



Prosody transfer - German speakers acquiring Mandarin tones



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INTRODUCTION

Although producing lexical tones in citation form is unproblematic for English native speakers acquiring Mandarin Chinese, these same speakers appear to have great difficulties producing tones in connected speech (Shih, 2010 [1]).

Do (advanced) German learners of Mandarin have difficulties with utterance level tonal implementation?

German prosody: Marking of new information and focus with a peak accent (containing H*)

Sparse tonal specification; LH has the same tune as L H (H not associated with a specific syllable)

LH
ja
sicher

Mandarin prosody: Pitch range and postfocal compression [3], no pitch accent to mark focus. Specification of tone for each syllable, even the neutral tone has a target [4]. Distribution of HL melody over two syllable [5]

SPEAKERS

6 (1 x male, 5 x female) native speakers of Mandarin (L1). All grew up in northern China, between 20 and 35 years old.

6 (3 x male, 3 x female) German native speakers, learning Mandarin as L2 for at least 3 years. All German subjects have spent one year in China and are between 20 and 30 years old.

SPEECH MATERIAL

Sentence frame Wǒ kàn jiàn Noun1 zài Noun2 shàng.
“I see Noun1 on Noun2 (on).

Target words and focus conditions

Noun 1: 4 disyllabic nouns, neutral tone on second syllable (tone sequences 1-0, 2-0, 3-0 and 4-0)

Noun 2: 4 disyllabic nouns, tone 3 on first syllable (tone sequences 3-1, 3-2, 3-3 and 3-4)

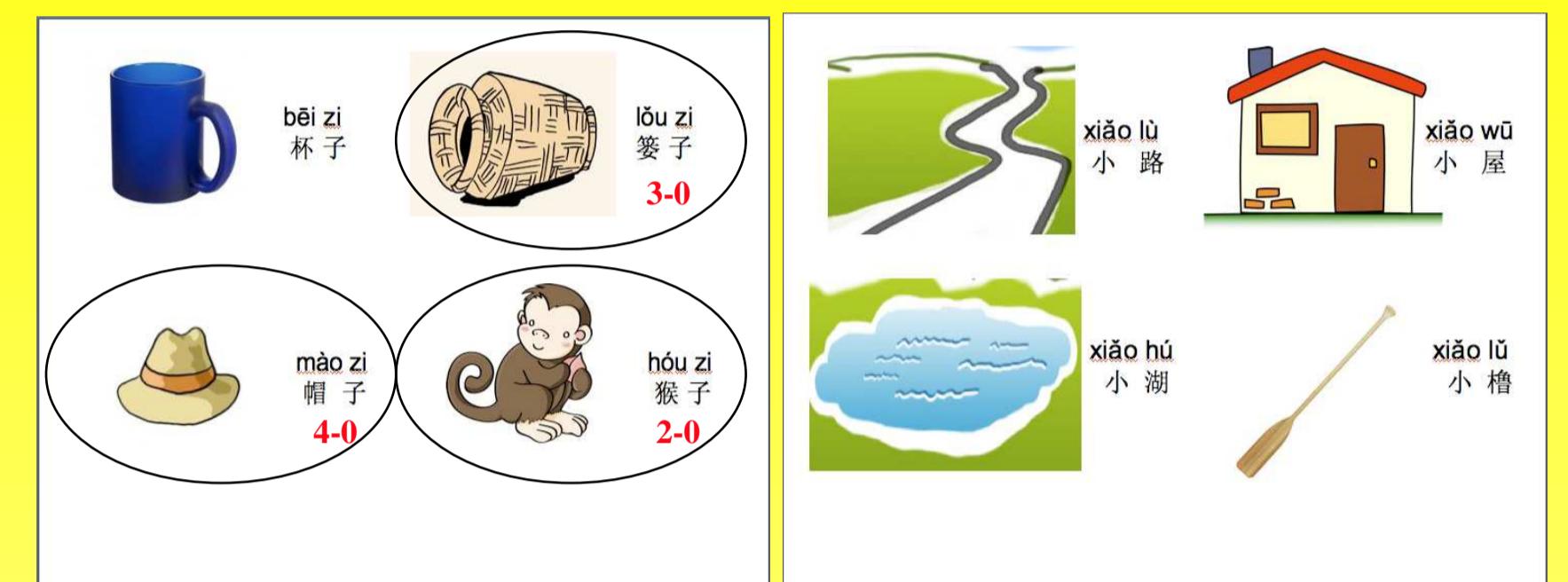
3 Narrow focus on Noun1, Noun2, broad focus

