

**Reference Data for the Madison Speech Assessment Protocol (MSAP):
A Database of Fifty 20-to-80 Year Participants with Typical Speech**

Technical Report No. 20

Alison R. Scheer-Cohen

Andrew S. Holt

Heather B. Karlsson

Heather L. Mabie

Jane L. McSweeney

Christine M. Tilkens

Lawrence D. Shriberg

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**Phonology Project, Waisman Center
University of Wisconsin-Madison**

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Background

Phonology Project Technical Reports provide technical and substantive information on methods developed for a program of research in speech sound disorders of known and unknown origins. Primary goals of the Phonology Project are to identify etiologic origins, risk and protective factors, and diagnostic markers for eight subtypes of speech sound disorders of currently unknown origin (Shriberg, 2010).

The diagnostic instrument used in all Phonology Project studies is termed the Speech Disorders Classification System (SDCS: Shriberg et al., 2010a). The SDCS includes a typologic nosology for research and practice in speech sound disorders, and an etiologic nosology for the eight putative subtypes of speech sound disorders of currently unknown origin. The assessment protocol used in all studies since approximately 2010 is termed the Madison Speech Assessment Protocol (MSAP). The MSAP Data reduction methods include both perceptual and acoustic methods. Perceptual methods for narrow phonetic transcription of speech are based on extensions to the system described in *Clinical Phonetics* (Shriberg & Kent, 2012). Perceptual methods to code speakers' prosody and voice are based on extensions to the system described in *The Prosody-Voice Screening Profile* (PVSP: Shriberg, Kwiatkowski, & Rasmussen, 1990), Phonology Project Technical Report No. 1 (Shriberg, Kwiatkowski, Rasmussen, Lof, & Miller, 1992), and the Phonology Project Laboratory Manual (PPLM; unpublished). Acoustic methods and reliability findings for speech, prosody, and voice variables are described in Shriberg et al. (2010a; 2010b) and in the PPLM. Shriberg et al. (2010a) provides extensive information on the structure and content of the MSAP relevant for the present report and is not summarized in this report.

The goal of this technical report is to provide reference data for the 145 speech, prosody, and voice signs organized by the Ten Linguistic Domains Analytics (TLDA) shown in the table in the following section. Shriberg et al. (2010) provides a complete description of the rationale and content of the TLDA framework.

Method

Participants

To recruit qualified participants for the reference database the examiner (author ASC) sent emails describing the research study to adult groups and disseminated flyers at community centers and workplaces in the Iowa City, IA area. The recruitment material included a brief description of the purpose of the study, the age range required of potential participants, time required to complete the protocol, compensation for participation (\$30), and examiner contact information.

To determine if they qualified to participate in the study, respondents were asked the following six screening questions in a phone call (answers in brackets were required for participation):

1. Is your first language English? ['yes']
2. Have you ever been diagnosed with a language and/or learning disability? ['no']
3. Have you ever been diagnosed with a psychiatric and/or neurological condition? ['no']
4. Do you have any oral structure and/or dental anomalies and/or body piercings that interfere with your speech? [no]
5. Do you have a history of uncorrected visual problems? ['no']
6. Do you have a history of uncorrected hearing problems and/or hearing loss? ['no']

If a potential participant had any questions about the study, the examiner answered his/her question(s). The 50 participants selected and scheduled for assessment included four females and

four males from the following age group decades: 20-29, 30-39, 40-49, 50-59, 60-69, and five females and five males from ages 70-80 years. Due to technical difficulties with the recording equipment, 14 participants were either retested on a portion or all of the protocol or they were replaced with new participants.

Assessment

All participants signed an informed consent form, which was approved by the University of Wisconsin-Madison and University of Iowa institutional review boards. Participants were tested individually in a quiet room in a university speech clinic. A subset of tasks and tests in the Madison Speech Assessment Protocol (MSAP: Shriberg et al., 2010a) was administered to all participants. The MSAP includes a hearing screening at 20 dB HL for 500, 1000, 2000, and 4000 Hz, the *Goldman Fristoe Test of Articulation-2* (Goldman & Fristoe, 2000), and 15 speech tasks. Responses to the subset of speech tasks completed were recorded on a Marantz CDR420 HD/CD digital audio recorder with matching external Shure MX412DC cardioid condenser microphone. The audio samples were processed in Madison using the procedures described in the reference citations.

The reference data in this report are presented without comment. Thorough analyses of trends within and between the variables of age, sex, and speech signs are beyond the scope of the present goal. Obvious constraints on these reference data are the lack of sociodemographic diversity and the possibility of sampling errors due to small cell sizes. Readers interested in the reference data obtained using acoustic methods are welcome to contact the authors for additional technical information and access to the wave files.

Organization and current number of speech, prosody, and voice signs in the Speech Disorders Classification System (SDCS). Shriberg et al. (2010a) provides a complete description of the rationale and content of the Ten Linguistic Domains Analytics (TLDA) and the Competence, Precision, Stability Analytics (CPSA).^a

	Competence, Precision, Stability Analytics (CPSA)							
	Competence		Precision		Stability			
Ten Linguistic Domains Analytics (TLDA)	<u>Perceptual</u>	<u>Acoustic</u>	<u>Perceptual</u>	<u>Acoustic</u>	<u>Perceptual</u>	<u>Acoustic</u>	<u>Total</u>	
Segmental								
I. Vowels	9	0	0	16	4	16	45	
II. Consonants	8	0	4	9	2	2	25	
III. Vowels & Consonants	2	0	5	0	4	0	11	
Total	19	0	9	25	10	18	81	
Suprasegmental								
Prosody								
IV. Phrasing	1	0	6	6	0	0	13	
V. Rate	1	0	0	8	0	8	17	
VI. Stress	1	0	0	4	0	4	9	
Voice								
VII. Loudness	1	0	0	3	0	3	7	
VIII. Pitch	1	0	0	2	0	1	4	
IX. Laryngeal Quality	1	0	4	0	0	0	5	
X. Resonance	1	0	2	3	0	3	9	
Total	7	0	12	26	0	19	64	
Overall Total	26	0	21	51	10	37	145	

^a Data for 6 of the acoustic Laryngeal Quality variables are not included in this report due to as yet unresolved technical needs.

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Key to Sources and Measurement Units/Abbreviations

ALL = All available sources

count = count

AT = Articulation Test

Hertz = Hz

CSS = Conversational Speech Sample

kiloHertz = kHz

CWT = Challenging Words Task

milliseconds = ms

EST = Emphatic Stress Task

millisyllables = ‰

LST = Lexical Stress Task

percentage = %

MWT = Multisyllabic Words Task

syllables/sec = syll/sec

RSTR = Rhotics and Sibilants Task

unitless = u

SPT = Speech Phrases Task

SRT = Syllable Repetition Task

SVT = Sustained Vowel Task

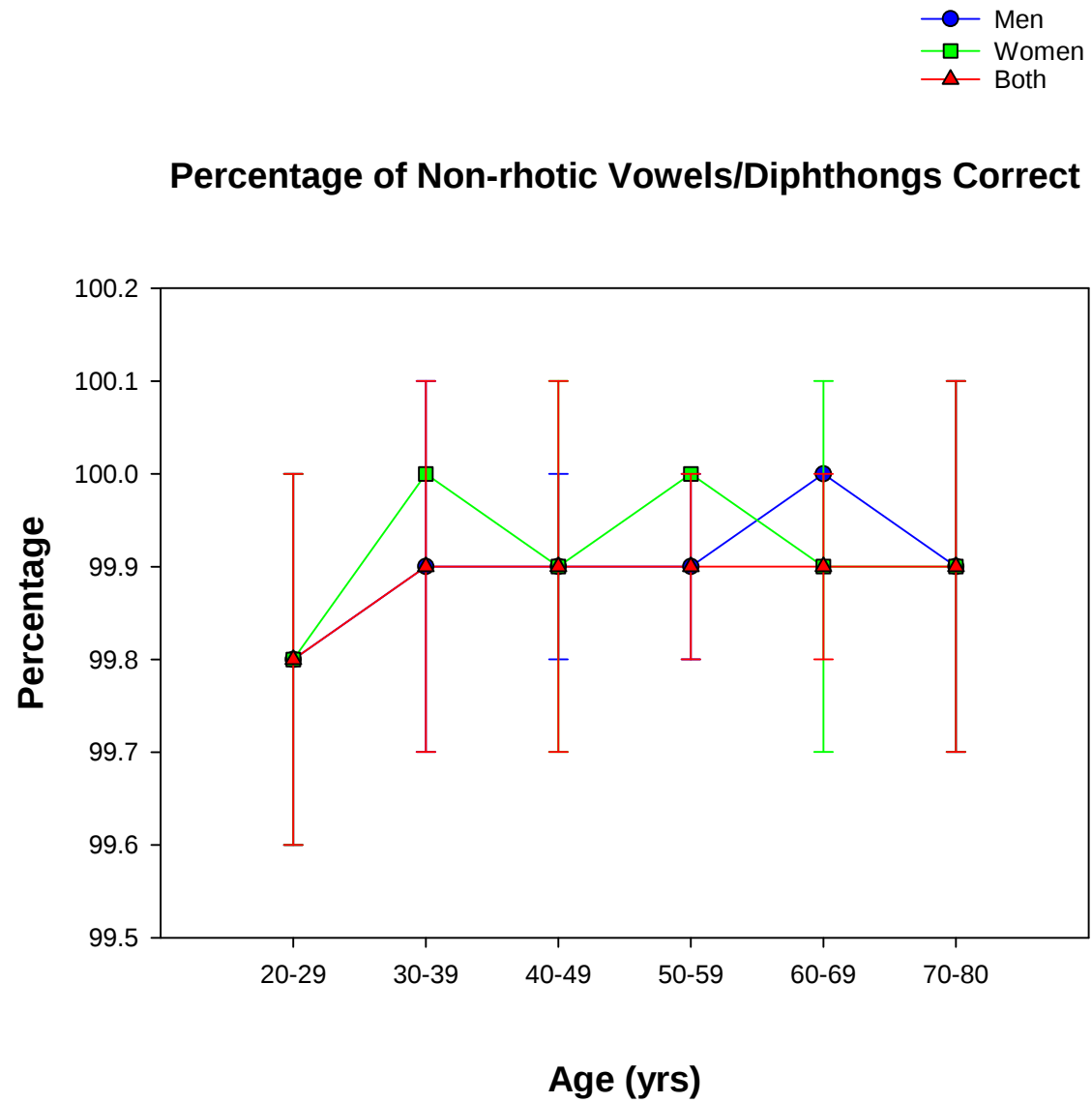
VT1 = Vowel Task 1

VT2 = Vowel Task 2

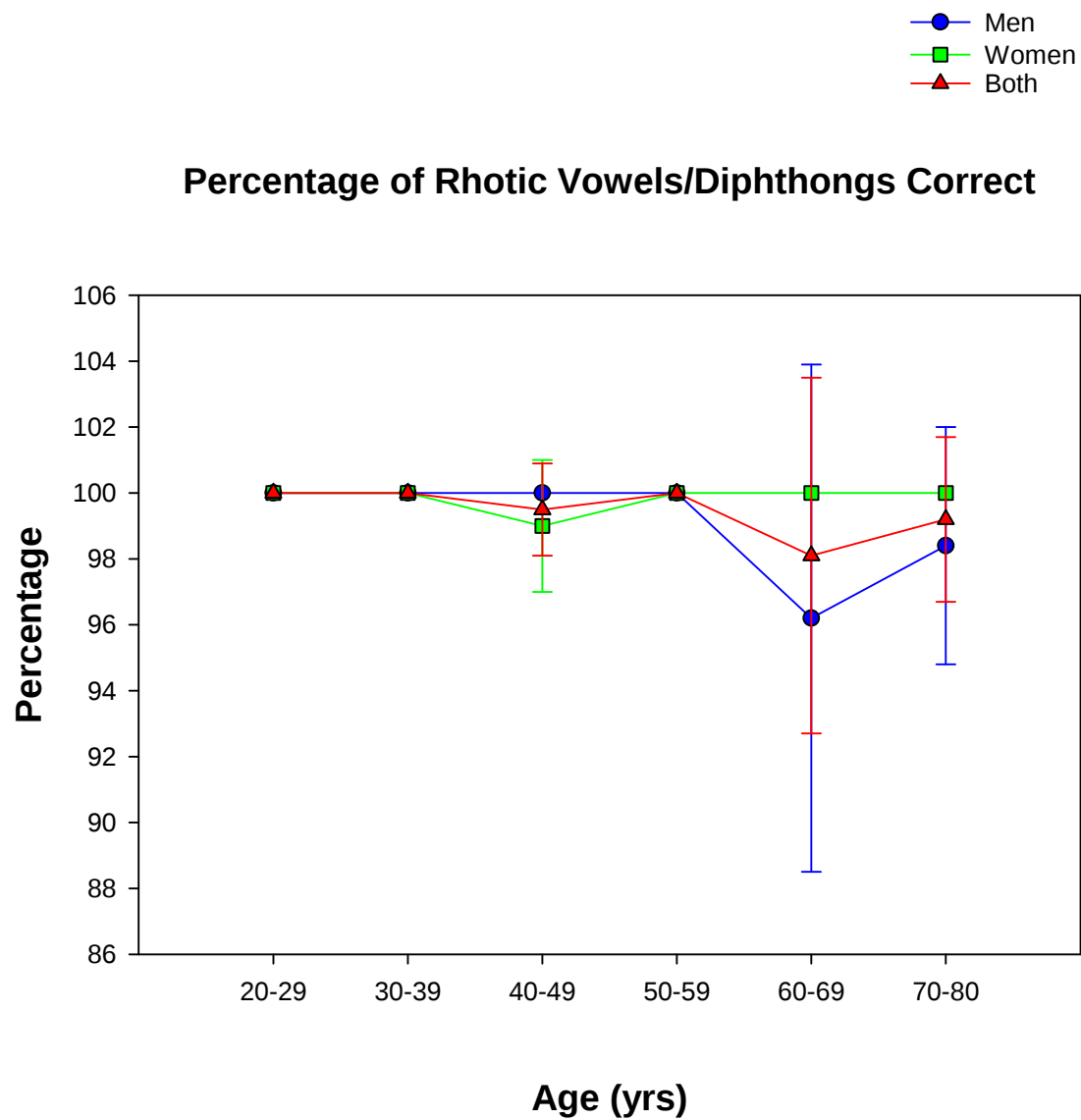
VT3 = Vowel Task 3

VT12 = Vowel Tasks 1 & 2

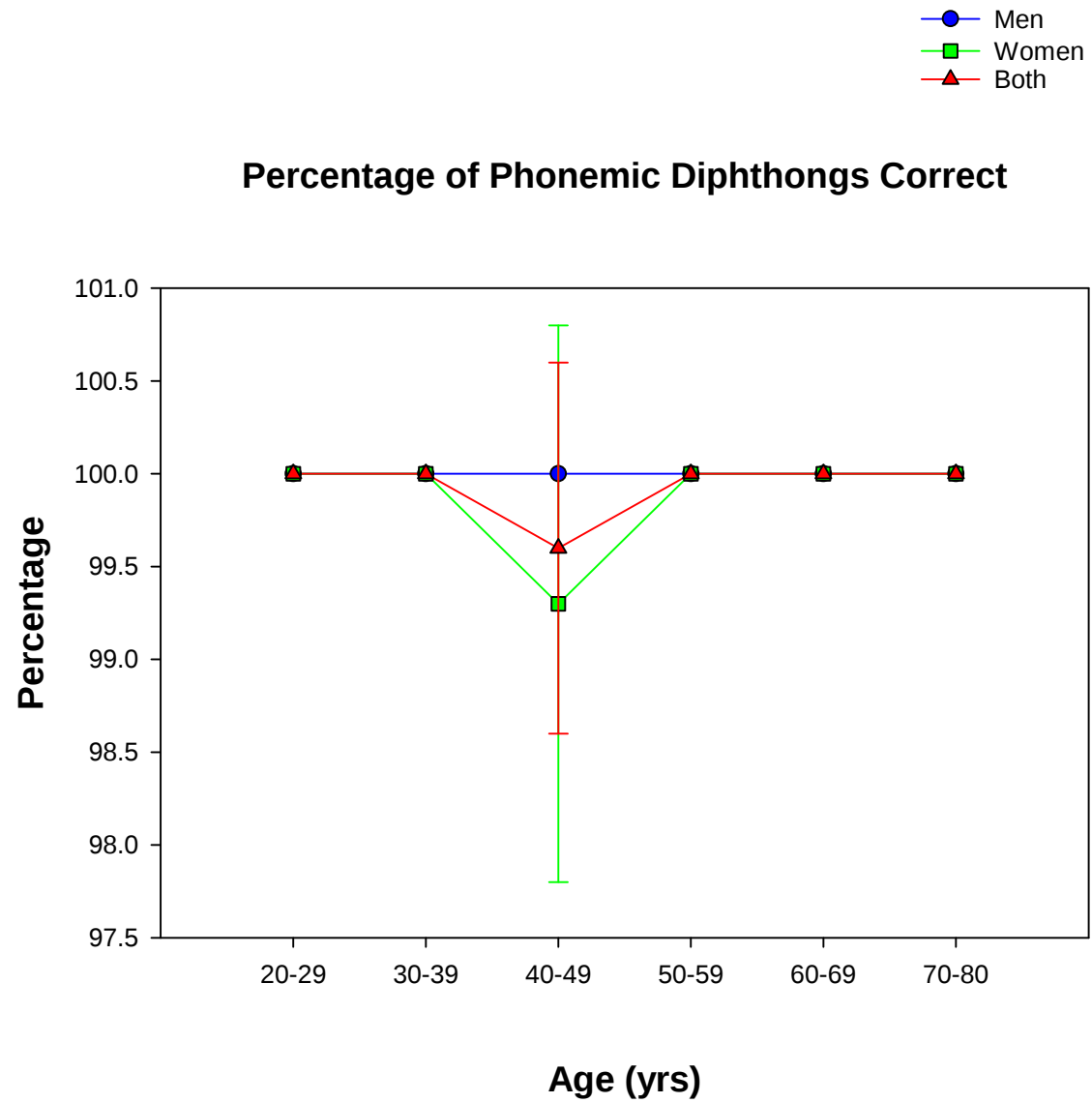
Percentage of Non-Rhotic Vowels/Diphthongs Correct (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	99.8	0.2	99.7-100.0	99.9	0.2	99.6-100.0	99.9	0.1	99.7-100.0	99.9	0.1	99.7-100.0	100.0	0.0		99.9	0.2	99.7-100.0
<i>Female</i>																		
CSS	99.8	0.2	99.6-100.0	100.0	0.0		99.9	0.2	99.6-100.0	100.0	0.0		99.9	0.2	99.7-100.0	99.9	0.2	99.6-100.0
<i>Both</i>																		
CSS	99.8	0.2	99.6-100.0	99.9	0.2	99.6-100.0	99.9	0.2	99.6-100.0	99.9	0.1	99.7-100.0	99.9	0.1	99.7-100.0	99.9	0.2	99.6-100.0



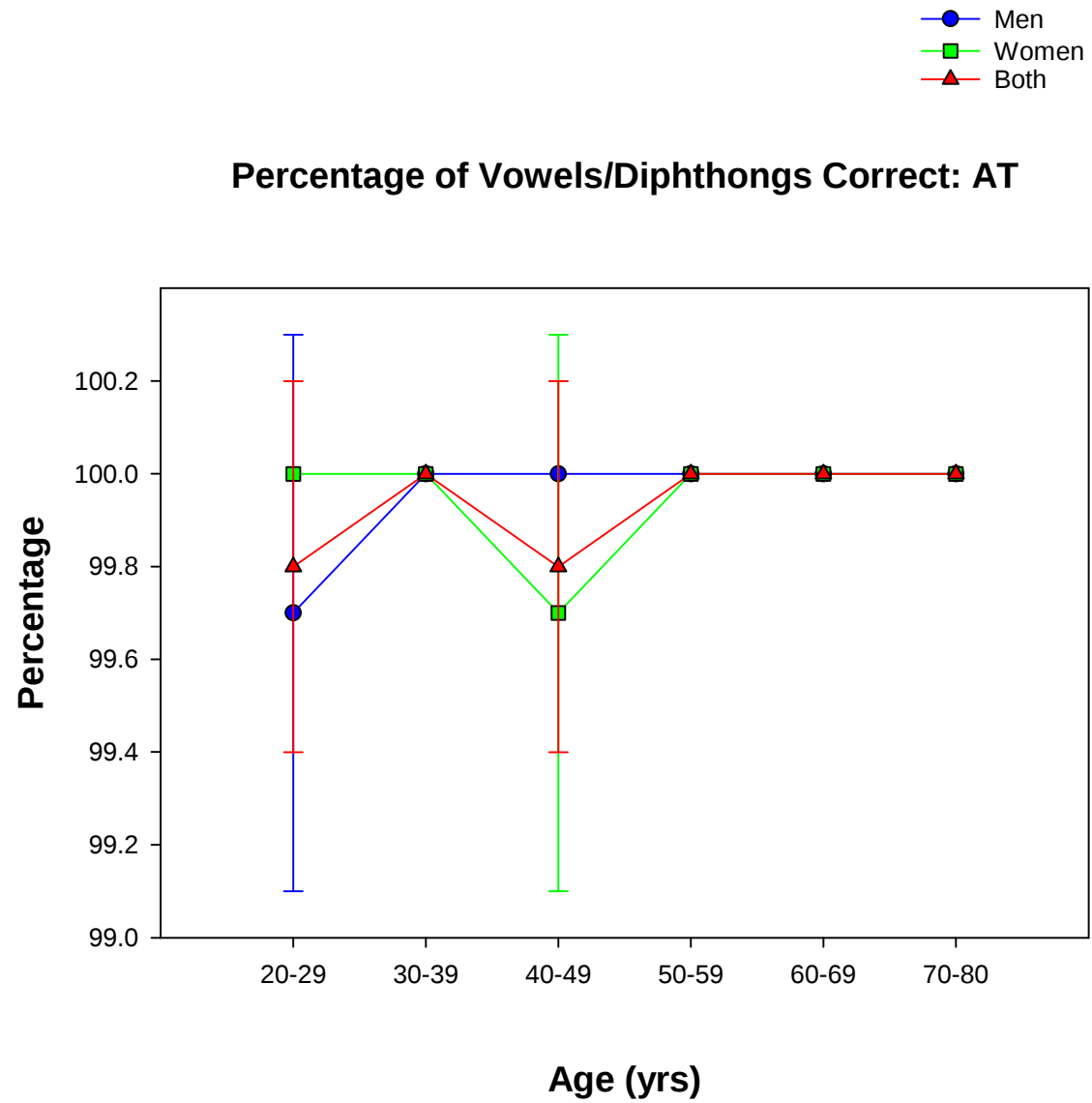
Percentage of Rhotic Vowels/Diphthongs Correct (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0		96.2	7.7	84.6-100.0	98.4	3.6	92.0-100.0
<i>Female</i>																		
CSS	100.0	0.0		100.0	0.0		99.0	2.0	96.0-100.0	100.0	0.0		100.0	0.0		100.0	0.0	
<i>Both</i>																		
CSS	100.0	0.0		100.0	0.0		99.5	1.4	96.0-100.0	100.0	0.0		98.1	5.4	84.6-100.0	99.2	2.5	92.0-100.0

