Realisation of sentence mode in the intonation of Connemara Irish

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Overview

III. Introduction

- Research aims and motivations
- Intonation analysis methods

IV. Sentence mode data

- Informants and speech materials
- Methods and measurements
- Findings
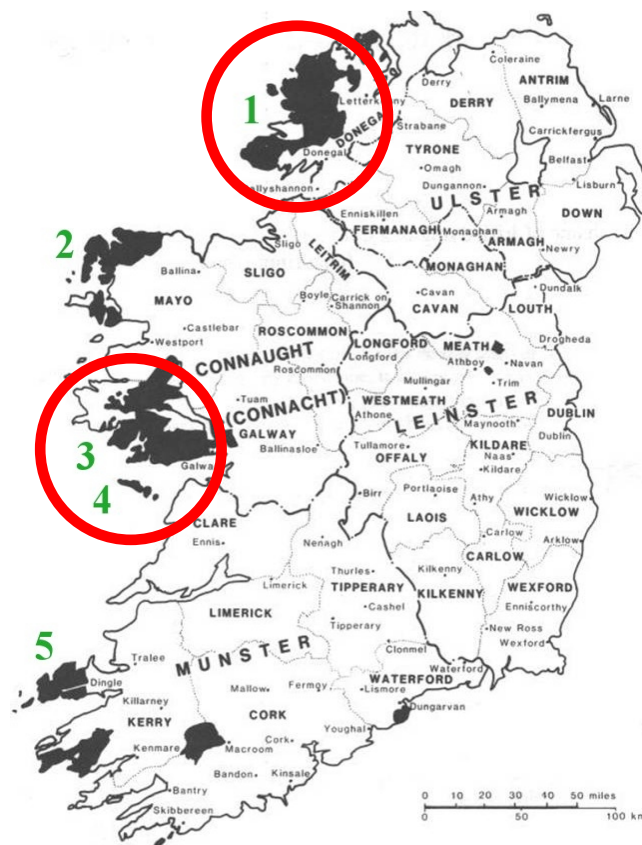- Summary

I.   Introduction

Research work

Analysis of prosody of two dialects of Irish

- Donegal (1)
- Connemara:

> Cois Fharraige (3)
>
> Aran Islands (Inis Mór) (4)

Motivation:

- To permit new insights into intonational variation and cross-dialect differentiation

Research work

Two levels

5.   Intonation system of the dialects – cross-dialect differentiation
       Analysis of f0 contours with IViE transcription system

7.   Phonetic realisation – quantitative description

    a)   Direct f0 contour measurements
    b)   Decomposition of f0 contours with Fujisaki model

       (esp. for structurally similar dialects)

Two-level analysis

IViE system

→ contours analysed into phrases and accents
→ high (**H**) and low (**L**) primes
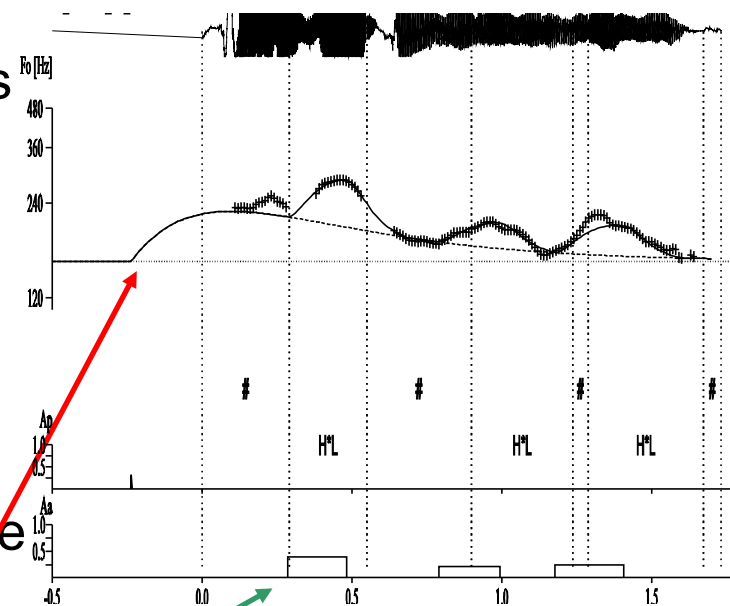   are aligned with segmental string

