

()

가 (sound/syllable repetition) 가 (sound prolongation) 가 (fluent utterance)

가 가 가

가 8 11 3

(spatial) (temporal) strain guage system

I.

(sound/syllable repetition: SSR) (sound prolongation: SP)

가 가

(Cooper & Cooper, 1985; Curlee, 1980; Johnson & Associates, 1959; Riley, 1981).

(normal disfluency) (incipient stuttering)

(differential diagnosis)

. (presence) (duration)
 가 ,
 (Conture, 1990; Zebrowski, 1994).

. , Schwartz and Conture (1988)
 가 , (sound prolongation index : SPI)
 가

“ 가 . ”
 , 가
 가

.
 . ,
 . (production)
 . ,

, (fluent utterances: FLU)
 (spatial) · (temporal) Discriminant analysis
 , 가 .

II.

1.

가 3 (S1=10 5 , S2=8
10 , S3=11) .

(1) 100 3
(within-word disfluencies),

300

S1: = 10.3% (: 10 - 11%)
1. 71%
2. 23%
3. 6%

S2: = 17.6% (: 16 - 19%)
1. 67%
2. 15%
3. 10%
4. (phrase) 6%
5. (interjection) 2%

S3: = 24% (: 22 - 27%)
1. 51%
2. 35%
3. 5%
4. 4%
5. 3%

(2) 가 가

2 .

(upper lip: UL), (lower lip: LL), (jaw: J)

strain gauge system

3.

가 (linguistic complexity) , (target word) (communicative demand)

가.

/p/, /m/ , (/b/, (low vowel) 가 가 가 가

가 1 2 (5" x 8") (67) 3 가

(1) 1: (Simple picture naming)

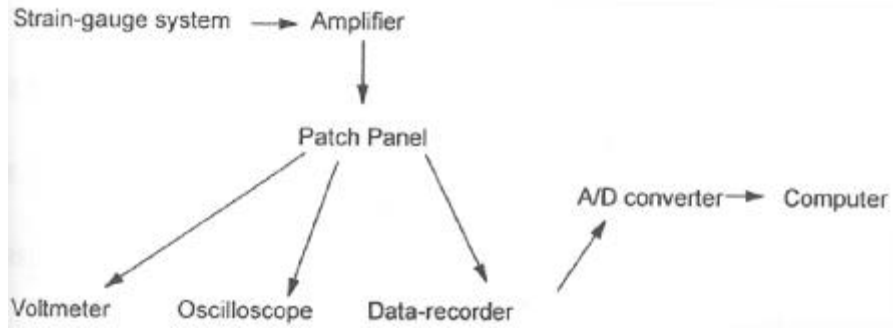
가

(2) 2: (in a carrier sentence)

가

2

Levandoski, 1995) voicing



< - 1 >

Cspeech (Version 3.1)
 (operational definition) (Robin, Bean & Folkins, 1989)
 (< - 2 >).

가.

- (1) (mm) ,
 (UCD: 2 3) (UOD: 3 4) .
- (2) (mm/sec) ,
 (UCV: 5) (UOV: 6) .
- (3) (ms) , (UCT: 2 3) (UOT: 3 4) .

- (1) (mm) ,
 (LCD: 7 8) (LOD: 8 9) .
- (2) (mm/sec) ,
 (LCV: 10) (LOV: 11) .

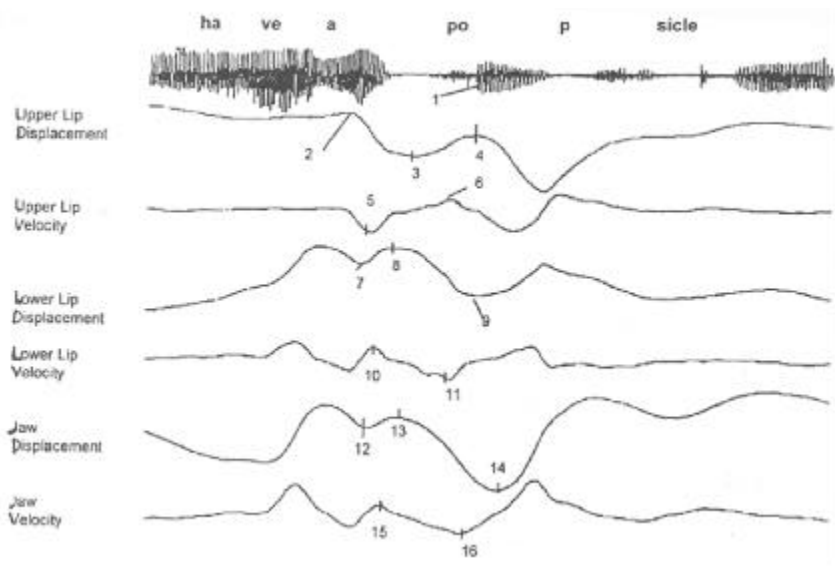
(3) (ms)
 (LCT: 7 8) (UOT: 8 9)

(1) (mm) (JCD: 12)
 (13) (JOD: 13 14)

(2) (mm/sec) (JCV:)
 (15) (JOV: 16)

(3) (ms) (JCT: 12)
 (13) (JOT: 13 14)

(4) voicing (relative timing) (ONV-JD: 1 14).



< - 2> "Do you have a popsicle again?" "popsicle"
 (velocity) (displacement)
 (19 가)

7.