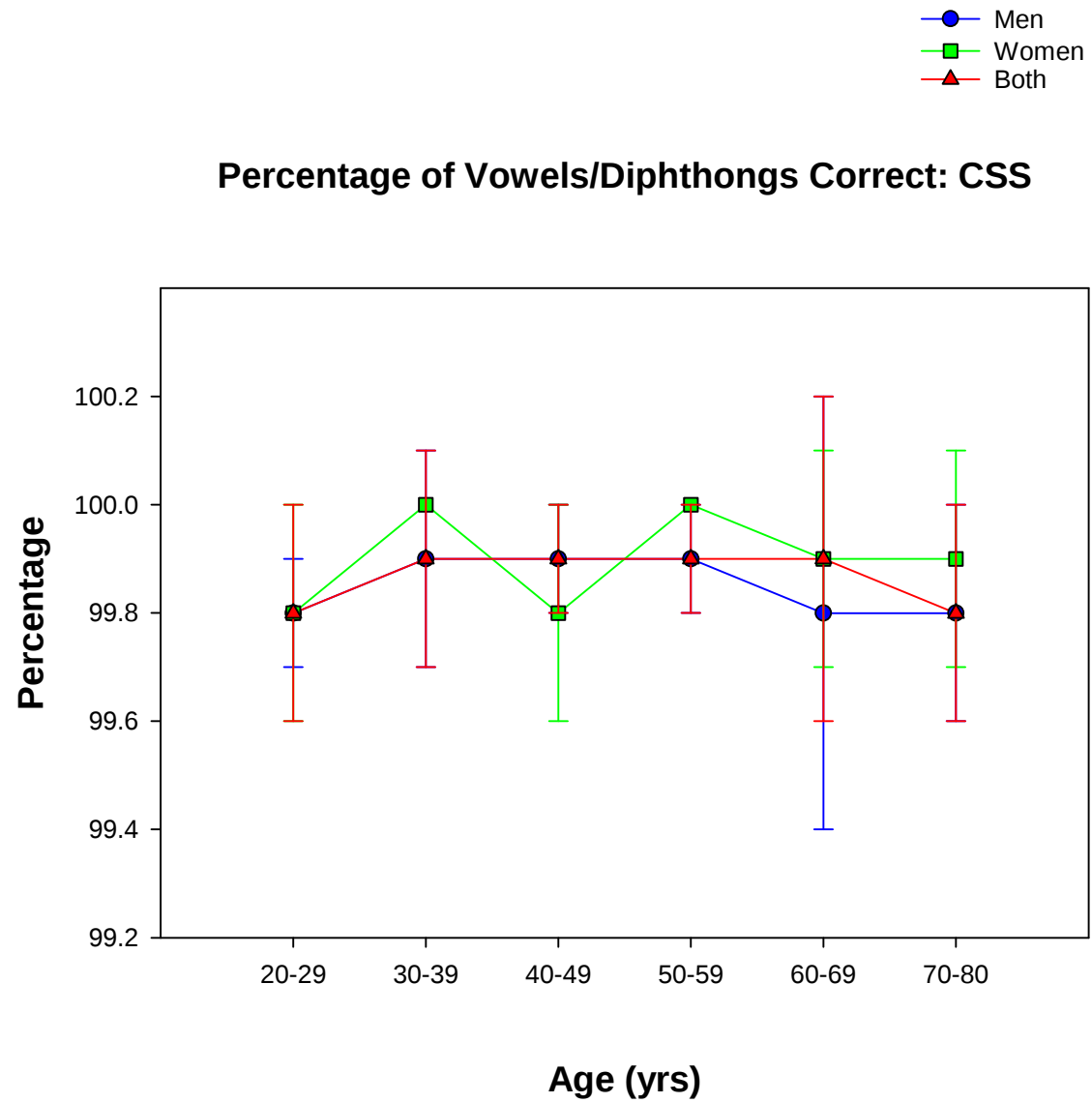


Percentage of Phonemic Diphthongs Correct (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0	
<i>Female</i>																		
CSS	100.0	0.0		100.0	0.0		99.3	1.5	97.1-100.0	100.0	0.0		100.0	0.0		100.0	0.0	
<i>Both</i>																		
CSS	100.0	0.0		100.0	0.0		99.6	1.0	97.1-100.0	100.0	0.0		100.0	0.0		100.0	0.0	

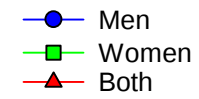


Percentage of Vowels/Diphthongs Correct (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
AT	99.7	0.6	98.7-100.0	100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0	
CSS	99.8	0.1	99.7-100.0	99.9	0.2	99.6-100.0	99.9	0.1	99.7-100.0	99.9	0.1	99.7-100.0	99.8	0.4	99.2-100.0	99.8	0.2	99.5-100.0
<i>Female</i>																		
AT	100.0	0.0		100.0	0.0		99.7	0.6	98.8-100.0	100.0	0.0		100.0	0.0		100.0	0.0	
CSS	99.8	0.2	99.6-100.0	100.0	0.0		99.8	0.2	99.7-100.0	100.0	0.0		99.9	0.2	99.7-100.0	99.9	0.2	99.6-100.0
<i>Both</i>																		
AT	99.8	0.4	98.7-100.0	100.0	0.0		99.8	0.4	98.8-100.0	100.0	0.0		100.0	0.0		100.0	0.0	
CSS	99.8	0.2	99.6-100.0	99.9	0.2	99.6-100.0	99.9	0.1	99.7-100.0	99.9	0.1	99.7-100.0	99.9	0.3	99.2-100.0	99.8	0.2	99.5-100.0

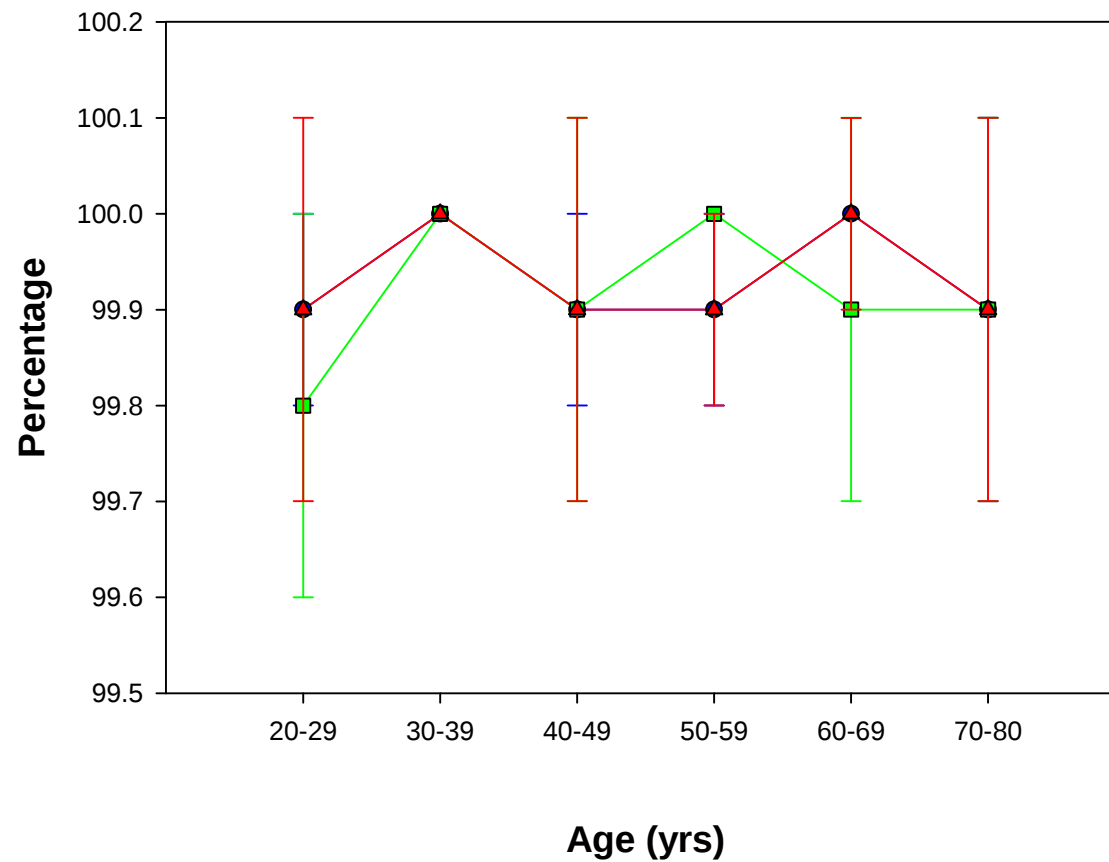




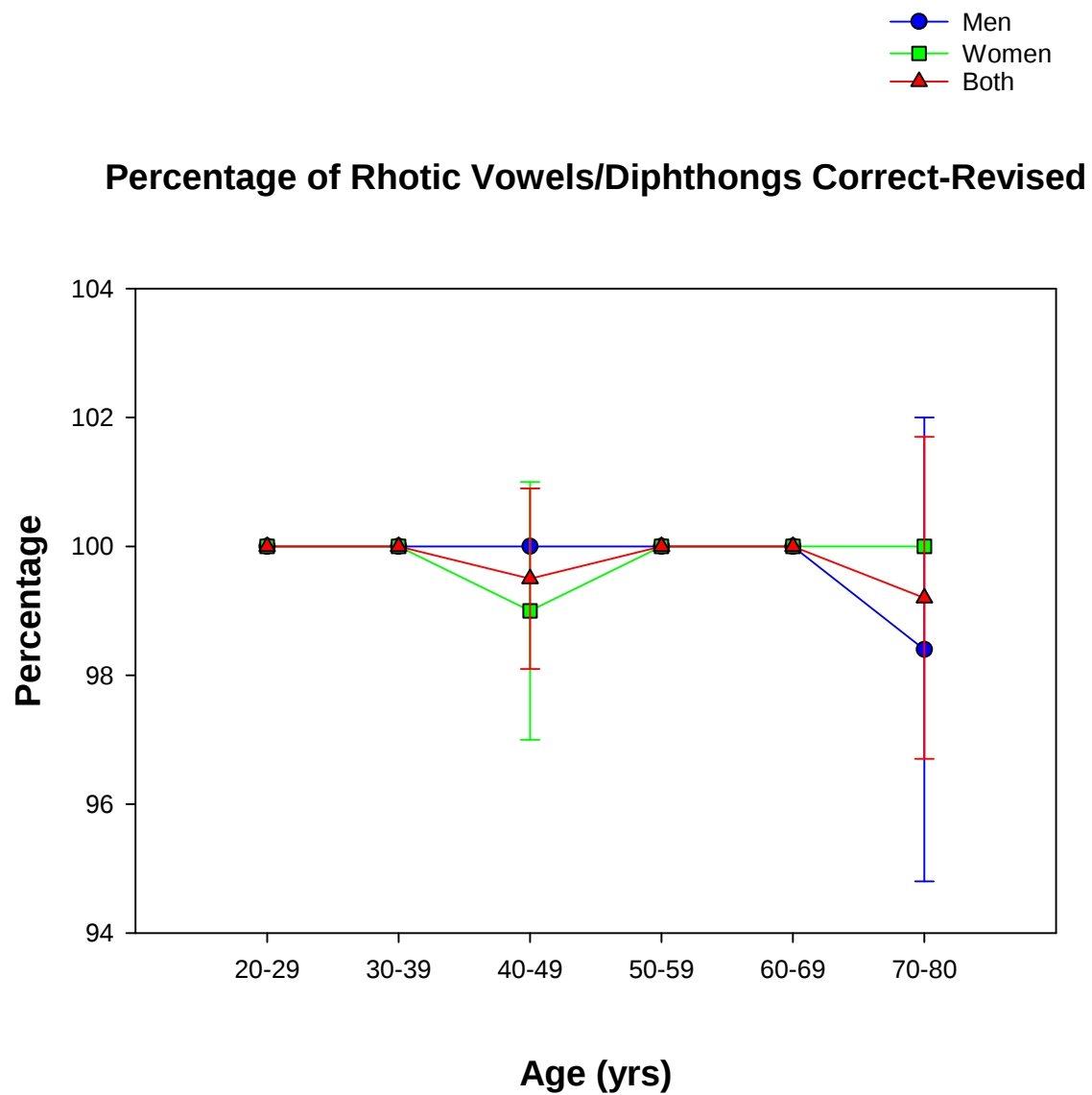
Percentage of Non-Rhotic Vowels/Diphthongs Correct-Revised (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	99.9	0.1	99.8-100.0	100.0	0.0		99.9	0.1	99.7-100.0	99.9	0.1	99.7-100.0	100.0	0.0		99.9	0.2	99.7-100.0
<i>Female</i>																		
CSS	99.8	0.2	99.6-100.0	100.0	0.0		99.9	0.2	99.6-100.0	100.0	0.0		99.9	0.2	99.7-100.0	99.9	0.2	99.6-100.0
<i>Both</i>																		
CSS	99.9	0.2	99.6-100.0	100.0	0.0		99.9	0.2	99.6-100.0	99.9	0.1	99.7-100.0	100.0	0.1	99.7-100.0	99.9	0.2	99.6-100.0



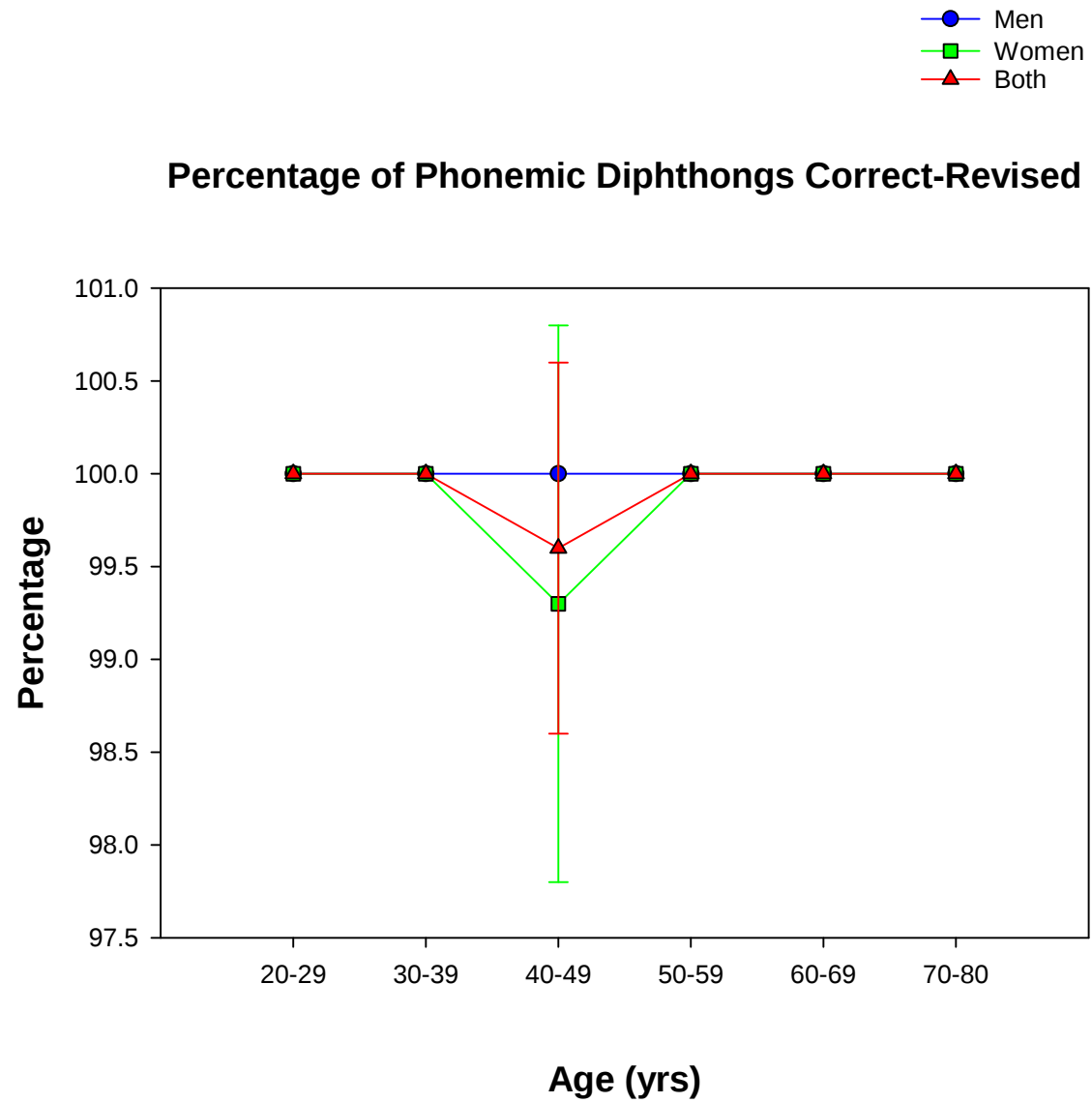
Percentage of Non-Rhotic Vowels/Diphthongs Correct-Revised



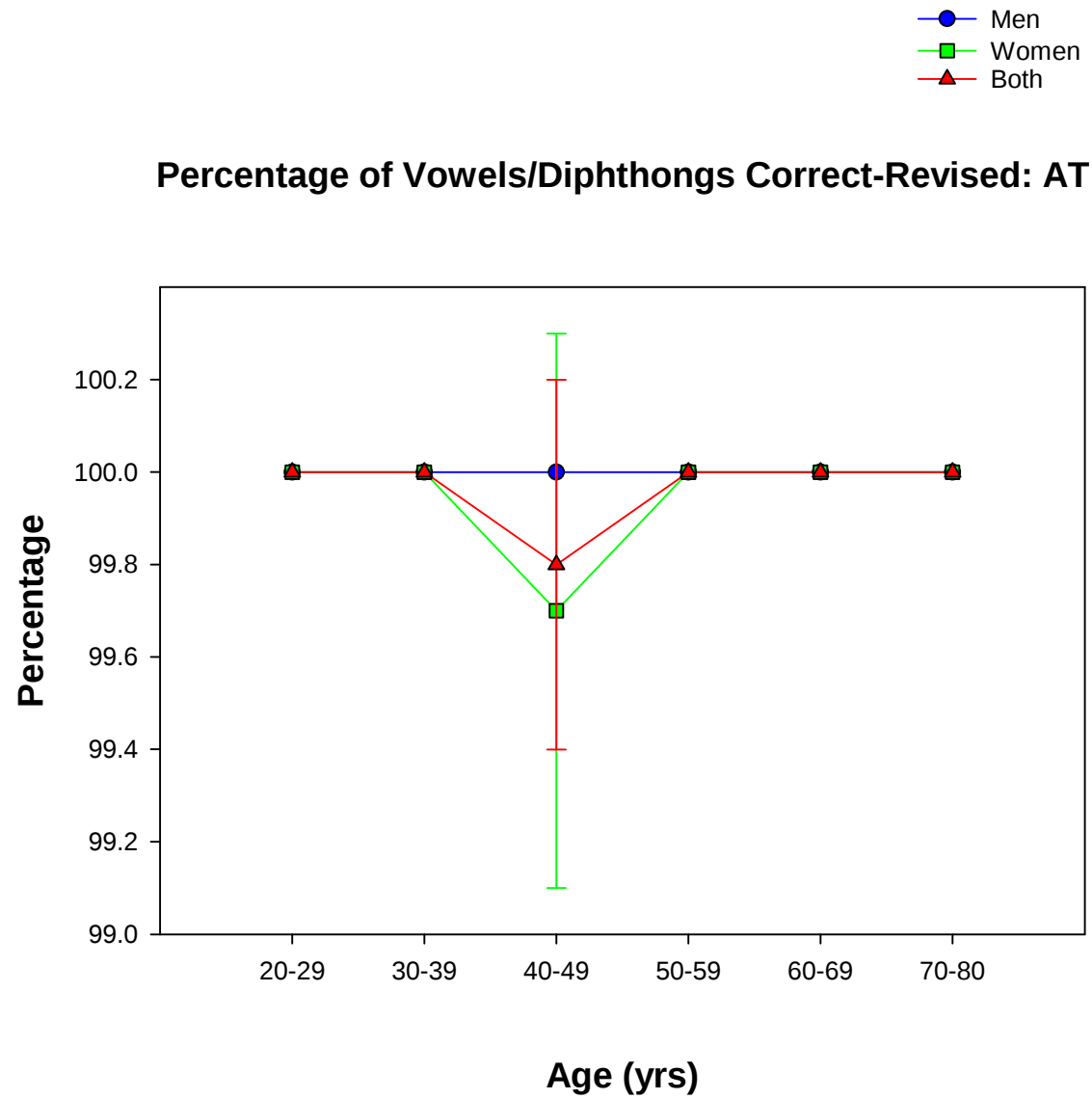
Percentage of Rhotic Vowels/Diphthongs Correct-Revised (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0		98.4	3.6	92.0-100.0
<i>Female</i>																		
CSS	100.0	0.0		100.0	0.0		99.0	2.0	96.0-100.0	100.0	0.0		100.0	0.0		100.0	0.0	
<i>Both</i>																		
CSS	100.0	0.0		100.0	0.0		99.5	1.4	96.0-100.0	100.0	0.0		100.0	0.0		99.2	2.5	92.0-100.0

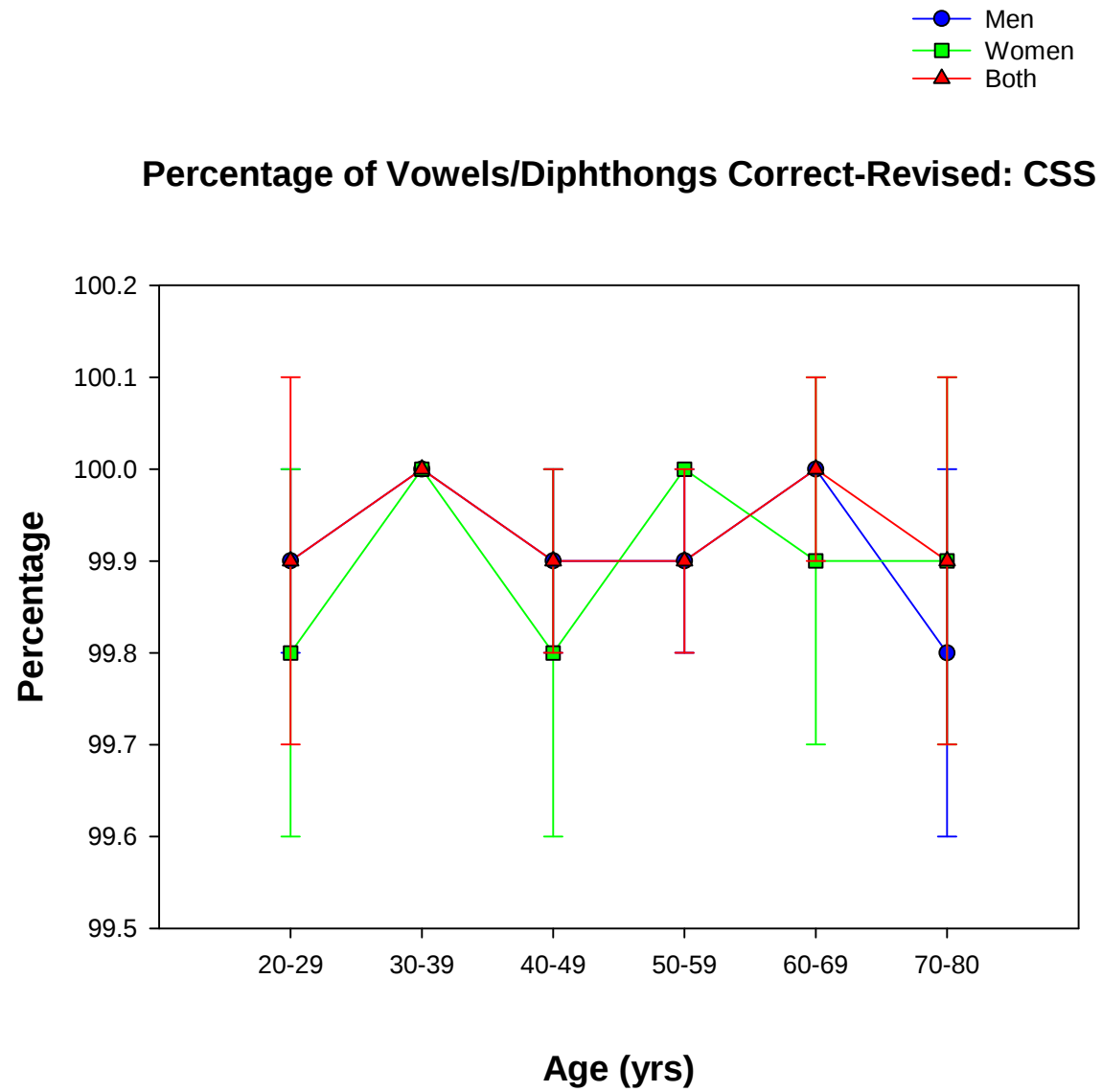


Percentage of Phonemic Diphthongs Correct-Revised (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0	
<i>Female</i>																		
CSS	100.0	0.0		100.0	0.0		99.3	1.5	97.1-100.0	100.0	0.0		100.0	0.0		100.0	0.0	
<i>Both</i>																		
CSS	100.0	0.0		100.0	0.0		99.6	1.0	97.1-100.0	100.0	0.0		100.0	0.0		100.0	0.0	

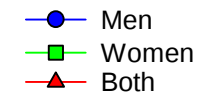


Percentage of Vowels/Diphthongs Correct-Revised (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
AT	100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0	
CSS	99.9	0.1	99.8-100.0	100.0	0.0		99.9	0.1	99.7-100.0	99.9	0.1	99.8-100.0	100.0	0.0		99.8	0.2	99.5-100.0
<i>Female</i>																		
AT	100.0	0.0		100.0	0.0		99.7	0.6	98.8-100.0	100.0	0.0		100.0	0.0		100.0	0.0	
CSS	99.8	0.2	99.6-100.0	100.0	0.0		99.8	0.2	99.7-100.0	100.0	0.0		99.9	0.2	99.8-100.0	99.9	0.2	99.6-100.0
<i>Both</i>																		
AT	100.0	0.0		100.0	0.0		99.8	0.4	98.8-100.0	100.0	0.0		100.0	0.0		100.0	0.0	
CSS	99.9	0.2	99.6-100.0	100.0	0.0		99.9	0.1	99.7-100.0	99.9	0.1	99.8-100.0	100.0	0.1	99.8-100.0	99.9	0.2	99.5-100.0