Fujisaki model

→ Contours represented as a sum of
   phrase commands and accent commands
   superimposed on base frequency asymptote

Fujisaki model-to-IViE mapping:
IViE analysis guides and constrains Fujisaki modelling
- phrase commands correspond to IPs
- accent commands model accents and (high) boundary tones

II. Sentence mode data

Sentence mode – background

- Intonation conveys sentence modes: differences between questions and statements (Hirst & Di Christo, 1998)

- Some languages may use different contours for questions

  – Non-falling (rise or fall-rise) in the nuclear tune = high final pitch
  – Overall raising of pitch

- In English
- yes-no questions → high final pitch
- wh- questions → similar to statements (i.e. falling)

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Sentence mode – earlier findings

Dalton (2007) for South Connaught (Cois Fharraige and Inis Oírr):

Analysis of 55 read sentences (DEC, WHQ and YNQ)

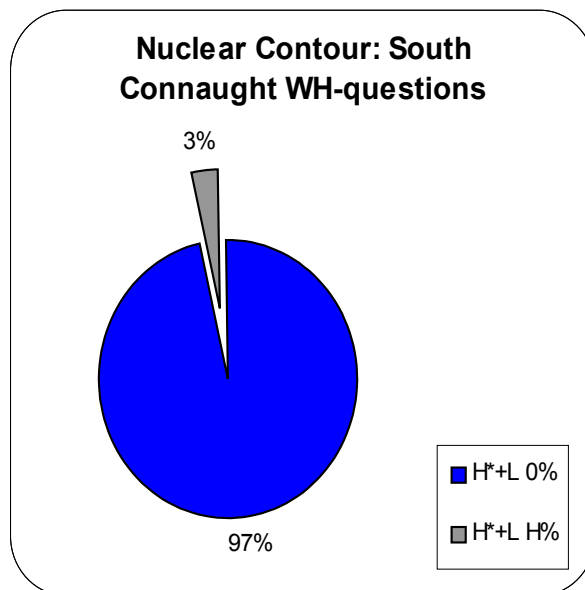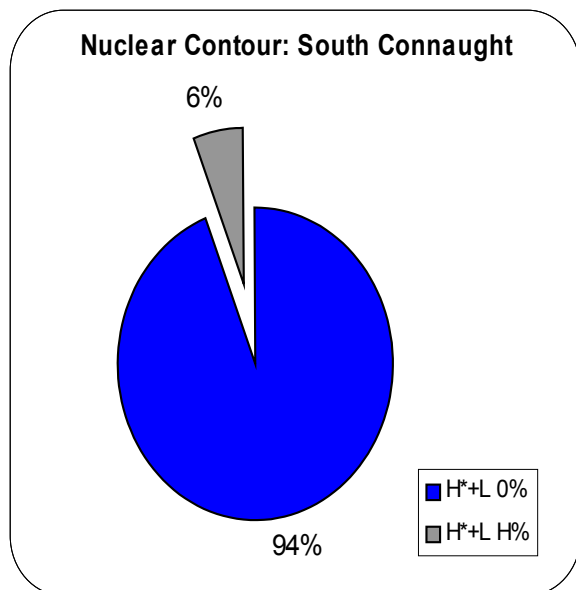Default tune for declaratives, yes-no questions and wh-questions:

H*+L   (H*+L)   H*+L 0%

Prenuclear accents can be produced as H* (more frequently Cois Fharraige than Inis Oírr) with optional downstep

Sentence mode – **earlier findings**

Nuclear tunes – South Connaught

Distribution in declaratives, yes-no and wh- questions:
Majority – fall (H*+L %); some fall-rises (H*+L H%)

(Figures reproduced from Dalton (2007))