4 x 4 x 3 = 48 sentences

SUMMARY

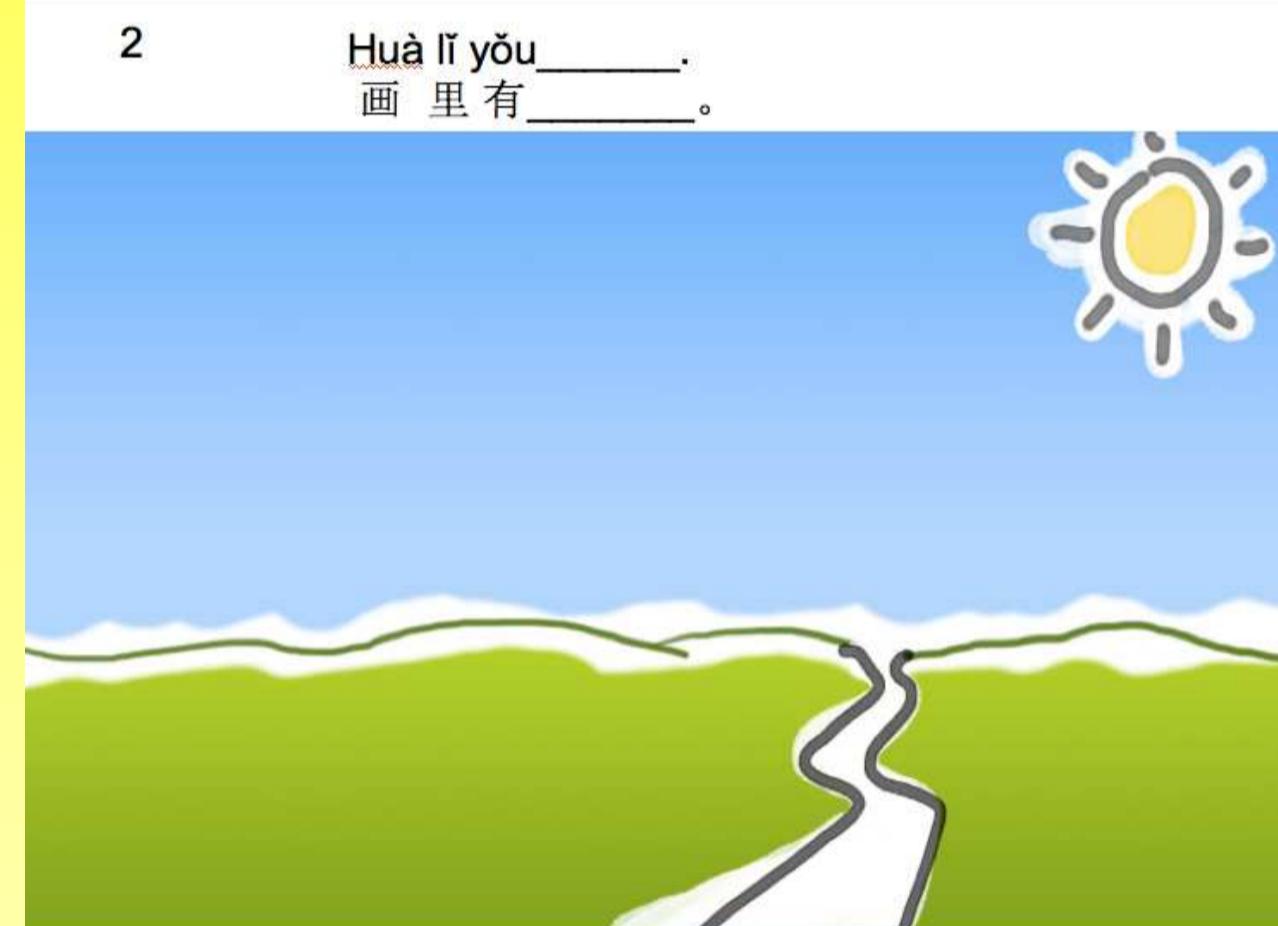
- 2-0 and 3-0 German learners realize a pitch peak, akin to pitch accent (H*)
- Possibly preferring a H tone for marking prominence
- 4-0 German learners have fewer problems with 4-0 combination, as H and L distributed over two syllables, realisations more native-like prefocally
- Transfer of L1 to L2 prosody is more evident in non-native production when words are in focus than prefocally

