

Variation and change in the nominal pitch-accent system of South Kyungsang Korean

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Supplementary materials

1 Statistical results of the acoustic measurements

This section contains the results of an ANOVA analysis of the acoustic measurements of the various tonal patterns given in §4.1 of the paper.

			F0 scaling (Hz)			F0 duration (ratio)		
			<i>F</i>	<i>df</i>	<i>p</i>	<i>F</i>	<i>df</i>	<i>p</i>
HL	F0 _{min}	Group	16.06	1,17	<0.01	0.04	1,17	0.84
		Syllable	149.96	3,51	<0.01	208.01	3,51	<0.01
		Group × Syllable	32.91	3,51	<0.01	1.23	3,51	0.31
	F0 _{max}	Group	6.89	1,17	0.01	3.16	1,17	0.09
		Syllable	177.44	3,51	<0.01	227.11	3,51	<0.01
		Group × Syllable	14.74	3,51	<0.01	8.21	3,51	<0.01
H(H)	F0 _{min}	Group	15.63	1,17	<0.01	20.96	1,17	<0.01
		Syllable	79.80	2,34	<0.01	119.50	2,34	<0.01
		Group × Syllable	16.21	2,34	<0.01	31.86	2,34	<0.01
	F0 _{max}	Group	9.86	1,17	<0.01	29.91	1,17	<0.01
		Syllable	37.26	2,34	<0.01	150.55	2,34	<0.01
		Group × Syllable	32.25	2,34	<0.01	29.52	2,34	<0.01

			F0 scaling (Hz)			F0 duration (ratio)		
			<i>F</i>	<i>df</i>	<i>p</i>	<i>F</i>	<i>df</i>	<i>p</i>
HH	F0 _{min}	Group	12.9	1,17	<0.01	10.34	1,17	<0.01
		Syllable	170.68	3,51	<0.01	79.30	3,51	<0.01
		Group × Syllable	7.62	3,51	<0.01	21.87	3,51	<0.01
	F0 _{max}	Group	9.47	1,17	<0.01	4.46	1,17	0.04
		Syllable	167.37	3,51	<0.01	83.81	3,51	<0.01
		Group × Syllable	13.62	3,51	<0.01	16.87	3,51	<0.01
R	F0 _{min}	Group	26.69	1,16	<0.01	6.86	1,17	0.01
		Syllable	72.30	2,33	<0.01	205.5	2,34	<0.01
		Group × Syllable	8.42	2,33	<0.01	17.5	2,34	<0.01
	F0 _{max}	Group	15.43	1,16	<0.01	0.14	1,17	0.71
		Syllable	159.98	2,33	<0.01	136.30	2,34	<0.01
		Group × Syllable	6.86	2,33	<0.01	22.48	2,34	<0.01
LH(H)	F0 _{min}	Group	49.23	1,17	<0.01	9.84	1,17	<0.01
		Syllable	88.45	3,51	<0.01	110.37	3,51	<0.01
		Group × Syllable	12.11	3,51	<0.01	16.56	3,51	<0.01
	F0 _{max}	Group	37.06	1,17	<0.01	4.74	1,17	0.04
		Syllable	63.70	3,51	<0.01	116.16	3,51	<0.01
		Group × Syllable	7.17	3,51	<0.01	21.85	3,51	<0.01
H	F0 _{min}	Group	25.31	1,16	<0.01	1.83	1,17	0.19
		Syllable	94.22	2,32	<0.01	60.20	2,34	<0.01
		Suffix	6.30	2,32	<0.01	40.86	2,34	<0.01
		Group × Syllable	41.45	2,32	<0.01	5.50	2,34	<0.01
		Group × Suffix	9.38	2,32	<0.01	10.37	2,34	<0.01
		Syllable × Suffix	50.24	3,49	<0.01	19.44	3,51	<0.01
		Group × Syllable × Suffix	26.11	3,49	<0.01	11.18	3,51	<0.01
	F0 _{max}	Group	8.69	1,16	<0.01	8.11	1,17	0.01
		Syllable	52.38	2,32	<0.01	76.24	2,34	<0.01
		Suffix	2.54	2,32	0.09	27.00	2,34	<0.01
		Group × Syllable	27.59	2,32	<0.01	13.07	2,34	<0.01
		Group × Suffix	10.19	2,32	<0.01	13.17	2,34	<0.01
		Syllable × Suffix	74.4	3,49	<0.01	22.23	3,51	<0.01
		Group × Syllable × Suffix	34.97	3,49	<0.01	9.86	3,51	<0.01

