Intonation in Australian languages

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- Intonational characteristics of a group of Australian indigenous languages (mainly Northern Australian languages)

Nita, Nancy, and Ruth, Goulburn Island, NT

- Many descriptions of intonation are based on handful of well-studied languages – English, German, Japanese etc.

- Need to understand less-well described languages to test and refine our understanding of how intonation works across a range of languages

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- Before 1788
  - 200-250 distinct languages

- Present day
  - 70 languages
  - fewer than 10 have > 1,000 speakers
  - most have < 50 speakers
  - 20 languages or less being transmitted to next generation
  - Kriol, a "mixed language", is often spoken
  - Speakers are often multi-lingual

- 2006 Census:
  - 455,000 Australians identified as indigenous
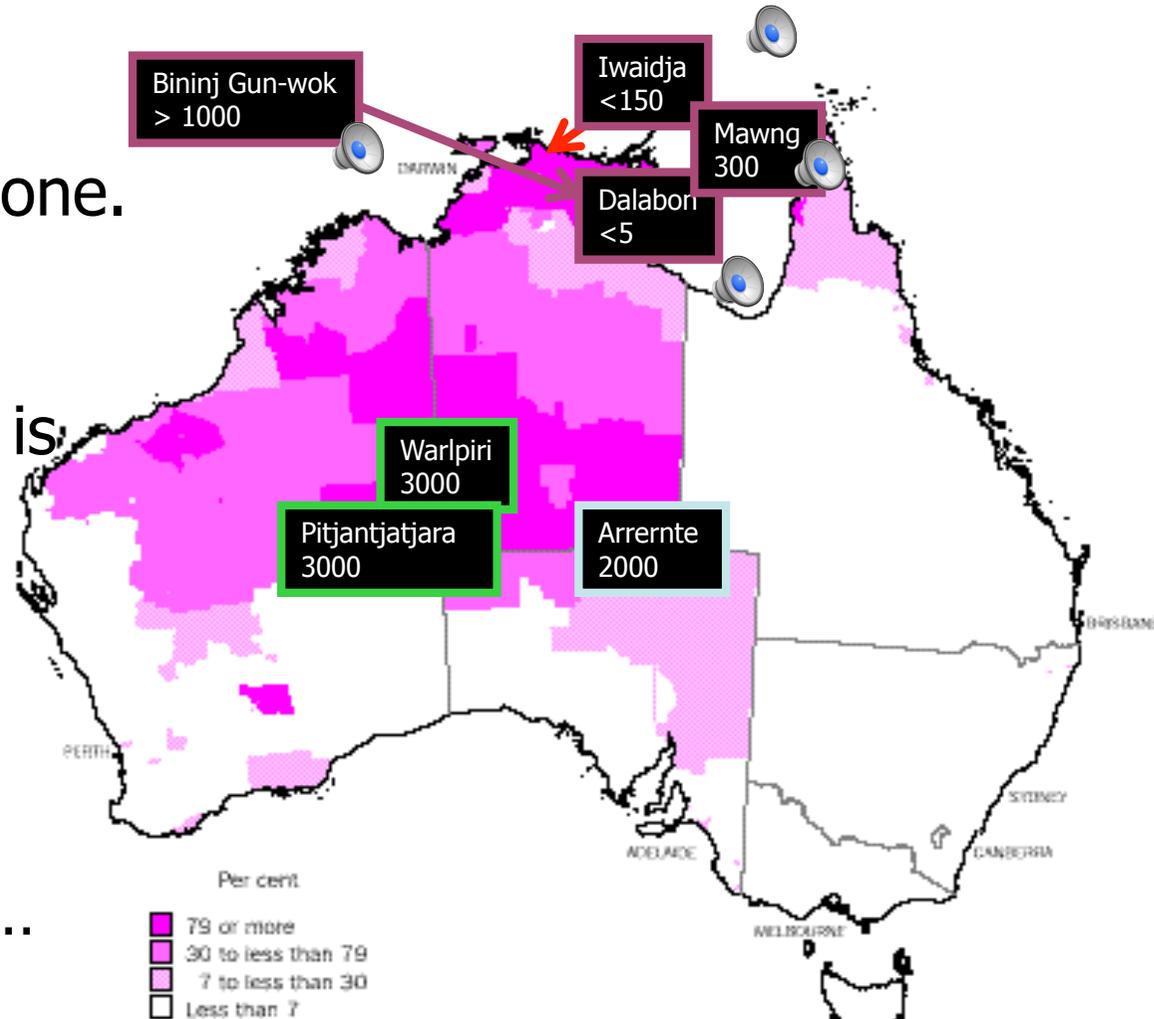 - 47,000 Australians (12 % of the indigenous population) claimed to speak an Aboriginal language

Dalabon is almost gone.

Bininj Gun-wok (Kunwinjku variety) is healthy.

Mawng is still being acquired.

Iwaidja is declining…

(map courtesy of A. Butcher, Flinders University)

Dalabon, Eastern Arnhem Land

Bininj Gun-wok (Kundedjnjenghmi variety), Eastern Arnhem Land

Mawng, Goulburn Island

What does intonation contribute to spoken communication?

- Sentence Modality e.g. question versus statement

- Phrasing, discourse segmentation – "chunking" for ease of processing

- Grammar of Focus marking; pragmatics – "what information is highlighted by intonation?"

- Speaker attitude, emotion, etc.

- *Tone Target Model* – intonation patterns are broken down into **sequences of tones, L** (low) **H** (high)

- *pitch accents, phrase & boundary tones* – these define the ***intonational phrase*** in English and German

- Words can be **accented** or **unaccented** in an intonational phrase

- An extra PITCH movement or TONE TARGET makes one word stand out from surrounding words

- **PITCH ACCENTS**

- *Pitch accents* – a tone or tone sequence or pitch shape <u>aligning</u> with primary stressed syllable of words in English or German   T* = accent

- Different pitch shapes occur on primary stressed syllables of accented words to make them stand out from surrounding words

- H* (high) L* (low)

- L+H* (rising) L*+H ("delayed rising or scooped")

- H*+L H+L* ("late falling", "early falling")

Kunwinjku (BGW)

