlaoui & Szendrői 2015:82, ex.4):
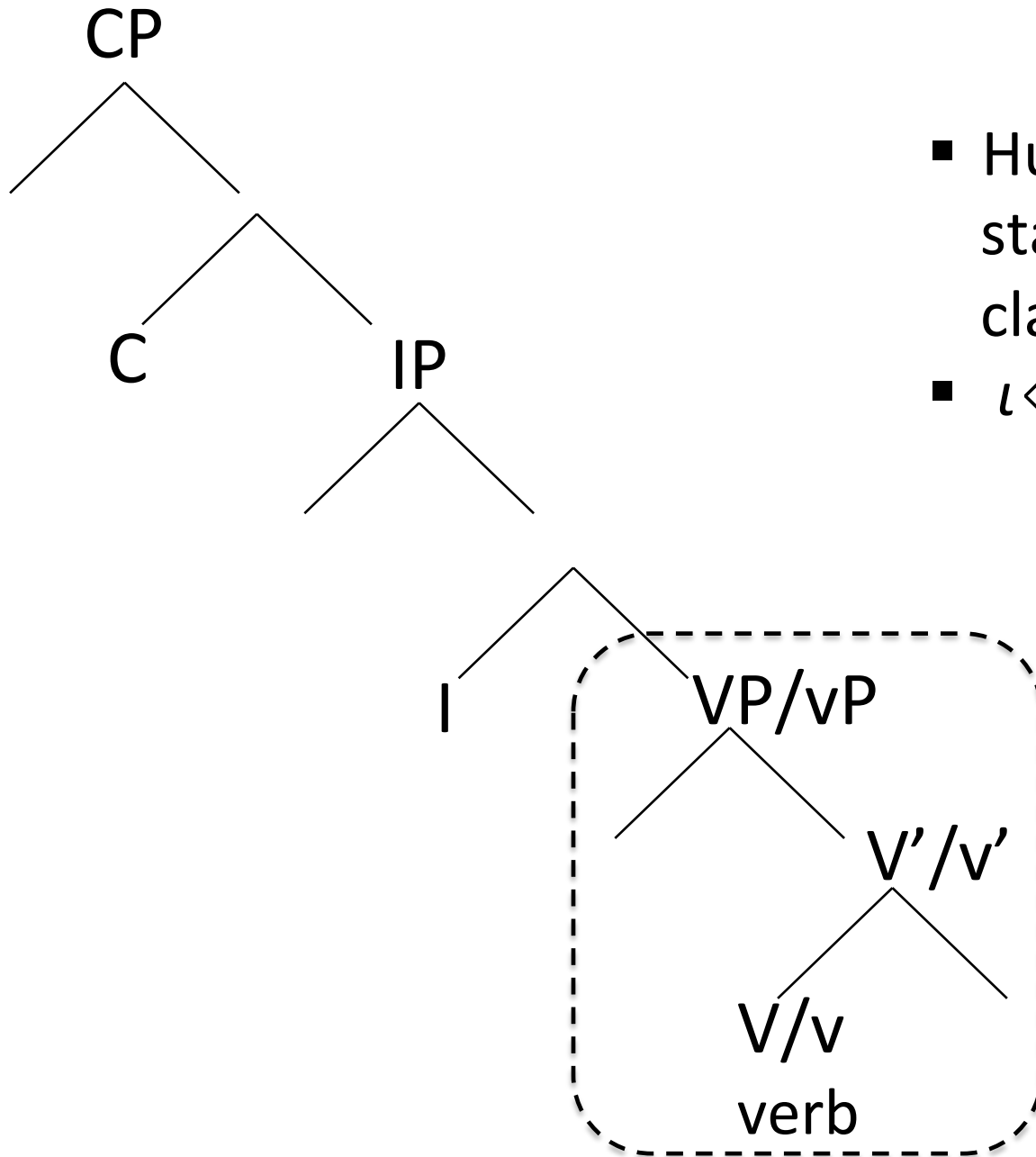
b. Prosody-to-syntax mapping

(i)   ALIGN-L (ι-HVP):

Align the left edge of an ι with the left edge of the highest projection whose head is overtly filled by the verb or verbal material.