LH	F0 _{min}	Group Syllable Suffix Group × Syllable Group × Suffix Syllable × Suffix Group × Syllable × Suffix	F0 scaling (Hz)			F0 duration (ratio)		
			<i>F</i>	<i>df</i>	<i>p</i>	<i>F</i>	<i>df</i>	<i>p</i>
			27.79	1,16	<0.01	3.54	1,17	0.07
85.13	3,48	<0.01	174.87	3,51	<0.01			
19.79	2,32	<0.01	14.52	2,34	<0.01			
4.56	3,48	<0.01	15.17	3,51	<0.01			
1.24	2,32	0.30	0.81	2,34	0.45			
50.48	5,82	<0.01	13.74	5,85	<0.01			
0.28	5,82	0.92	1.08	5,85	0.38			
F0 _{max}	Group	20.19	1,16	<0.01	9.24	1,17	<0.01	
	Syllable	73.98	3,48	<0.01	83.01	3,51	<0.01	
	Suffix	5.47	2,32	<0.01	8.40	2,34	<0.01	
	Group × Syllable	3.28	3,48	0.02	24.64	3,51	<0.01	
	Group × Suffix	2.43	2,32	0.10	0.46	2,34	0.63	
	Syllable × Suffix	28.67	5,82	<0.01	7.56	5,85	<0.01	
	Group × Syllable × Suffix	0.82	5,82	0.53	0.25	5,85	0.93	

2 Data plots of the F0 scaling and timing measurements

This section contains figures with boxplots giving the distribution of the measured F0 scaling and timing values of the various tonal patterns given in §4.1 of the paper. The boxplots shows the first, second (i.e. median) and third quartiles with whiskers (including ± 1.5 times the first and third quartiles). For F0 scaling properties, minimum and maximum values within syllables show which syllable has the highest peak and the degree to which peak values are comparable across adjacent syllables. F0 timing properties indicate the location of the F0 minimum and maximum values within syllables, providing information about pitch movement within syllables; a F0_{max} occurring later than a F0_{min} within a syllable would suggest a rising contour or a peak at the right edge of a syllable, whereas the opposite would mean a falling contour or a peak at the left edge of a syllable.

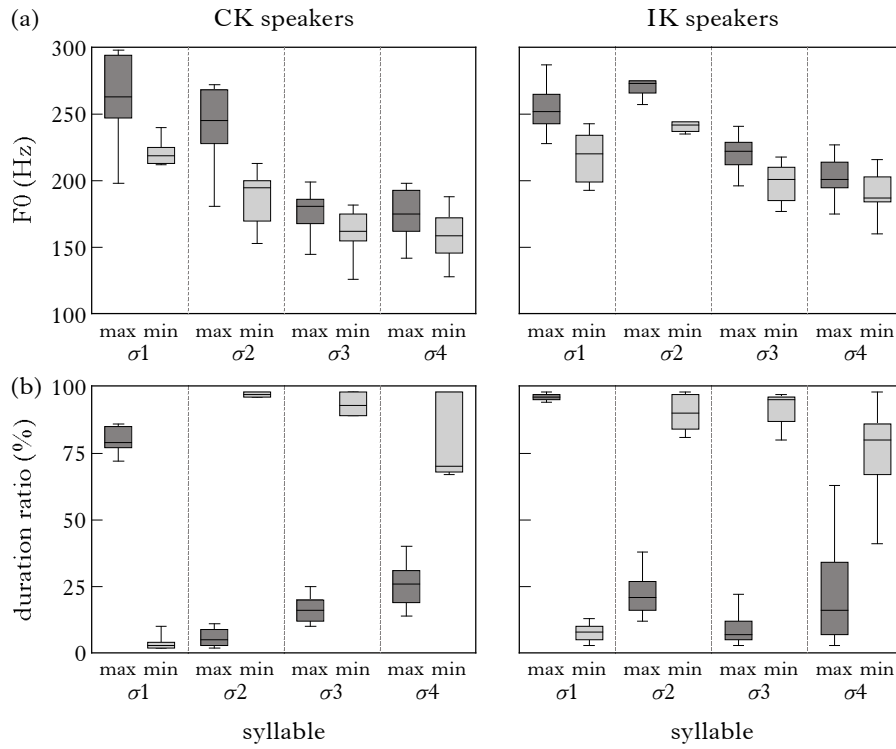


Figure 8

Distribution of (a) F0 scaling and (b) duration measures for HL for conservative and innovative Kyungsang speakers.