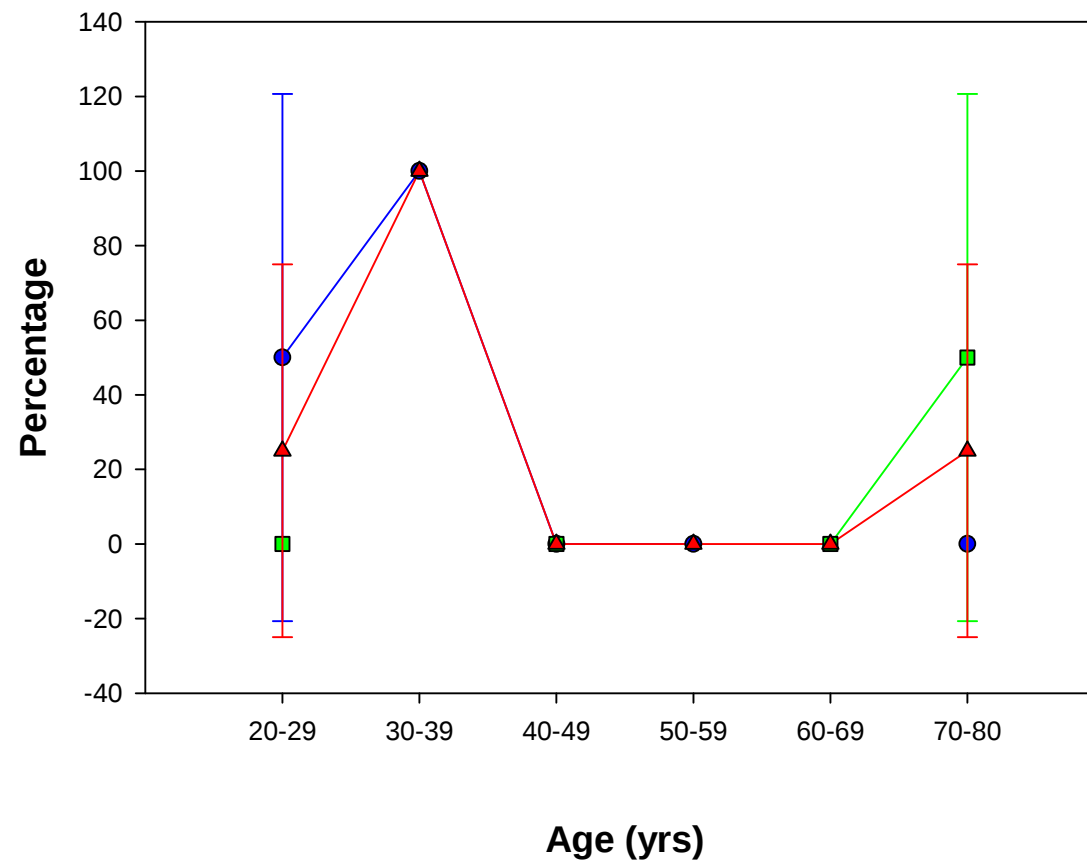




Percentage of Relative Non-Rhotic Vowel/Diphthongs Distortions (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	50.0	70.7	0.0-100.0	100.0	*		0.0	0.0		0.0	0.0		*	*	*	0.0	0.0	
<i>Female</i>																		
CSS	0.0	0.0		*	*	*	0.0	0.0		*	*	*	0.0	0.0		50.0	70.7	0.0-100.0
<i>Both</i>																		
CSS	25.0	50.0	0.0-100.0	100.0	*		0.0	0.0		0.0	0.0		0.0	0.0		25.0	50.0	0.0-100.0



Percentage of Relative Non-rhotic Vowel/Diphthong Distortions



Reduced Vowel Space: Quadrilateral VSQI ^a (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
VT1	35287	7230	25266-42499	30823	10050	18112-41673	34100	12465	20072-50430	38105	10672	25879-51066	40382	11471	27626-50323	29297	4347	24552-34655
CSS	9297	5684	1777-14593	9675	2586	6727-12509	7183	5609	999-14188	10901	4624	6038-15993	14232	7343	5120-21343	7378	4085	1234-11956
<i>Female</i>																		
VT1	55904	17847	29707-68503	41066	8135	30325-48028	56545	6067	51096-61853	65635	13826	48348-82187	53354	17610	36113-77776	57809	5258	49171-62372
CSS	18688	8890	8424-23934	15517	12411	5457-33637	18324	12916	7886-35933	25648	12586	8625-35795	10957	6931	5193-20924	19398	7446	13254-28637
<i>Both</i>																		
VT1	45595	16744	25266-68503	35947	10079	18112-48028	45323	15043	20072-61853	51870	18635	25879-82187	46868	15407	27626-77776	43553	15700	24552-62372
CSS	13322	8228	1777-23934	12596	8867	5457-33637	12754	10974	999-35933	18275	11798	6038-35795	12595	6838	5120-21343	13388	8496	1234-28637

^a All original cell values in this table were divided by 10.

Reduced Vowel Space: Quadrilateral VSQIL (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
VT1	0.43	0.07	0.33-0.49	0.40	0.11	0.26-0.52	0.43	0.16	0.26-0.65	0.45	0.13	0.27-0.54	0.44	0.10	0.36-0.56	0.36	0.08	0.30-0.50
CSS	0.12	0.08	0.01-0.19	0.15	0.06	0.08-0.21	0.10	0.07	0.02-0.19	0.15	0.05	0.09-0.19	0.19	0.09	0.09-0.30	0.11	0.06	0.03-0.18
<i>Female</i>																		
VT1	0.42	0.12	0.25-0.53	0.36	0.09	0.28-0.47	0.50	0.04	0.45-0.54	0.55	0.10	0.43-0.68	0.44	0.14	0.32-0.63	0.53	0.03	0.50-0.56
CSS	0.16	0.08	0.06-0.20	0.13	0.08	0.05-0.25	0.18	0.11	0.08-0.34	0.25	0.12	0.10-0.34	0.10	0.08	0.02-0.20	0.21	0.08	0.15-0.31
<i>Both</i>																		
VT1	0.43	0.09	0.25-0.53	0.38	0.10	0.26-0.52	0.46	0.12	0.26-0.65	0.50	0.12	0.27-0.68	0.44	0.11	0.32-0.63	0.45	0.10	0.30-0.50
CSS	0.13	0.07	0.01-0.20	0.14	0.07	0.05-0.28	0.14	0.10	0.02-0.34	0.20	0.10	0.09-0.34	0.15	0.09	0.02-0.30	0.16	0.08	0.03-0.31

Reduced Vowel Space: Distance from Center VSD (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
VT1	473.1	47.3	411.0-515.6	444.6	87.5	331.0-541.2	463.0	79.4	393.4-574.8	517.2	90.8	439.5-648.2	531.1	95.5	421.9-648.7	466.7	50.0	407.0-514.7
CSS	327.0	53.5	265.9-392.2	374.4	46.2	316.8-416.7	341.3	43.3	278.2-375.0	367.1	68.4	264.7-406.1	402.4	75.6	331.7-503.4	334.6	63.1	241.1-402.4
<i>Female</i>																		
VT1	614.3	87.5	491.2-684.1	522.6	47.8	464.9-579.6	607.4	66.8	538.9-690.9	663.9	79.5	568.4-763.1	608.5	117.8	505.6-778.1	642.3	39.5	602.3-688.0
CSS	463.3	42.7	433.8-512.4	410.4	120.6	260.9-534.4	448.4	47.1	393.4-506.9	493.3	63.6	401.0-545.8	388.8	111.4	267.8-520.9	409.7	44.7	369.7-482.4
<i>Both</i>																		
VT1	543.7	99.7	411.0-684.1	483.6	77.4	331.0-579.6	535.2	102.8	393.4-690.9	590.6	111.3	439.5-763.1	569.8	107.5	421.9-778.1	554.5	101.8	407.0-688.0
CSS	385.4	85.7	265.9-512.4	392.4	86.7	260.9-534.4	394.8	70.9	278.2-506.9	430.2	91.0	264.7-545.8	395.6	88.4	267.8-520.9	372.2	65.0	241.1-482.4

Reduced Vowel Space: Distance from Center VSDL (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
VT1	0.52	0.06	0.44-0.57	0.54	0.04	0.50-0.58	0.53	0.11	0.39-0.64	0.52	0.09	0.39-0.61	0.51	0.06	0.44-0.56	0.48	0.05	0.42-0.55
CSS	0.35	0.11	0.24-0.50	0.43	0.11	0.32-0.58	0.37	0.01	0.35-0.38	0.40	0.04	0.35-0.44	0.40	0.10	0.28-0.50	0.34	0.04	0.29-0.39
<i>Female</i>																		
VT1	0.52	0.08	0.41-0.57	0.51	0.05	0.47-0.57	0.57	0.04	0.53-0.63	0.59	0.04	0.54-0.63	0.52	0.09	0.42-0.64	0.56	0.02	0.53-0.59
CSS	0.42	0.02	0.41-0.44	0.39	0.06	0.33-0.47	0.44	0.03	0.41-0.48	0.43	0.09	0.29-0.50	0.36	0.04	0.29-0.39	0.40	0.04	0.33-0.44
<i>Both</i>																		
VT1	0.52	0.06	0.41-0.57	0.53	0.04	0.47-0.58	0.55	0.08	0.39-0.64	0.56	0.08	0.39-0.63	0.51	0.07	0.42-0.64	0.52	0.05	0.42-0.59
CSS	0.38	0.09	0.24-0.50	0.41	0.09	0.32-0.58	0.40	0.04	0.35-0.48	0.41	0.07	0.29-0.50	0.38	0.07	0.28-0.50	0.37	0.05	0.29-0.44

Reduced Vowel Space: /i, æ, ʌ/ Distance from Center VSD3 (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
VT1	413.5	67.2	330.7-472.1	432.5	76.6	336.4-523.1	414.6	68.6	348.2-507.0	479.7	99.3	421.7-627.7	473.9	89.6	406.6-597.4	447.3	74.7	380.1-566.0
CSS	329.8	74.9	246.1-428.2	397.9	67.0	311.9-466.1	350.8	38.6	318.0-406.4	390.2	71.4	283.9-437.4	383.8	102.7	267.6-497.9	316.1	57.8	233.7-368.9
<i>Female</i>																		
VT1	599.3	47.8	541.9-655.4	519.9	25.1	490.8-541.3	543.9	48.8	485.4-599.9	577.6	30.5	555.8-621.1	551.9	102.4	442.9-684.5	560.5	12.5	545.3-578.0
CSS	468.0	18.2	444.2-488.0	454.1	151.0	285.9-609.2	455.9	61.8	390.8-533.8	435.7	79.0	325.5-510.3	406.1	160.6	296.6-638.5	410.3	52.0	360.4-481.4
<i>Both</i>																		
VT1	506.4	113.0	330.7-655.4	476.2	70.5	336.4-541.3	479.2	88.4	348.2-599.9	528.7	85.8	421.7-627.7	512.9	98.4	406.6-684.5	503.9	78.2	380.1-578.0
CSS	398.9	89.5	246.1-488.0	426.0	112.2	285.9-609.2	403.4	73.7	318.0-533.8	412.9	73.8	283.9-510.3	394.9	125.4	267.6-638.5	363.2	71.8	233.7-481.4

Reduced Vowel Space: /i, æ, a/ Distance from Center VSD3L (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
VT1	0.47	0.06	0.39-0.53	0.52	0.04	0.49-0.57	0.50	0.08	0.39-0.58	0.50	0.09	0.36-0.56	0.47	0.08	0.37-0.55	0.46	0.06	0.36-0.51
CSS	0.34	0.10	0.28-0.49	0.42	0.10	0.29-0.54	0.38	0.02	0.36-0.40	0.42	0.07	0.33-0.49	0.37	0.11	0.21-0.46	0.32	0.04	0.27-0.36
<i>Female</i>																		
VT1	0.49	0.05	0.42-0.53	0.47	0.02	0.46-0.49	0.53	0.07	0.49-0.63	0.54	0.07	0.45-0.61	0.48	0.08	0.38-0.58	0.49	0.07	0.42-0.58
CSS	0.40	0.03	0.39-0.45	0.41	0.07	0.35-0.47	0.41	0.02	0.39-0.44	0.38	0.11	0.24-0.48	0.38	0.08	0.29-0.47	0.37	0.04	0.34-0.43
<i>Both</i>																		
VT1	0.48	0.05	0.39-0.53	0.50	0.04	0.46-0.57	0.52	0.07	0.39-0.63	0.52	0.08	0.36-0.61	0.47	0.07	0.37-0.58	0.48	0.06	0.36-0.58
CSS	0.37	0.08	0.28-0.49	0.41	0.08	0.29-0.54	0.39	0.03	0.36-0.44	0.40	0.09	0.24-0.49	0.37	0.09	0.21-0.47	0.35	0.04	0.27-0.43

Lengthened Vowels: Corners (ms)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
VT1	215.8	28.0	185.4-240.1	163.5	23.4	132.9-189.1	200.0	19.0	186.3-227.9	214.3	23.0	190.3-238.7	203.0	24.5	173.1-224.1	207.0	22.8	190.4-247.1
CSS	110.4	13.4	96.5-127.8	114.9	7.7	104.5-122.1	108.8	28.3	82.4-141.9	129.2	15.6	111.9-148.7	113.3	17.9	99.9-138.2	132.5	29.1	101.9-166.2
<i>Female</i>																		
VT1	192.9	12.5	176.4-203.9	181.1	35.7	129.9-211.1	204.2	35.5	174.3-246.4	197.7	14.0	187.1-217.5	187.9	24.5	162.3-219.1	193.4	14.3	179.5-211.6
CSS	104.6	25.4	76.8-129.4	118.3	6.3	113.8-127.5	109.8	17.0	94.0-133.7	105.9	30.3	72.0-133.0	110.8	5.0	107.4-118.0	102.4	13.4	86.4-123.6
<i>Both</i>																		
VT1	204.3	23.5	176.4-240.1	172.3	29.5	129.9-211.1	202.1	26.5	174.3-246.4	206.0	19.7	187.1-238.7	195.5	24.1	162.3-224.1	200.2	19.3	179.5-247.1
CSS	107.5	19.1	76.8-129.4	116.6	6.8	104.5-127.5	109.3	21.6	82.4-141.9	117.6	25.5	72.0-148.7	112.0	12.2	99.9-138.2	117.5	26.6	86.4-166.2

Lengthened Vowels: Non-Rhotic Mids (ms)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
VT2	183.0	26.1	152.8-212.7	151.4	20.1	128.6-175.1	180.5	20.8	163.3-210.7	184.6	14.6	171.8-198.1	171.6	22.1	141.7-194.7	192.6	33.5	153.9-246.2
CSS	83.7	12.9	71.6-99.2	83.3	12.8	71.1-99.2	84.2	10.0	69.9-91.2	102.0	12.2	89.4-116.9	99.1	21.8	78.5-129.8	99.4	20.4	78.7-130.2
<i>Female</i>																		
VT2	186.2	8.0	178.7-193.9	177.2	15.7	156.2-194.3	190.4	28.1	155.7-223.2	174.9	14.8	153.0-185.6	168.2	31.0	134.1-205.8	172.5	12.2	154.7-184.3
CSS	93.5	24.6	70.5-126.4	90.4	8.9	81.3-98.1	98.1	12.5	82.8-113.1	93.4	10.4	82.7-107.3	94.6	13.1	83.0-112.3	83.9	6.2	78.8-93.9
<i>Both</i>																		
VT2	184.6	18.0	152.8-212.7	164.3	21.7	128.6-194.3	185.4	23.5	155.7-223.2	179.8	14.6	153.0-198.1	169.9	25.0	134.1-205.8	182.6	26.0	153.9-246.2
CSS	88.6	18.9	70.5-126.4	86.9	10.9	71.1-99.2	91.1	12.8	69.9-113.1	97.7	11.4	82.7-116.9	96.9	16.8	78.5-129.8	91.6	16.4	78.7-130.2

Phonemic Diphthongs (ms)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
VT2	265.3	49.2	209.9-328.6	233.0	36.3	185.8-274.3	257.2	36.0	236.2-311.1	285.3	25.2	262.8-319.0	268.3	40.0	209.5-296.4	278.9	54.2	230.0-368.6
CSS	123.8	25.2	97.2-156.5	122.0	21.6	94.4-147.2	120.6	27.4	84.0-150.4	160.9	29.2	125.1-196.5	161.1	41.8	132.0-222.7	164.5	38.0	114.6-219.9
<i>Female</i>																		
VT2	295.1	28.8	253.6-320.2	264.5	49.1	192.2-301.9	293.2	33.7	248.3-327.3	283.5	21.1	254.1-299.8	268.4	25.9	233.5-295.8	271.4	24.6	249.5-313.2
CSS	127.4	31.1	92.5-157.2	145.5	39.8	112.0-198.0	126.7	10.5	115.4-140.4	151.6	33.6	109.8-179.6	141.4	17.7	126.6-162.9	137.3	28.0	109.4-176.1
<i>Both</i>																		
VT2	280.2	40.6	209.9-328.6	248.8	43.4	185.8-301.9	275.2	37.6	236.2-327.3	284.4	21.5	254.1-319.0	268.3	31.2	209.5-296.4	275.2	39.9	230.0-368.6
CSS	125.6	26.3	92.5-157.2	133.7	32.2	94.4-198.0	123.6	19.5	84.0-150.4	156.2	29.5	109.8-196.5	151.3	31.5	126.6-222.7	150.9	34.6	109.4-219.9

Reduced Vowel Substitution Coefficients (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
ALL	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
<i>Female</i>																		
ALL	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
<i>Both</i>																		
ALL	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

Increased Distorted Vowel Substitutions (count)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
VT12	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
<i>Female</i>																		
VT12	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		1.0	2.2	0.0-5.0
<i>Both</i>																		
VT12	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.5	1.6	0.0-5.0

Less Precise Diphthongs (5 points) ^a (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
VT2	4715	1067	4056-6308	4686	1699	3495-6632	5261	2058	2386-7272	5776	1048	4616-7085	7777	1033	7121-9319	6570	972	5296-7683
<i>Female</i>																		
VT2	11185	4657	7031-16777	6534	2185	3676-8970	11125	3789	7720-16378	11324	2824	8449-13945	9227	4221	5461-13386	9615	2809	5787-13336
<i>Both</i>																		
VT2	7950	4663	4056-16777	5742	2080	3495-8970	8193	4218	2386-16378	8550	3561	4616-13945	8502	2948	5461-13386	8093	2550	5296-13336

^a All original cell values in this table were divided by 10.

Less Precise Diphthongs (3 points) ^a (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
VT2	2445	945	1517-3755	2861	2089	1058-5151	2064	449	1450-2522	3636	1907	1698-6221	3500	859	2683-4693	2765	1126	1417-4007
<i>Female</i>																		
VT2	9417	2989	6706-12621	3980	1761	1677-5885	6154	2542	3895-9344	5128	1169	3693-6544	3863	1458	2354-5192	4879	1076	3158-5771
<i>Both</i>																		
VT2	5931	4254	1517-12621	3501	1834	1058-5885	4109	2763	1450-9344	4382	1667	1698-6544	3681	1125	2354-5192	3822	1523	1417-5771

^a All original cell values in this table were divided by 10.

Distorted Rhotics: F3-F2 (Hz)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
VT2	364.6	90.9	291.0-488.3	317.9	66.7	226.3-377.0	309.3	53.7	236.8-366.0	332.0	70.9	247.3-402.3	449.8	89.7	388.0-581.5	497.4	152.1	301.0-656.8
RSTR	349.6	58.4	287.2-421.3	317.3	19.8	291.9-340.0	305.0	4.6	301.1-310.9	290.6	49.6	253.2-363.8	391.8	105.1	248.4-494.9	464.3	152.6	339.6-717.9
CSS	424.5	108.9	344.9-581.5	388.6	88.6	265.7-470.1	400.6	42.4	338.0-430.1	396.5	54.4	320.4-440.2	388.5	100.7	247.3-473.8	484.2	197.8	355.5-832.6
<i>Female</i>																		
VT2	436.0	183.2	334.3-710.5	366.2	76.8	280.3-441.3	379.6	73.8	323.3-484.5	528.0	400.0	238.0-1120.0	334.1	60.3	258.8-388.0	322.0	40.4	280.5-388.0
RSTR	319.5	70.9	267.8-420.9	341.0	113.4	234.8-488.4	327.0	94.3	259.0-464.4	351.4	82.2	273.0-440.4	349.1	58.5	285.6-417.8	324.7	33.4	268.3-349.8
CSS	448.8	46.0	416.5-517.0	415.4	82.0	366.5-538.0	527.2	157.5	418.7-761.0	394.4	66.6	330.0-454.7	393.4	21.4	376.8-421.8	389.3	57.3	344.0-488.3
<i>Both</i>																		
VT2	400.3	139.2	291.0-710.5	342.1	71.4	226.3-441.3	344.4	70.6	236.8-484.5	430.0	286.0	238.0-1120.0	391.9	94.0	258.8-581.5	409.7	139.8	280.5-656.8
RSTR	334.5	62.3	267.8-421.3	329.1	76.4	234.8-488.4	316.0	62.9	259.0-464.4	321.0	70.7	253.2-440.4	370.4	82.0	248.4-494.9	394.5	127.5	268.3-717.9
CSS	436.6	78.5	344.9-581.5	402.0	80.3	265.7-538.0	463.9	126.4	338.0-761.0	395.4	56.3	320.4-454.7	391.0	67.4	247.3-473.8	436.7	146.1	344.0-832.6

Distorted Rhotics: F3/F2 (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
VT2	1.3	0.1	1.2-1.3	1.2	0.0	1.2-1.3	1.2	0.1	1.2-1.3	1.3	0.0	1.2-1.3	1.3	0.1	1.3-1.4	1.4	0.1	1.2-1.5
RSTR	1.3	0.0	1.2-1.3	1.2	0.0	1.2-1.3	1.2	0.0	1.2-1.3	1.2	0.0	1.2-1.3	1.3	0.1	1.2-1.4	1.3	0.1	1.3-1.5
CSS	1.3	0.1	1.3-1.4	1.3	0.1	1.2-1.3	1.3	0.0	1.3-1.4	1.3	0.0	1.3-1.3	1.3	0.1	1.2-1.4	1.4	0.2	1.3-1.7
<i>Female</i>																		
VT2	1.3	0.1	1.2-1.4	1.2	0.0	1.2-1.3	1.2	0.0	1.2-1.3	1.3	0.2	1.2-1.7	1.2	0.0	1.2-1.3	1.2	0.0	1.2-1.3
RSTR	1.2	0.0	1.2-1.3	1.2	0.1	1.2-1.4	1.2	0.1	1.2-1.3	1.2	0.0	1.2-1.3	1.2	0.0	1.2-1.3	1.2	0.0	1.2-1.3
CSS	1.3	0.0	1.2-1.3	1.3	0.0	1.3-1.4	1.3	0.1	1.3-1.4	1.2	0.0	1.2-1.3	1.3	0.0	1.3-1.3	1.3	0.1	1.2-1.4
<i>Both</i>																		
VT2	1.3	0.1	1.2-1.4	1.2	0.0	1.2-1.3	1.2	0.0	1.2-1.3	1.3	0.2	1.2-1.7	1.3	0.1	1.2-1.4	1.3	0.1	1.2-1.5
RSTR	1.2	0.1	1.2-1.3	1.2	0.1	1.2-1.4	1.2	0.1	1.2-1.3	1.2	0.0	1.2-1.3	1.3	0.1	1.2-1.4	1.3	0.1	1.2-1.5
CSS	1.3	0.1	1.2-1.4	0.3	0.0	1.2-1.4	1.3	0.1	1.3-1.5	1.3	0.0	1.2-1.3	1.3	0.1	1.2-1.4	1.3	0.1	1.2-1.7

Reduced Pairwise Vowel Duration Variability (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	59.3	6.0	53.0-67.3	58.7	3.9	54.2-63.6	51.2	4.5	45.0-55.4	57.1	4.3	53.5-62.6	53.1	5.6	45.2-58.3	54.6	3.8	50.5-59.7
<i>Female</i>																		
CSS	56.0	16.5	42.8-78.9	59.1	14.5	48.5-79.8	53.6	8.2	47.1-65.6	51.1	3.4	46.3-53.9	53.8	7.6	46.5-62.8	50.9	5.7	44.7-57.3
<i>Both</i>																		
CSS	57.6	11.6	42.8-78.9	58.9	9.8	48.5-79.8	52.4	6.3	45.0-65.6	54.1	4.8	46.3-62.6	53.4	6.2	45.2-62.8	52.7	5.0	44.7-59.7

Less Stable Vowel Space: Quadrilateral VSQI (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
VT1	87.4	9.2	73.8-93.0	82.1	3.9	78.6-85.9	89.5	2.1	87.7-92.4	90.1	2.7	87.3-93.1	85.5	2.2	82.3-87.1	84.2	5.4	78.7-90.6
CSS	38.9	24.5	11.8-59.3	52.2	6.1	45.5-57.3	54.1	22.7	38.0-70.1	56.1	26.4	25.7-73.0	60.0	11.4	45.7-72.1	23.3	11.2	7.2-32.1
<i>Female</i>																		
VT1	86.2	3.0	83.1-90.2	86.9	3.5	82.6-90.0	89.1	3.0	87.0-93.5	89.1	3.6	84.4-93.0	87.0	3.3	84.0-90.2	89.5	2.6	85.6-92.7
CSS	56.7	11.0	47.7-68.0	43.6	16.4	20.4-56.7	66.8	5.0	61.1-70.0	64.2	25.6	35.4-84.4	61.0	13.1	51.7-70.2	65.8	17.4	37.1-80.5
<i>Both</i>																		
VT1	86.8	6.3	73.8-93.0	84.5	4.2	78.7-90.0	89.3	2.4	87.0-93.5	89.6	3.0	84.4-93.1	86.2	2.7	82.3-90.2	86.9	4.9	78.7-92.7
CSS	47.8	19.8	11.8-69.0	47.3	12.9	20.4-57.3	61.7	13.8	38.1-70.1	60.2	23.7	25.7-84.4	60.3	10.6	45.7-72.1	46.9	26.5	7.2-80.5