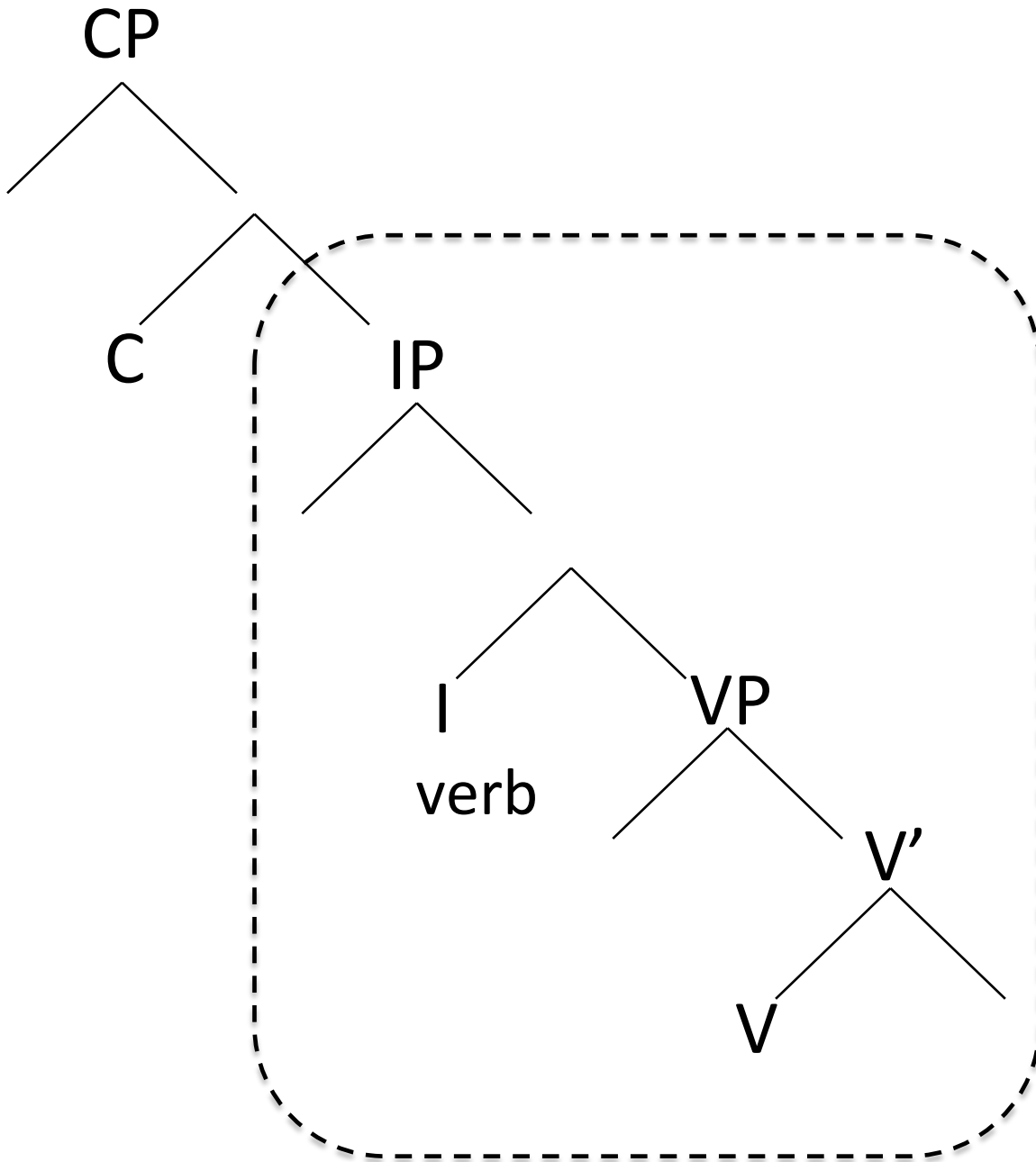(ii) ALIGN-R (ι-HVP):