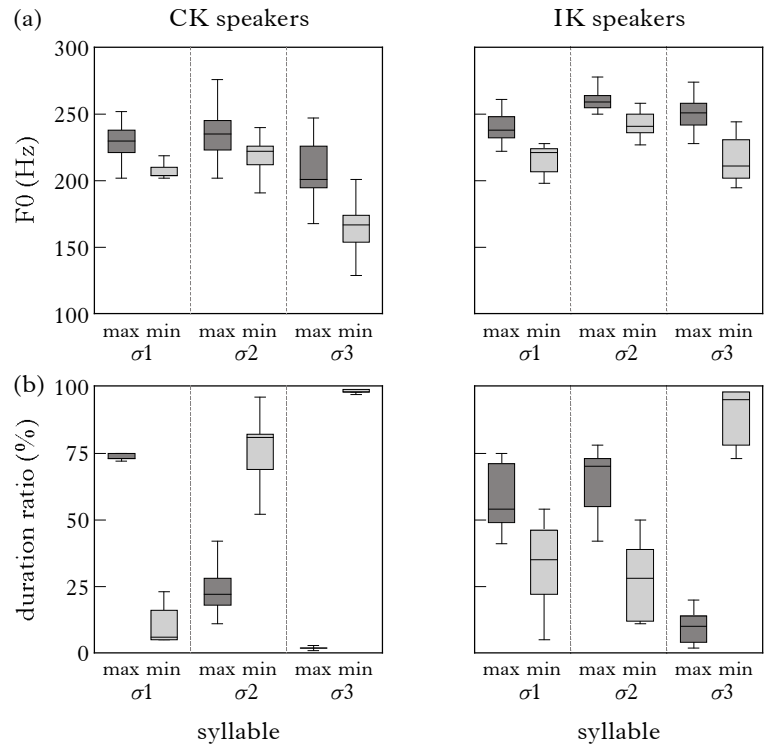


Figure 9

Distribution of (a) F0 scaling and (b) duration measures for H(H) for conservative and innovative Kyungsang speakers.

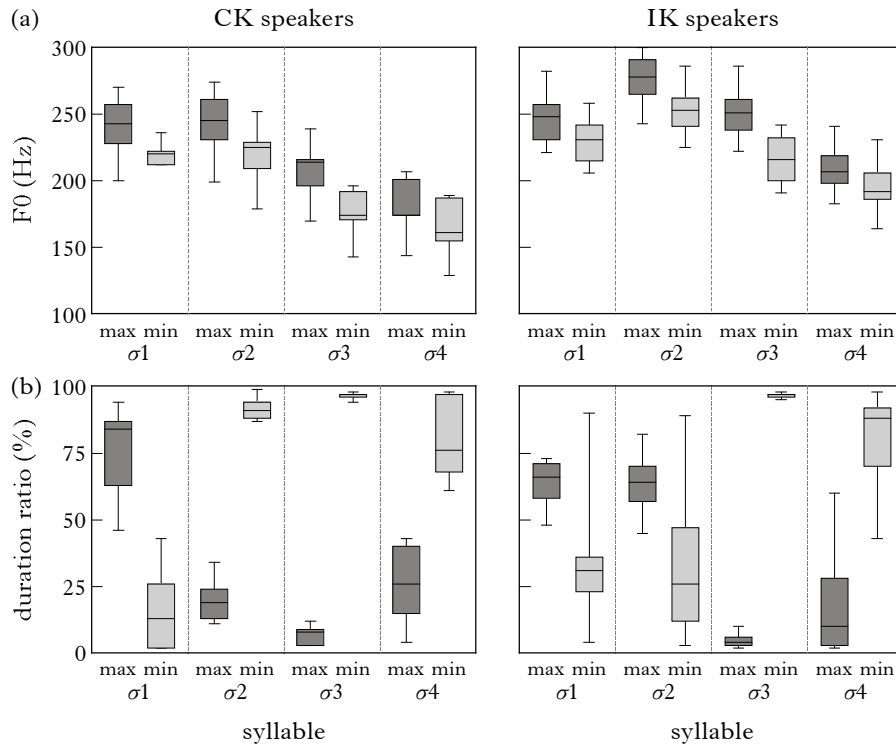


Figure 10

Distribution of (a) F0 scaling and (b) duration measures for HH for conservative and innovative Kyungsang speakers.