Less Stable Vowel Space: Quadrilateral VSQIL (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
VT1	85.0	11.2	68.2-91.8	80.4	1.5	78.3-81.8	88.2	1.9	85.8-90.0	87.8	4.1	83.2-92.5	84.8	2.8	80.9-87.1	84.7	5.5	77.9-90.3
CSS	41.2	24.5	15.2-63.9	49.2	8.6	40.7-57.8	53.1	14.3	43.0-63.3	47.0	21.6	24.3-67.4	60.3	9.8	50.2-73.6	26.8	9.2	13.9-34.0
<i>Female</i>																		
VT1	83.6	3.3	80.4-88.2	84.2	4.9	79.3-89.5	86.8	3.3	83.2-91.0	86.2	5.8	79.9-92.5	86.0	3.7	80.8-89.7	88.7	2.5	86.5-92.4
CSS	48.9	13.8	35.7-63.1	43.3	12.5	30.8-59.0	63.9	8.6	54.2-70.6	66.9	26.5	36.6-85.7	54.5	14.0	44.6-64.4	67.7	15.5	44.5-82.2
<i>Both</i>																		
VT1	84.3	7.7	68.2-91.8	82.3	3.9	78.3-89.5	87.5	2.6	83.2-91.0	87.0	4.7	79.9-92.5	85.4	3.1	80.8-89.7	86.7	4.5	77.9-92.4
CSS	45.1	18.3	15.2-64.0	45.8	10.6	30.8-59.0	59.6	11.1	43.0-70.6	57.0	24.2	24.3-85.7	58.4	10.3	44.6-73.6	49.5	24.9	13.9-82.2

Less Stable Vowel Space: Distance from Center VSD (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
VT1	57.1	10.2	44.5-69.4	56.9	3.5	53.9-61.0	58.6	9.6	48.8-71.5	56.4	3.7	52.2-59.7	57.5	5.2	50.4-62.7	54.8	9.5	39.9-65.4
CSS	38.8	13.9	29.9-59.2	54.0	4.0	49.1-58.3	48.7	8.4	41.9-61.0	37.7	6.2	29.4-43.4	47.2	8.6	35.9-55.9	41.3	9.5	33.4-57.1
<i>Female</i>																		
VT1	52.4	5.0	47.0-59.0	52.9	7.1	46.9-63.2	59.3	5.4	54.9-66.4	58.6	5.4	53.2-64.2	55.6	4.3	51.6-61.6	59.1	10.5	47.8-75.5
CSS	53.5	13.1	38.8-63.7	54.1	6.1	45.2-58.9	57.9	6.2	49.1-63.3	45.9	5.2	41.8-52.7	48.7	12.7	35.5-62.2	52.0	10.8	40.3-67.9
<i>Both</i>																		
VT1	54.7	7.8	44.5-69.4	54.9	5.6	46.9-63.2	58.9	7.2	48.8-71.5	57.5	4.4	52.2-64.2	56.5	4.5	50.4-62.7	57.0	9.7	39.9-75.5
CSS	45.1	14.7	29.9-63.7	54.1	4.8	45.2-58.9	53.3	8.4	41.9-63.3	41.8	6.9	29.4-52.7	48.0	10.1	35.5-62.2	46.6	11.2	33.4-67.9

Less Stable Vowel Space: Distance from Center VSDL (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
VT1	75.9	6.4	67.5-82.4	72.7	2.6	69.3-75.6	74.6	7.8	64.0-82.1	73.8	8.2	65.1-84.6	73.3	5.7	67.5-81.2	71.5	8.3	61.9-80.6
CSS	50.2	22.5	25.9-77.3	52.8	16.0	31.7-70.2	54.9	4.7	51.7-61.9	41.6	15.5	26.1-58.8	55.3	15.8	40.3-76.1	52.6	5.0	47.3-57.8
<i>Female</i>																		
VT1	75.3	4.1	69.6-79.3	73.1	4.0	68.2-77.8	78.0	2.9	75.4-81.5	73.4	6.8	68.3-83.2	74.0	5.2	67.4-79.6	75.9	3.1	71.9-80.2
CSS	62.0	10.6	49.9-69.2	56.3	10.4	44.5-65.8	64.2	2.7	61.1-67.2	63.3	5.3	57.2-68.6	59.1	13.7	47.1-73.7	70.3	5.9	64.9-76.8
<i>Both</i>																		
VT1	75.6	5.0	67.5-82.4	72.9	3.1	68.2-77.8	76.3	5.8	64.0-82.1	73.6	7.0	65.1-84.6	73.7	5.1	67.4-81.2	73.7	6.3	61.9-80.6
CSS	55.2	18.2	25.9-77.4	54.5	12.6	31.7-70.2	59.6	6.1	51.7-67.2	52.5	15.8	26.1-68.6	57.2	13.8	40.3-76.1	61.4	10.7	47.3-76.8

Less Stable Vowel Space: /i, æ, a/ Distance from Center VSD3 (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
VT1	46.9	4.6	42.4-52.8	48.6	5.1	41.0-51.5	45.6	5.9	39.0-52.1	48.0	1.5	45.8-49.3	45.4	4.9	38.8-49.9	46.9	4.1	43.9-53.8
CSS	49.0	8.2	38.8-56.4	54.5	13.1	38.5-67.5	55.8	14.9	41.2-69.1	42.8	14.4	22.1-55.1	47.8	16.6	28.2-68.8	43.2	10.1	29.8-53.1
<i>Female</i>																		
VT1	53.7	2.7	51.1-57.4	48.9	3.7	43.6-51.6	51.9	3.3	47.1-54.1	48.1	7.2	38.3-54.6	49.0	9.0	37.9-59.3	53.7	7.3	38.2-56.4
CSS	57.6	4.6	52.5-63.4	59.6	10.5	46.4-70.4	58.8	8.0	49.5-66.0	44.1	2.2	41.6-46.9	52.6	15.9	31.0-69.5	51.4	6.4	44.1-59.7
<i>Both</i>																		
VT1	50.3	5.0	42.4-57.4	48.7	4.1	41.0-51.6	48.7	5.6	39.0-54.1	48.0	4.8	38.3-54.6	47.2	7.0	37.9-59.3	50.3	5.8	38.2-56.4
CSS	53.3	7.7	38.8-63.4	57.1	11.3	38.5-70.4	57.3	11.2	41.2-69.1	43.4	9.6	22.1-55.1	50.2	15.3	28.2-69.5	47.3	9.0	29.8-59.7

Less Stable Vowel Space: /i, æ, a/ Distance from Center VSD3L (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
VT1	57.1	3.1	53.0-60.5	58.7	4.4	52.4-62.5	56.8	6.0	48.1-61.7	58.8	6.1	50.3-64.6	57.6	5.9	48.9-61.8	56.7	3.5	51.6-60.4
CSS	50.1	9.4	41.3-61.8	57.9	5.3	50.0-61.6	56.3	6.7	46.4-61.4	34.2	12.3	20.2-50.1	55.6	10.8	40.0-63.3	52.7	4.7	48.4-59.2
<i>Female</i>																		
VT1	60.0	1.6	57.9-61.8	56.1	3.5	51.4-58.9	61.9	1.2	60.7-63.0	55.0	4.7	49.5-60.8	55.7	5.3	47.9-60.1	57.1	3.8	53.4-62.5
CSS	53.2	18.7	30.7-76.3	57.7	14.4	48.1-78.6	56.1	2.3	53.4-58.5	51.5	6.6	45.2-58.7	61.3	19.1	36.0-82.4	62.8	9.9	54.6-79.8
<i>Both</i>																		
VT1	58.6	2.7	53.0-61.8	57.4	3.9	51.4-62.5	59.3	4.8	48.1-63.0	56.9	5.4	49.5-64.6	56.7	5.3	47.9-61.8	56.9	3.4	51.6-62.5
CSS	51.7	13.8	30.7-76.3	57.8	10.0	48.1-78.6	56.2	4.7	46.4-61.4	42.8	13.0	20.2-58.7	58.5	14.7	36.0-82.4	57.8	9.0	48.4-79.8

Less Stable F1: /i/ (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
VT1	89.5	4.3	84.5-93.4	92.0	5.8	86.4-100.0	95.2	5.6	89.7-100.0	87.0	11.4	72.6-100.0	86.4	5.3	79.7-91.1	85.6	5.8	79.7-92.0
CSS	88.6	7.4	77.7-93.8	87.5	13.8	72.7-100.0	86.5	10.3	75.1-100.0	72.2	18.5	48.4-92.0	88.1	8.8	74.9-93.4	88.5	4.3	82.1-93.4
<i>Female</i>																		
VT1	90.8	4.3	85.5-94.6	86.3	8.0	74.9-93.2	91.8	6.5	84.7-100.0	81.2	8.3	69.0-87.8	85.1	1.8	83.7-87.7	89.9	8.7	79.2-100.0
CSS	83.3	14.2	63.6-94.0	86.1	5.4	80.6-91.0	87.0	9.5	78.3-100.0	84.1	4.3	80.0-90.0	83.1	5.6	77.6-90.4	88.5	8.2	79.6-100.0
<i>Both</i>																		
VT1	90.1	4.0	84.5-94.6	89.1	7.1	74.9-100.0	93.5	5.9	84.7-100.0	84.1	9.7	69.0-100.0	85.7	3.8	79.7-91.1	87.8	7.3	79.2-100.0
CSS	86.0	10.9	63.6-94.0	86.7	8.9	72.7-100.0	86.8	9.1	75.1-100.0	78.1	14.0	48.4-92.0	85.6	7.4	74.9-93.4	88.5	6.2	79.6-100.0

Less Stable F1: /æ/ (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
VT1	96.0	4.7	91.7-100.0	91.4	5.1	85.6-96.9	95.5	1.8	93.5-97.1	96.2	1.3	94.3-97.3	93.7	3.2	89.8-97.6	92.2	3.3	89.8-97.2
CSS	77.8	7.2	71.8-85.8	78.3	7.8	71.4-85.7	72.2	13.7	52.8-83.5	86.3	6.5	78.9-94.8	83.0	11.5	73.5-95.8	80.7	5.4	71.2-84.2
<i>Female</i>																		
VT1	94.4	3.6	90.1-97.7	96.7	2.4	94.9-100.0	96.4	3.0	93.5-100.0	94.5	2.3	92.6-97.2	94.5	3.2	89.8-97.4	93.1	3.1	87.7-95.7
CSS	82.9	15.3	60.1-92.1	73.7	16.4	56.6-96.0	83.2	5.6	76.7-86.7	75.3	13.4	55.6-83.8	68.3	14.0	53.0-86.7	81.9	17.1	60.1-96.9
<i>Both</i>																		
VT1	95.2	3.9	90.1-100.0	94.1	4.7	85.6-100.0	96.0	2.3	93.5-100.0	95.4	2.0	92.6-97.3	94.1	3.0	89.8-97.6	92.7	3.1	87.7-97.2
CSS	80.7	11.9	60.1-92.1	76.0	12.1	56.6-96.0	76.9	11.8	52.8-86.7	80.8	11.4	55.6-94.8	74.6	14.3	53.0-95.8	81.3	12.0	60.1-96.9

Less Stable F1: /u/ (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
VT1	87.2	7.0	77.1-92.6	82.2	4.5	77.9-88.2	88.3	4.6	83.7-93.9	91.7	2.3	89.1-94.6	89.8	3.1	86.6-94.0	90.9	6.0	83.7-100.0
CSS	86.1	7.7	77.7-95.3	70.7	22.4	39.8-92.6	83.6	5.9	74.9-87.4	84.1	1.3	82.4-85.6	86.0	13.8	68.4-100.0	85.3	6.0	77.6-92.0
<i>Female</i>																		
VT1	90.3	4.9	83.7-95.1	85.9	9.3	72.9-95.1	91.3	8.8	79.4-100.0	89.5	8.3	77.4-94.9	89.8	7.1	79.7-95.4	91.4	3.2	86.4-94.6
CSS	88.9	15.8	77.7-100.0	85.3	12.4	70.6-100.0	87.2	9.5	80.0-100.0	89.8	8.8	84.2-100.0	88.4	3.7	84.3-93.3	84.1	4.6	80.5-92.0
<i>Both</i>																		
VT1	88.8	5.8	77.1-95.1	84.0	7.1	72.9-95.1	89.8	6.7	79.4-100.0	90.6	5.8	77.4-94.9	89.8	5.1	79.7-95.4	91.1	4.6	83.7-100.0
CSS	87.0	9.3	77.7-100.0	78.0	18.5	39.8-100.0	85.4	7.6	74.9-100.0	86.6	6.0	82.4-100.0	87.2	9.5	68.4-100.0	84.6	5.0	77.6-92.0

Less Stable F1: /ɑ/ (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
VT1	94.8	1.9	92.6-96.9	96.1	2.1	92.9-97.2	96.0	2.9	93.2-100.0	96.2	1.1	94.8-97.2	93.1	6.1	84.5-97.7	92.9	2.5	91.1-97.3
CSS	88.8	7.0	79.2-96.1	91.8	8.6	80.2-100.0	83.9	7.0	77.1-93.3	84.0	17.1	60.9-100.0	83.9	15.2	61.5-93.5	88.3	2.6	84.4-90.6
<i>Female</i>																		
VT1	96.4	2.9	92.9-100.0	93.5	5.2	87.2-100.0	95.4	2.3	92.3-97.2	94.8	2.6	91.6-97.7	91.3	7.7	80.2-96.8	92.7	4.5	87.7-97.8
CSS	81.4	9.3	74.7-92.0	86.1	11.7	73.0-100.0	86.7	19.0	58.8-100.0	88.8	6.9	82.1-95.1	84.3	12.4	65.7-91.7	92.0	5.6	82.5-96.0
<i>Both</i>																		
VT1	95.6	2.4	92.6-100.0	94.8	4.0	87.2-100.0	95.7	2.4	92.3-100.0	95.5	2.0	91.6-97.7	92.2	6.5	80.2-97.7	92.8	3.4	87.7-97.8
CSS	85.6	8.3	74.7-96.1	89.0	10.0	73.0-100.0	85.3	13.3	58.8-100.0	86.4	12.3	60.9-100.0	84.1	12.9	61.5-93.5	90.2	4.6	82.5-96.0

Less Stable F2: /i/ (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
VT1	95.9	5.4	88.1-100.0	97.6	1.7	95.2-98.9	97.6	1.0	96.5-98.8	96.6	0.4	96.2-97.2	95.7	3.1	93.0-99.2	95.8	1.3	94.3-97.1
CSS	90.7	4.5	87.1-96.6	97.0	2.4	94.2-98.9	91.6	3.7	86.8-95.1	93.1	3.3	88.3-96.0	90.5	3.6	85.6-93.5	93.6	5.6	87.1-100.0
<i>Female</i>																		
VT1	97.8	1.5	95.7-99.3	98.6	1.1	97.5-100.0	96.8	2.6	93.1-99.1	97.5	1.2	95.9-98.5	96.9	1.1	95.5-98.1	97.5	1.6	95.2-99.1
CSS	95.0	2.9	91.8-98.8	96.0	2.1	94.3-98.8	93.9	3.9	88.2-97.3	93.2	5.4	87.4-98.1	93.2	1.1	92.1-94.2	92.3	4.2	86.5-97.5
<i>Both</i>																		
VT1	96.9	3.8	88.1-100.0	98.1	1.4	95.2-100.0	97.2	1.9	93.1-99.1	97.1	1.0	95.9-98.5	96.3	2.2	93.0-99.2	96.7	1.6	94.3-99.1
CSS	92.9	4.2	87.1-98.8	96.4	2.1	94.2-98.9	92.8	3.7	86.8-97.3	93.2	4.1	87.4-98.1	91.8	2.9	85.6-94.2	92.9	4.7	86.5-100.0

Less Stable F2: /æ/ (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
VT1	97.2	1.0	96.1-98.0	97.2	2.6	94.7-100.0	98.0	1.9	95.6-100.0	98.3	1.2	97.2-100.0	97.2	1.5	95.6-98.9	95.9	1.3	94.4-97.6
CSS	95.2	5.0	90.0-100.0	84.8	10.0	72.3-95.7	90.0	5.4	86.8-98.1	92.8	4.5	86.9-96.5	93.3	6.4	87.3-100.0	92.8	5.2	85.7-100.0
<i>Female</i>																		
VT1	95.5	2.3	93.9-98.9	96.4	2.1	93.8-98.9	97.3	2.1	94.4-99.0	96.6	1.2	95.6-98.3	95.7	1.7	93.2-97.0	97.4	1.0	96.3-98.7
CSS	94.5	3.3	89.8-96.9	83.7	8.0	71.7-88.8	90.1	7.8	81.2-96.0	87.4	12.0	71.6-98.6	82.8	16.5	v-97.5	89.6	4.5	83.1-95.0
<i>Both</i>																		
VT1	96.3	1.9	93.9-98.9	96.8	2.2	93.8-100.0	97.7	1.9	94.4-100.0	97.5	1.4	95.6-100.0	96.4	1.7	93.2-98.9	96.7	1.4	94.4-98.7
CSS	94.8	3.7	89.8-100.0	84.2	8.4	71.7-95.7	90.1	5.9	81.2-98.1	90.1	8.9	71.6-98.6	87.3	13.5	59.4-100.0	91.2	4.9	83.1-100.0

Less Stable F2: /u/ (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
VT1	93.5	6.3	84.1-98.1	94.8	2.7	90.9-96.6	94.6	3.5	89.8-98.2	96.2	1.2	94.5-97.3	93.4	2.4	90.8-96.4	93.7	3.5	89.6-98.0
CSS	78.5	15.7	62.8-93.5	86.4	7.5	79.2-96.6	77.7	15.2	60.8-90.7	87.0	10.3	77.8-98.3	81.9	11.8	69.9-93.3	75.3	23.9	40.3-94.0
<i>Female</i>																		
VT1	91.0	3.0	88.1-93.7	94.2	1.9	92.2-96.8	92.9	6.0	85.8-100.0	92.1	4.4	87.3-97.5	93.4	2.8	90.1-95.8	92.3	4.8	84.1-96.8
CSS	74.4	17.3	62.2-86.6	84.9	8.0	75.3-93.0	87.9	5.6	80.7-94.4	78.8	9.1	70.2-88.4	86.4	6.9	80.0-94.8	84.7	6.8	73.4-91.5
<i>Both</i>																		
VT1	92.3	4.8	84.1-98.1	94.5	2.2	90.9-96.8	93.7	4.6	85.8-100.0	94.2	3.7	87.3-97.5	93.4	2.4	90.1-96.4	93.0	4.0	84.1-98.0
CSS	77.1	14.5	62.2-93.5	85.6	7.2	75.3-96.6	82.8	11.9	60.8-94.4	83.5	10.0	70.2-98.3	84.2	9.3	69.9-94.8	80.5	16.2	40.3-94.0

Less Stable F2: /a/ (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
VT1	96.1	1.5	94.9-98.4	95.3	3.8	90.1-98.3	95.8	2.0	93.8-98.2	97.6	1.7	95.9-100.0	93.2	2.3	90.2-95.3	96.2	1.0	95.2—97.5
CSS	91.2	3.4	87.7-95.9	94.9	4.0	90.2-100.0	90.3	6.6	80.8-96.0	87.8	10.6	73.5-96.7	85.2	14.5	64.6-97.7	88.4	11.6	67.9-96.7
<i>Female</i>																		
VT1	95.6	1.7	94.0-97.4	96.5	1.6	94.5-97.8	94.0	3.4	89.5-96.7	97.3	1.0	96.2-98.6	95.8	1.7	94.3-97.4	96.2	2.3	93.8-100.0
CSS	93.9	0.2	93.6-94.1	86.3	9.3	80.3-100.0	94.7	5.4	86.7-98.2	88.9	3.8	84.7-92.3	90.6	5.3	86.6-97.8	93.6	2.2	90.6-96.0
<i>Both</i>																		
VT1	95.8	1.5	94.0-98.4	95.9	2.7	90.1-98.3	94.9	2.8	89.5-98.2	97.4	1.3	95.9-100.0	94.5	2.4	90.2-97.4	96.2	1.7	93.8-100.0
CSS	92.3	2.8	87.7-95.9	90.6	8.1	80.3-100.0	92.5	6.1	80.8-98.2	88.4	7.4	73.5-96.7	87.9	10.5	64.6-97.8	91.0	8.3	67.9-96.7

Less Stable Vowel Duration: Corners (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
VT1	83.6	3.1	80.9-87.9	85.3	1.8	83.7-87.5	84.1	3.8	79.3-87.5	87.1	1.8	85.2-88.6	84.5	3.2	80.7-88.2	82.6	2.2	79.4-85.2
CSS	30.0	10.3	21.8-45.0	38.3	20.8	23.6-53.0	49.7	7.6	40.0-58.1	37.3	13.1	23.7-55.0	44.3	7.6	37.6-55.1	44.1	5.8	35.8-50.0
<i>Female</i>																		
VT1	85.8	1.3	84.6-87.4	84.7	1.4	82.7-85.7	83.2	1.9	80.5-85.1	81.3	2.8	78.1-84.8	86.9	3.9	81.5-90.6	81.9	1.4	80.0-84.0
CSS	41.9	15.3	19.0-51.0	22.5	6.0	17.5-31.2	30.9	11.4	16.8-44.0	39.2	25.2	18.5-75.8	32.4	11.1	16.8-41.7	46.5	14.9	20.8-58.2
<i>Both</i>																		
VT1	84.7	2.5	80.9-87.9	85.0	1.5	82.7-87.5	83.6	2.8	79.3-87.5	84.2	3.8	78.1-88.6	85.7	3.6	80.7-90.6	82.3	1.8	79.4-85.2
CSS	35.9	13.7	19.0-51.0	27.8	13.2	17.5-53.0	40.3	13.5	16.8-58.1	38.3	18.6	18.5-75.8	38.4	10.9	16.8-55.1	45.3	10.7	20.8-58.2

Less Stable Vowel Duration: Non-Rhotic Mids (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
VT2	77.6	6.5	68.7-83.9	78.6	1.4	77.3-80.5	79.3	3.4	75.2-82.8	74.7	4.0	69.0-78.1	75.6	4.3	72.1-81.7	76.8	8.3	67.1-84.4
CSS	46.7	6.2	37.8-51.9	32.1	8.4	19.7-37.7	41.7	6.0	35.3-49.4	37.5	8.2	30.8-49.2	45.5	5.8	39.7-52.6	50.0	3.3	44.6-53.2
<i>Female</i>																		
VT2	76.1	2.3	72.7-77.9	80.6	2.2	79.2-83.9	74.0	1.4	72.5-75.5	67.1	3.8	63.6-71.4	73.7	3.9	70.3-79.1	74.9	6.3	65.0-81.2
CSS	33.5	14.0	13.9-44.7	27.0	7.7	19.1-35.0	20.9	1.9	19.7-23.7	34.6	17.7	12.5-52.4	30.6	5.4	25.5-37.3	49.0	6.0	38.9-54.5
<i>Both</i>																		
VT2	76.9	4.6	68.7-83.9	79.6	2.0	77.3-83.9	76.7	3.7	72.5-82.8	70.9	5.4	63.6-78.1	74.6	3.9	70.3-81.7	75.8	7.0	65.0-84.4
CSS	40.1	12.3	13.9-51.9	29.6	7.9	19.1-37.7	31.3	11.8	19.7-49.4	36.1	12.9	12.5-52.4	38.0	9.5	25.5-52.6	49.5	4.6	38.9-54.5

Less Stable Vowel Duration: Phonemic Diphthongs (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
VT2	67.9	8.7	59.3-75.8	66.2	9.1	56.4-76.4	67.8	3.8	64.2-72.7	65.7	7.0	59.0-75.4	71.1	8.6	63.8-80.9	70.3	5.2	65.8-79.3
CSS	50.9	10.4	35.7-58.8	51.9	1.2	50.9-53.3	57.5	4.3	53.4-62.6	46.1	11.5	34.7-60.7	50.6	15.2	38.4-72.3	57.4	5.8	49.6-65.8
<i>Female</i>																		
VT2	66.7	8.7	55.8-75.4	69.5	7.3	62.8-79.3	64.0	6.1	59.8-72.9	59.8	5.5	55.2-67.6	60.0	5.5	53.0-64.7	64.1	12.3	48.6-80.9
CSS	36.4	19.8	16.5-57.3	34.6	14.4	17.0-50.8	47.6	15.9	31.5-66.5	66.8	7.7	55.5-72.4	50.1	7.2	42.5-58.0	56.6	8.5	43.7-64.2
<i>Both</i>																		
VT2	67.3	8.0	55.8-75.8	67.9	7.8	56.4-79.3	65.9	5.1	59.8-72.9	62.8	6.6	55.2-75.4	65.5	8.9	53.0-80.9	67.2	9.5	48.6-80.9
CSS	43.6	16.6	16.5-58.8	42.0	13.8	17.0-53.3	52.5	12.0	31.5-66.5	56.5	14.3	34.7-72.4	50.3	11.0	38.4-72.3	57.0	6.9	43.7-65.8