Align the right edge of an ι with the right edge of the highest projection whose head is overtly filled by the verb or verbal material.

```
        CP
       /  \
      C    IP
          /  \
         I    VP
             /  \
            /    V'
                / \
               V
```
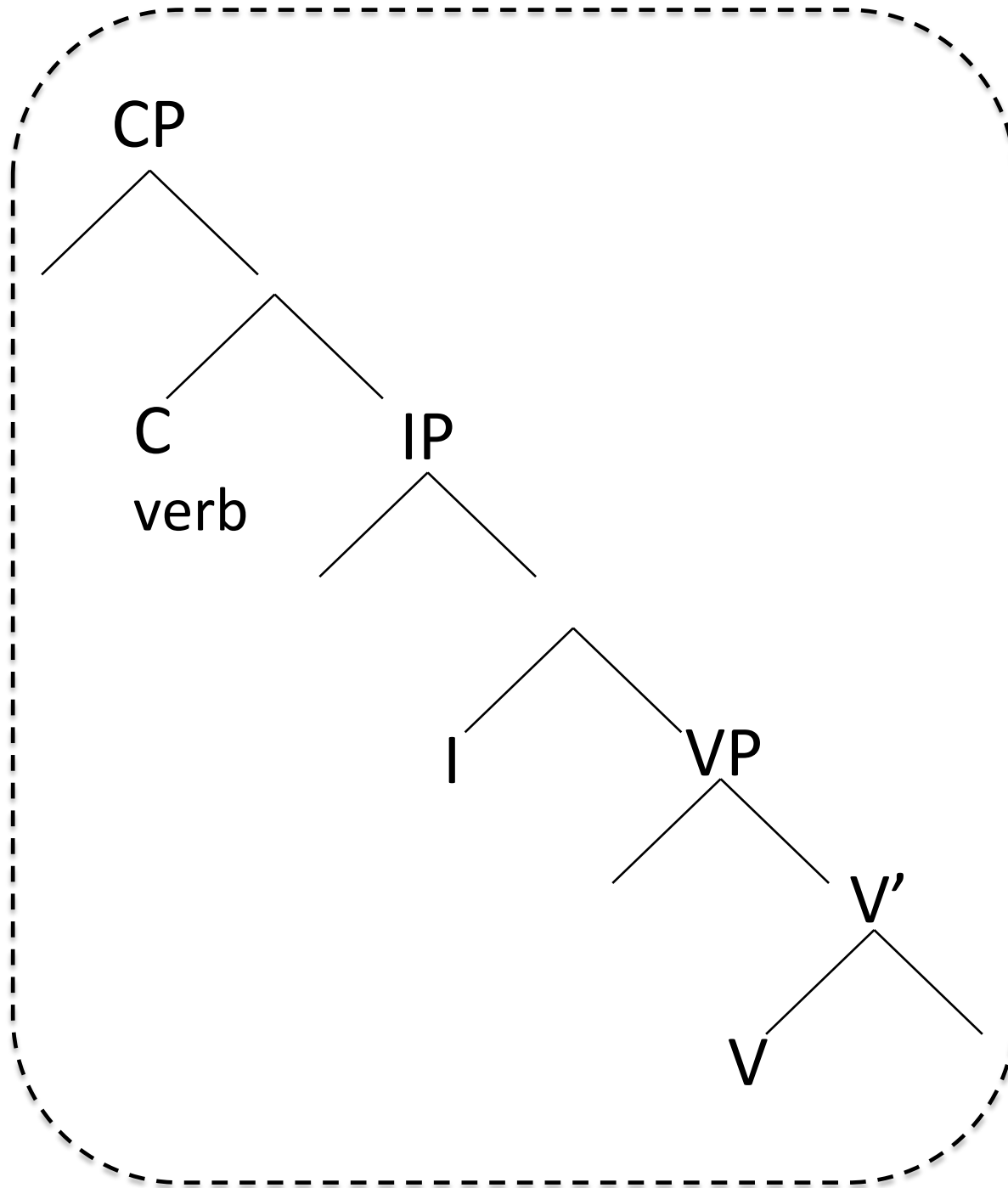
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- Hungarian: no Aux, V stays low in neutral clauses
- $\iota \Leftrightarrow$ VP/vP

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- Italian: V-to-I
  English: Aux in I
- $\iota \Leftrightarrow$ IP

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- Italian/ English *wh*-questions
- German: V2
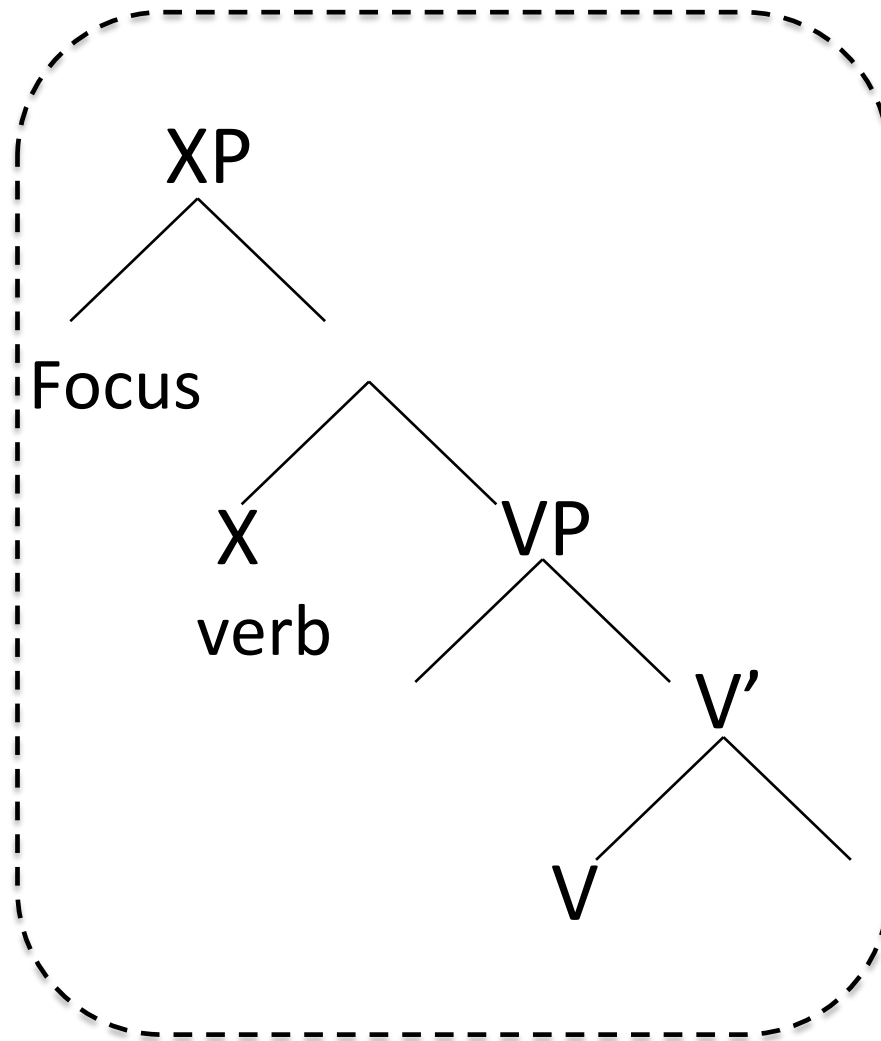- $\iota \Leftrightarrow$ CP