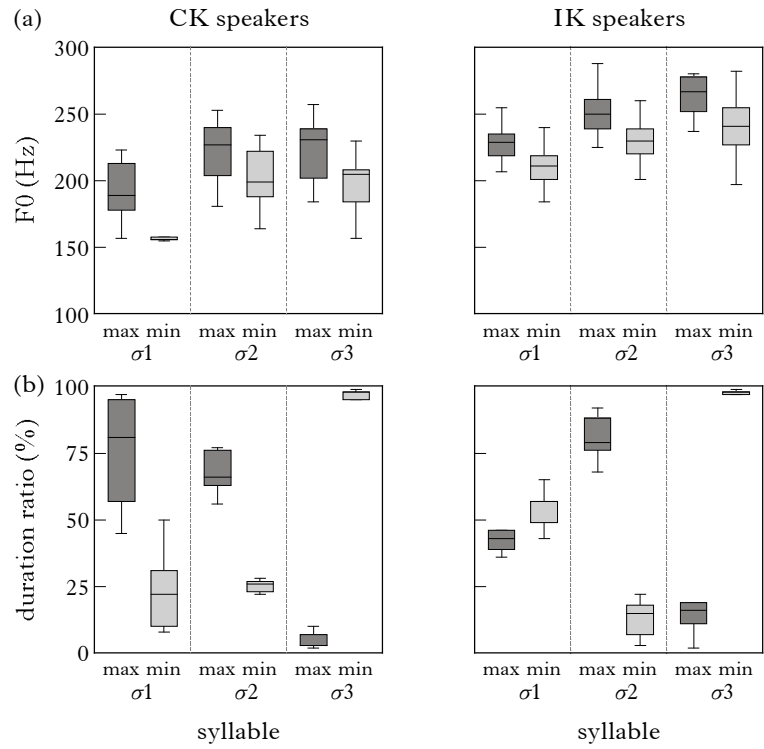


Figure 11

Distribution of (a) F0 scaling and (b) duration measures for R for conservative and innovative Kyungsang speakers.