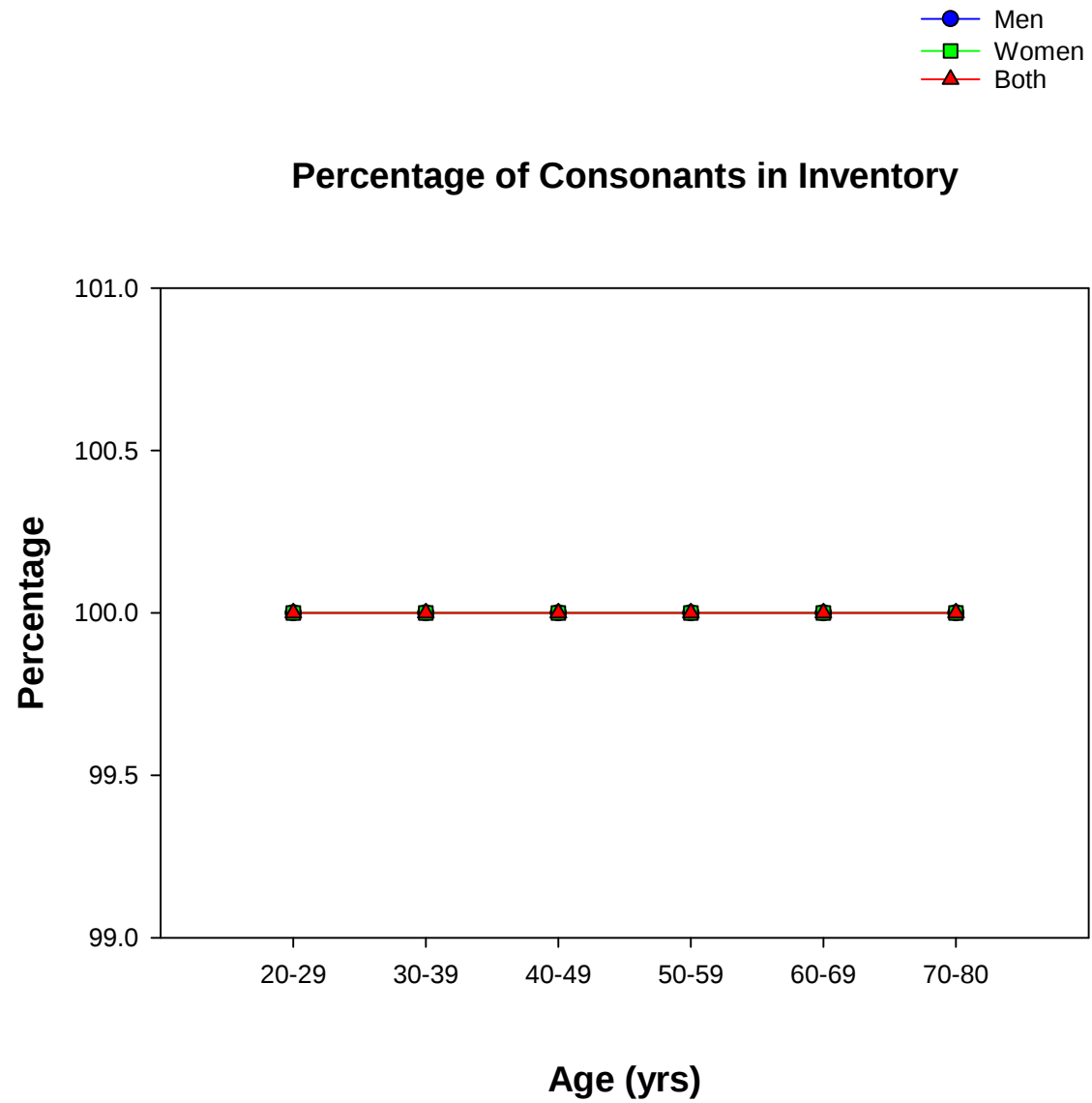
Less Stable Rhotic Distortions: F3-F2 (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
VT2	70.8	12.7	60.3-88.4	84.3	9.2	76.4-94.0	83.5	5.3	76.4-88.2	86.9	6.7	79.7-93.8	80.8	12.9	62.5-91.9	78.2	15.0	59.3-91.8
RSTR	80.3	4.2	75.2-84.9	68.0	24.7	31.0-82.0	76.7	9.1	63.6-84.0	83.0	4.1	78.5-86.6	73.5	15.8	50.1-83.3	76.6	3.9	72.6-81.1
CSS	82.0	8.6	76.0-94.8	82.2	4.4	76.2-85.9	75.0	7.1	68.2-84.7	64.3	19.2	42.9-80.1	68.4	13.2	51.3-83.5	63.8	19.3	34.1-84.2
<i>Female</i>																		
VT2	79.7	17.0	64.8-99.8	82.4	6.3	75.7-90.8	81.4	9.0	74.4-93.6	89.2	0.2	89.1-89.6	67.0	10.2	52.8-76.5	77.4	11.3	65.8-92.3
RSTR	79.2	7.0	72.5-88.9	78.3	7.8	69.1-85.6	73.0	13.4	53.0-81.0	83.7	5.7	76.2-88.3	77.4	3.4	74.3-82.0	81.4	8.4	67.8-90.3
CSS	58.6	23.2	42.2-74.9	78.3	17.5	59.1-94.5	66.2	9.1	56.8-78.5	79.1	16.2	61.8-100.0	65.6	17.8	44.6-85.5	61.5	13.6	53.4-81.8
<i>Both</i>																		
VT2	75.3	14.7	60.3-99.8	83.4	7.4	75.7-94.0	82.5	6.9	74.4-93.6	88.1	4.6	79.7-93.8	73.9	13.0	52.8-91.9	77.8	12.5	59.3-92.3
RSTR	79.8	5.4	72.5-88.9	73.2	17.8	31.0-85.6	74.9	10.8	53.0-84.0	83.4	4.6	76.2-88.3	75.4	10.8	50.1-83.3	79.0	6.7	67.8-90.3
CSS	74.2	17.3	42.2-94.8	80.2	12.0	59.1-94.5	70.6	8.9	56.8-84.7	72.8	17.8	42.9-100.0	67.0	14.6	44.6-85.5	62.8	16.0	34.1-84.2

Less Stable Rhotic Distortions: F3/F2 (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
VT2	93.5	3.5	90.0-98.4	96.9	2.0	95.0-98.8	97.2	0.7	96.3-97.9	96.8	1.7	94.8-98.6	94.3	4.5	87.8-97.8	93.8	3.6	88.5-97.7
RSTR	96.1	1.0	94.9-97.0	94.1	4.2	87.9-96.5	95.4	1.6	93.0-96.5	96.5	0.4	96.1-96.9	93.2	4.7	86.2-96.2	93.6	2.2	90.7-95.9
CSS	95.8	1.1	94.3-97.0	95.5	0.7	95.0-96.5	93.1	1.1	92.1-94.7	90.9	1.8	88.9-92.3	91.2	6.6	81.9-96.5	88.8	6.7	81.5-96.4
<i>Female</i>																		
VT2	94.7	4.9	88.2-98.9	96.8	1.6	94.5-98.3	95.7	2.4	93.4-99.0	96.7	2.8	92.7-98.7	94.0	1.7	92.5-96.3	96.0	2.4	93.3-98.5
RSTR	96.2	1.7	94.4-98.2	95.8	1.5	94.3-97.5	95.3	1.7	93.2-97.3	97.2	1.0	95.7-98.0	95.4	1.2	94.3-97.1	95.6	2.4	91.3-97.1
CSS	89.4	7.0	84.4-94.4	95.3	3.4	92.1-99.4	91.6	1.3	90.4-93.4	94.7	4.3	90.0-99.4	92.5	4.4	88.9-97.8	92.4	3.0	90.1-96.8
<i>Both</i>																		
VT2	94.1	4.0	88.2-98.9	96.8	1.7	94.5-98.8	96.4	1.8	93.4-99.0	96.8	2.1	92.7-98.7	94.1	3.1	87.8-97.8	94.9	3.5	88.5-98.5
RSTR	96.1	1.3	94.4-98.2	94.9	3.0	87.9-97.5	95.3	1.5	93.0-97.3	96.8	0.8	95.7-98.0	94.3	3.4	86.2-97.1	94.6	2.4	90.7-97.1
CSS	93.7	4.7	84.4-97.0	95.4	2.2	92.1-99.4	92.4	1.4	90.4-94.7	93.1	3.8	88.9-99.4	91.8	5.2	81.9-97.8	90.4	5.4	81.5-96.8

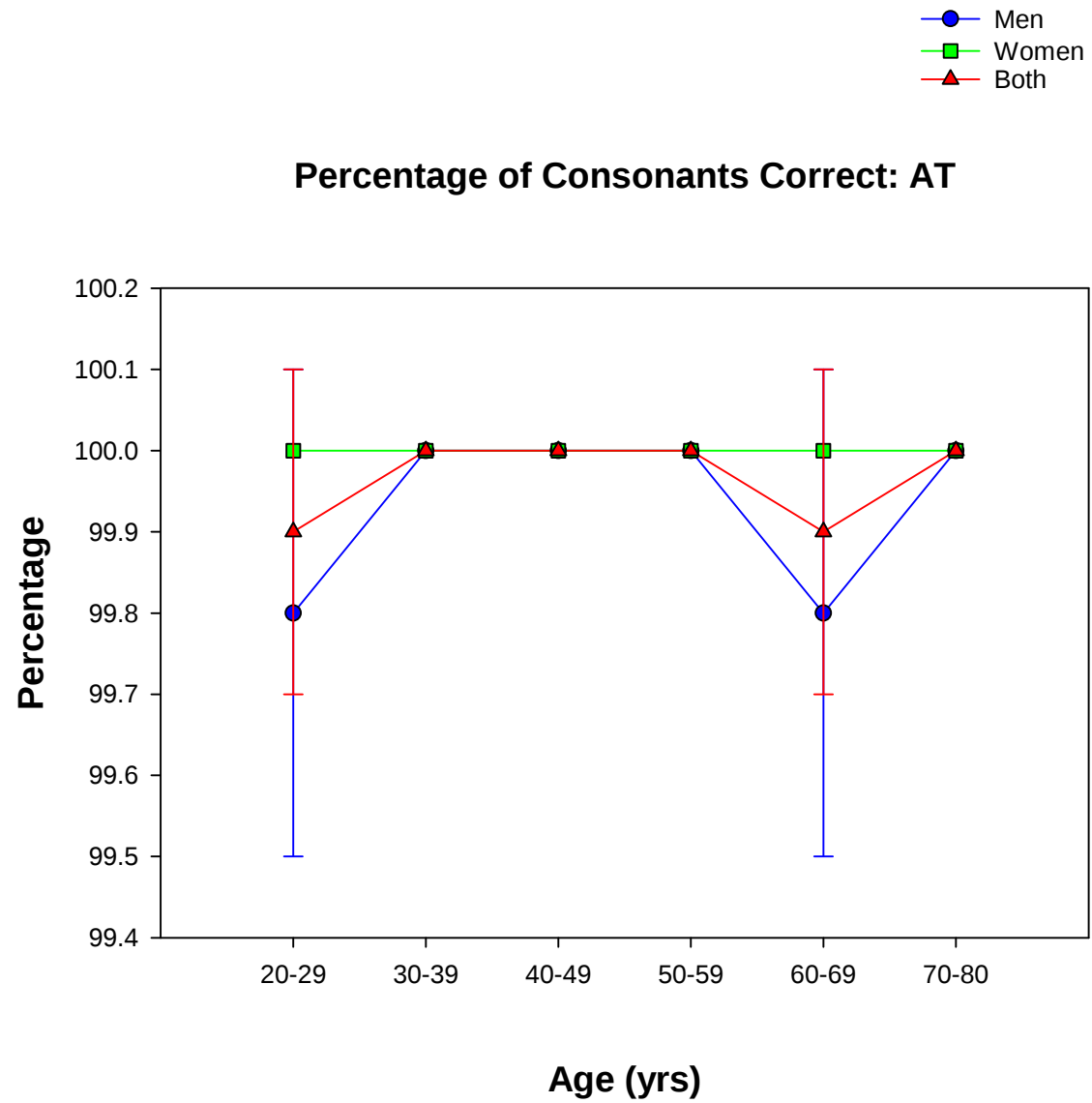
Less Stable Vowel Errors: Targets (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
VT12	50.0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
CWT	*	*	*	84.1	*	*	*	*	*	*	*	*	*	*	*	*	*	*
MWT	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	73.3	*	*
VT3	*	*	*	50.0	*	*	100.0	*	*	*	*	*	*	*	*	100.0	*	*
CSS	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
<i>Female</i>																		
VT12	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	100.0	*	*
CWT	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	61.1	*	*
MWT	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	81.4	*	*
VT3	100.0	0.0		100.0	0.0		*	*	*	100.0	*	*	50.0	*	*	100.0	*	*
CSS	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
<i>Both</i>																		
VT12	50.0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	100.0	*	*
CWT	*	*	*	84.1	*	*	*	*	*	*	*	*	*	*	*	61.1	*	*
MWT	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	77.4	5.7	73.3-81.4
VT3	100.0	0.0		83.3	28.9	50.0-100.0	100.0	*	*	100.0	*	*	50.0	*	*	100.0	0.0	
CSS	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

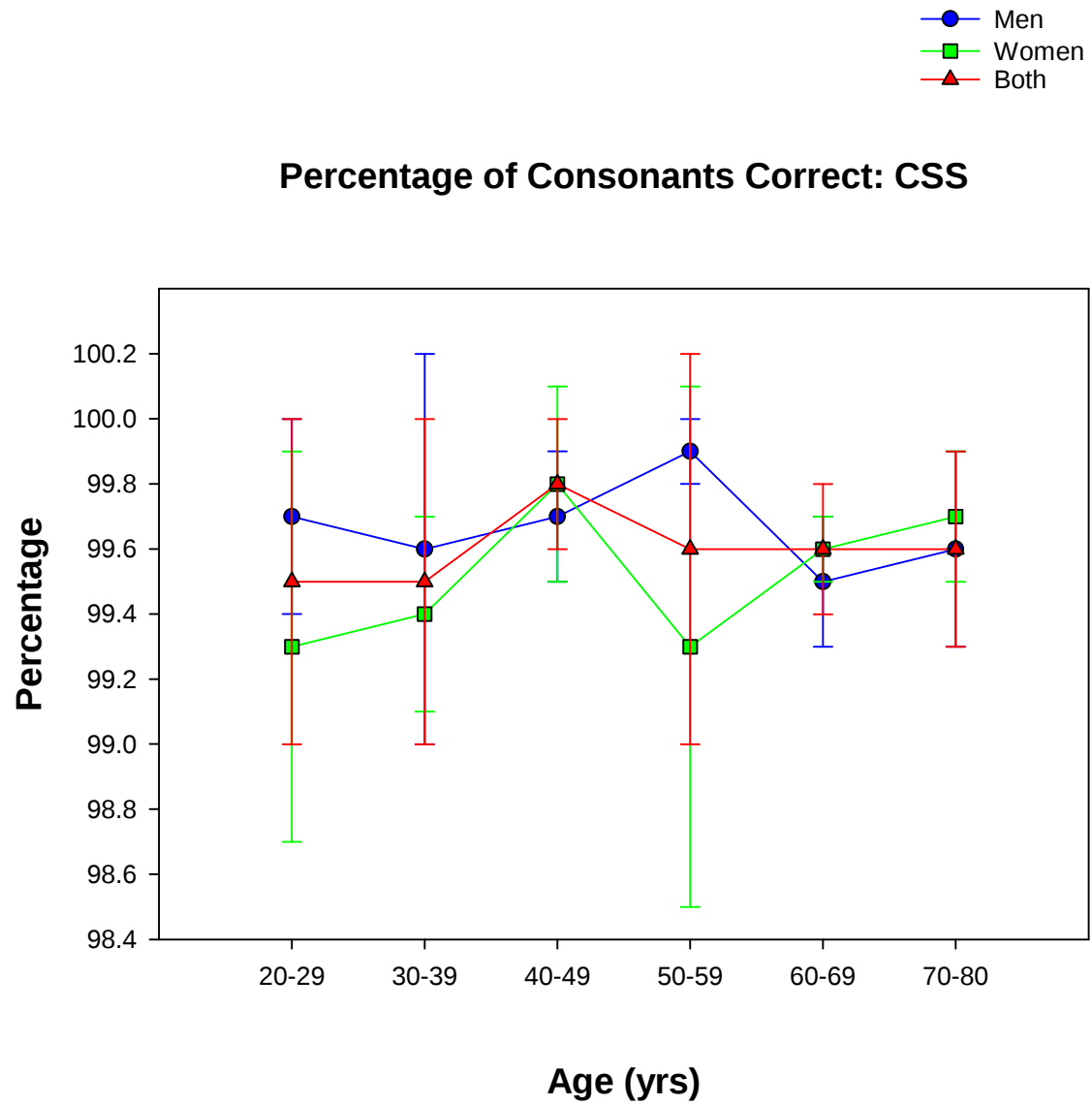
Less Stable Vowel Errors: Error Types (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
VT12	100.0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
CWT	*	*	*	100.0	*	*	*	*	*	*	*	*	*	*	*	*	*	*
MWT	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	33.3	*	*
VT3	*	*	*	100.0	*	*	100.0	*	*	*	*	*	*	*	*	100.0	*	*
CSS	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
<i>Female</i>																		
VT12	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	100.0	*	*
CWT	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	100.0	*	*
MWT	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0.0	*	*
VT3	100.0	0.0		100.0	0.0		*	*	*	100.0	*	*	100.0	*	*	100.0	*	*
CSS	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
<i>Both</i>																		
VT12	100.0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	100.0	*	*
CWT	*	*	*	100.0	*	*	*	*	*	*	*	*	*	*	*	100.0	*	*
MWT	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	16.7	23.6	0.0-33.3
VT3	100.0	0.0		100.0	0.0		100.0	*	*	100.0	*	*	100.0	*	*	100.0	0.0	
CSS	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

Percentage of Consonants in Inventory (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0	
<i>Female</i>																		
CSS	100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0	
<i>Both</i>																		
CSS	100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0	

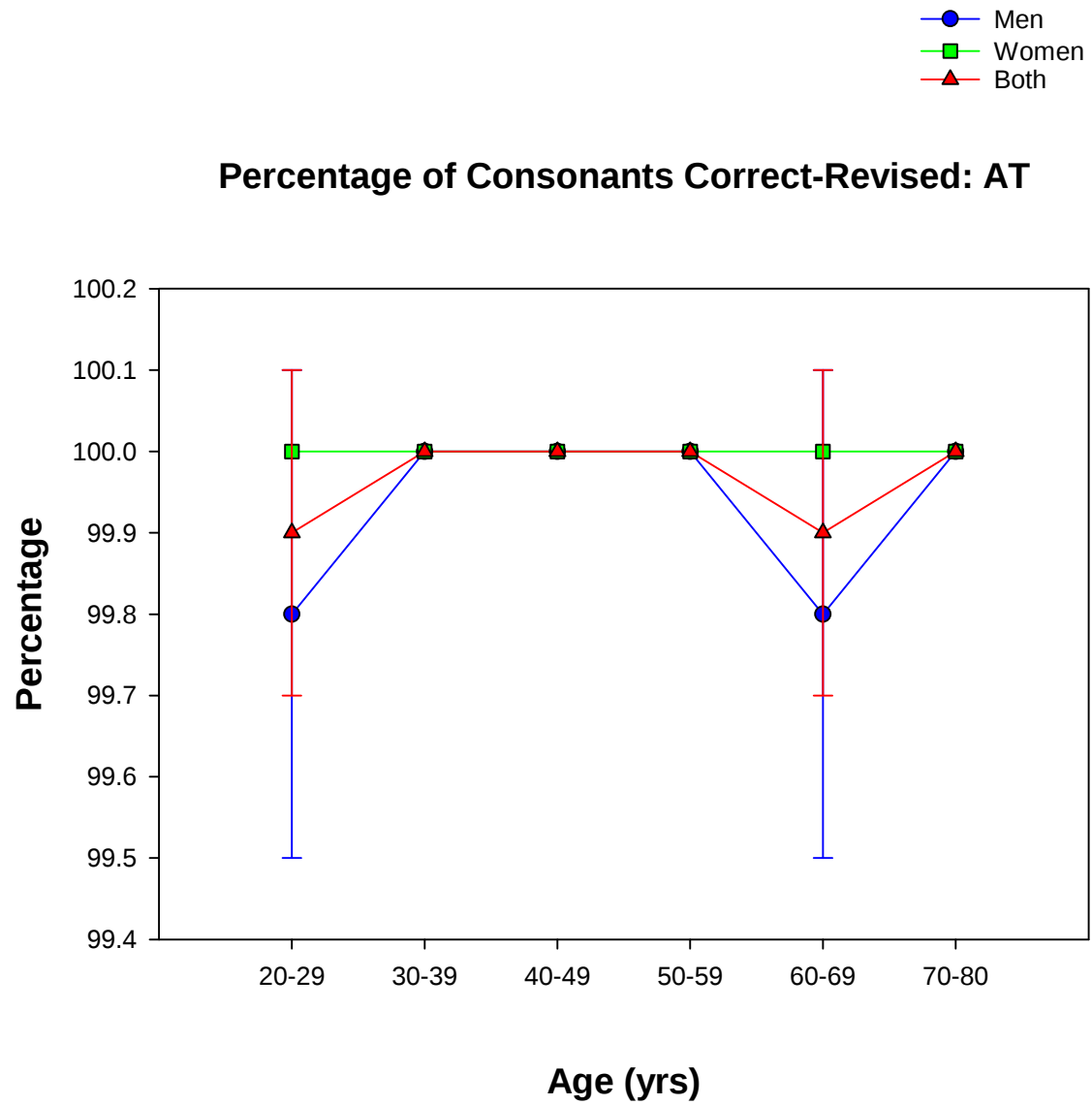


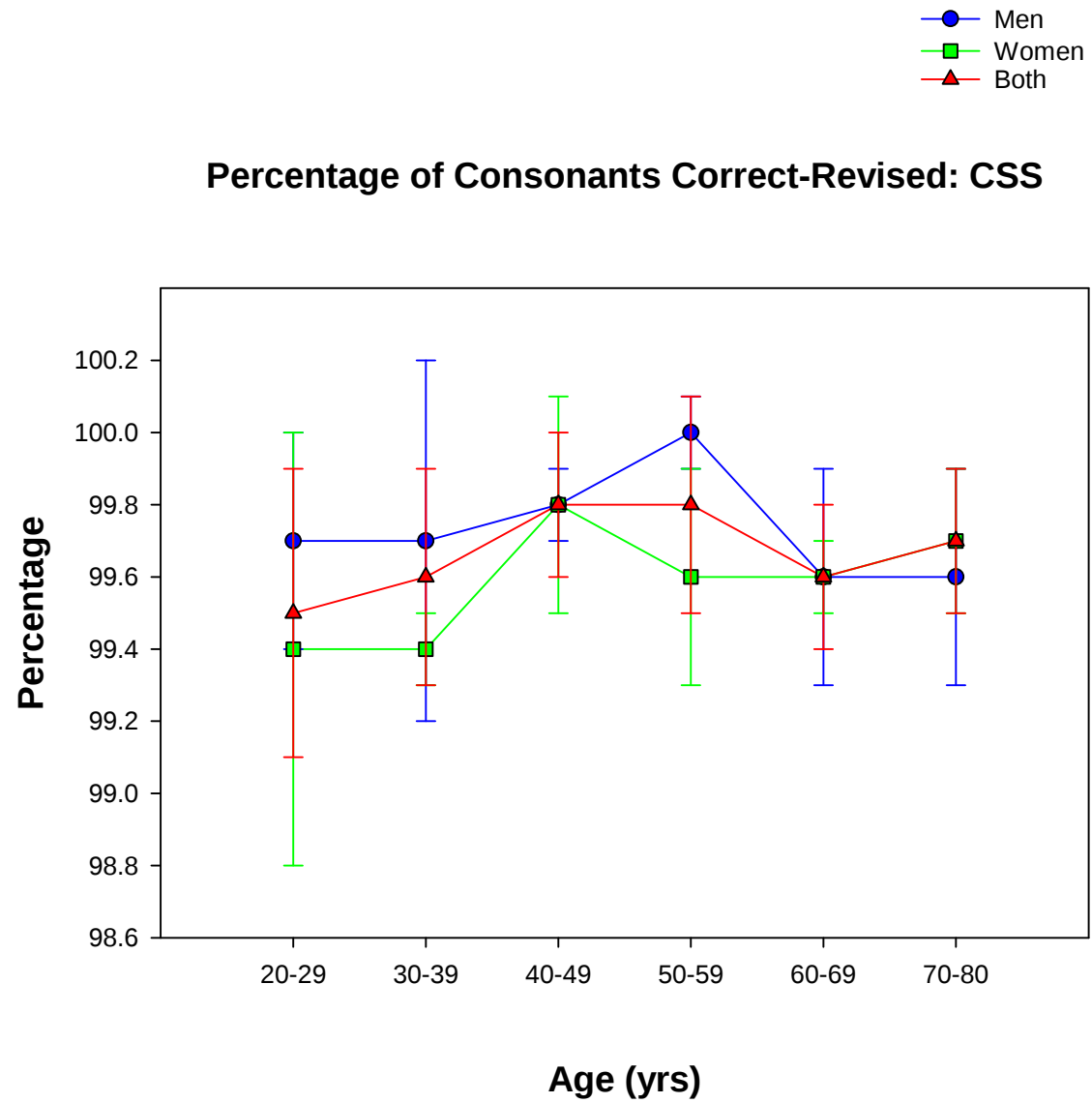
Percentage of Consonants Correct (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
AT	99.8	0.3	99.3-100.0	100.0	0.0		100.0	0.0		100.0	0.0		99.8	0.3	99.3-100.0	100.0	0.0	
CSS	99.7	0.3	99.4-100.0	99.6	0.6	98.9-100.0	99.7	0.2	99.5-100.0	99.9	0.1	99.7-100.0	99.5	0.2	99.4-99.8	99.6	0.3	99.3-100.0
<i>Female</i>																		
AT	100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0	
CSS	99.3	0.6	98.6-100.0	99.4	0.3	98.9-99.5	99.8	0.3	99.5-100.0	99.3	0.8	98.2-99.9	99.6	0.1	99.5-99.8	99.7	0.2	99.4-100.0
<i>Both</i>																		
AT	99.9	0.2	99.3-100.0	100.0	0.0		100.0	0.0		100.0	0.0		99.9	0.2	99.3-100.0	100.0	0.0	
CSS	99.5	0.5	98.6-100.0	99.5	0.5	98.8-100.0	99.8	0.2	99.5-100.0	99.6	0.6	98.2-100.0	99.6	0.2	99.4-99.8	99.6	0.3	99.3-100.0