MANOVA 가
 19 가 , MANOVA 가 가
 가 가 (discriminant
 analysis) SAS/STAT .

III.

MANOVA 가 (S1
 $F(36,352) = 4.4, p < 0.0001$; S2 $F(36, 338) = 3.34, p < 0.04$; S3 $F(38,304) = 3.371, p < 0.0001$).

1.

19 가 가 , ,
 (relative contribution)
 1(the first discriminant function)
 가 (S1 $F(38, 340) = 4.11, p < 0.0001$; S2 $F(36, 338) = 3.34, p < 0.0001$; S3 $F(38, 304) = 3.37, p < 0.0001$). , 2(the second discriminant function)
 가 . $< -1 >, < -2 >$
 $< -3 >$ 가 19
 가 10 . 19
 10
 $< -1 >, < -2 >$ $< -3 >$, 19
 1 가

(total discriminating power) 84% . . . 1
, , 84% .
, 가 가 10
. , S1 (UCT) 가
(11%) , S2 UCT가 4% S3
10 . S3 (JOV)
18% , S1 10 .
, < -1>, < -2> < -3>
, (LOT) (JOT) 가
가 가 .

< -1> 1(S 1)

	1 (Y1)	2 (Y2)
UCT	- 0.497 (11%)	- 0.530
UCD	0.430 (20%)	- 0.549
JOT	0.395 (28%)	0.495
JCT	0.358 (36%)	0.093
LOD	- 0.305 (42%)	0.737
JCD	0.304 (49%)	0.079
UCV	- 0.300 (55%)	0.134
UOD	0.291 (61%)	0.527
LOT	0.292 (67%)	0.264
LOC	0.278 (67%)	0.232
	84%	16%

< -2> 2(S2)

	1 (Y1)	2 (Y2)
LOT	0.777 (14%)	- 0.410
JCD	- 0.672 (26%)	- 0.109
LCD	- 0.649 (37%)	- 0.061
LCT	0.558 (47%)	- 0.130
UOT	0.488 (56%)	0.158
JOD	0.400 (63%)	- 0.628
JOT	- 0.273 (68%)	0.495
UCD	0.247 (73%)	0.795
UCT	0.222 (76%)	0.105
JOV	- 0.203 (80%)	0.225
	84%	16%

< -3> 3(S3)

	1 (Y1)	2 (Y2)
JOV	0.866 (18%)	0.425
LOT	0.417 (27%)	- 0.090
LOD	0.371 (35%)	- 0.075
LCT	0.558 (47%)	- 0.130
JCT	0.350 (42%)	- 0.120
JCD	- 0.326 (59%)	- 0.290
UOV	0.323 (63%)	- 0.475
ONV-JD	0.289 (69%)	- 0.164
LCT	0.289 (69%)	- 0.254
UOD	- 0.258 (80%)	0.017
	83%	17%

2 .

가

(Tatsuoka, 1980).

< -4>

가

< -3>

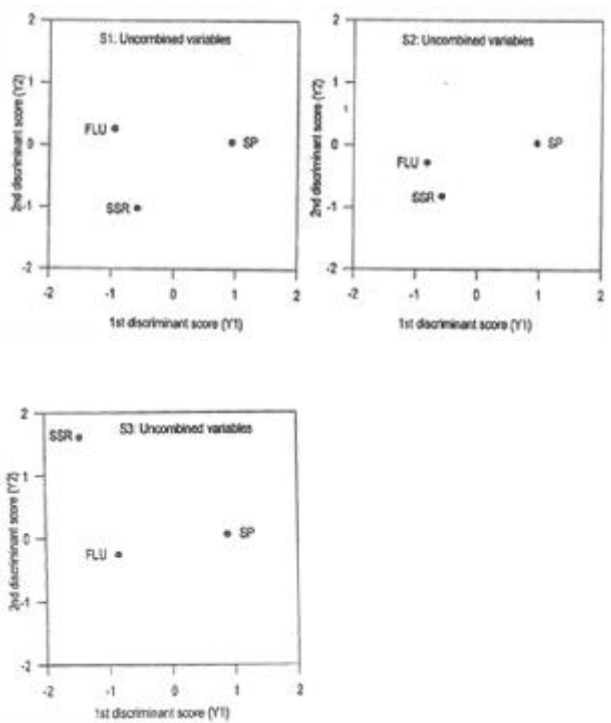
. < -3>

(, X

)

< -4> 1, 2, 3 (S1, S2, S3)

	1 (Y1)			2 (Y2)		
	s1	s2	s3	s1	s2	s3
SSR	- 0.58	- 0.57	- 1.45	- 1.02	- 0.82	1.61
SP	0.94	0.96	0.88	0.05	0.04	0.06
FLU	- 0.95	- 0.81	- 0.85	0.26	- 0.28	- 0.26



< - 3>

(SSR), (P) (FLU)
Y1 Y2

IV.

가 , 가 , 가 , 가 , 가 .

Conture (1982, 1990) “Alpha-Delta 가 ”
 Conture - (speech physiology)

“ ”
 “ ” (compensatory reaction) 가
 가 . Conture
 “ ” “ ”
 “ ” “ ” “ ”
 ” , 가 . “ ”
 ” . Conture “ ”
 가

3
 (seperated)

-

가 , ,
 10
 가
 10
 가가 3
 ,
 ,
 가
 , Conture (1990)가 ,
 “ ” ,
 ,
 가 3
 가
 ,
 가 .

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