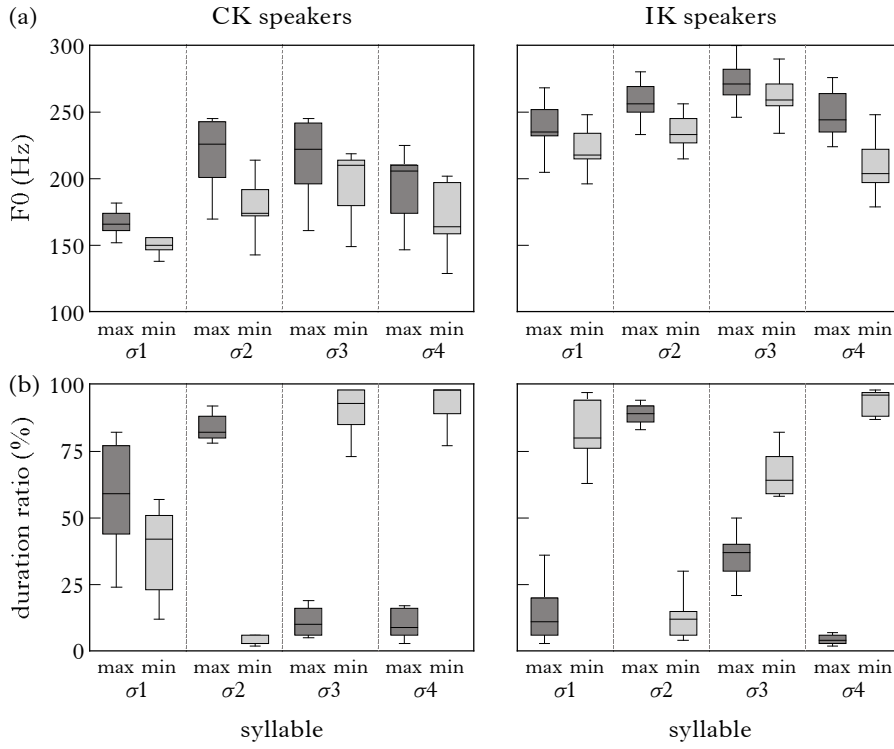
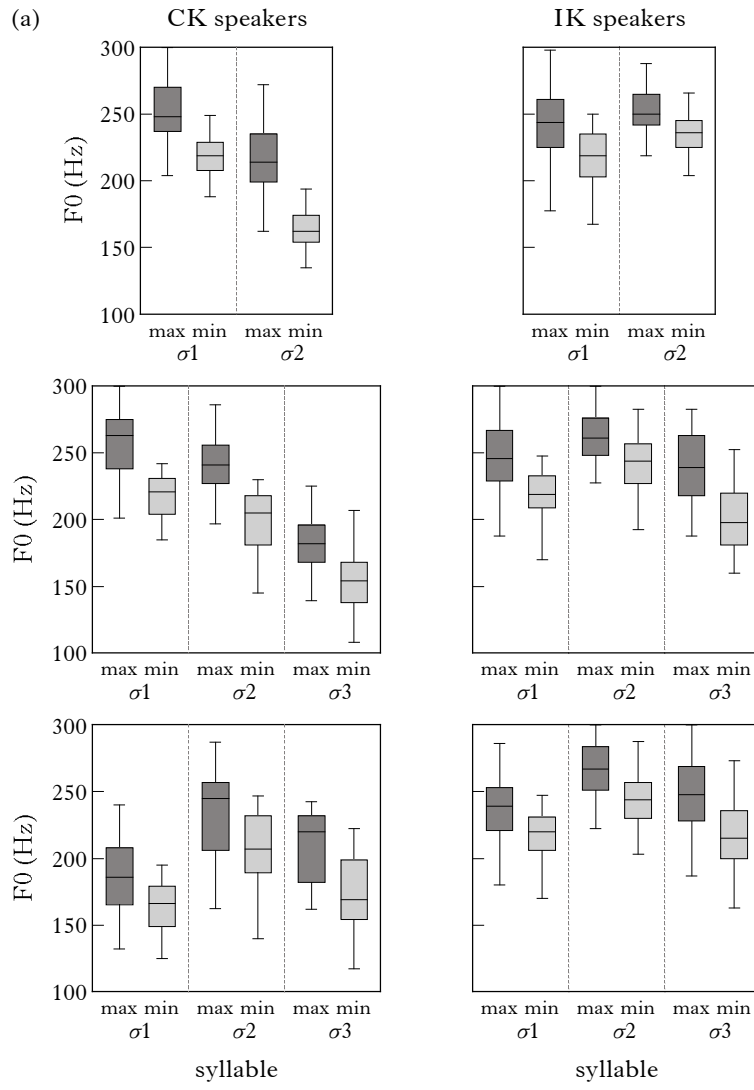


Figure 12

Distribution of (a) F0 scaling and (b) duration measures for LH(H) for conservative and innovative Kyungsang speakers.