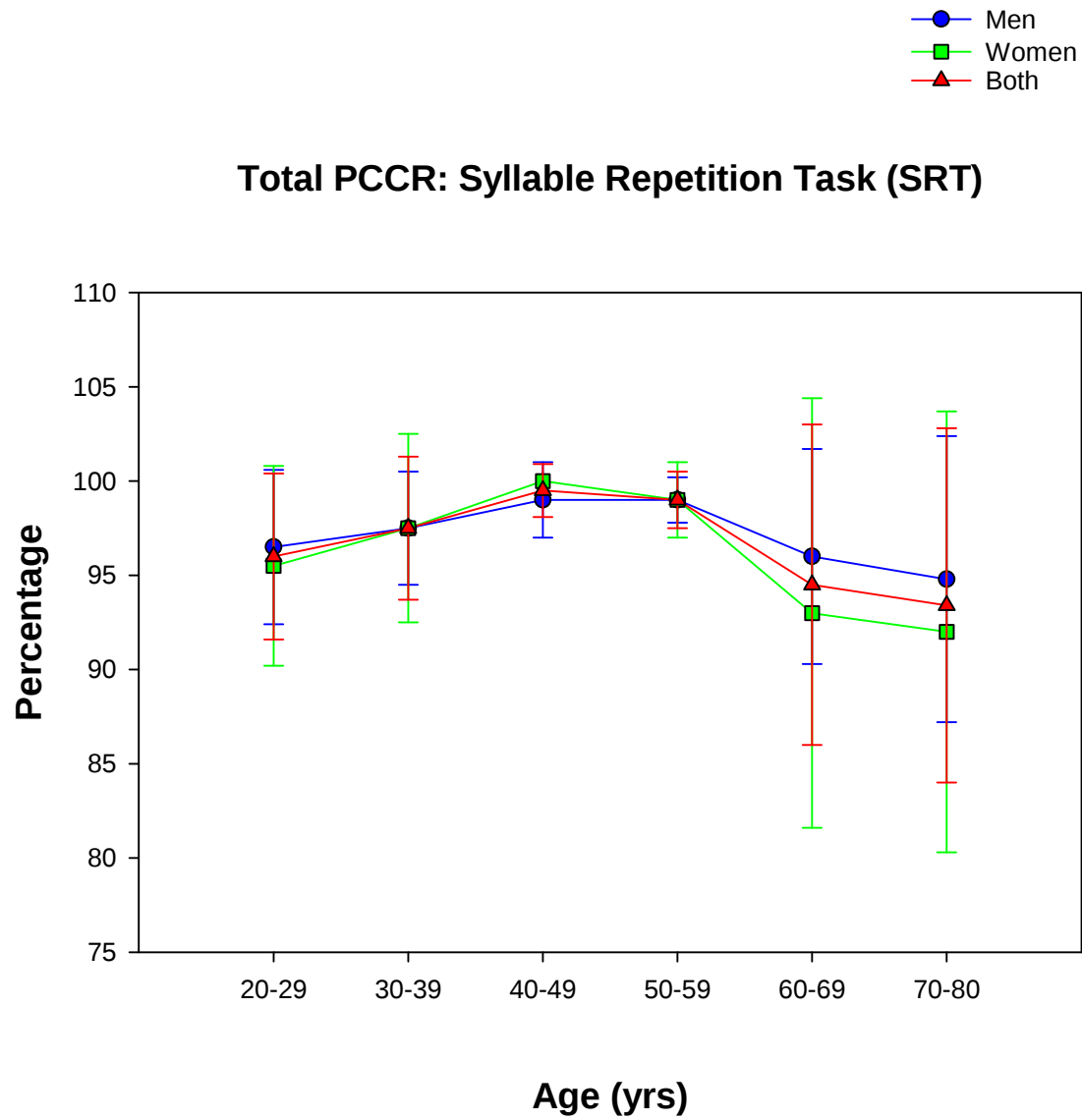


Percentage of Consonants Correct-Revised (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
AT	99.8	0.3	99.3-100.0	100.0	0.0		100.0	0.0		100.0	0.0		99.8	0.3	99.3-100.0	100.0	0.0	
CSS	99.7	0.3	99.4-100.0	99.7	0.5	99.2-100.0	99.8	0.1	99.7-100.0	100.0	0.1	99.9-100.0	99.6	0.3	99.4-100.0	99.6	0.3	99.3-100.0
<i>Female</i>																		
AT	100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0	
CSS	99.4	0.6	98.9-100.0	99.4	0.1	99.3-99.5	99.8	0.3	99.5-100.0	99.6	0.3	99.2-99.9	99.6	0.1	99.5-99.8	99.7	0.2	99.4-100.0
<i>Both</i>																		
AT	99.9	0.2	99.3-100.0	100.0	0.0		100.0	0.0		100.0	0.0		99.9	0.2	99.3-100.0	100.0	0.0	
CSS	99.5	0.4	98.9-100.0	99.6	0.3	99.2-100.0	99.8	0.2	99.5-100.0	99.8	0.3	99.2-100.0	99.6	0.2	99.4-100.0	99.7	0.2	99.3-100.0

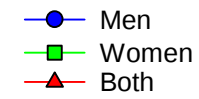




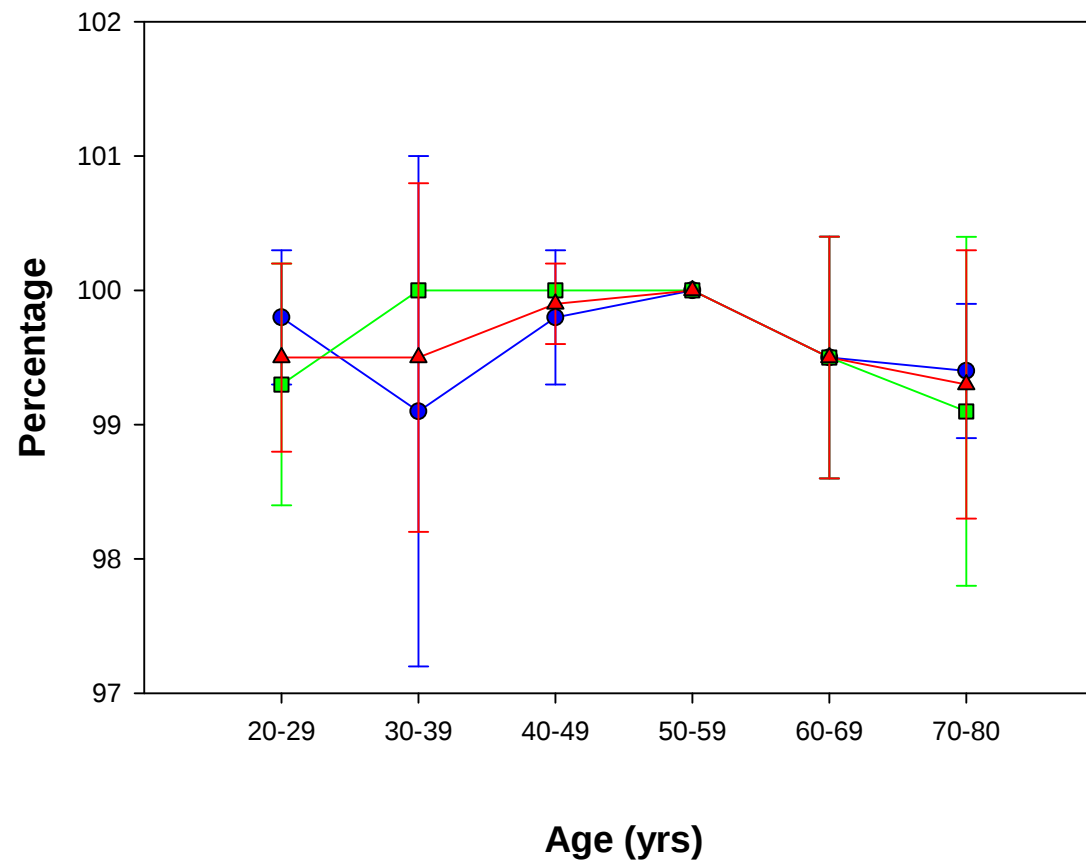
SRT Total Percentage Consonants Correct-Revised (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
SRT	96.5	4.1	92.0-100.0	97.5	3.0	94.0-100.0	99.0	2.0	96.0-100.0	99.0	1.2	98.0-100.0	96.0	5.7	88.0-100.0	94.8	7.6	82.0-100.0
<i>Female</i>																		
SRT	95.5	5.3	90.0-100.0	97.5	5.0	90.0-100.0	100.0	0.0		99.0	2.0	96.0-100.0	93.0	11.4	76.0-100.0	92.0	11.7	72.0-100.0
<i>Both</i>																		
SRT	96.0	4.4	90.0-100.0	97.5	3.8	90.0-100.0	99.5	1.4	96.0-100.0	99.0	1.5	96.0-100.0	94.5	8.5	76.0-100.0	93.4	9.4	72.0-100.0



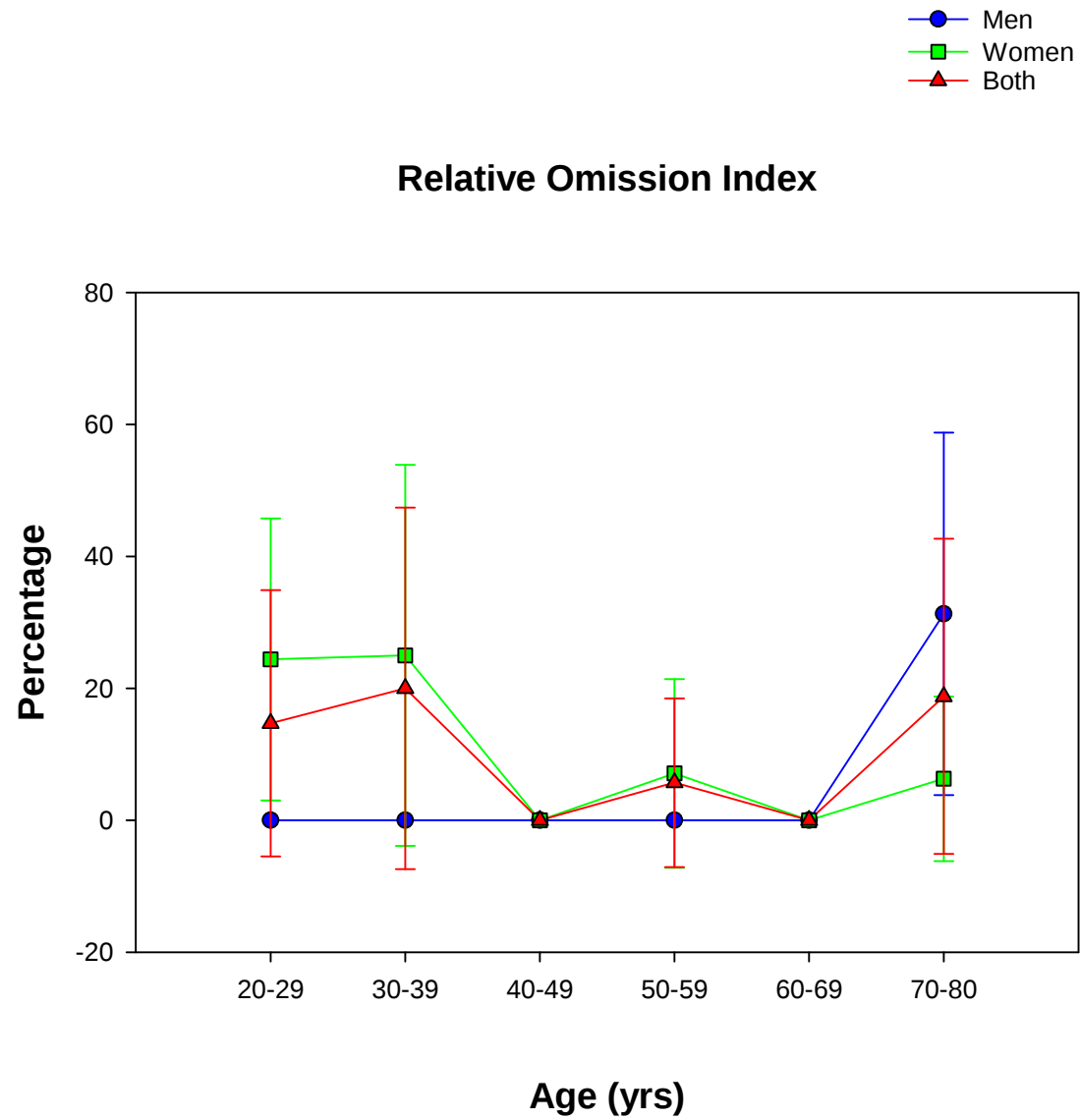
Percentage Consonants Correct in Complex Words (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
MWT	99.8	0.5	99.1-100.0	99.1	1.9	96.3-100.0	99.8	0.5	99.1-100.0	100.0	0.0		99.5	0.9	98.2-100.0	99.4	0.5	99.1-100.0
<i>Female</i>																		
MWT	99.3	0.9	98.2-100.0	100.0	0.0		100.0	0.0		100.0	0.0		99.5	0.9	98.2-100.0	99.1	1.3	97.2-100.0
<i>Both</i>																		
MWT	99.5	0.7	98.2-100.0	99.5	1.3	96.3-100.0	99.9	0.3	99.1-100.0	100.0	0.0		99.5	0.9	98.2-100.0	99.3	1.0	97.2-100.0



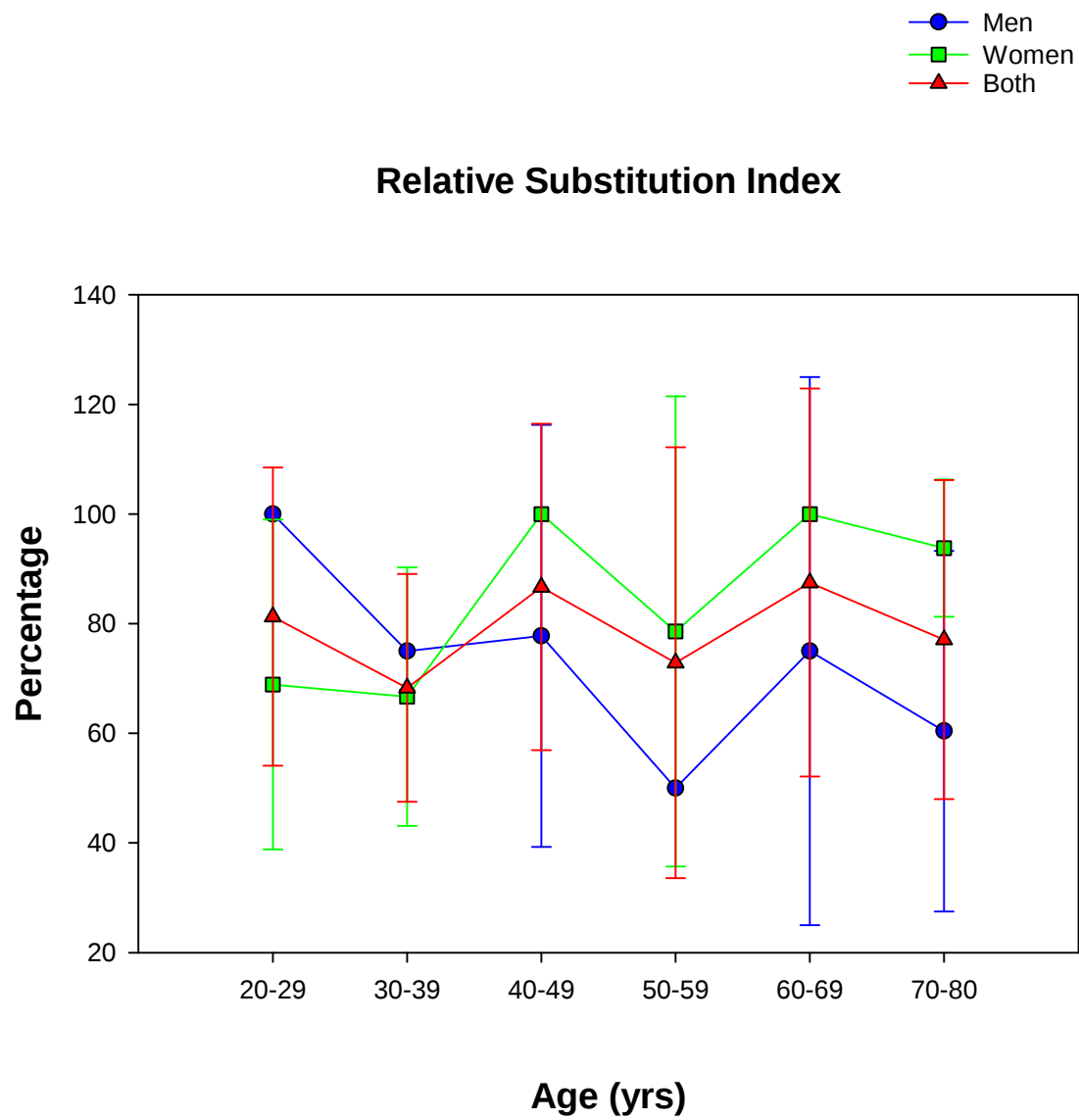
Percentage of Consonants Correct in Complex Words: MWT



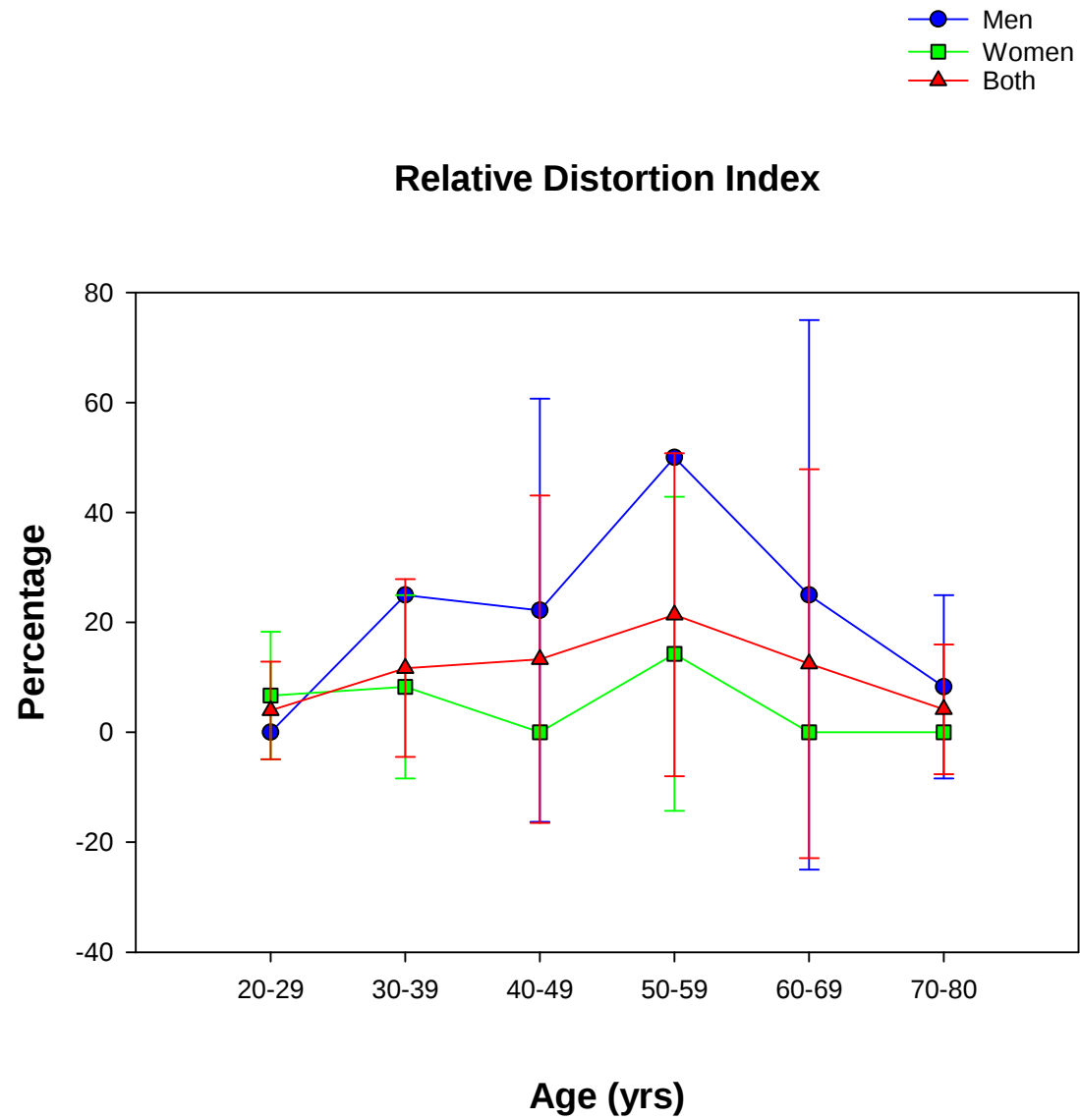
Relative Omission Index (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	0.0	0.0		0.0	*		0.0	0.0		0.0	*		0.0	0.0		31.3	27.5	0.0-66.7
<i>Female</i>																		
CSS	24.4	21.4	0.0-40.0	25.0	28.9	0.0-50.0	0.0	0.0		7.1	14.3	0.0-28.6	0.0	0.0		6.3	12.5	0.0-25.0
<i>Both</i>																		
CSS	14.7	20.2	0.0-40.0	20.0	27.4	0.0-50.0	0.0	0.0		5.7	12.8	0.0-28.6	0.0	0.0		18.8	23.9	0.0-66.7



Relative Substitution Index (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	100.0	0.0		75.0	*		77.8	38.5	33.3-100.0	50.0	*	50.0-50.0	75.0	50.0	0.0-100.0	60.4	32.9	33.3-100.0
<i>Female</i>																		
CSS	68.9	30.1	40.0-100.0	66.7	23.6	50.0-100.0	100.0	0.0		78.6	42.9	14.3-100.0	100.0	0.0		93.8	12.5	75.0-100.0
<i>Both</i>																		
CSS	81.3	27.2	40.0-100.0	68.3	20.8	50.0-100.0	86.7	29.8	33.3-100.0	72.9	39.3	14.3-100.0	87.5	35.4	0.0-100.0	77.1	29.1	33.3-100.0



Relative Distortion Index (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	0.0	0.0		25.0	*		22.2	38.5	0.0-66.7	50.0	*		25.0	50.0	0.0-100.0	8.3	16.7	0.0-33.3
<i>Female</i>																		
CSS	6.7	11.6	0.0-20.0	8.3	16.7	0.0-33.3	0.0	0.0		14.3	28.6	0.0-57.1	0.0	0.0		0.0	0.0	
<i>Both</i>																		
CSS	4.0	8.9	0.0-20.0	11.7	16.2	0.0-33.3	13.3	29.8		21.4	29.4	0.0-57.1	12.5	35.4	0.0-100.0	4.2	11.8	0.0-33.3