Nuclear Contour: South Connaught
6%
94%
■ H*+L 0%
■ H*+L H%

Nuclear Contour: South Connaught WH-questions
3%
97%
■ H*+L 0%
■ H*+L H%

Nuclear Contour: South Connaught Yes/No-Questions
17%
83%
□ H*+L H%
■ H*+L 0%
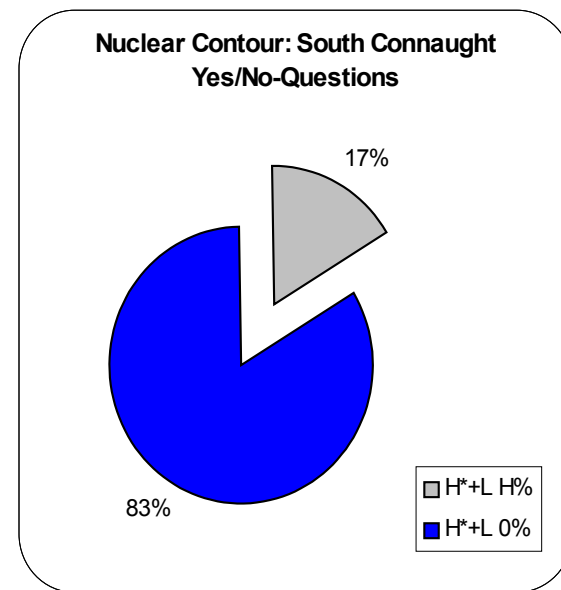
Some new data from Inis Mór & further data from Cois Fharraige

Data presented here – work in progress

Looks more closely at realisation of sentence mode

Matched statements and questions to allow detailed quantitative comparison

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Informants

4 speakers of Cois Fharraige (**CF**)

- 1 female and 3 male

5 speakers of Irish of Inis Mór (**IM**)

- 4 female and 1 male

All informants are native speakers of Irish

Materials

CF: 62 DEC, 23 WHQ and 23 YNQ embedded in dialogues (1 rendition of each) = 108 tokens

IM: 61 DEC, 46 WHQ and 43 YNQ embedded in mini-dialogues (multiple repetitions) = 150 tokens

For quantitative measurements of **IM**, a subset of 66 sentences analysed: DEC, WHQ and YNQ

DEC	🔊	Agus	bhuail	mé le	Dó nall.
YNQ	🔊	Ach ar	bhuail	tú le	Dó nall?
WHQ	🔊	Agus	cé	bhí le	Dó nall?

Methods & measurements
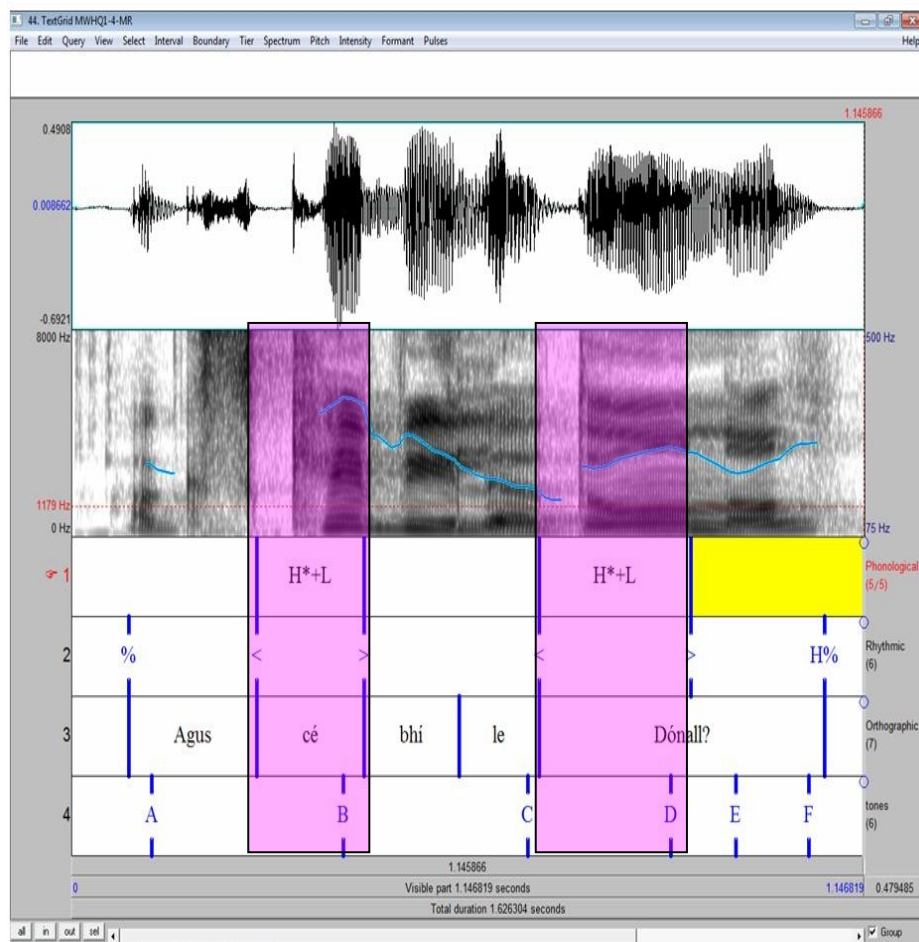
All data:

b) IViE transcription of accents and boundary tones

c) grouping into tunes:

- **fall** (H*+L %, (H+)L* %)

- **fall-rise** (H*+L H%, !H*+L H%)

- **rise** (L*+H %)

- **rise-fall** (L*+H L%)

- **HRT** (L*+H H%, H* H%)

Inis Mór subset:

- 6 f0 measurements points in contour (for accents and boundary tones)

Results – Cois Fharraige (**CF**)

- Major tune in all sentence modes – fall

- Some, few rises and fall-rises in WHQ and YNQ

- Rare HRTs in YNQ (1 speaker)
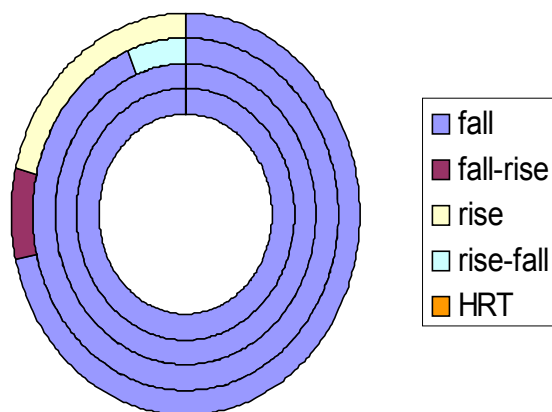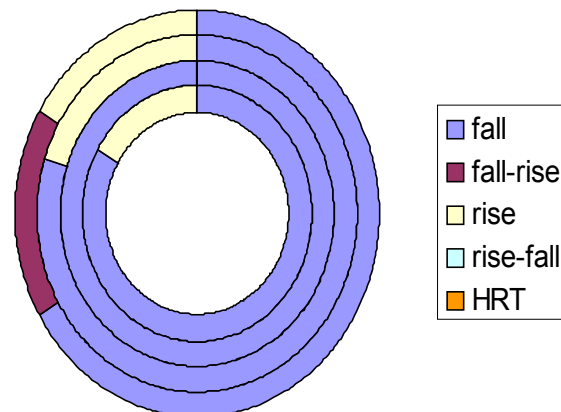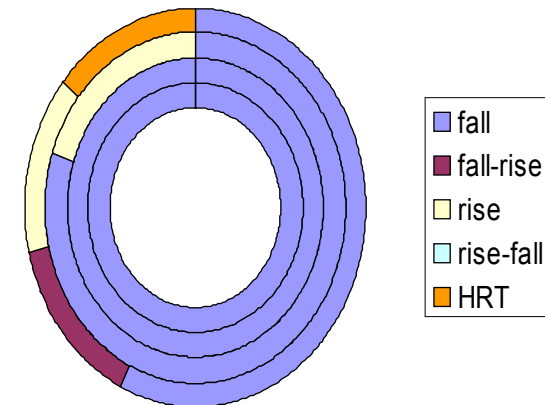
Results – Inis Mór **(IM)**