Tones	L+H*		!H*	L%
Words		ku-warrde		bo-yoy

Pitch Accent

Pitch Accent

180

130

Hz
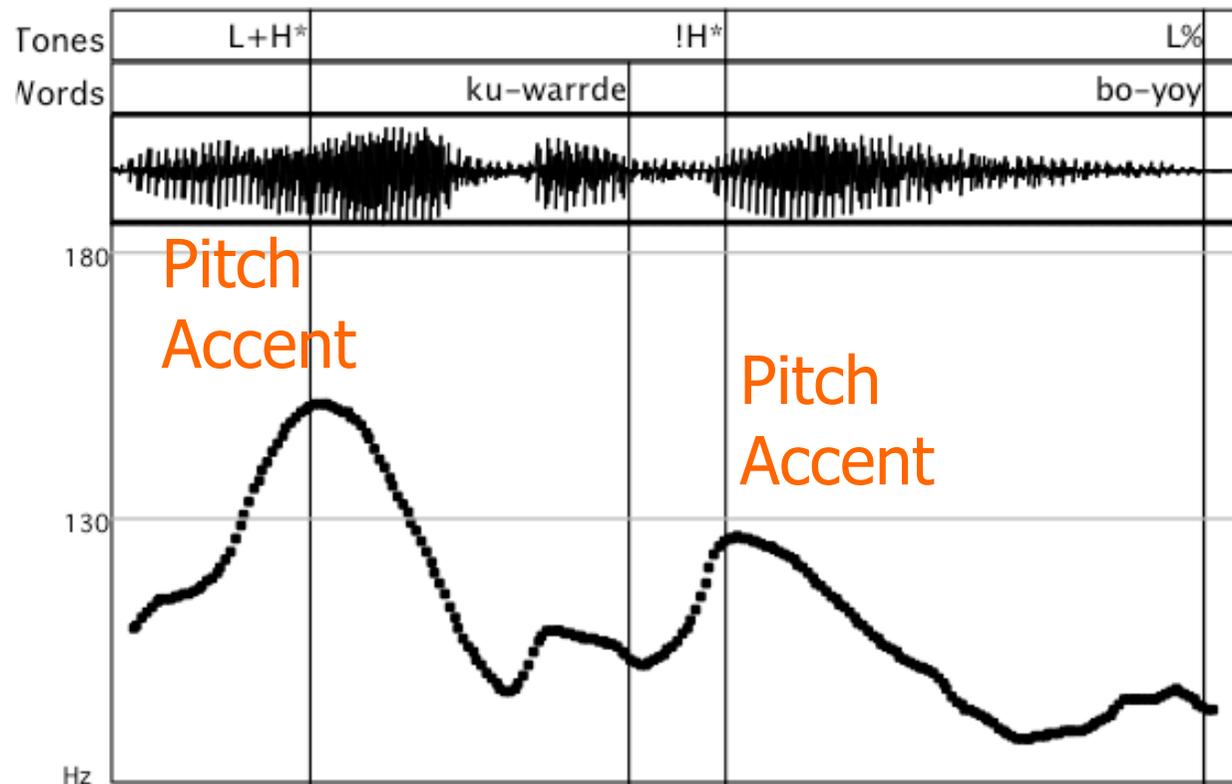
Ku-warrde bo-yoy "Water lay in the cave"

- ***Intonation phrase*** – the part of an utterance over which a particular intonation pattern extends (may be one or more in an English or German sentence)

- Largest intonational constituent

- BOUNDARY tone defines the right EDGE of Intonational Phrase

- Usually marked with % e.g. L% H%

- *Intermediate phrase*

- smaller intonational constituent usually marked with - e.g L- H-

- PHRASE tone defines EDGE of Intermediate phrase

- German, English combine two tones to mark Intonational Phrase boundaries e.g. L-L%, H-H%, L-H%

H L   (Relatively) High or Low tone target relative to pitch range for that intonational phrase

* after the tone target denotes a H* or L* pitch accent, +H or L+ either side of the * tone target indicates a BITONAL accent

−   after the tone target denotes a H- or L- phrase accent or phrase tone, describes the pitch after the nuclear pitch accent (the last accent in a phrase)

% after the tone target denotes a H% or L% boundary tone; marks the final phonetic value of an intonational phrase as relatively High or Low

Kunwinjku (BGW)
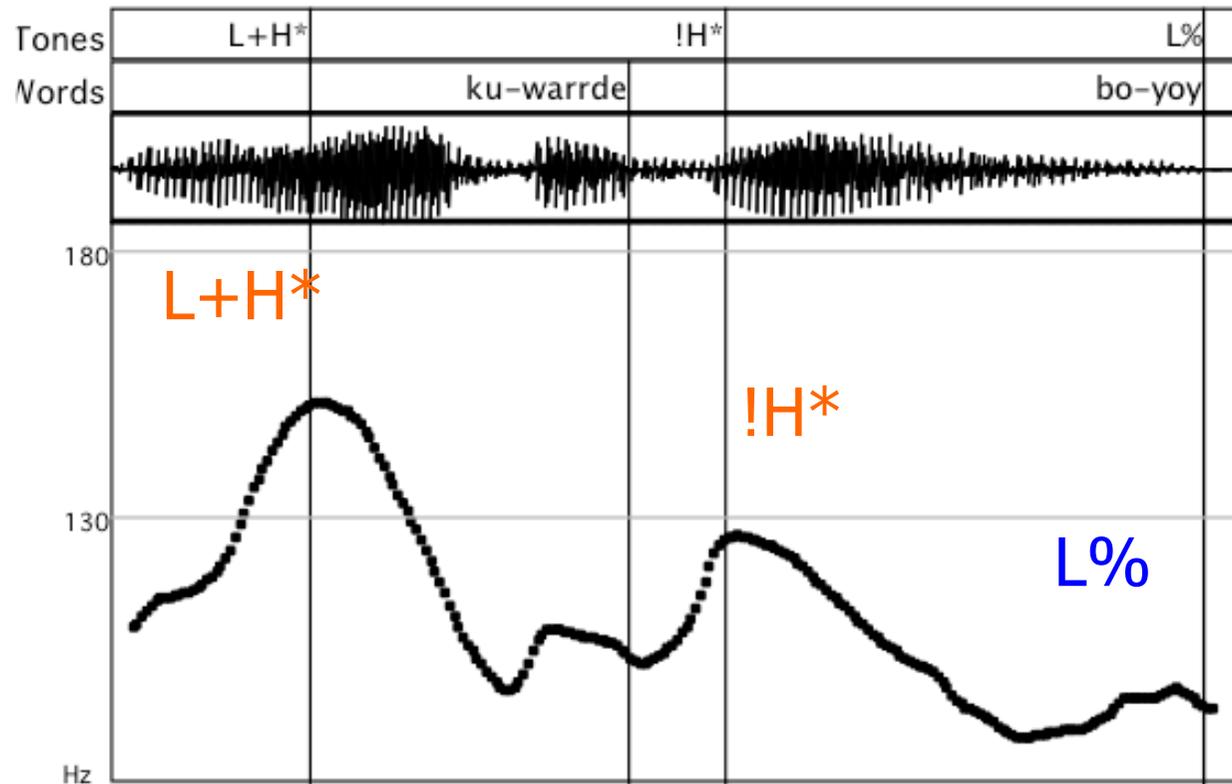
Ku-warrde bo-yoy "Water lay in the cave"

- Do all intonation languages have pitch accents?