Hungarian left-peripheral focus

(3)

$[_{FocP}$ PÉTERT$_i$ szerette$_j$ $[_{VP}$ meg t$_j$ Mari t$_i$]]]

  Peter.ACC loved   PRT   Mary

'It was PETER that Mari fell in love with.'

Left-peripheral focus movement can target [Spec, XP] with verb in X:

Hungarian left-peripheral focus

(3)

$($ ι $[_{FocP}$ PÉTERT$_i$ szerette$_j$ $[_{VP}$ meg t$_j$ Mari t$_i$]]] $)$

Peter.ACC loved   PRT   Mary

'It was PETER that Mari fell in love with.'

Hungarian left-peripheral topics
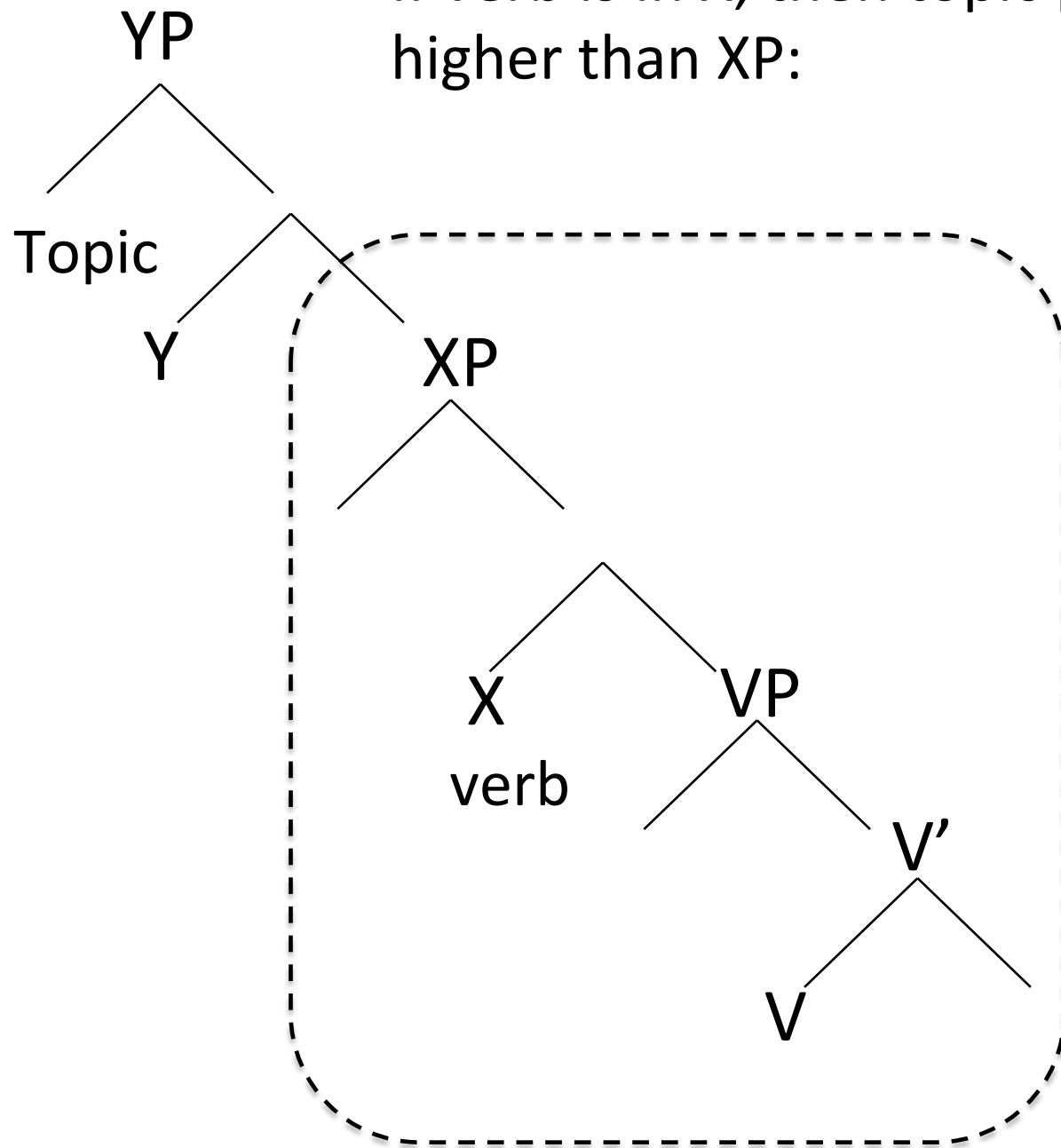
(4)