- **DEC**: Major tune – fall; frequent rises - 1 speaker
- **WHQ**: Two dominant tunes – fall and fall-rise; occasional HRTs
- **YNQ**: Two dominant tunes - fall and fall-rise; rare HRTs and rise-falls - 2 speakers
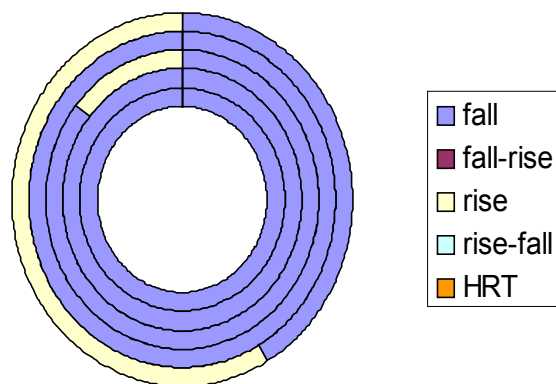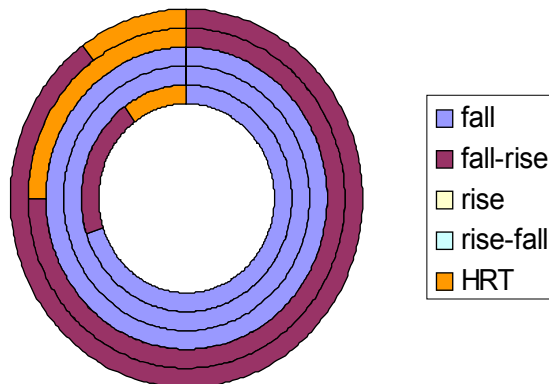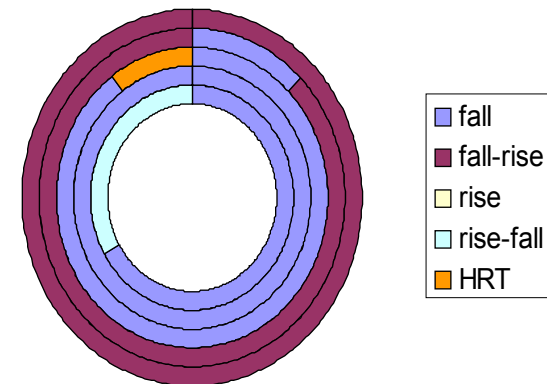
Results – **CF** and **IM** - comparison