Subjects were familiarized with the eight test objects and given their names in pinyin and Chinese characters before the recordings began. The subjects were recorded reading sentences accompanying each picture. Some of these sentences contain gaps that speakers were instructed to fill with one of the eight test words.



PROCEDURE

LEFT:
There is a road on the picture.



RIGHT:
What do you see on the road?
I see the basket on the road.

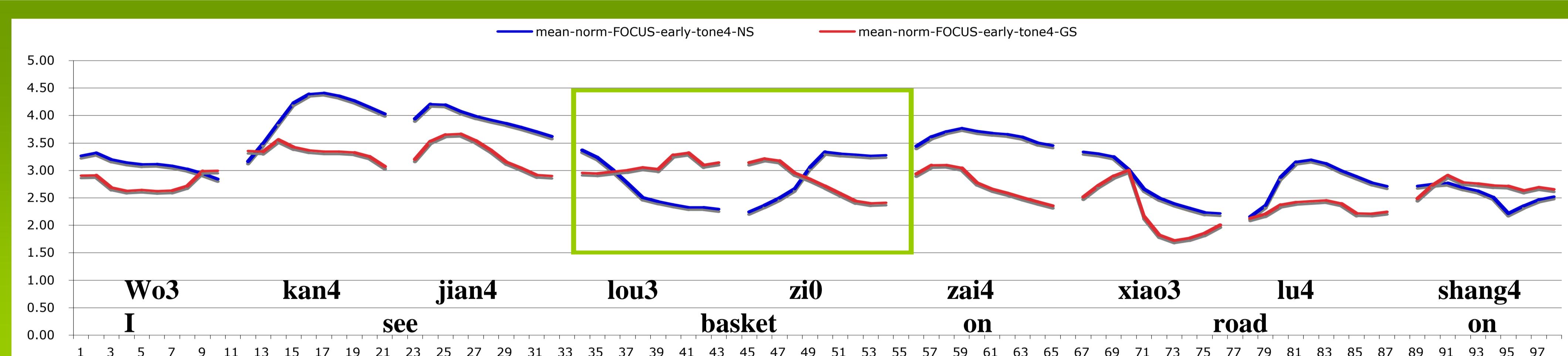


LEFT:
There is a basket on the picture.