Nasal Emissions (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
MWT	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
AT	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
CSS	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
<i>Female</i>																		
MWT	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
AT	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
CSS	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
<i>Both</i>																		
MWT	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
AT	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
CSS	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	

Reduced Percentage of Glides Correct (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
MWT	95.0	10.0	80.0-100.0	95.0	10.0	80.0-100.0	100.0	0.0		100.0	0.0		95.0	10.0	80.0-100.0	100.0	0.0	
SPT	100.0	0.0		100.0	0.0		100.0	0.0		96.4	7.1	85.7-100.0	100.0	0.0		100.0	0.0	
AT	100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0	
CSS	100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0		99.4	1.3	97.1-100.0
<i>Female</i>																		
MWT	95.0	10.0	80.0-100.0	100.0	0.0		100.0	0.0		100.0	0.0		95.0	10.0	80.0-100.0	100.0	0.0	
SPT	96.4	7.1	85.7-100.0	100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0	
AT	100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0	
CSS	100.0	0.0		99.3	1.4	97.2-100.0	100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0	
<i>Both</i>																		
MWT	95.0	9.3	80.0-100.0	97.5	7.1	80.0-100.0	100.0	0.0		100.0	0.0		95.0	9.3	80.0-100.0	100.0	0.0	
SPT	98.2	5.1	85.7-100.0	100.0	0.0		100.0	0.0		98.2	5.1	85.7-100.0	100.0	0.0		100.0	0.0	
AT	100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0	
CSS	100.0	0.0		99.6	1.1	97.2-100.0	100.0	0.0		100.0	0.0		100.0	0.0		99.7	0.9	97.1-100.0

Increased Percentage of /j/ Deletions in Clusters (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
ALL	4.2	8.3	0.0-16.7	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		2.2	5.0	0.0-11.1
<i>Female</i>																		
ALL	5.0	10.0	0.0-20.0	0.0	0.0		0.0	0.0		0.0	0.0		5.0	10.0	0.0-20.0	0.0	0.0	
<i>Both</i>																		
ALL	4.6	8.5	0.0-20.0	0.0	0.0		0.0	0.0		0.0	0.0		2.5	7.1	0.0-20.0	1.1	3.5	0.0-11.1

Lowered Sibilant Centroids: M1 at Midpoint (kHz)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
RST	6.9	0.6	6.1-7.5	6.3	0.6	5.8-6.9		0.8	5.2-7.1	6.9	0.5	6.4-7.5	6.3	0.9	5.4-7.2	6.1	0.8	5.1-7.4
MWT	7.0	0.4	6.6-7.5	6.2	0.6	5.7-7.1		0.4	5.7-6.8	6.6	0.4	6.2-7.1	6.0	0.8	5.1-6.8	5.9	0.6	5.3-6.8
AT	6.0	0.6	5.3-6.6	5.4	0.8	4.9-6.5		0.3	5.0-5.6	6.1	0.5	5.6-6.7	5.4	0.8	4.3-6.1	5.4	0.5	4.9-6.2
CSS	5.9	0.8	4.6-6.6	5.2	0.2	5.0-5.4		0.4	4.7-5.6	5.6	0.8	4.6-6.6	5.3	0.6	4.3-5.7	5.5	0.5	5.1-6.4
<i>Female</i>																		
RST	8.5	0.2	8.3-8.7	7.7	0.3	7.5-8.1	7.9	0.6	7.0-8.5	7.9	0.7	7.0-8.7	7.6	0.5	7.0-8.0	7.2	1.0	6.1-8.3
MWT	8.3	0.2	8.1-8.5	7.4	0.3	6.9-7.6	8.1	0.5	7.4-8.5	7.6	0.9	6.6-8.5	7.4	0.7	6.9-8.3	7.0	0.7	6.1-7.8
AT	7.1	1.1	5.5-7.9	7.0	0.3	6.7-7.3	7.3	0.3	6.9-7.6	6.9	0.6	6.1-7.3	6.7	0.6	6.2-7.5	6.2	0.7	5.3-6.9
CSS	7.5	0.2	7.3-7.8	6.7	0.5	5.9-7.1	7.3	0.7	6.3-8.0	6.5	0.5	5.8-7.0	6.6	0.5	6.1-7.1	6.0	0.9	4.7-7.0
<i>Both</i>																		
RST	7.7	0.9	6.1-8.7	7.0	0.9	5.8-8.1	7.0	1.2	5.2-8.5	7.4	0.8	6.4-8.7	6.9	0.9	5.4-8.0	6.6	1.1	5.1-8.3
MWT	7.6	0.8	6.6-8.5	6.9	0.8	5.7-7.6	7.2	1.0	5.7-8.5	7.1	0.8	6.2-8.5	6.7	1.0	5.1-8.3	6.5	0.8	5.3-7.8
AT	6.6	1.0	5.3-7.9	6.2	1.0	4.9-7.3	6.3	1.2	5.0-7.6	6.5	0.6	5.6-7.3	6.1	1.0	4.3-7.5	5.8	0.7	4.9-6.9
CSS	6.7	1.1	4.6-7.8	5.9	0.9	5.0-7.0	6.1	1.3	4.7-8.0	6.1	0.8	4.6-7.0	5.9	0.9	4.3-7.1	5.8	0.7	4.7-7.0

Lowered Sibilant Centroids: Maximum M1 (kHz)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
RST	7.3	0.6	6.5-7.9	6.8	0.6	6.2-7.4	6.7	0.7	5.8-7.4	7.3	0.4	6.9-7.8	6.7	1.0	5.6-7.7	6.4	0.8	5.5-7.7
MWT	7.3	0.4	6.8-7.7	6.9	0.4	6.4-7.4	6.7	0.4	6.2-7.1	7.0	0.4	6.6-7.5	6.5	0.8	5.4-7.2	6.3	0.4	5.9-7.0
AT	6.5	0.6	5.8-7.0	6.1	0.7	5.4-7.1	5.9	0.3	5.5-6.2	6.7	0.3	6.3-7.0	5.8	0.8	4.6-6.5	6.0	0.5	5.5-6.7
CSS	6.3	0.7	5.5-7.1	5.6	0.2	5.4-5.9	5.3	0.4	5.0-5.8	6.4	0.4	5.9-6.9	5.7	0.8	4.6-6.2	5.9	0.4	5.5-6.6
<i>Female</i>																		
RST	8.9	0.2	8.7-9.1	8.0	0.2	7.8-8.3	8.4	0.6	7.5-8.9	8.2	0.7	7.3-9.0	7.9	0.5	7.3-8.3	7.6	0.9	6.7-8.7
MWT	8.8	0.2	8.6-9.0	7.7	0.3	7.3-8.0	8.5	0.4	7.9-8.8	8.0	0.9	6.9-8.8	7.8	0.6	7.2-8.5	7.5	0.6	6.6-8.1
AT	7.6	0.9	6.3-8.1	7.4	0.3	7.0-7.7	7.8	0.4	7.2-8.1	7.2	0.6	6.4-7.7	7.2	0.7	6.7-7.9	6.6	0.7	5.6-7.3
CSS	8.0	0.3	7.7-8.3	7.0	0.6	6.2-7.4	7.7	0.8	6.6-8.3	7.3	0.4	6.9-7.7	7.0	0.5	6.4-7.4	6.5	0.7	5.7-7.5
<i>Both</i>																		
RST	8.1	1.0	6.5-9.1	7.4	0.8	6.2-8.3	7.5	1.1	5.8-8.9	7.8	0.7	6.9-9.0	7.3	1.0	5.6-8.3	7.0	1.0	5.5-8.7
MWT	8.1	0.8	6.8-9.0	7.3	0.5	6.4-8.0	7.6	1.0	6.2-8.8	7.5	0.8	6.6-8.8	7.2	1.0	5.4-8.5	6.9	0.8	5.9-8.1
AT	7.0	0.9	5.8-8.1	6.7	0.9	5.4-7.7	6.9	1.1	5.5-8.1	6.9	0.5	6.3-7.7	6.5	1.0	4.6-7.9	6.3	0.7	5.5-7.3
CSS	7.2	1.0	5.5-8.3	6.3	0.8	5.4-7.4	6.5	1.4	5.0-8.3	6.9	0.6	5.9-7.7	6.3	0.9	4.6-7.4	6.2	0.6	5.5-7.5

Lengthened Cluster Durations: Relative Duration of Cluster (ms)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
MWT	825.0	225.0	530.0-1047.0	731.1	118.8	637.4-889.5	787.3	126.0	617.7-921.2	803.6	167.6	671.0-1026.4	712.8	139.1	552.8-885.4	693.5	38.2	638.7-736.2
AT	674.0	234.0	454.0-1004.0	676.2	120.1	589.1-850.5	670.1	84.9	576.8-781.6	805.4	125.3	684.1-955.5	655.2	131.0	493.6794.3	637.4	151.3	507.8-886.5
CSS	822.4	130.1	664.2-974.6	899.6	116.4	763.0-1047.5	706.1	121.0	571.1-841.8	640.8	163.7	434.9-803.1	769.0	289.0	511.0-1181.0	707.9	97.6	549.5-814.6
<i>Female</i>																		
MWT	875.7	138.2	718.8-1054.3	757.6	114.9	626.2-891.6	822.7	121.6	712.9-996.6	930.5	109.6	833.8-1086.8	754.5	19.1	737.2-778.3	815.4	118.3	674.0-908.1
AT	825.0	202.0	537.0-1008.0	690.6	125.6	578.9-846.2	709.8	77.6	635.4-799.8	778.2	61.2	688.2-823.9	691.8	109.9	607.8-843.3	757.7	88.5	662.4-854.7
CSS	908.6	195.8	739.8-1182.0	654.2	40.1	621.0-710.1	853.0	283.0	583.0-1116.0	819.4	131.8	663.1-963.3	683.4	75.3	600.6-763.9	728.4	77.8	616.9-825.9
<i>Both</i>																		
MWT	850.3	174.9	529.6-1054.3	744.4	109.1	626.2-891.6	805.0	116.2	617.7-996.6	867.0	147.6	671.0-1086.8	733.6	94.6	552.8-885.4	754.4	104.9	638.7-908.1
AT	749.6	217.9	453.7-1007.6	683.4	114.0	578.9-850.5	689.9	78.2	576.8-799.8	791.8	92.4	684.1-955.5	673.5	113.7	493.6-843.3	697.5	133.0	507.8-886.5
CSS	865.5	160.7	664.2-1182.0	776.9	154.0	621.0-1047.5	779.6	216.1	571.1-1115.8	730.1	167.4	434.9-963.3	726.2	200.9	511.3-1181.3	718.2	83.9	549.5-825.9

Lengthened Cluster Durations: Relative Duration of First Consonant (% o)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
MWT	476.1	148.4	341.4-669.6	405.0	83.2	288.4-470.5	483.9	82.9	360.8-536.7	444.4	125.5	332.2-574.4	368.9	108.2	237.8-488.5	389.8	54.5	327.8-472.0
AT	390.4	169.8	237.9-633.5	358.7	86.5	302.1-487.7	366.1	54.1	319.9-440.0	424.7	68.8	340.5-500.9	355.8	92.2	233.8-458.0	325.4	89.2	240.2-463.4
CSS	376.4	56.0	320.2-453.1	495.0	201.0	295.0-745.0	388.1	142.6	238.9-568.8	344.2	124.5	229.8-488.0	373.1	127.1	234.3-542.3	369.3	91.5	277.0-477.3
<i>Female</i>																		
MWT	560.2	82.9	488.9-679.1	467.4	100.5	396.7-614.5	512.8	40.1	474.0-563.4	530.0	108.8	443.8-671.7	359.1	18.6	338.3-381.5	510.9	84.4	439.0-610.5
AT	460.8	125.8	278.2-547.6	370.1	37.7	318.1-406.0	411.8	43.9	374.7-462.6	471.8	55.3	389.6-509.6	377.1	42.8	345.8-439.9	421.3	83.2	350.7-565.2
CSS	426.0	111.1	297.0-555.4	349.7	36.6	310.2-381.9	363.2	80.2	247.1-425.8	440.6	101.6	297.6-525.9	332.0	61.2	250.1-390.1	384.5	53.7	327.1-453.0
<i>Both</i>																		
MWT	518.1	120.0	341.4-679.1	436.2	91.7	288.4-614.5	498.3	62.2	360.8-563.4	487.2	118.0	332.2-671.7	364.0	72.0	237.8-488.5	450.3	92.6	327.8-610.5
AT	425.6	143.3	237.9-633.5	364.4	62.1	302.1-487.7	389.0	51.7	319.9-462.6	448.2	63.0	340.5-509.6	366.5	67.5	233.8-458.0	373.3	95.8	240.2-565.2
CSS	401.2	85.7	297.0-555.4	422.5	154.4	294.6-744.8	375.6	107.9	238.9-568.8	392.4	117.1	229.8-525.9	352.5	94.9	234.3-542.3	376.9	71.2	277.0-477.3

Lengthened Cluster Durations: Relative Duration of Second Consonant (% o)

Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
MWT	329.4	105.0	176.0-413.5	312.8	82.7	225.0-415.1	291.5	62.6	244.3-376.8	340.8	88.8	256.9-466.1	330.0	37.9	299.9-385.4	287.9	43.5	247.0-345.4
AT	268.1	64.7	205.3-355.2	305.3	39.5	257.3-347.6	290.3	42.0	244.7-329.0	367.1	73.2	266.6-439.7	282.0	51.5	231.3-336.2	298.6	69.4	231.4-409.4
CSS	406.9	80.1	308.3-478.0	385.2	164.8	140.4-494.7	286.9	19.9	258.3-302.5	275.2	83.1	184.5-370.9	378.8	170.4	260.1-622.6	311.9	78.5	225.8-428.5
<i>Female</i>																		
MWT	303.0	64.7	218.3-358.9	277.3	65.3	219.4-371.0	295.9	82.2	227.9-412.3	380.6	58.5	310.6-450.8	373.7	20.5	348.1-398.0	290.9	91.1	210.0-444.2
AT	351.4	81.3	250.0-446.4	307.1	104.8	213.2-450.0	287.4	41.0	253.5-347.0	289.9	21.1	268.9-319.3	298.0	74.9	224.3-389.8	313.5	71.1	257.4-433.7
CSS	471.6	156.4	345.7-699.5	276.8	59.8	229.5-363.9	463.0	202.0	251.0-640.0	359.8	48.7	316.2-429.5	323.2	67.2	252.6-413.3	326.3	68.1	246.2-411.3
<i>Both</i>																		
MWT	316.2	81.9	176.0-413.5	295.1	71.6	219.4-415.1	293.7	67.7	227.9-412.3	360.7	72.8	256.9-466.1	351.8	36.6	299.9-398.0	289.4	67.3	210.0-444.2
AT	309.7	81.3	205.3-446.4	306.2	73.3	213.2-450.0	288.9	38.5	244.7-347.0	328.5	64.7	266.6-439.7	290.0	60.1	224.3-389.8	306.1	66.7	231.4-433.7
CSS	439.2	120.1	308.3-699.5	331.0	128.6	140.4-494.7	374.8	162.6	251.0-640.1	317.5	77.6	184.5-429.5	351.0	123.5	252.6-622.6	319.1	69.7	225.8-428.5

Lengthened Cluster Durations: Percentage of S-F/F-S Cluster Disruptions (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
MWT	0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00	
AT	0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00	
CSS	0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		2.78	5.55	0.00-11.11	0.00	0.00	
<i>Female</i>																		
MWT	0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00	
AT	0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		20.00	44.70	0.00-100.00
CSS	0.00	0.00		2.78	5.55	0.00-11.11	0.00	0.00		0.00	0.00		0.00	0.00		2.86	6.39	0.00-14.29
<i>Both</i>																		
MWT	0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00	
AT	0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		10.00	31.60	0.00-100.00
CSS	0.00	0.00		1.39	3.93	0.00-11.11	0.00	0.00		0.00	0.00		1.39	3.93	0.00-11.11	1.43	4.52	0.00-14.29

Lengthened Cluster Durations: Relative Duration of S-F/F-S Cluster Disruptions (% o)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
MWT	19.2	7.9	10.9-29.7	16.0	5.9	7.4-20.1	12.1	4.8	5.4-16.4	19.7	13.7	6.5-38.6	16.7	6.2	11.2-25.6	17.5	2.6	13.5-20.6
AT	17.2	8.0	10.9-28.6	12.8	7.4	4.4-21.9	13.5	7.2	5.5-21.5	17.3	2.0	14.9-19.6	25.0	9.3	17.1-38.5	16.0	7.4	3.9-22.0
CSS	39.1	3.4	35.7-43.5	19.2	7.6	14.2-30.4	31.2	12.2	14.8-43.1	21.5	4.4	15.7-25.1	17.2	9.4	6.2-29.2	26.7	14.0	9.9-45.9
<i>Female</i>																		
MWT	14.7	3.4	10.7-18.4	15.5	8.1	7.3-24.1	16.1	6.8	9.1-23.4	19.3	3.4	15.9-23.4	20.5	5.6	14.1-27.6	16.4	8.9	10.6-31.9
AT	16.0	8.0	8.6-24.8	14.7	1.9	12.2-16.9	9.1	3.9	5.1-13.6	18.2	6.6	11.5-24.3	17.8	3.8	14.1-23.1	84.8	148.0	15.2-349.5
CSS	11.1	2.1	9.3-13.8	27.6	21.1	9.6-53.6	27.1	22.1	6.3-49.9	19.0	13.1	8.6-36.4	28.3	4.5	24.6-34.9	17.6	14.7	4.7-36.4
<i>Both</i>																		
MWT	17.0	6.1	10.7-29.7	15.8	6.6	7.3-24.1	14.1	5.9	5.4-23.4	19.5	9.3	6.5-38.6	18.6	5.8	11.2-27.6	17.0	6.2	10.6-31.9
AT	16.6	7.5	8.6-28.6	13.7	5.1	4.4-21.9	11.3	5.9	5.1-21.5	17.7	4.5	11.5-24.3	21.4	7.6	14.1-38.5	50.4	105.2	3.9-349.5
CSS	25.1	15.2	9.3-43.5	23.4	15.4	9.6-53.6	29.2	16.7	6.3-49.9	20.2	9.2	8.6-36.4	22.7	9.1	6.2-34.9	22.2	14.3	4.7-45.9

Lengthened Cluster Durations: Relative Duration of Pause Disruptions (% o)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
Male																		
MWT	0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00	
AT	0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00	
CSS	0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00	
Female																		
MWT	0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00	
AT	0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00	
CSS	0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00	
Both																		
MWT	0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00	
AT	0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00	
CSS	0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00	

Lengthened Cluster Durations: Relative Duration of Addition Disruptions (% o)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
MWT	0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00	
AT	0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00	
CSS	0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00	
<i>Female</i>																		
MWT	0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00	
AT	0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00	
CSS	0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00	
<i>Both</i>																		
MWT	0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00	
AT	0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00	
CSS	0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00	

SRT Transcoding (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
SRT	100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0	
<i>Female</i>																		
SRT	98.6	2.8	94.4-100.0	98.6	2.8	94.4-100.0	100.0	0.0		100.0	0.0		100.0	0.0		93.3	12.1	72.2-100.0
<i>Both</i>																		
SRT	99.3	2.0	94.4-100.0	99.3	2.0	94.4-100.0	100.0	0.0		100.0	0.0		100.0	0.0		96.7	8.8	72.2-100.0

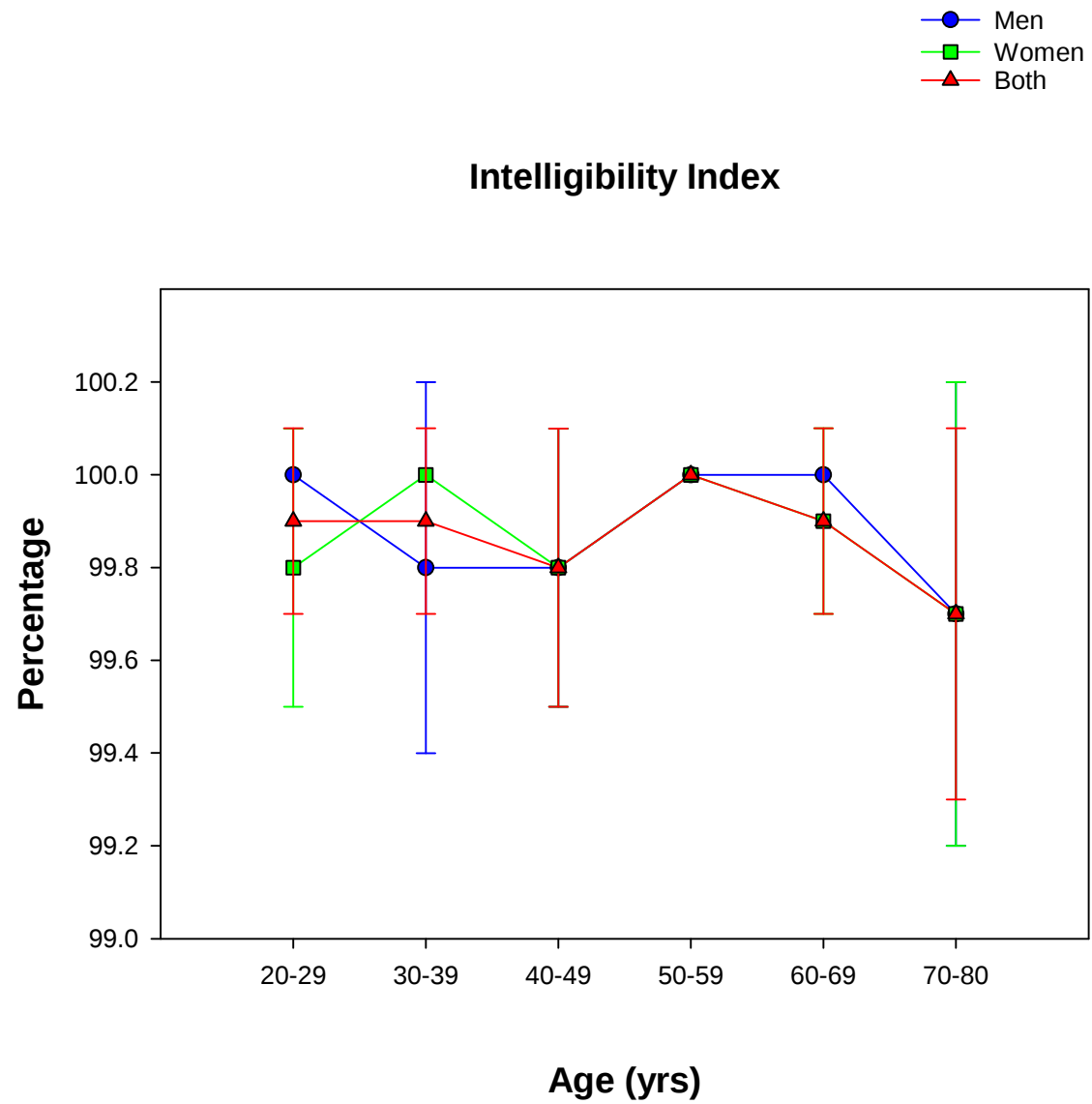
Less Stable Consonant Errors: Targets (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
RSTR	*	*		*	*		*	*		*	*		*	*		*	*	
CWT	*	*		*	*		*	*		*	*		*	*		*	*	
MWT	*	*		*	*		*	*		*	*		*	*		*	*	
CSS	*	*		*	*		*	*		*	*		30.0	*		*	*	
<i>Female</i>																		
RSTR	*	*		*	*		*	*		*	*		*	*		*	*	
CWT	*	*		*	*		*	*		*	*		*	*		*	*	
MWT	*	*		*	*		*	*		*	*		*	*		62.2	*	
CSS	47.6	*		52.4	8.1	46.7-58.1	57.1	*		73.3	37.7	46.7-100.0	*	*		61.1	*	
<i>Both</i>																		
RSTR	*	*		*	*		*	*		*	*		*	*		*	*	
CWT	*	*		*	*		*	*		*	*		*	*		*	*	
MWT	*	*		*	*		*	*		*	*		*	*		62.2	*	
CSS	47.6	*		52.4	8.1	46.7-58.1	57.1	*		73.3	37.7	46.7-100.0	30.0	*		61.1	*	

Less Stable Consonant Errors: Error Types (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
RSTR	*	*		*	*		*	*		*	*		*	*		*	*	
CWT	*	*		*	*		*	*		*	*		*	*		*	*	
MWT	*	*		*	*		*	*		*	*		*	*		*	*	
CSS	*	*		*	*		*	*		*	*		0.0	*		*	*	
<i>Female</i>																		
RSTR	*	*		*	*		*	*		*	*		*	*		*	*	
CWT	*	*		*	*		*	*		*	*		*	*		*	*	
MWT	*	*		*	*		*	*		*	*		*	*		0.0	*	
CSS	0.0	*		100.0	0.0		100.0	*		100.0	0.0		*	*		100.0	*	
<i>Both</i>																		
RSTR	*	*		*	*		*	*		*	*		*	*		*	*	
CWT	*	*		*	*		*	*		*	*		*	*		*	*	
MWT	*	*		*	*		*	*		*	*		*	*		0.0	*	
CSS	0.0	*		100.0	0.0		100.0	*		100.0	0.0		0.0	*		100.0	*	