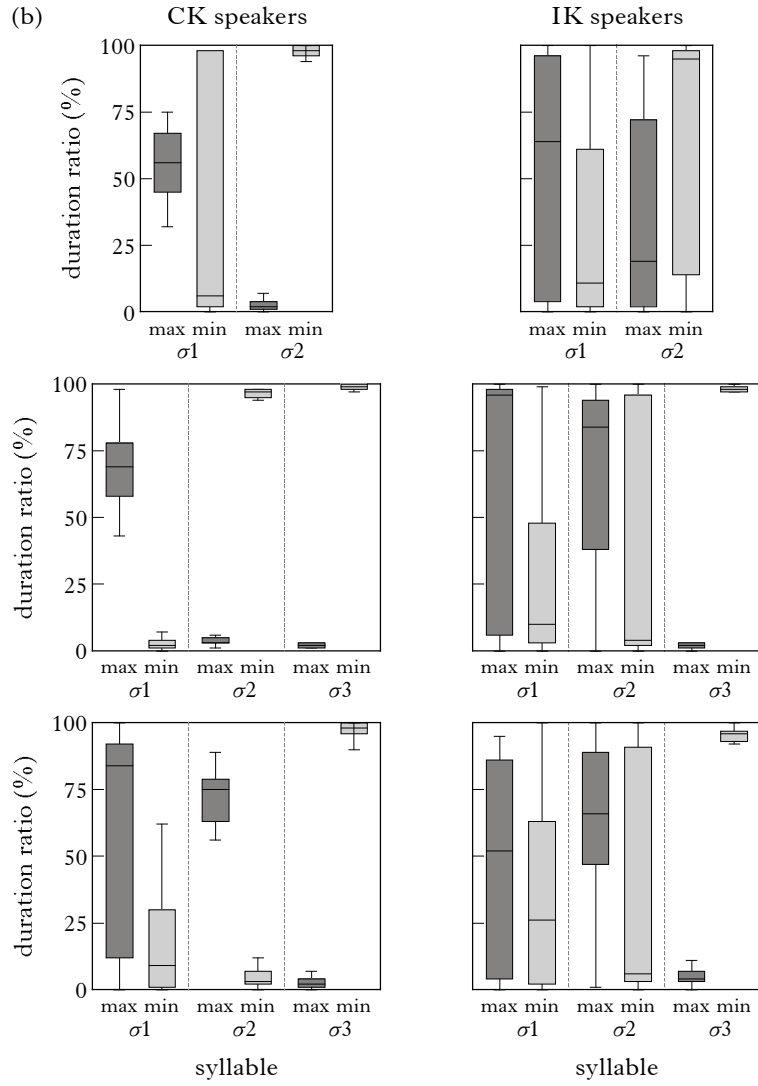
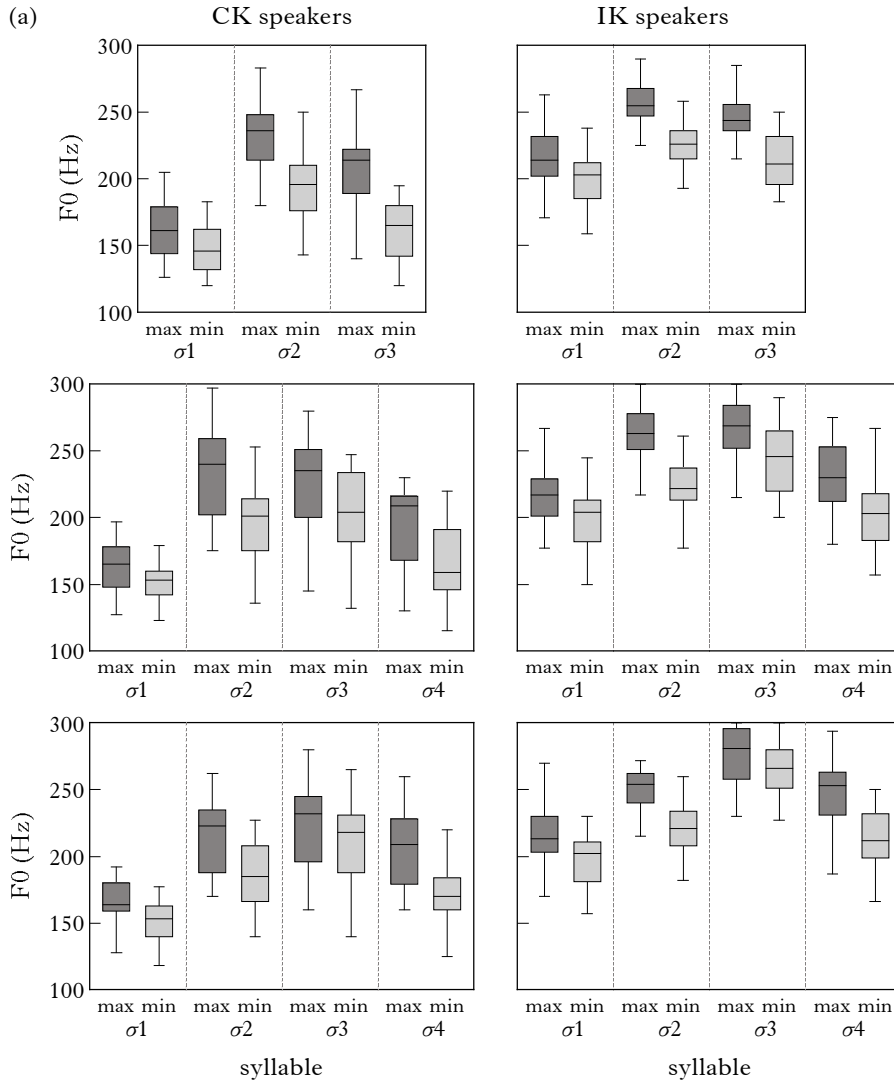


Figure 13

Distribution by suffix (*-i* (upper), *-imyen* (middle) and *-pota* (lower)) of (a) F0 scaling and (b) duration measures for H for conservative and innovative Kyungsang speakers.