- No, some only have phrase tones or boundary tones that mark the edges of chunks of speech and no pitch accents

1. Does a language have lexical stress, tone/lexical pitch accent, both,or neither at the word level?

WORD

2. Is Sentence level prosodic prominence marked at the HEAD of the phrase?

- Is it marked at the EDGE of the phrase?

- Is it marked both at the EDGE/HEAD?

PHRASE

1. Head-marking prosody, e.g. English, German, Dutch

2. Edge-marking prosody e.g. French, Korean

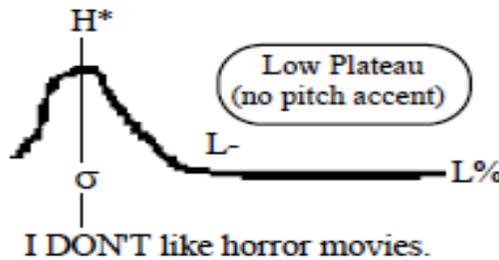3. Head & Edge marking prosody e.g. Japanese

English
(and
German)

Pitch accents,
Phrase and
Boundary TONES

Korean | Phrase/
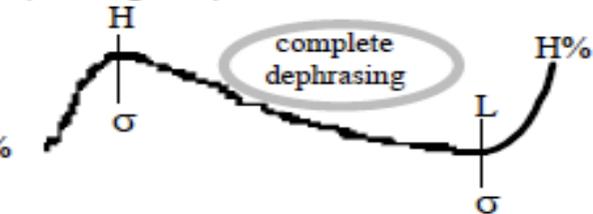Boundary
TONES

Japanese?

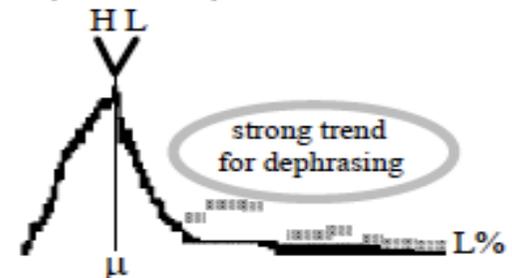a. English
(declarative: H* L- L%)   (interrogative: L* H- H%)

H*   Low Plateau (no pitch accent)   L-   L%

σ

I DON'T like horror movies.

L*   H-   High Plateau (no pitch accent)   upstep H%

σ

Do YOU like horror movies?
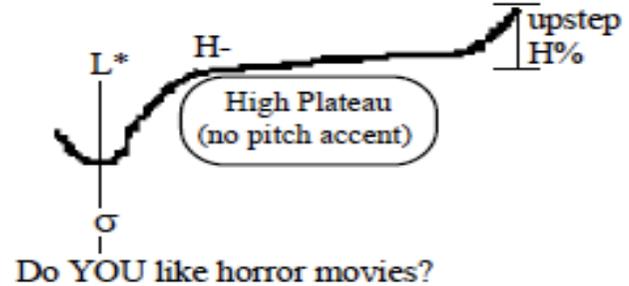
b. Korean
(declarative)   (interrogative)

H   complete dephrasing   L   L%

σ   σ

H   complete dephrasing   L   H%

σ   σ

c. Japanese
(declarative)   (interrogative)

H L   strong trend for dephrasing   L%

μ

H L   strong trend for dephrasing   H%

μ

from Ueyama & Jun 1998

- Challenge 1: What are the characteristic intonational "tunes" or melodies of Australian languages?

- Challenge 2: What is the intonational typology of Australian languages relative to other languages of the world?

- Are Australian languages Head-marking, Edge-marking, or Head- and Edge- marking?

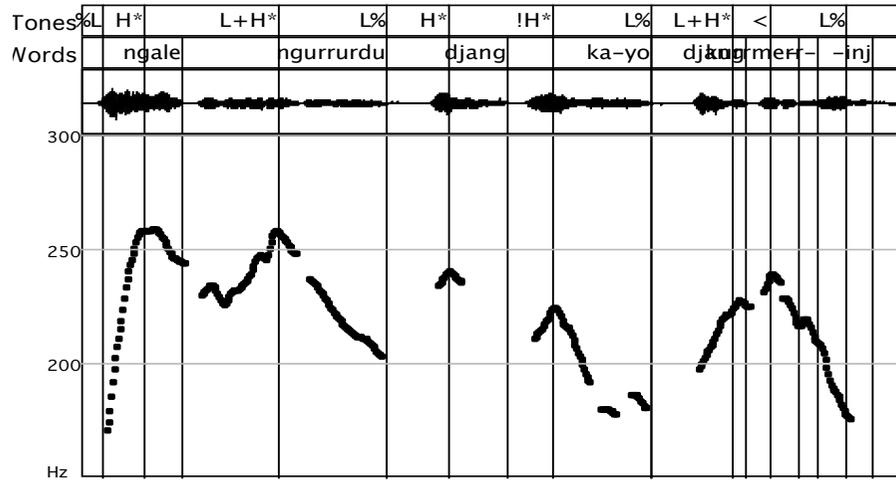- Challenge 3: What functions do tunes have in Australian languages?