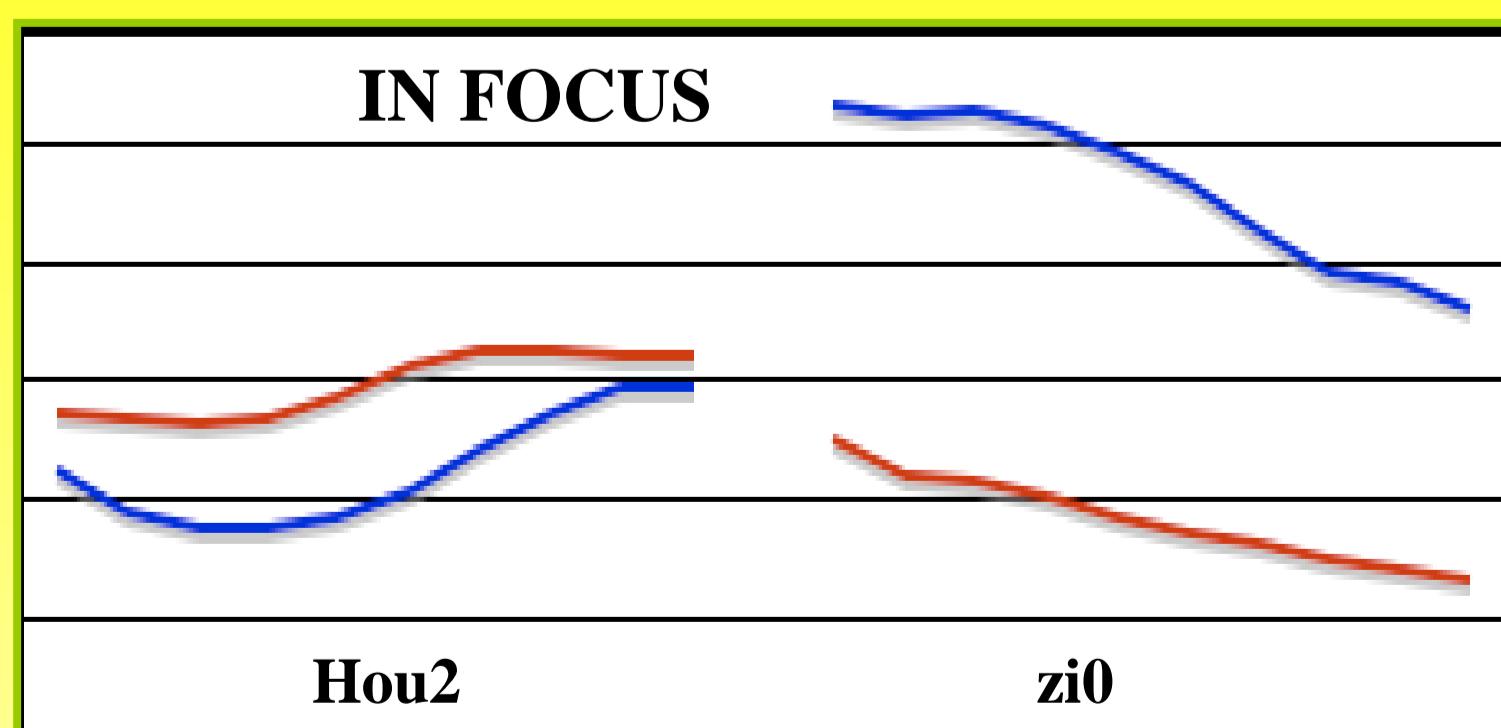
RIGHT:
What do you see the basket on?
I see the basket on the road.

Blue = native speakers
Red = German speakers

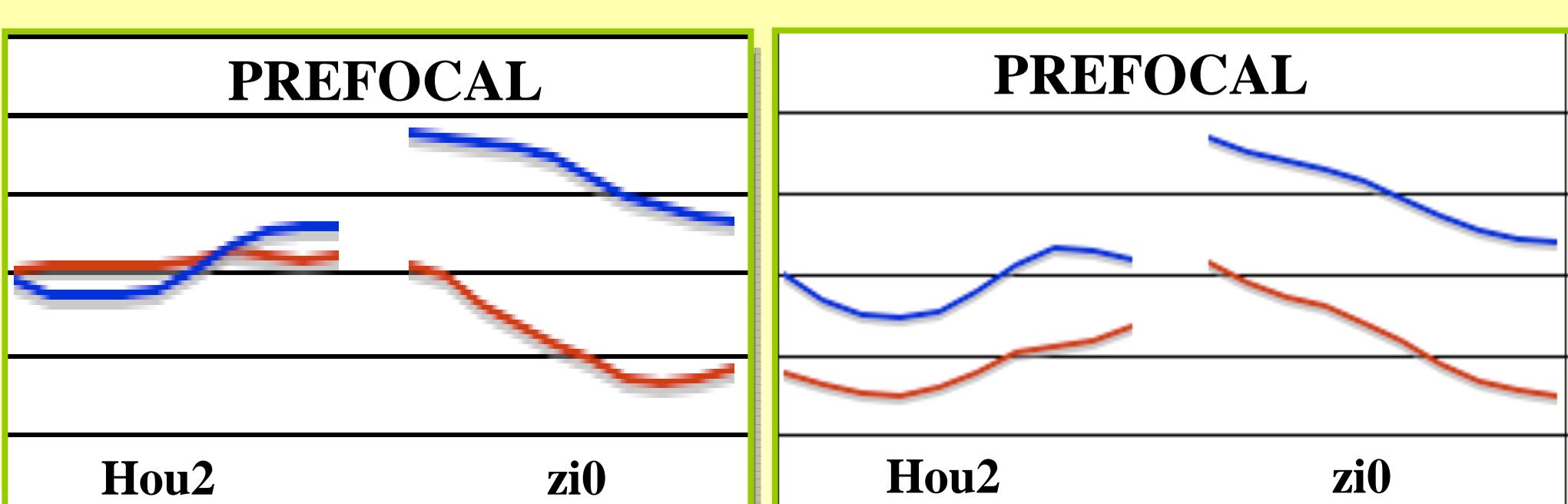
Averaged contours
(6 speakers per group)
normalised in time and frequency domains [6]