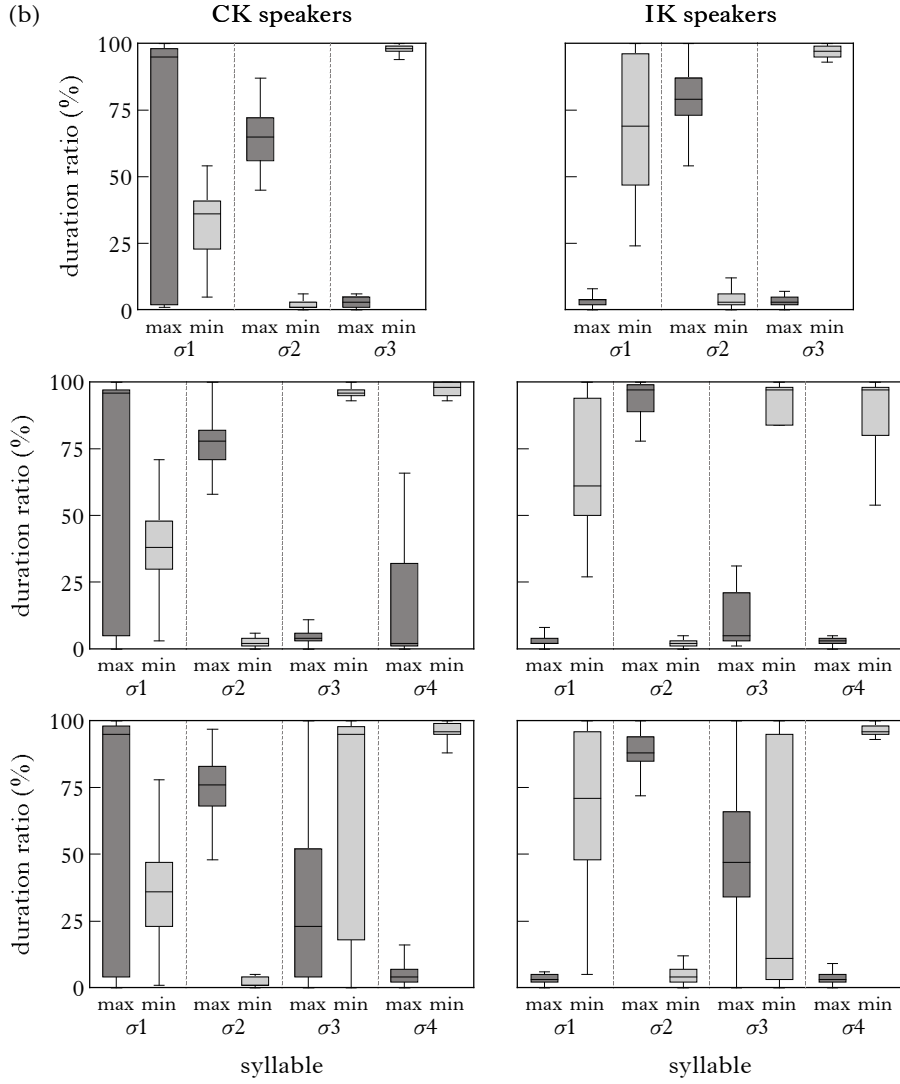


Figure 14

Distribution by suffix (*-i* (upper), *-imyen* (middle) and *-pota* (lower)) of (a) F0 scaling and (b) duration measures for LH for conservative and innovative Kyungsang speakers.

3 Individual variation

The figures in this section show individual data for each of the nine conservative and ten innovative Kyungsang speakers, and give the proportion of the observed tonal patterns for HL and H(H) and for LH-*imyen* and LH-*pota*.