[Pétert$_i$ [$_{\textbf{FocP}}$ MARI$_k$ <u>szerette</u>$_j$ [$_{VP}$ meg t$_j$ t$_i$ t$_k$]]]]

Peter.ACC   Mary loved   PRT

'About Peter, it was MARY that he fell in love with.'

If verb is in X, then topic phrases may attach higher than XP:
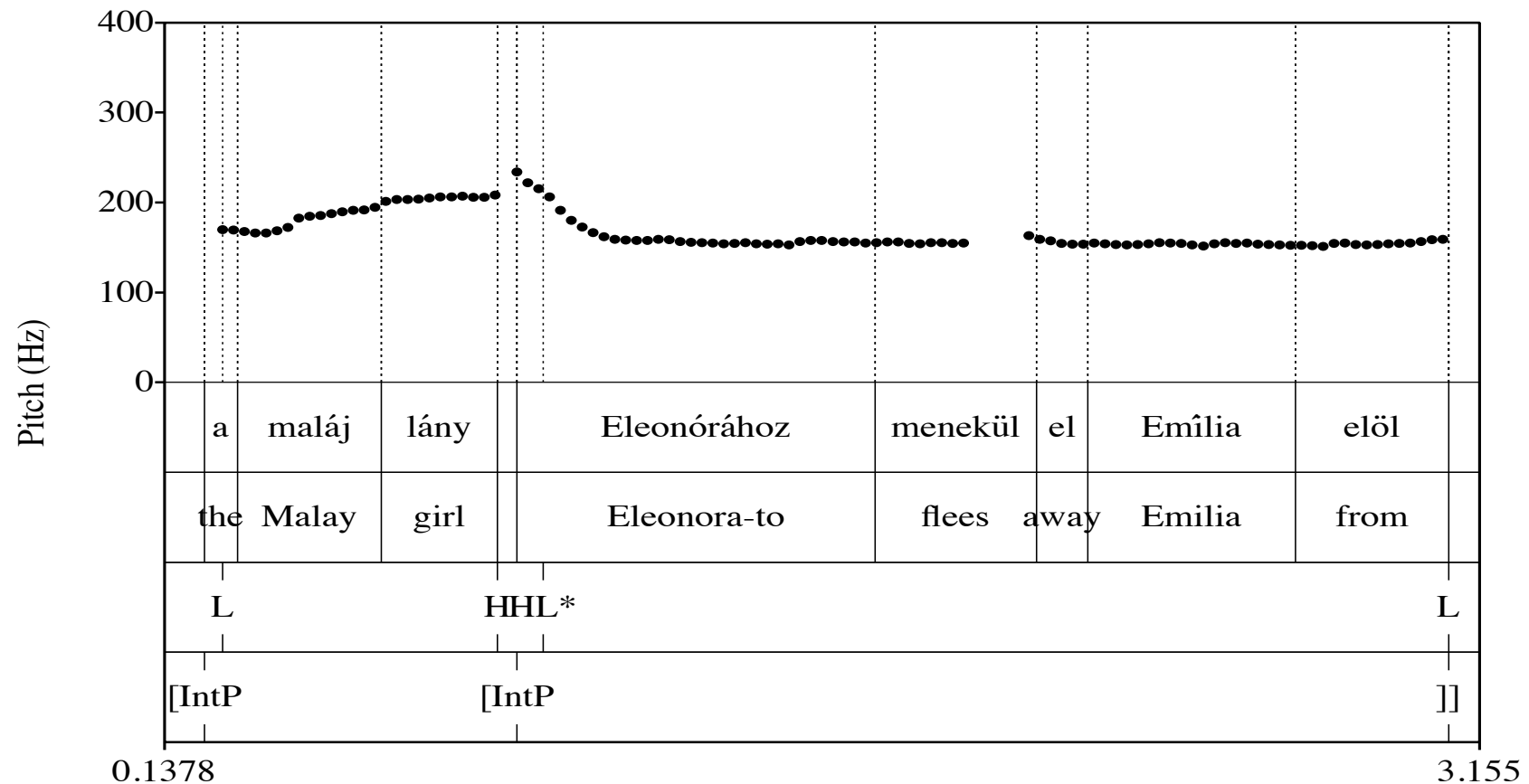
Hungarian left-peripheral topics

