

< Some major data from Kubozono (To appear in 2006) >

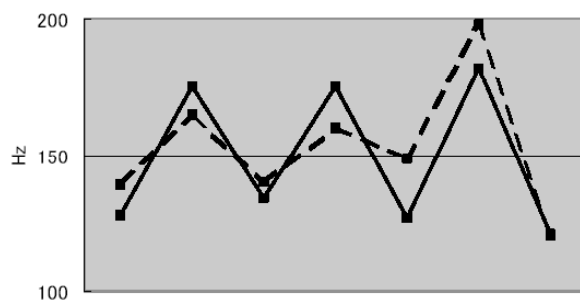
(13) Experimental sentences:

- a. [AA-Wh] ...aómori-de náoko-to náni-o...
‘What did you see with Naoko in Aomori?’
- b. [AU-Wh] ...aómori-de naomi-to náni-o...
‘What did you see with Naomi in Aomori?’
- c. [UA-Wh] ...oomori-de náoko-to náni-o...
‘What did you see with Naoko in Oomori?’
- d. [UU-Wh] ...oomori-de naomi-to náni-o...
‘What did you see with Naomi in Oomori?’

Table 1: Statistics of the peak F0 values (in Hz) in (13a) and (13d)

Speaker	Peak of Wh in (13a)	Peak of Wh in (13d)	T value	P value
TS (male)	146.2	153.7	2.630	p<0.05
TY (male)	139.7	156.3	2.297	p<0.05
JI (male)	205.9	222.6	3.393	p<0.01
AO (male)	184.3	196.2	4.005	p<0.01
AK (female)	277.8	289.4	2.202	p<0.05
NI (male)	179.4	182.5	0.415	p=0.683
MM (female)	271.9	281.9	1.445	p=0.165

Figure 4: Schematic comparison of the pitch contours
— [AA-Wh] (solid line) vs. [UU-Wh] (dashed line)



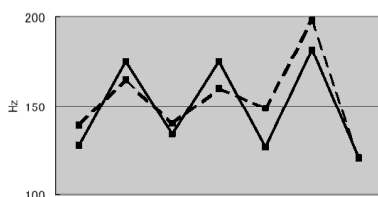
< Discussion >

In this pilot experiment, a pair of sentences as in (1) were compared:

- (1)a. ana'ta-wa ao'mori-de na'oko-to NA'ni-o mima'sita-ka?
you-TOP Aomori-in Naoko-with what-ACC saw-COMP_{WH}
'What did you see with Naoko in Aomori?'
- b. ana'ta-wa oomori-de naomi-to NA'ni-o mima'sita-ka?
you-TOP Oomori-in Naomi-with what-ACC saw-COMP_{WH}
'What did you see with Naomi in Oomori?'

In Wh-questions in (1), the Wh element, *NA'ni* 'what', bears focus. (1a) contains a sequence of lexically accented elements before the focused Wh-word, whereas (1b) involves a sequence of lexically unaccented elements in the same position. The production experiment which used seven native speakers of Tokyo Japanese as subjects has shown the following two points. First, the focused Wh-elements in (1) receive pitch boost and are actually given much higher pitch than their surrounding elements. This clearly indicates that the focused elements receive prominence in prosodic terms, too.¹ Second, the focused Wh-elements in (1) nevertheless exhibit pitch differences between (a) and (b). That is, focused Wh-elements are realized at a considerably lower pitch region when they follow accented phrases in (1a) than when they follow unaccented phrases in (1b).² This tendency was shown by all seven speakers, and the difference was statistically significant (by a two-tailed t test) for five of those speakers ($p < 0.05$ for three speakers, $p < 0.01$ for two speakers, $p = 0.683$ for one speaker, and $p = 0.165$ for one speaker). The average pitch contours of [AA-Wh] (solid line) as in (1a) and that of [UU-Wh] (dashed line) as in (1b) are schematically compared in the Figure 4 (repeated here as (2)).

- (2) A/U A/U Wh



This clearly indicates that the pitch height of the focused Wh-elements is influenced by the accentedness of the material immediately preceding them, and the intonational process of downstep is NOT blocked by the left boundary of the FPD according to the paradigmatic definition of the term. This result suggests that focus does not block downstep, and hence does not introduce a new major (or intermediate) phrase boundary as long as this phonological phrase is defined as the domain of downstep.

¹ This experimental result supports the view that FPD is a normal prosodic pattern for Wh-questions in Tokyo Japanese, contrary to what Nishigauchi (1990) suggests. cf. Kitagawa (2005) for further support.

² The average pitch of F_0 was measured concerning the high tone of the prominent Wh-phrase in several recordings.