- Typical and (atypical) tunes of Australian languages

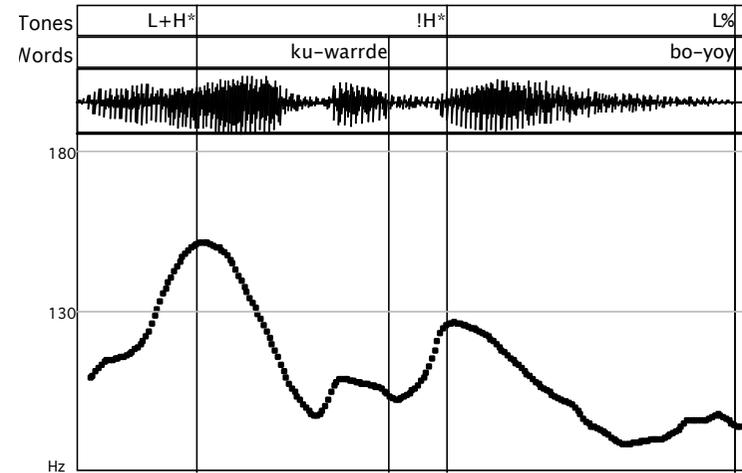## Kundjedjedmi (BGW)

Kunwinjku (BGW)

Ngale ngurrurdu djang ka-yo djang-kurrme-rr-inj

"That emu of ours is a dreaming, she put herself
in the landscape as a dreaming"

Ku-warrde bo-yoy "Water lay in the cave"

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peter1.02.wav

Rise

"(we make a windbreak), over there"

Dalabon

Level plateau-like

(he made a spear), he made a **hook spear**"

Dalabon

"They **went along**……"

Kuninjku

"Stylized" high sustained contour – story telling
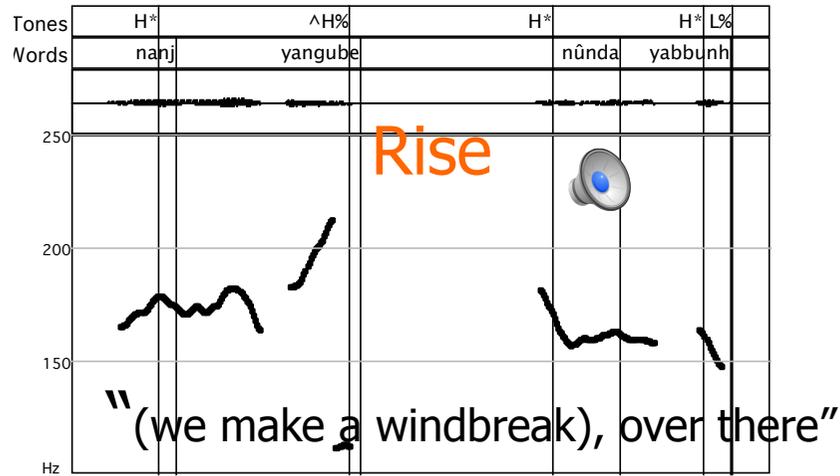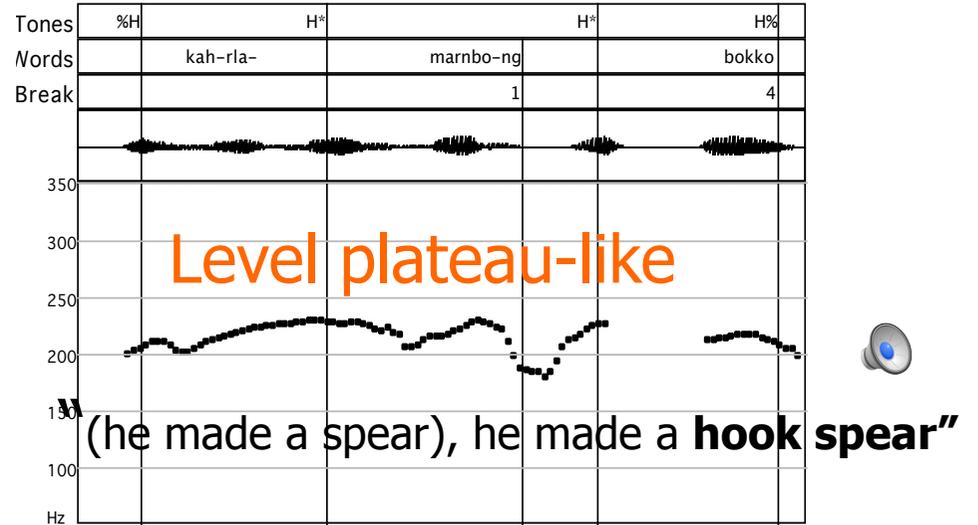
Also, Kayardild (Round 2010), Iwaidja (Birch 2002)

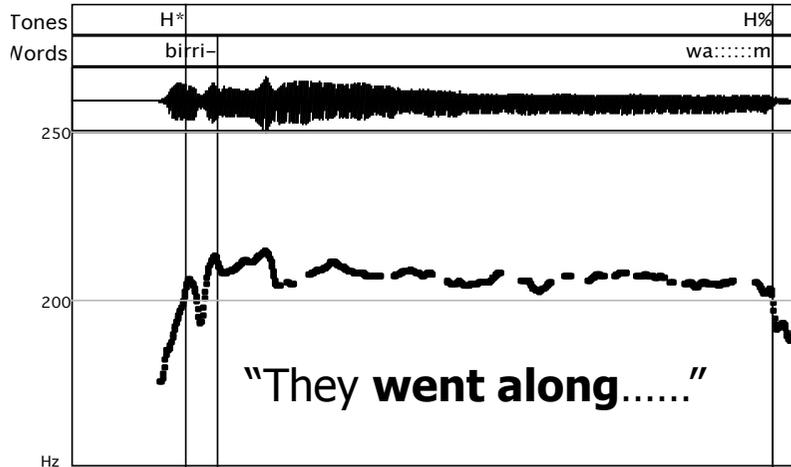- Not as much variation in tune types that we see in languages like English or German

- High falling, High/Mid Level are the major tunes

- Fewer tone target categories

90%

Pitch accents	Left-edge boundary tones	Right-edge boundary tones	Right edge Intermediate/ Accentual phrase tones
H*		L%	(Lp)
!H* **^H***		H%	(Hp)
L+H*		LH%	
		^H%	
		H:: (Stylized rise)	