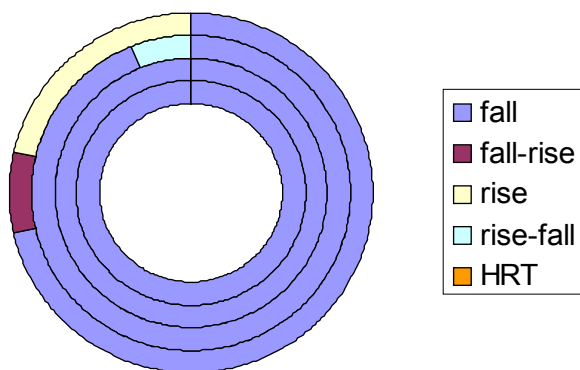
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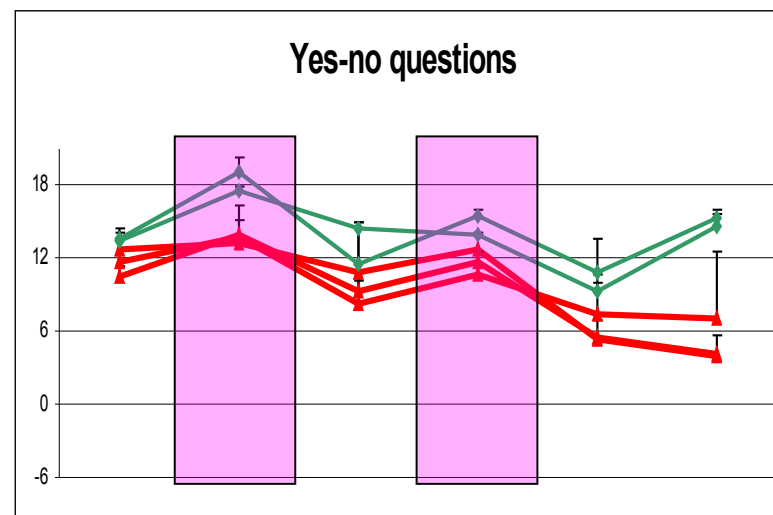
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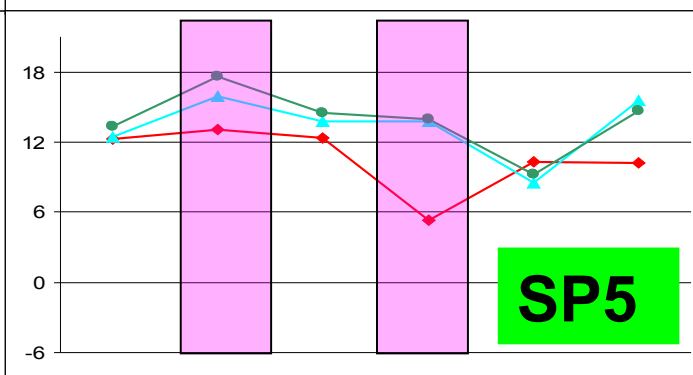Phonetics and Speech Laboratory
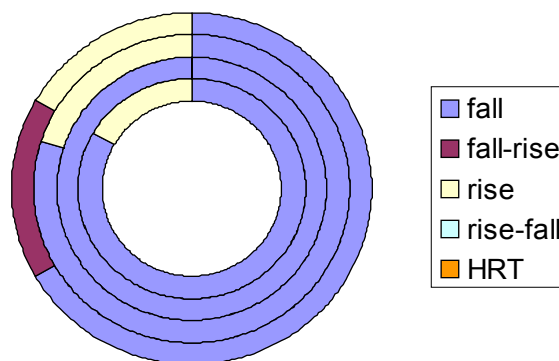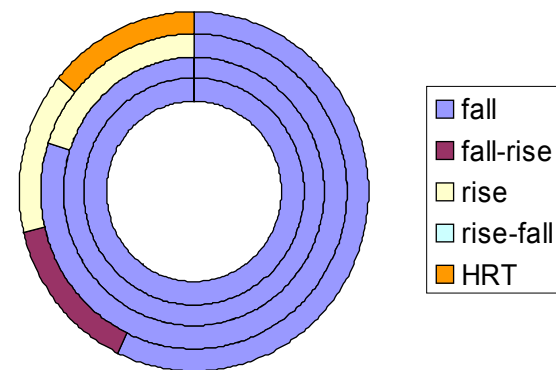