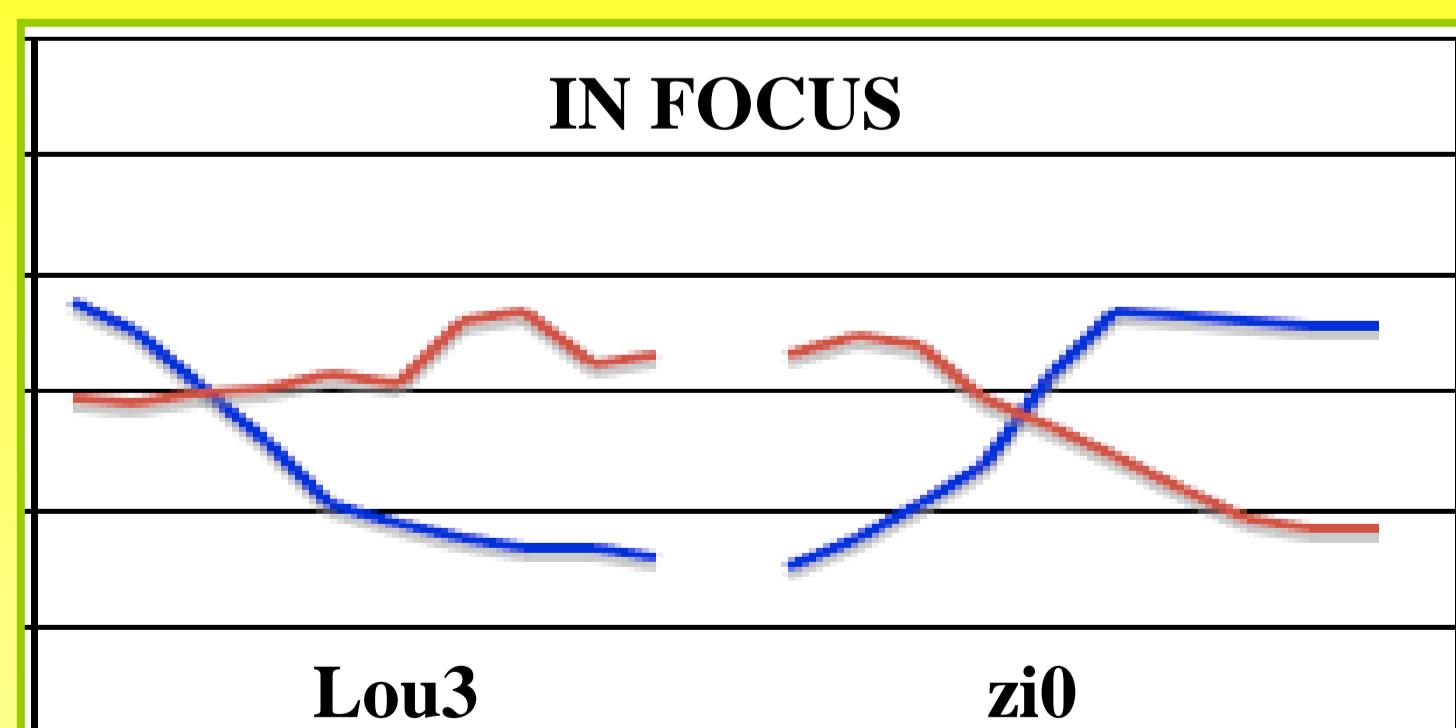
For 2-0 combination in focus, natives place the H peak on second syllable, German L2 place peak on first (stressed) syllable (like H*)