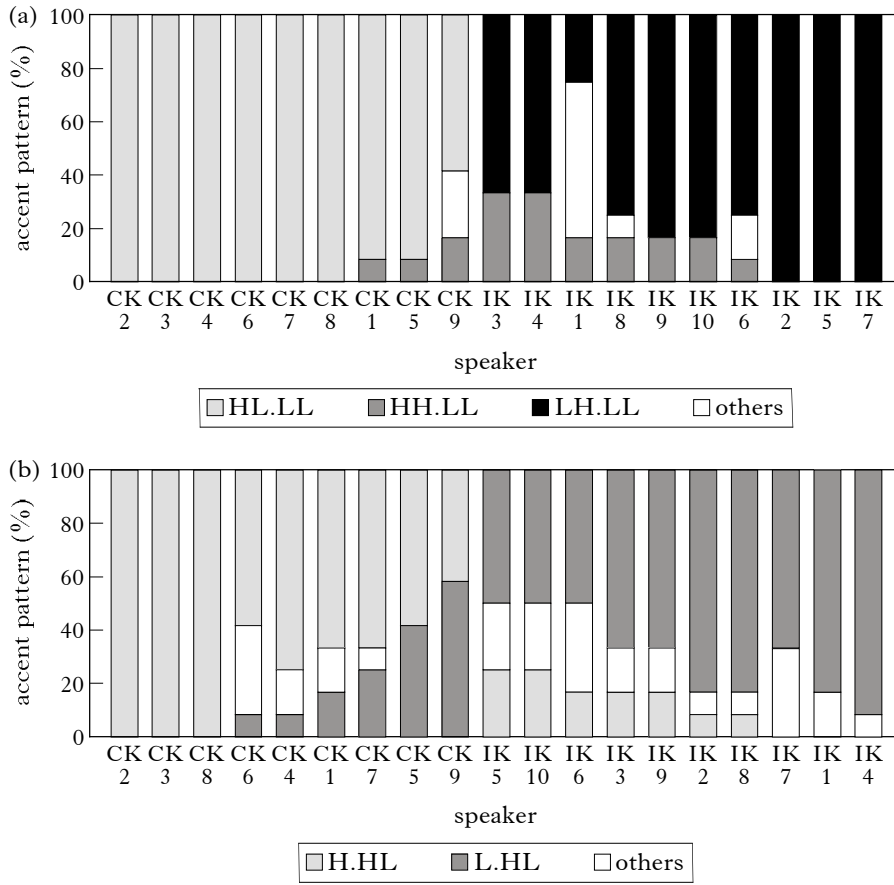


Figure 15

Data for individual innovative and conservative Kyungsang speakers of tonal patterns for (a) HL and (b) H(H) words under suffixation.

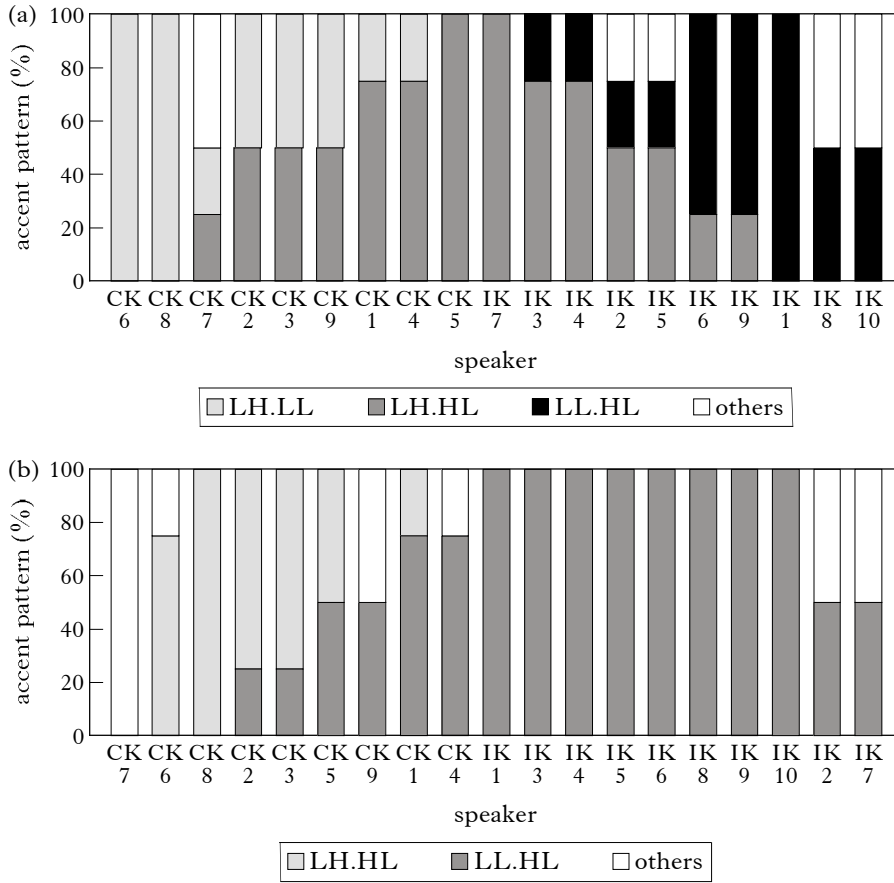


Figure 16

Data for individual innovative and conservative Kyungsang speakers of tonal patterns for (a) LH-*imyen* and (b) LH-*pota* words.