(4)

($_\iota$ [Pétert$_i$ (, [$_{FocP}$ MARI$_k$ <u>szerette</u>$_j$ [$_{VP}$ meg t$_j$ t$_i$ t$_k$]]])])

   Peter.ACC   Mary loved   PRT

'About Peter, it was MARY that he fell in love with.'

Fig. 1 Non-neutral declarative sentence in Hungarian

	a	maláj	lány	Eleonórához	menekül	el	Emîlia	elöl
	the	Malay	girl	Eleonora-to	flees	away	Emilia	from

L HHL* L

[IntP [IntP]]

0.1378 3.155

[A maláj lány [ELEONÓRÁHOZ menekül [$_{VP}$ el t$_V$ t$_{DP}$ t$_{DP}$ Emília elöl]]]

the Malay girl.NOM Eleonora-to   escapes   PRT   Emilia from

'It is to ELEONORA where the Malay girl escaped from Emilia.'

Hungarian stress

(5) a. Endrule-L

   Main stress is on the leftmost φ within the ι.

   (Violated if main stress is not on leftmost φ within ι.)

   b. Endrule-R

   Main stress is on the rightmost φ within the ι.

   (Violated if main stress is not on rightmost φ within ι.)

   c. Stress-ι

   Every ι has a stressed φ. (Violated by headless ι.)

(6) Stress-ι >> Endrule-L >> Endrule-R

Stress-focus correspondence

(7) *Stress–Focus Correspondence Principle*

The focus of a clause is any constituent containing the main stress of the ι, as determined by the stress rule
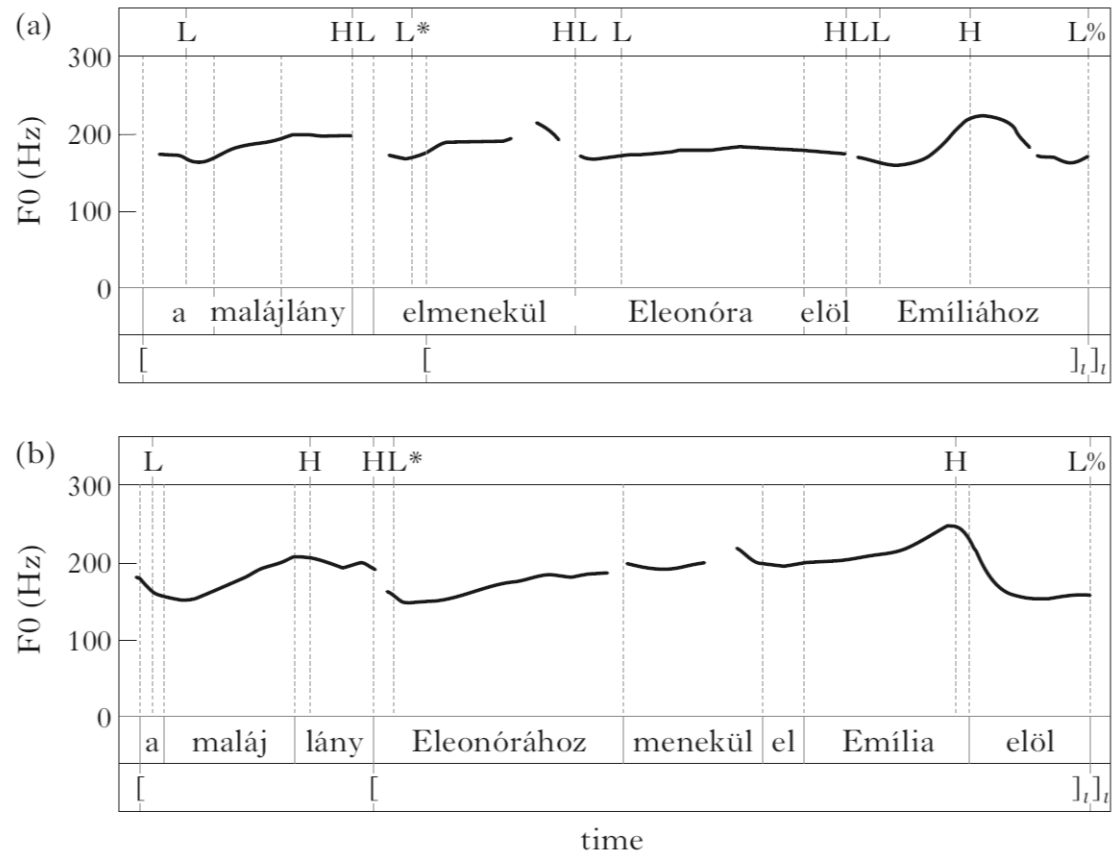
(Reinhart 1995/2006; Szendrői 2001, 2003).