2 basic pitch accent shapes
H* L+H*

Boundaries
H% or L%
Hp or Lp

e.g. English Pitch accents H* L* L+H* L*+H H+!H* H*+L,H+L*

German Pitch accents H* L* L*+H H*+L, L+H* H+L*

Intonational Phrase

Pitch accent
H*, L+H*

Boundary tone
L%, LH%, H%

Intermediate ("Accentual") Phrase

Pitch accent
H*, L+H*

Phrase tone
Lp, Hp

- Are they Head-marking?
- Edge-marking?
- Head/Edge-marking?
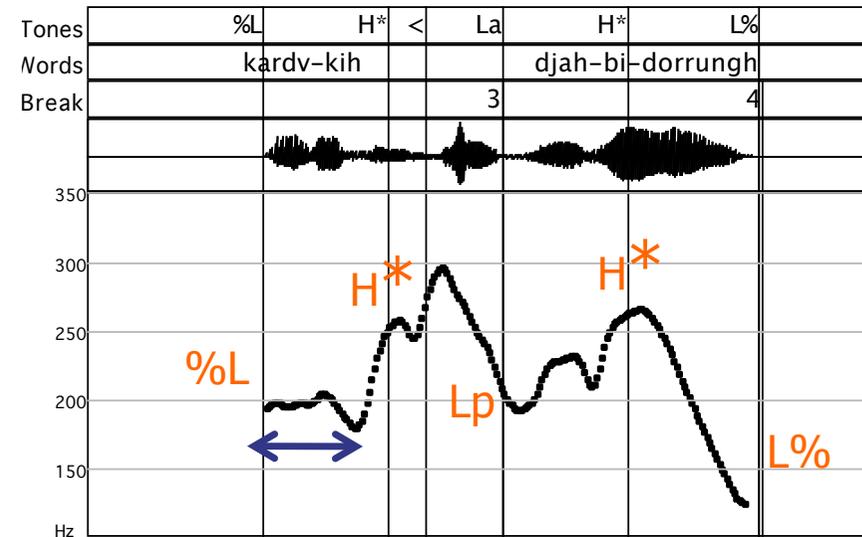
- **Pitch accents** - first or second syllable of the word in a phrase, often on the stem morpheme, also some prefixes, "stressed" syllable…

- Penultimate or final syllable of a phrase-final word

Fletcher & Evans 2002, Bishop 2003, Fletcher 2014
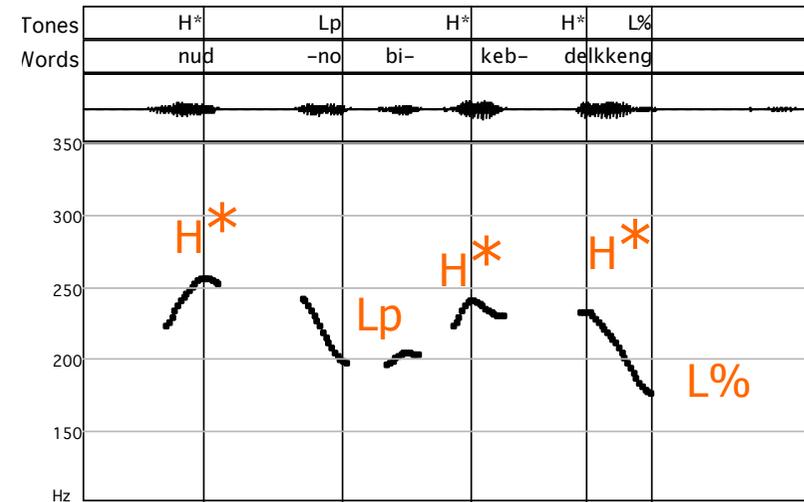
BGW - Kundedjnjenghmi

Dalabon – no accent on prefix

- **Boundary tones** mark the right edge together with pitch accents
- Prevalence of "Hat pattern" in many languages
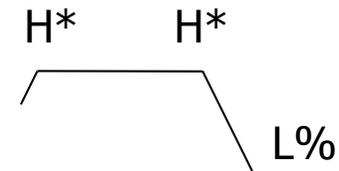
H*   H*

L%

Kundjedjedmi (BGW)

Tones	%L	H*		L+H*		L%	H*		!H*		L%	L+H*	<	L%
Words		ngale		ngurrurdu			djang		ka-yo			djang	kurrmerr-	-inj

300

H*

L+H*

250

H*

!H*

L+H*

L%

200

Hz

L%   L%

"That emu of ours is a dreaming, she put herself in the landscape as a dreaming"

Pitch range

Downstep !

Final Lowering

Pitch range reset

- Intonational Phrases often align with a single grammatical word made up of many morphemes (mildly – highly polysynthetic languages)

- words can be up to 12 morphemes long in Bininj Gun-wok!!

- Broken into smaller prosodic constituents

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Tones	H*	L+H*<		Ha	H*		H*		H*	L+H*		Final	H Lo
Words	ka-lng			–yurd–mi–nj	bulu	kah–yelûng		–berrû–			bawo–ng		
Break					3	1		1				4	
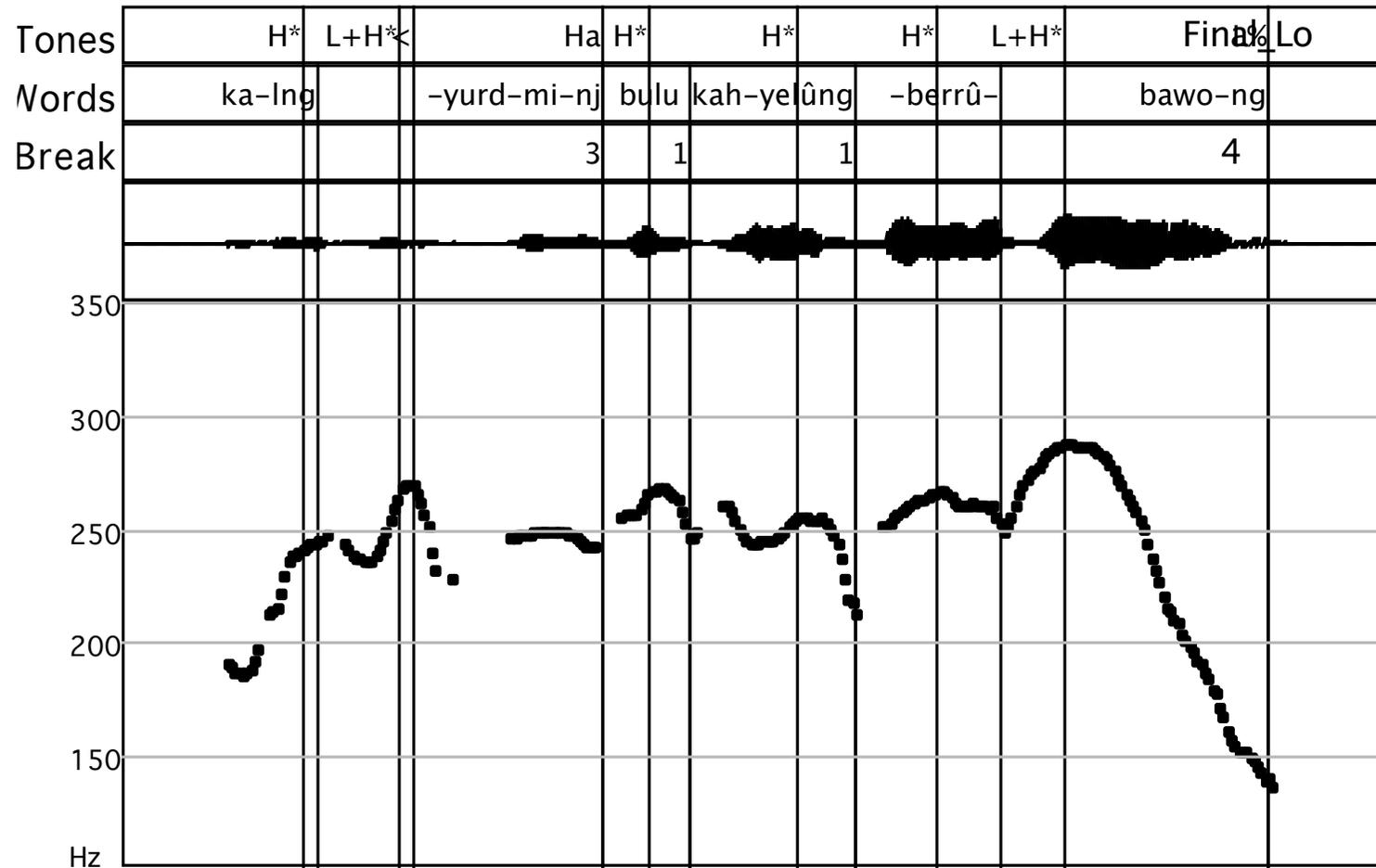
ka-lng-yurdmi-nj   *bulu*   *ka-h-yelûng-berrû-bawo-ng ...*
3SG-SEQ-run-PP   them   3SG-R-SEQ-many-leave-PP
'He ran away then and left them all.'