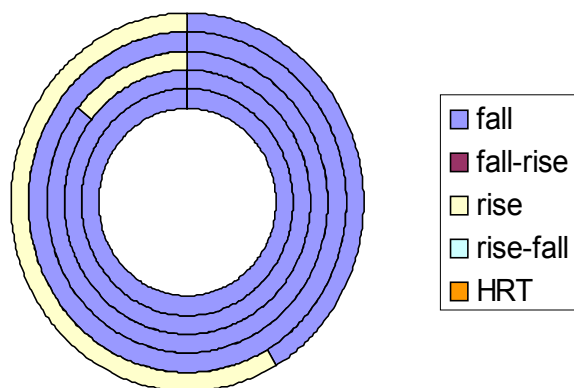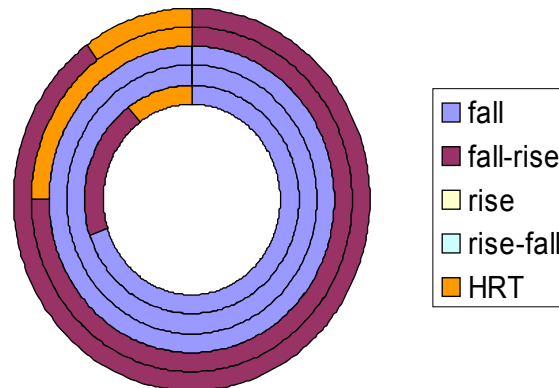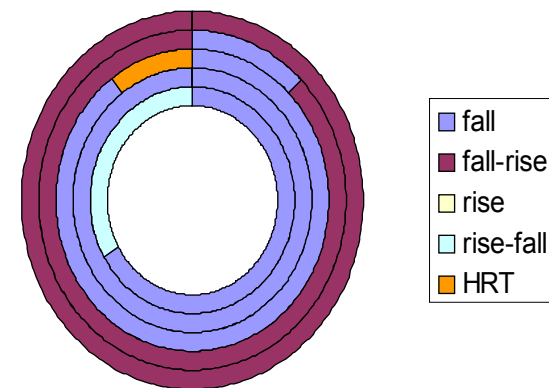
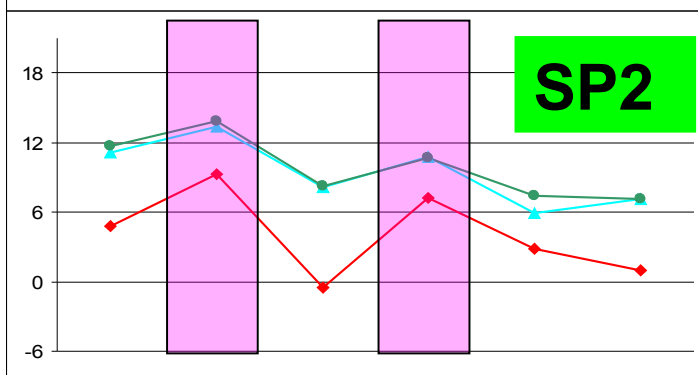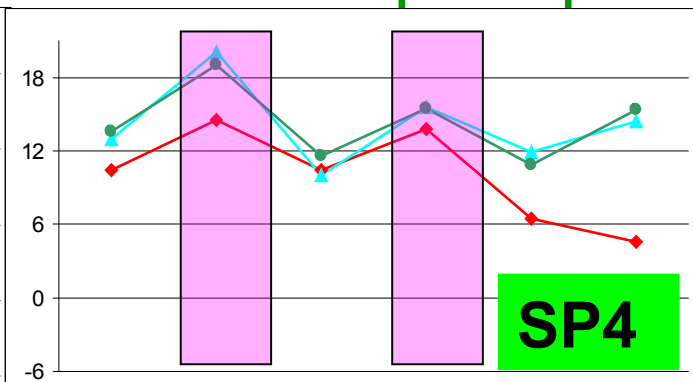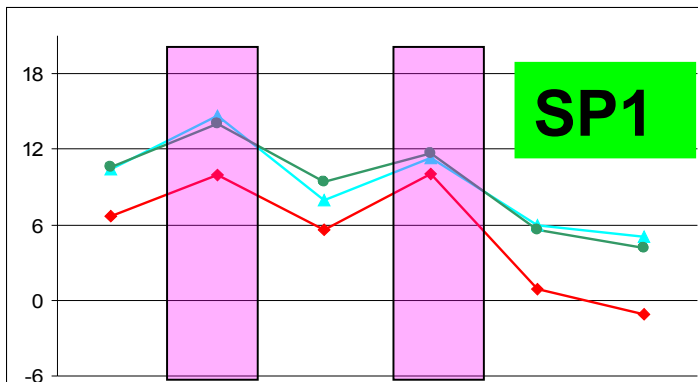# IM – cross-speaker variation
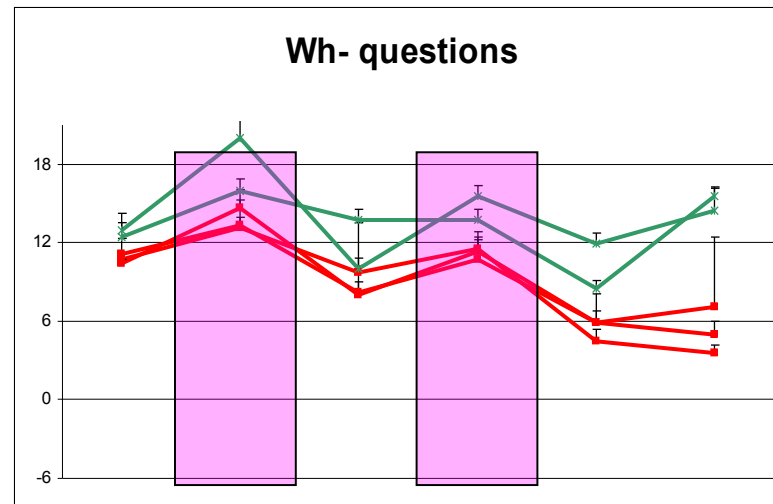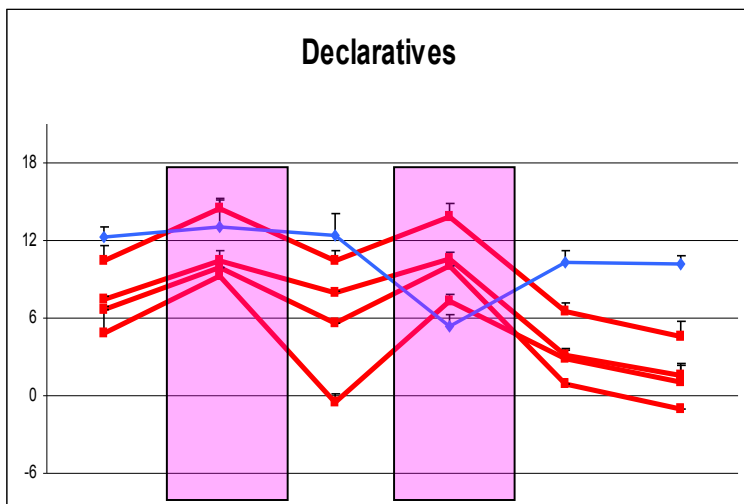
Contours: fall fall-rise rise