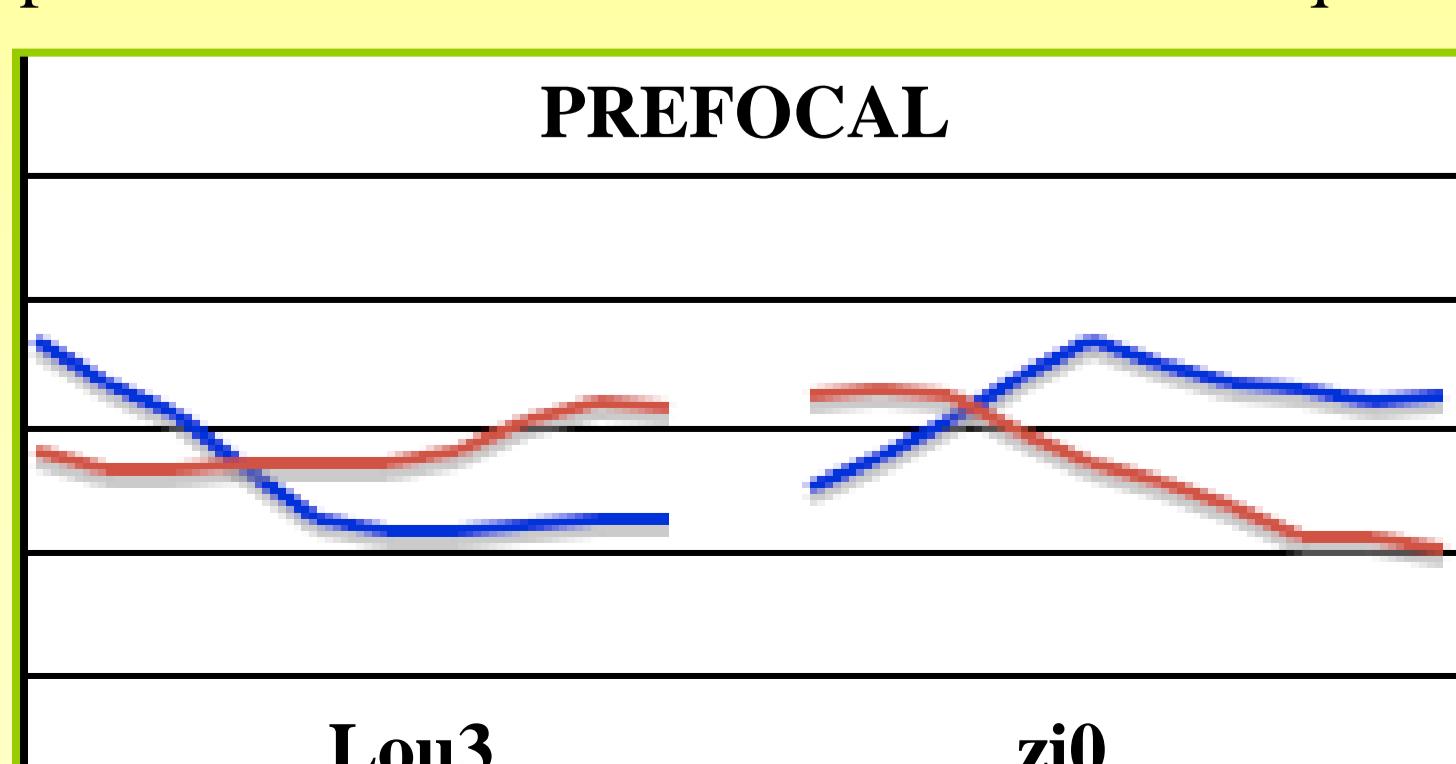
Prefocally, L2 contours closer to native speakers' productions (contextual variation determined by Noun2)