Figure 2: F0 contour of a Hungarian neutral yes-no question (a) and a yes-no question with left-peripheral focus (b)

a. [A maláj lány   [_{VP} elmenekül   Eleonóra elöl   t_{DP} Emíliához]]]?
   the Malay girl.NOM PRT.escapes Eleonora from   Emilia-to
   'Does the Malay girl escape from Eleonora to Emilia?'

Figure 2: Neutral declarative clause in Hungarian

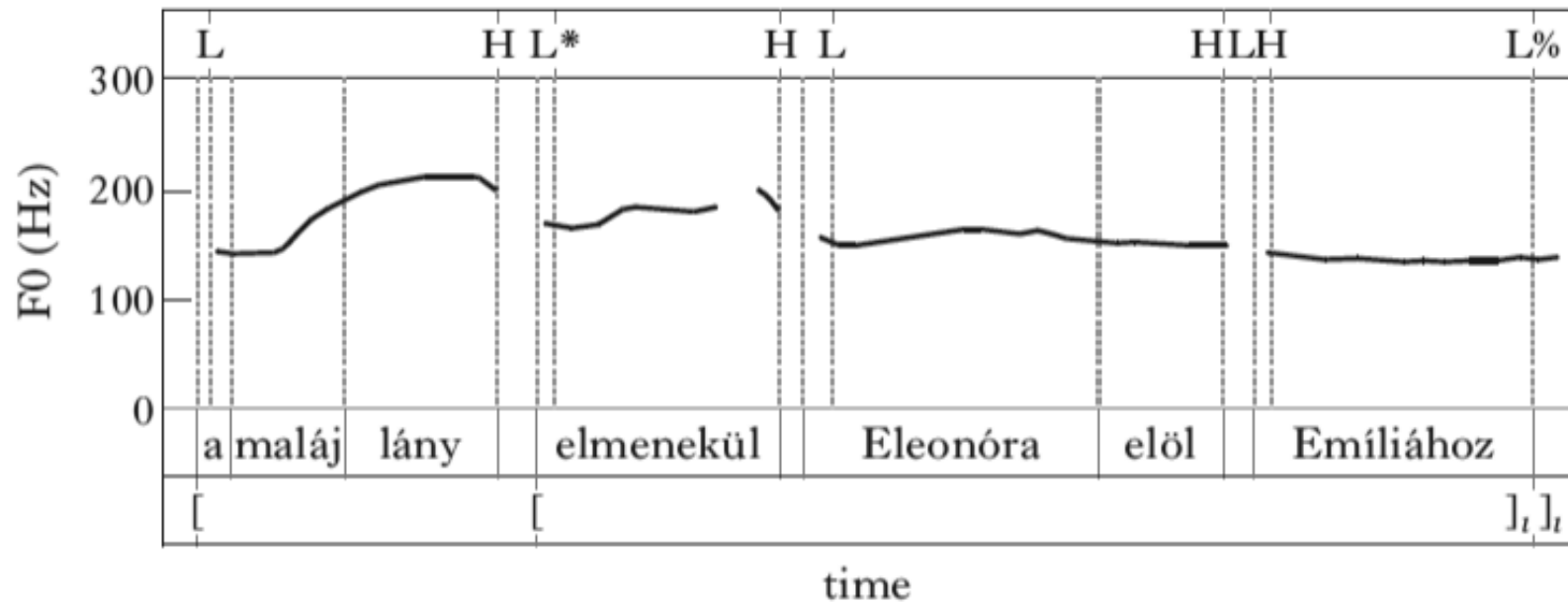*A flexible approach to the mapping of intonational phrases* 89

Figure 2

F0 contour for the neutral declarative sentence in (18): *A maláj lány elmenekül Eleonóra elöl Emíliához.* 'The Malay girl escapes from Eleonora to Emilia.'.

Recursive or not?