(Fletcher 2014, Ross 2011)

- Head-marking
- Edge-marking
- Head/Edge-marking

Why?

You can't just accent any word in a phrase, unlike English

Accents can shift 1-2 syllables into an IP, e.g. possible to have initial unccented stretch of 2-3 syllables, but pitch accents stay relatively close to edges; certain morphemes attract accents

- **Tune and sentence modality**

- Is there question versus statement intonation?

- Statements tend to either have falling intonation or mid-level, dipping intonation (for continuation)

H*   H*
                    H%

L%

Words | nganti | j(a)ingalangaka | werrk

L+H*

!H*

Lp

H*

L%

Question word
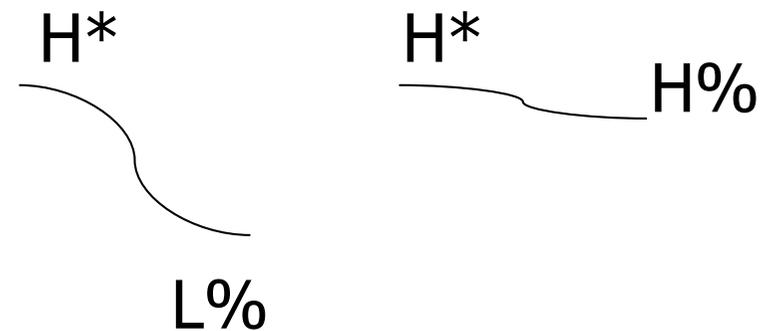
"Who is the one that she sent **first**?"
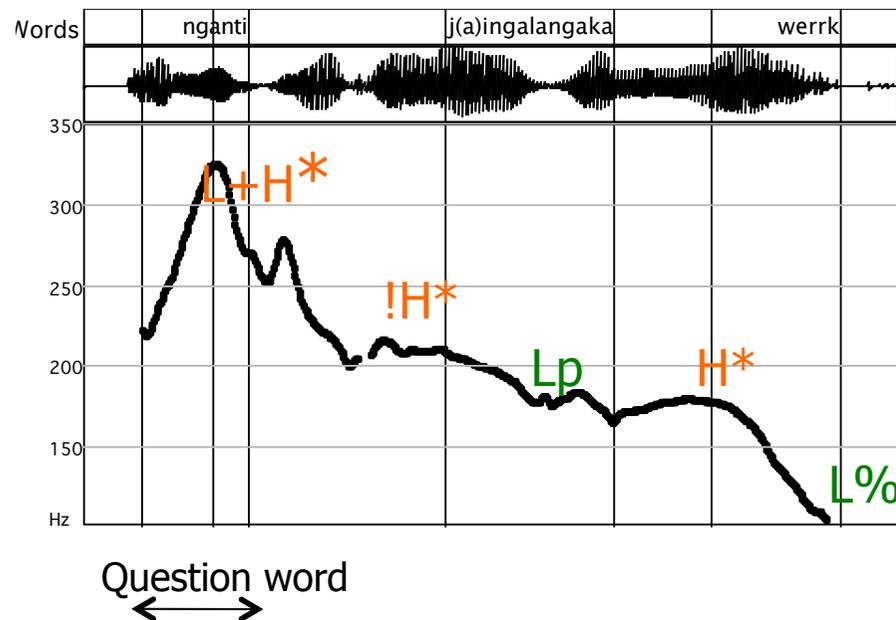
Questions – expanded pitch range of first word

Pitch compression & strong pitch downdrift on rest of sentence but no loss of auditory prominence on final word for example

- Question word is **often** first in the utterance (not unusual in the world's languages!)

- Location of the **highest pitch peak**, pitch downdrift or compression through rest of the phrase

- Similar pattern is realised **without** question word

- Are there ever question rises?

- Yes, in Warlpiri, Ngalagkan, Murrinh-patha

- People don't ask a lot of yes/no questions!!

- Rising intonation is not so prevalent

- Possibly leads to intercultural communication problems…..

- How do Australian languages use intonation to highlight important information in connected speech?

- New/salient information: **pitch accents** on some kind of constituent

- **Local pitch range or register reset** at the beginning of intonational phrases

- Suspension of global pitch downtrends

- Modification of prosodic structure can give insights on the nature of prosodic typology

(in response to " Do you have a galah open cut mine?"

- (No I've gotta DINGO open cut mine).