Speakers show preferences for tunes:

- DEC: falls (4)
- WHQ: falls (3), fall-rises (2)
- YNQ: falls (3), fall-rises (2)

IM – sentence mode per speaker
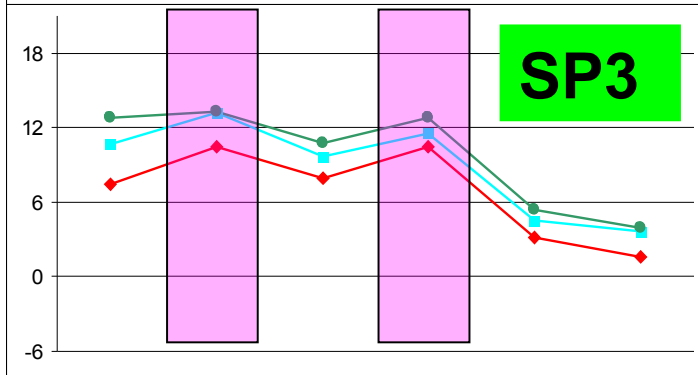
Contours:

YNQ

WHQ

DEC

WHQ and YNQ are not differentiated by any speaker

There *may* be a register difference between DEC and WHQ and YNQ (only tentatively suggested)

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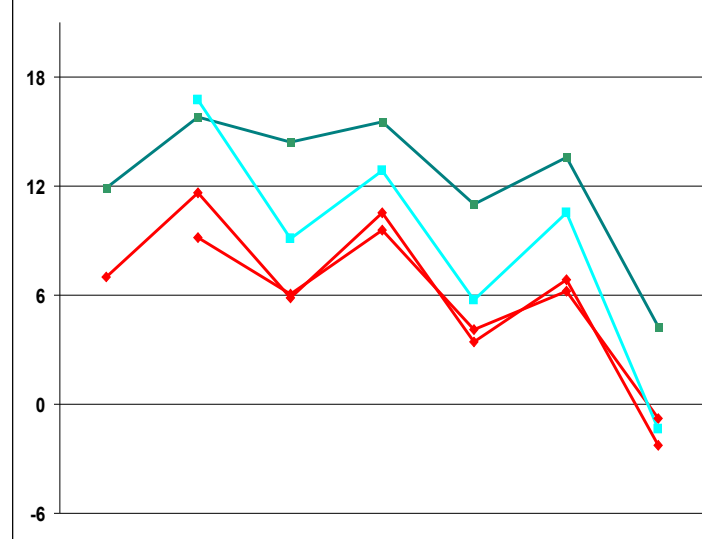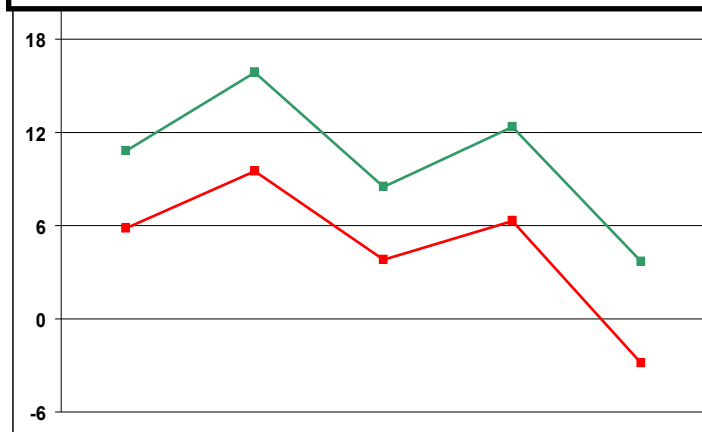# For one speaker of **CF**

Contours:

YNQ   WHQ   DEC

Matched sentences measured showed

- falls in DEC, YNQ & WHQ

- Qs (esp YNQ) show raised register

Declaratives vs questions register difference in Inis Mór?

Findings & summary

Realisation of sentence mode:

CF:

- Fall dominant in all sentence modes
- A few rises in WHQ and YNQ

IM:

- Fall dominant in DEC
- Fair number of fall-rises in WHQ and YNQ (2 out of 5 speakers)

f0 register may be higher in WHQ and especially YNQ (tentative conclusion)

Go raibh maith agaibh!

Thank you!