(6)

a. $(_\iota$ Topic Prt-V ...)   Genzel et al. (in press)

b. $(_\iota$ Topic $(_\iota$ Prt-V ...)) Hamlaoui & Szendri (2015)
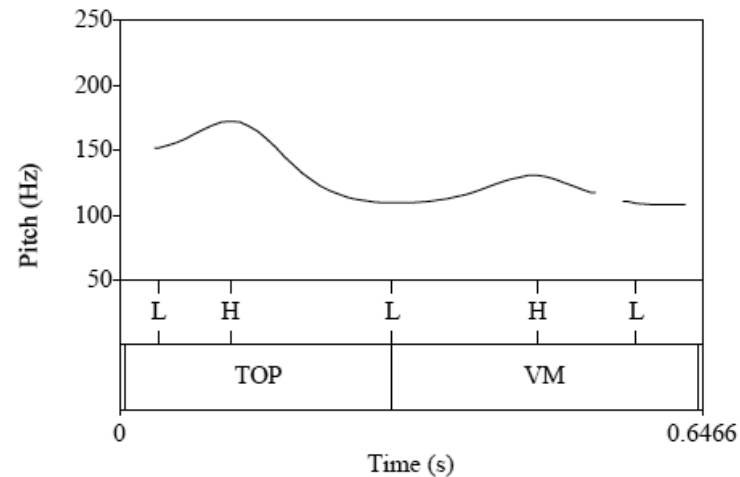
Genzel et al.

- Narrow focus bears a narrow H^*+L bitonal accent (Rosenthall 1992 , Sneed 2004)

- F^0 peak of focus is downstepped from a preceding narrow topic (Rosenthall 1992)

- Given topic has a rise, analysed as L^*+H by Sneed (2004)

$\rightarrow$ ($_\iota$Topic Prt-V ...) no recursion in neutral sentences

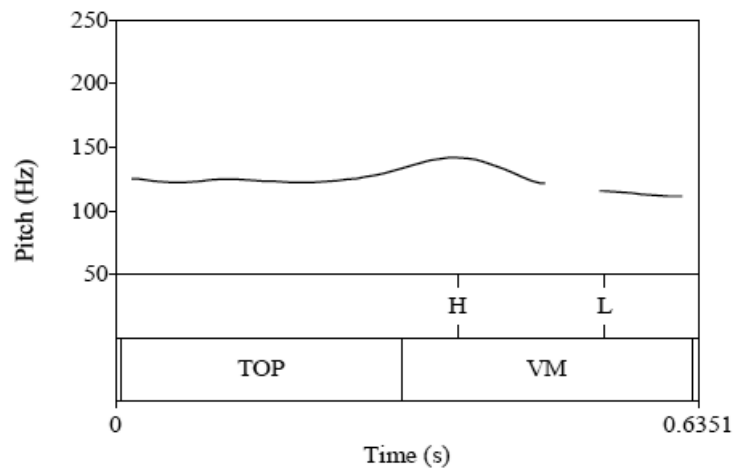# Genzel et al: Topic contours in neutral sentences

(a) Rising TOP
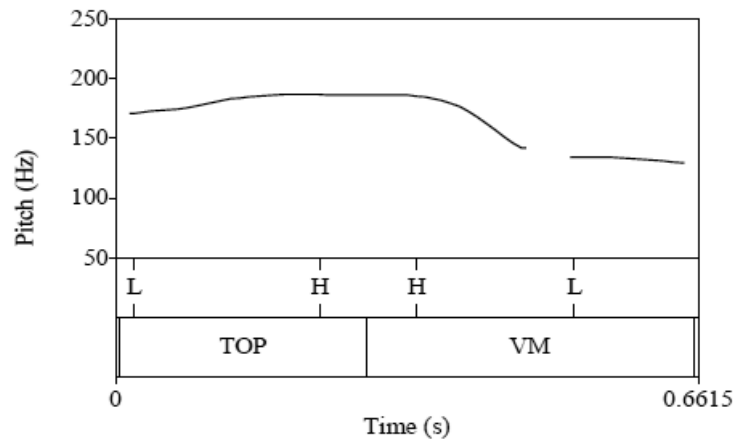
(b) Falling TOP

(c) Flat TOP

- Given topics do not have falling contour; same in sentences with preverbal focus

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Recursive or not: cont

- over 90% of VMs had a falling accent (Genzel et al)
- less than 10% of post-verbal material has a falling accent (Genzel et al)

→Hamlaoui & Szendrői (2015):

- neutral sentences have recursive phrasing:

  $(_\iota$Topic $(_\iota$Prt-V …$))$

- accent type on topics is determined by their own givenness
- domain of downstep is the outermost ι

Interim summary

- Hungarian left-peripheral focus is analysed as a syntactic operation that ensures that the *Stress-focus correspondence principle* (7) is satisfied. It has unmarked syntax-prosody mapping and unmarked prosody, due to the left-headedness of Hungarian ι.

- Left-peripheral topics sit outside the phrase corresponding to the innermost ι, since they are not accompanied by verb movement, and by assumption, the innermost ι is always determined by the position of the verb.

Thank you!