H+ !H*

L-L%
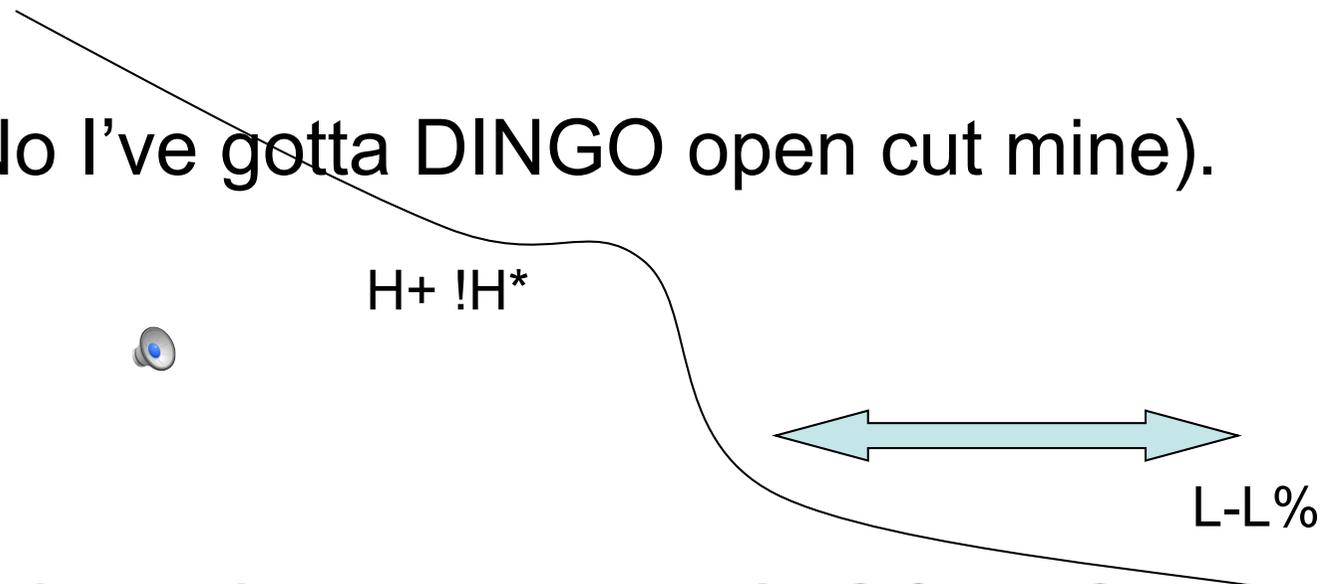
- Early nuclear accent – DINGO vs GALAH open cut mine "contrastive focus"

- Long unaccented stretch of speech after nuclear accent

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- Australian - 'free word order'

- Putting a word into initial position - **focus** (or discourse prominence) in a large number of Australian languages (Baker and Mushin 2008)

- **Rising pitch accent shape** L+H* anchored to the focused word or very high H*

- **Intonational phrasing** – focused element is also often realized as its own intonational phrase

- **Pitch range expansion** on the focused word

- **No de-accenting of following material** - pitch accents remain but overall pitch range after the highlighted element is reduced, compressed

Mawng "contrastive" focus

Speaker RM

Fronted target word (object) realised with expanded pitch range "contrastive focus"

Separate Intonational Phrase

Verb - compressed pitch range but pitch accents remain – separate Intonational phrase

Tones	H*		L%	H*	>	!H*	L%
Words			narut			arri–warnangajpu–n	
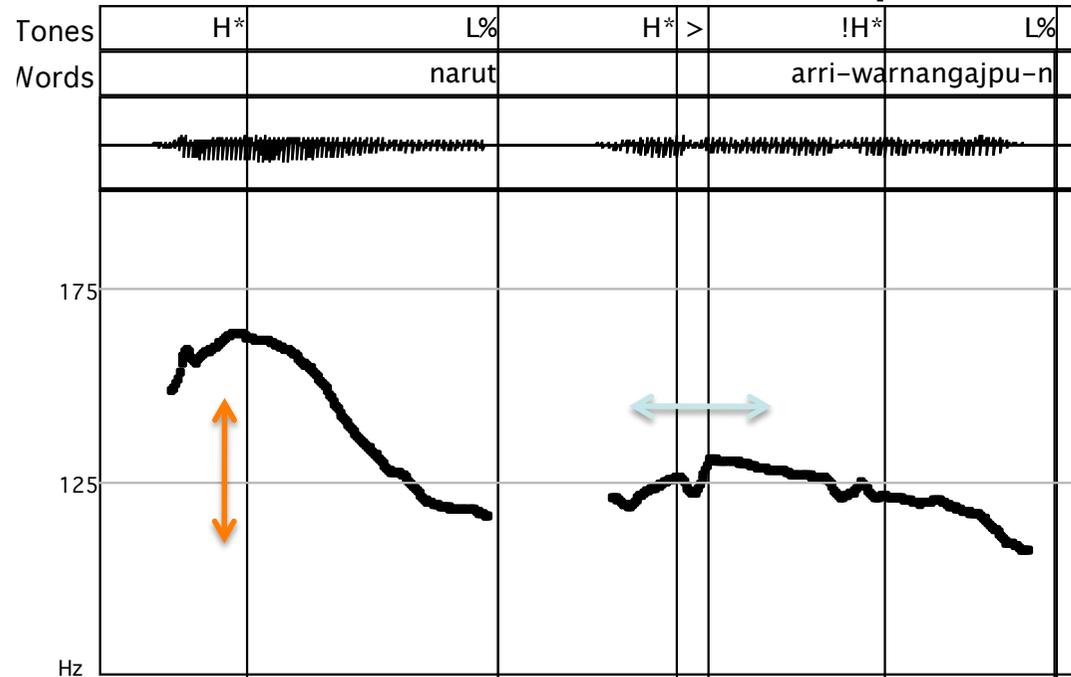
IP1   IP2

(We don't call it puffer fish)
Narut arri-warnangajpu-n
"We call it Sturgeon fish"