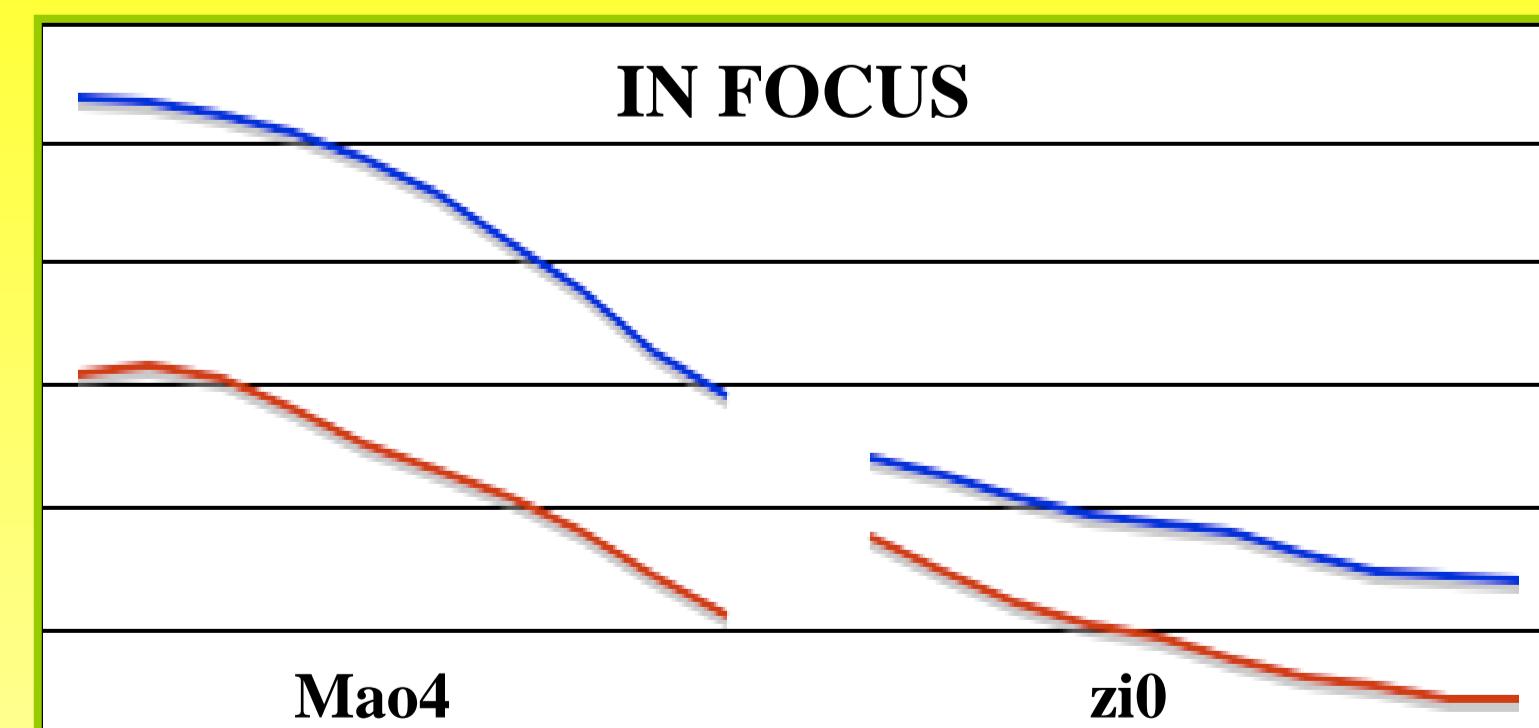
Although native 3-0 is a valley contour, German L2 produce a contour resembling a peak accent (H*)



Even in prefocal position, German learners fail to produce the correct contour for tone 3-0 sequence



For 4-0 combination, natives distribute the HL melody over both syllables, L2 productions only minimally different



L2 prefocal realisation can be native-like in some contexts, contextual variation not evident in native productionse