Speaker NN

L+H*

L+H*

!H*

Lp
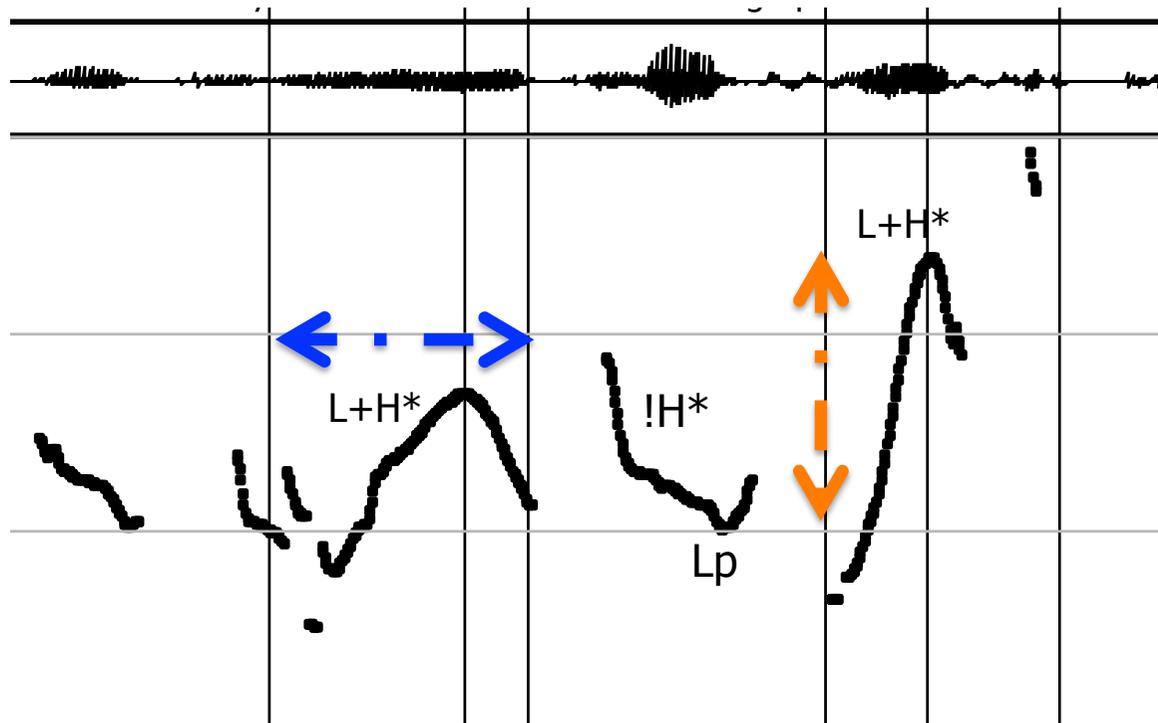
Pitch range boosting + prosodic phrasing

Question: *Kurlingka Maria k-ing-atpi-ø rabbit or karlarrk?*
             Does Maria have a rabbit or a cat?

Answer: *Makiny, Maria k-ing-atpi-ø **rabbit.*** (see pitch trace above)
             No, Maria has a rabbit.

Speaker SB

	H* HiF0	L%	H*	Lp	H*	L%
nes						
rds	jita	warrumpik	kamangawun		warlk	

250

200

150

Hz
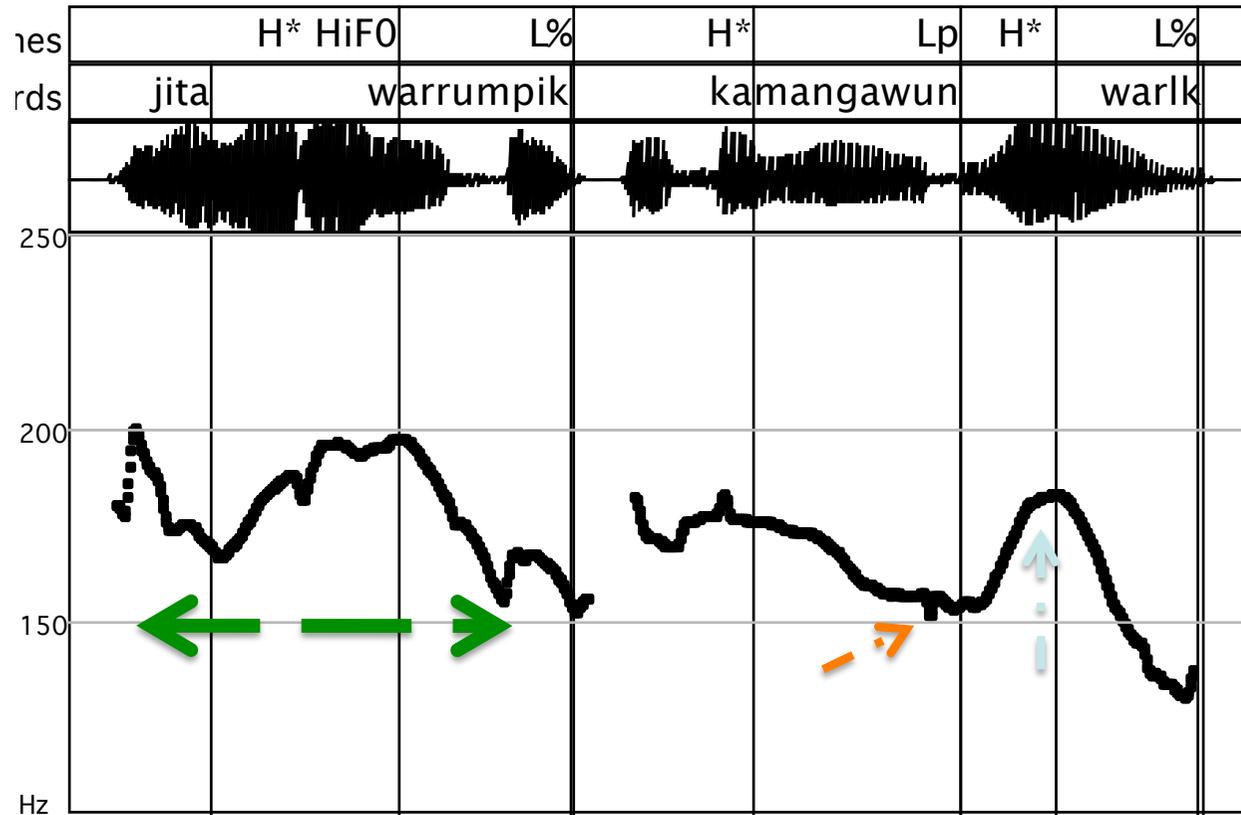
insertion of a
minor phrase
boundary
between last
two words

Subject also
realised in
own IP

(Question: Is the woman hitting the man?)
Answer: *Jita warrumpik kamanga-w-un warlk*
          The woman is hitting the tree.

- Fewer "tones" i.e. fewer intonational pitch accent shapes compared to Germanic languages, e.g. German, Dutch, English; fewer complex intonational conours

- Importance of **intonational phrasing** and **pitch range manipulation** to signal a range of "traditional" functions associated with intonation

- Our language consultants
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- Australian Research Council and University of Melbourne

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