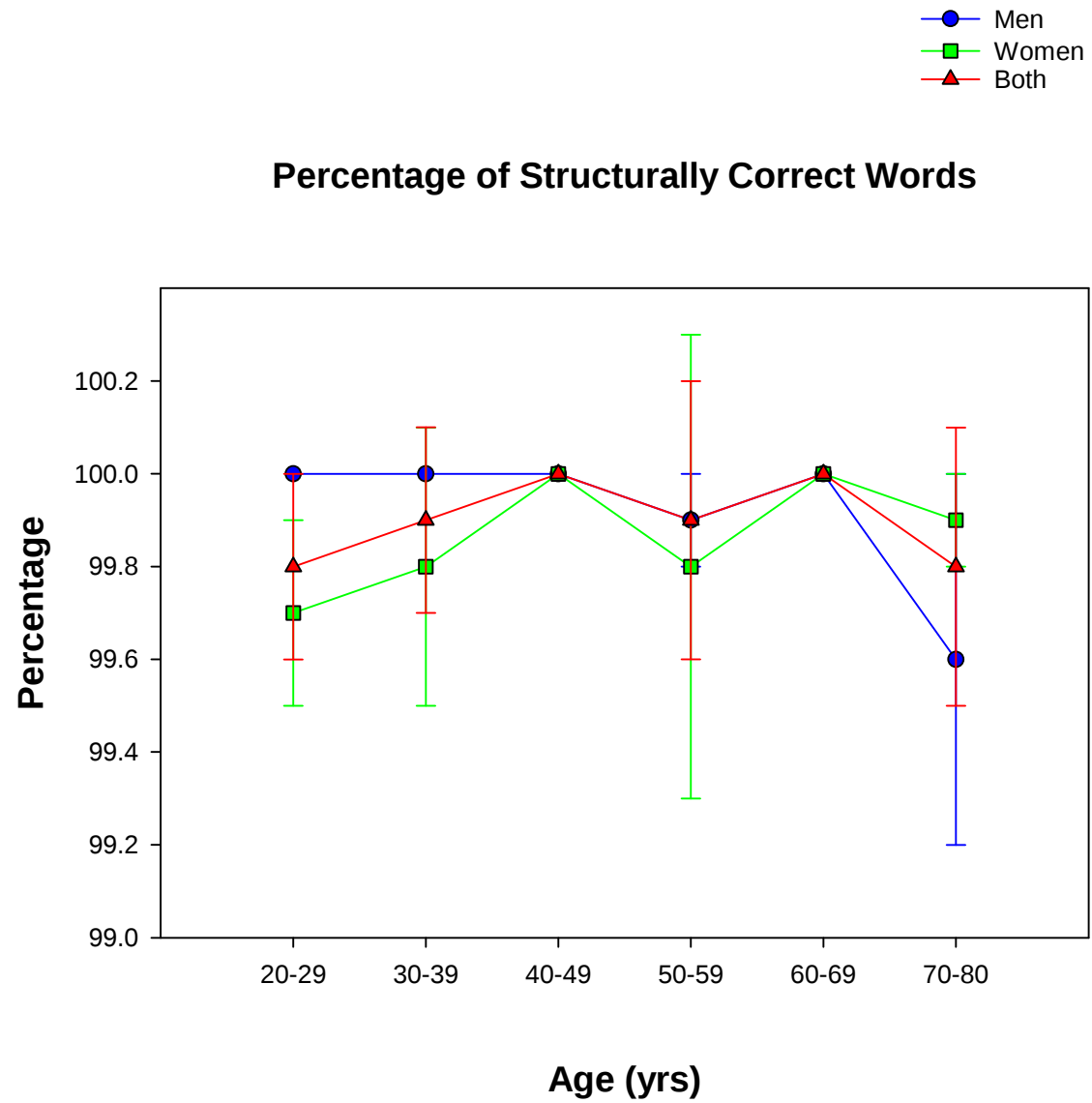
Less Stable Sibilant Centroids: M1 at Midpoint (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
RSTS	93.5	3.1	89.3-96.1	92.5	2.5	88.8-94.4	92.9	2.5	89.6-95.6	95.3	1.8	93.2-97.3	92.6	0.6	92.0-93.2	94.7	0.8	93.9-95.7
MWT	92.4	0.9	91.1-93.3	89.7	7.3	79.8-96.8	92.3	1.2	91.0-93.8	94.4	0.5	94.0-95.0	91.4	2.1	88.7-93.6	92.8	1.0	91.6-94.0
AT	84.6	3.2	81.4-87.6	87.2	2.5	84.1-89.3	85.2	1.8	83.3-86.8	81.6	2.9	77.7-84.4	86.9	5.4	81.3-94.3	85.8	3.9	81.3-90.5
CSS	84.8	7.2	74.9-91.4	88.4	2.6	84.6-90.4	83.8	2.8	80.5-87.3	80.3	20.7	49.7-94.6	85.3	3.8	81.2-90.4	88.3	1.8	86.1-90.9
<i>Female</i>																		
RSTS	95.3	1.0	94.1-96.3	95.5	1.7	93.0-96.7	92.3	3.3	88.1-95.5	93.8	2.4	91.2-97.0	95.7	0.8	94.9-96.8	93.7	1.8	91.6-96.3
MWT	93.7	1.0	92.6-94.7	93.6	1.4	91.7-95.0	94.6	1.8	92.0-95.9	93.5	3.2	89.6-97.4	94.1	1.1	92.7-95.2	91.5	3.3	87.1-95.7
AT	82.3	2.1	80.3-85.3	84.5	2.2	82.5-87.2	83.0	3.0	80.5-86.8	82.4	2.3	80.2-85.3	83.6	2.5	80.3-86.2	85.1	3.7	80.3-90.3
CSS	84.6	3.6	81.0-89.1	84.2	3.5	80.4-88.8	86.8	4.5	82.1-92.9	81.1	14.8	59.6-93.5	85.9	5.1	79.8-90.3	80.8	6.4	73.3-86.4
<i>Both</i>																		
RSTS	94.4	2.3	89.3-96.3	94.0	2.6	88.8-96.7	92.6	2.7	88.1-95.6	94.5	2.1	91.2-97.3	94.2	1.8	92.0-96.8	94.2	1.4	91.6-96.3
MWT	93.0	1.1	91.1-94.7	91.6	5.3	79.8-96.8	93.4	1.9	91.0-95.9	94.0	2.2	89.6-97.4	92.8	2.1	88.7-95.2	92.1	2.4	87.1-95.7
AT	83.5	2.8	80.3-87.6	85.9	2.6	82.5-89.3	84.1	2.6	80.5-86.8	82.0	2.4	77.7-85.3	85.2	4.3	80.3-94.3	85.5	3.6	80.3-90.5
CSS	84.7	5.2	74.9-91.4	86.3	3.6	80.4-90.4	85.3	3.8	80.5-92.9	80.7	16.7	49.7-93.5	85.6	4.1	79.8-90.4	84.6	5.9	73.3-90.9

Less Stable Sibilant Centroids: Maximum M1 (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
RSTS	94.4	2.7	90.5-96.3	93.6	3.0	90.1-96.3	94.6	1.5	93.5-96.8	96.0	1.5	94.5-97.8	93.0	1.1	91.5-94.1	95.4	0.7	94.5-96.2
MWT	92.7	1.0	91.4-93.7	91.7	5.4	85.2-97.8	95.1	0.9	94.1-96.2	93.9	1.8	91.5-95.6	91.5	1.7	90.6-94.0	93.6	1.0	91.9-94.6
AT	86.2	3.9	82.3-90.1	87.7	2.0	85.8-90.0	85.8	1.7	83.4-87.5	82.9	3.6	77.7-85.5	89.0	2.2	86.0-91.2	85.5	6.0	75.8-91.8
CSS	88.1	3.5	84.8-91.6	88.5	2.9	85.8-91.7	84.7	2.6	82.3-87.9	91.5	3.0	88.2-95.4	87.3	3.8	84.5-92.8	88.9	1.9	87.3-92.1
<i>Female</i>																		
RSTS	96.2	0.5	95.6-96.9	96.0	1.8	93.5-97.3	93.8	2.7	89.8-95.5	95.0	1.3	93.5-96.2	96.3	1.4	95.4-98.4	93.7	2.4	92.0-97.8
MWT	96.0	0.7	95.1-96.6	95.3	0.6	94.5-95.9	95.5	0.7	94.6-96.1	94.5	2.6	91.0-97.4	94.7	0.3	94.5-95.1	92.2	2.6	88.5-95.8
AT	82.5	2.2	79.8-85.0	85.8	2.5	83.2-88.5	85.0	2.7	81.6-88.3	83.8	1.6	81.9-85.5	84.5	1.6	83.0-86.2	85.9	2.9	82.5-89.9
CSS	87.5	1.1	86.0-88.5	84.7	4.5	80.0-90.7	88.1	4.8	83.2-94.6	89.1	2.6	86.2-92.1	87.4	4.2	83.1-91.1	85.8	5.3	77.2-91.1
<i>Both</i>																		
RSTS	95.3	2.0	90.5-96.9	94.8	2.6	90.1-97.3	94.2	2.1	89.8-96.8	95.5	1.4	93.5-97.8	94.7	2.1	91.5-98.4	94.6	1.9	92.0-97.8
MWT	94.4	2.0	91.4-96.6	93.5	4.0	85.2-97.8	95.3	0.8	94.1-96.2	94.2	2.1	91.0-97.4	93.1	2.0	90.6-95.1	92.8	2.0	88.5-95.8
AT	84.4	3.5	79.8-90.1	86.8	2.3	83.2-90.0	85.4	2.1	81.6-88.3	83.3	2.6	77.7-85.5	86.7	3.0	83.0-91.2	85.7	4.4	75.8-91.8
CSS	87.8	2.4	84.8-91.6	86.6	4.0	80.0-91.7	86.4	4.0	82.3-94.6	90.3	2.9	86.2-95.4	87.3	3.7	83.1-92.8	87.4	4.1	77.2-92.1

Intelligibility Index (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	100.0	0.0		99.8	0.4	99.4-100.0	99.8	0.3	99.5-100.0	100.0	0.0		100.0	0.0		99.7	0.5	99.0-100.0
<i>Female</i>																		
CSS	99.8	0.3	99.5-100.0	100.0	0.0		99.8	0.3	99.4-100.0	100.0	0.0		99.9	0.2	99.5-100.0	99.7	0.5	99.0-100.0
<i>Both</i>																		
CSS	99.9	0.2	99.5-100.0	99.9	0.2	99.4-100.0	99.8	0.3	99.4-100.0	100.0	0.0		99.9	0.2	99.5-100.0	99.7	0.4	99.0-100.0



Percentage of Structurally Correct Words (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	100.0	0.0		100.0	0.0		100.0	0.0		99.9	0.1	99.8-100.0	100.0	0.0		99.6	0.4	99.2-100.0
<i>Female</i>																		
CSS	99.7	0.2	99.5-100.0	99.8	0.3	99.5-100.0	100.0	0.0		99.8	0.5	99.0-100.0	100.0	0.0		99.9	0.1	99.7-100.0
<i>Both</i>																		
CSS	99.8	0.2	99.5-100.0	99.9	0.2	99.5-100.0	100.0	0.0		99.9	0.3	99.0-100.0	100.0	0.0		99.8	0.3	99.2-100.0



Increased Percentage of Phoneme Distortions: Place (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
RSTR	0.8	1.6	0.0-3.1	0.4	0.8	0.0-1.6	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
LST	0.2	0.4	0.0-1.0	0.0	0.0		0.0	0.0	0.0-0.8	0.2	0.4	0.0-0.8	0.0	0.0		0.0	0.0	
CWT	0.0	0.0		0.0	0.0		0.2	0.4	0.0-0.9	0.1	0.2	0.0-0.4	0.2	0.4	0.0-0.9	0.0	0.0	
MWT	0.0	0.0		0.3	0.6	0.0-1.2	0.0	0.0		0.1	0.3	0.0-0.6	0.1	0.3	0.0-0.6	0.0	0.0	
EST	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
VT3	0.0	0.0		0.4	0.6	0.0-1.2	0.1	0.2	0.0-0.3	0.2	0.4	0.0-0.9	0.1	0.2	0.0-0.3	0.6	0.9	0.0-2.1
AT	0.1	0.2	0.0-0.4	0.4	0.9	0.0-1.7	0.0	0.0		0.2	0.4	0.0-0.9	0.2	0.4	0.0-0.9	0.0	0.0	
CSS	0.5	0.2	0.4-0.7	0.5	0.2	0.3-0.7	0.1	0.2	0.0-0.4	0.2	0.3	0.0-0.6	0.3	0.3	0.0-0.6	0.3	0.4	0.1-1.0
<i>Female</i>																		
RSTR	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.2	0.3	0.0-0.8
LST	0.2	0.4	0.0-0.8	0.2	0.4	0.0-0.8	0.0	0.0		0.2	0.4	0.0-0.8	0.2	0.4	0.0-0.8	0.0	0.0	
CWT	0.1	0.2	0.0-0.4	0.0	0.0		0.2	0.4	0.0-0.9	0.4	0.6	0.0-1.3	0.1	0.2	0.0-0.4	0.3	0.6	0.0-1.3
MWT	0.0	0.0		0.3	0.6	0.0-1.2	0.0	0.0		0.4	0.6	0.0-1.2	0.0	0.0		0.0	0.0	
EST	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
VT3	0.0	0.0		0.4	0.8	0.0-1.5	0.2	0.3	0.0-0.6	0.4	0.6	0.0-1.2	0.3	0.6	0.0-1.2	0.4	0.6	0.0-1.5
AT	0.3	0.7	0.0-1.3	0.1	0.2	0.0-0.4	0.0	0.0		0.0	0.0		0.1	0.2	0.0-0.4	0.3	0.6	0.0-1.3
CSS	0.3	0.4	0.0-0.9	0.2	0.3	0.0-0.7	0.1	0.1	0.0-0.3	0.3	0.4	0.0-1.0	0.1	0.2	0.0-0.3	0.1	0.1	0.0-0.1

Increased Percentage of Phoneme Distortions: Place (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Both</i>																		
RSTR	0.4	1.1	0.0-3.1	0.2	0.6	0.0-1.6	0.0	0.0		0.0	0.0		0.0	0.0		0.1	0.2	0.0-0.8
LST	0.2	0.4	0.0-0.8	0.1	0.3	0.0-0.8	0.0	0.0		0.2	0.4	0.0-0.8	0.1	0.3	0.0-0.8	0.0	0.0	
CWT	0.1	0.2	0.0-0.4	0.0	0.0		0.2	0.4	0.0-0.9	0.3	0.5	0.0-1.3	0.2	0.3	0.0-0.9	0.1	0.4	0.0-1.3
MWT	0.0	0.0		0.3	0.5	0.0-1.2	0.0	0.0		0.3	0.4	0.0-1.2	0.1	0.2	0.0-0.6	0.0	0.0	
EST	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
VT3	0.0	0.0		0.4	0.6	0.0-1.5	0.1	0.2	0.0-0.6	0.3	0.5	0.0-1.2	0.2	0.4	0.0-1.2	0.5	0.7	0.0-2.1
AT	0.2	0.5	0.0-1.3	0.3	0.6	0.0-1.7	0.0	0.0		0.1	0.3	0.0-0.9	0.2	0.3	0.0-0.9	0.1	0.4	0.0-1.3
CSS	0.4	0.3	0.0-0.9	0.4	0.3	0.0-0.7	0.1	0.2	0.0-0.4	0.3	0.3	0.0-1.0	0.2	0.2	0.0-0.6	0.2	0.3	0.0-1.0

Increased Percentage of Phoneme Distortions: Additions (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
RSTR	0.8	1.1	0.0-2.3	0.4	0.8	0.0-1.6	0.8	1.6	0.0-3.1	1.2	1.0	0.0-2.3	0.2	0.4	0.0-0.8	1.3	1.7	0.0-3.1
LST	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.5	0.4	0.0-0.8
CWT	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
MWT	0.0	0.0		0.1	0.3	0.0-0.6	0.0	0.0		0.1	0.3	0.0-0.6	0.6	0.8	0.0-1.7	0.1	0.3	0.0-0.6
EST	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
VT3	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
AT	0.1	0.2	0.0-0.4	0.0	0.0		0.1	0.2	0.0-0.4	0.2	0.2	0.0-0.4	0.2	0.2	0.0-0.4	0.3	0.2	0.0-0.4
CSS	0.0	0.1	0.0-0.1	0.1	0.1	0.0-0.2	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.1	0.0-0.1
<i>Female</i>																		
RSTR	0.2	0.4	0.0-0.8	0.4	0.8	0.0-1.6	0.4	0.8	0.0-1.6	0.0	0.0		0.2	0.4	0.0-0.8	0.6	1.4	0.0-3.1
LST	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
CWT	0.0	0.0		0.2	0.4	0.0-0.9	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
MWT	0.1	0.3	0.0-0.6	0.0	0.0		0.0	0.0		0.3	0.3	0.0-0.6	0.0	0.0		0.0	0.0	
EST	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
VT3	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
AT	0.1	0.2	0.0-0.4	0.1	0.2	0.0-0.4	0.2	0.2	0.0-0.4	0.0	0.0		0.2	0.2	0.0-0.4	0.3	0.2	0.0-0.4
CSS	0.1	0.1	0.0-0.3	0.0	0.1	0.0-0.1	0.1	0.1	0.0-0.2	0.2	0.3	0.0-0.7	0.0	0.1	0.0-0.2	0.1	0.1	0.0-0.1

Increased Percentage of Phoneme Distortions: Additions (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Both</i>																		
RSTR	0.5	0.8	0.0-2.3	0.4	0.7	0.0-0.6	0.6	1.2	0.0-3.1	0.6	0.9	0.0-2.3	0.2	0.4	0.0-0.8	0.9	1.5	0.0-3.1
LST	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.2	0.4	0.0-0.8
CWT	0.0	0.0		0.1	0.3	0.0-0.9	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
MWT	0.1	0.2	0.0-0.6	0.1	0.2	0.0-0.6	0.0	0.0		0.2	0.3	0.0-0.6	0.3	0.6	0.0-1.7	0.1	0.2	0.0-0.6
EST	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
VT3	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
AT	0.1	0.2	0.0-0.4	0.1	0.2	0.0-0.4	0.2	0.2	0.0-0.4	0.1	0.2	0.0-0.4	0.2	0.2	0.0-0.4	0.3	0.2	0.0-0.4
CSS	0.1	0.1	0.0-0.3	0.0	0.1	0.0-0.2	0.0	0.1	0.0-0.2	0.1	0.2	0.0-0.7	0.0	0.1	0.0-0.2	0.0	0.1	0.0-0.1

Increased Percentage of Phoneme Distortions: Duration (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
RSTR	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.3	0.7	0.0-1.6
LST	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
CWT	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
MWT	0.3	0.3	0.0-0.6	0.1	0.3	0.0-0.6	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
EST	3.1	1.3	1.4-4.2	1.1	0.7	0.0-1.4	2.1	0.8	1.4-2.8	2.8	1.1	1.4-4.2	3.5	1.4	1.4-4.2	2.0	1.6	0.0-4.2
VT3	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.1	0.1	0.0-0.3
AT	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
CSS	0.1	0.1	0.0-0.2	0.6	0.3	0.3-0.9	0.2	0.1	0.1-0.3	0.3	0.2	0.1-0.4	0.4	0.3	0.0-0.7	0.4	0.3	0.1-1.0
<i>Female</i>																		
RSTR	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
LST	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
CWT	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
MWT	0.1	0.3	0.0-0.6	0.0	0.0		0.1	0.3	0.0-0.6	0.0	0.0		0.0	0.0		0.0	0.0	
EST	1.7	2.1	0.0-4.2	2.5	2.4	0.0-5.6	2.8	1.6	1.4-4.3	1.7	1.7	0.0-4.2	4.9	0.8	4.2-5.6	2.2	3.1	0.0-5.6
VT3	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
AT	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
CSS	0.4	0.3	0.1-0.7	0.5	0.3	0.0-0.7	0.2	0.2	0.0-0.4	0.6	0.3	0.2-0.8	0.4	0.3	0.1-0.8	0.2	0.2	0.0-0.5

Increased Percentage of Phoneme Distortions: Duration (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Both</i>																		
RSTR	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.2	0.5	0.0-1.6
LST	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
CWT	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
MWT	0.2	0.3	0.0-0.6	0.1	0.2	0.0-0.6	0.1	0.2	0.0-0.6	0.0	0.0		0.0	0.0		0.0	0.0	
EST	2.4	1.8	0.0-4.2	1.8	1.8	0.0-5.6	2.5	1.3	1.4-4.3	2.3	1.5	0.0-4.2	4.2	1.3	1.4-5.6	2.1	2.3	0.0-5.6
VT3	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.1	0.0-0.3
AT	0.0	0.0		0.	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
CSS	0.3	0.3	0.0-0.7	0.5	0.3	0.3-0.9	0.2	0.1	0.0-0.4	0.5	0.3	0.1-0.8	0.4	0.3	0.0-0.8	0.3	0.3	0.0-1.0

Increased Percentage of Phoneme Distortions: Force (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
RSTR	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
LST	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
CWT	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
MWT	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
EST	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
VT3	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
AT	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
CSS	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
<i>Female</i>																		
RSTR																		
LST	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
CWT	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
MWT	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
EST	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
VT3																		
AT	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
CSS	0.0	0.0		0.0	0.0		0.0	0.1	0.0-0.2	0.1	0.1	0.0-0.2	0.0	0.0		0.0	0.0	

Increased Percentage of Phoneme Distortions: Force (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Both</i>																		
RSTR	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
LST	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
CWT	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
MWT	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
EST	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
VT3	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
AT	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
CSS	0.0	0.0		0.0	0.0		0.0	0.1	0.0-0.2	0.0	0.1	0.0-0.2	0.0	0.0		0.0	0.0	

Increased Percent of EMMA errors by type (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CWT	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		2.1	4.2	0.0-8.3	1.7	3.7	0.0-8.3
MWT	0.0	0.0		3.4	4.4	0.0-9.1	0.0	0.0		1.1	2.3	0.0-4.6	2.3	2.6	0.0-4.6	1.8	2.5	0.0-4.6
AT	0.5	1.0	0.0-1.9	0.0	0.0		0.5	0.9	0.0-1.9	0.9	1.1	0.0-1.9	0.9	1.1	0.0-1.9	1.5	0.8	0.0-1.9
CSS	0.4	0.8	0.0-1.3	0.3	0.5	0.0-0.9	0.0	0.0		0.4	0.5	0.0-1.1	0.0	0.0		0.5	0.7	0.0-1.6
<i>Female</i>																		
CWT	2.1	4.2	0.0-8.3	2.1	4.2	0.0-8.3	0.0	0.0		0.0	0.0		0.0	0.0		1.7	3.7	0.0-8.3
MWT	2.3	2.6	0.0-4.6	0.0	0.0		0.0	0.0		2.3	2.6	0.0-4.6	2.3	2.6	0.0-4.6	1.8	2.5	0.0-4.6
AT	0.5	0.9	0.0-1.9	0.5	0.9	0.0-1.9	0.9	1.1	0.0-1.9	0.0	0.0		0.9	1.1	0.0-1.9	1.5	0.8	0.0-1.9
CSS	1.2	0.9	0.0-1.9	0.2	0.3	0.0-0.7	0.2	0.3	0.0-0.7	0.9	1.3	0.0-2.8	0.2	0.4	0.0-0.9	0.4	0.4	0.0-0.8
<i>Both</i>																		
CWT	1.0	3.0	0.0-8.3	1.0	3.0	0.0-8.3	0.0	0.0		0.0	0.0		1.0	3.0	0.0-8.3	1.7	3.5	0.0-8.3
MWT	1.1	2.1	0.0-4.6	1.7	3.4	0.0-9.1	0.0	0.0		1.7	2.4	0.0-4.6	2.3	2.4	0.0-4.6	1.8	2.4	0.0-4.6
AT	0.5	0.9	0.0-1.9	0.2	0.7	0.0-1.9	0.7	1.0	0.0-1.9	0.5	0.9	0.0-1.9	0.9	1.0	0.0-1.9	1.5	0.8	0.0-1.9
CSS	0.9	0.9	0.0-1.9	0.2	0.4	0.0-0.9	0.1	0.2	0.0-0.7	0.7	1.0	0.0-2.8	0.1	0.3	0.0-0.9	0.4	0.5	0.0-1.6

Less Stable Whole Word Errors: Targets (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
VT12	50.0	*		*	*		*	*	*	*	*	*	*	*	*	*	*	*
RSTR	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	50.0	*	
VT3	42.9	*		46.4	5.1	42.9-50.0	100.0	*		*	*		*	*		60.0	*	
CSS	*	*	*	*	*	*	*	*	*	*	*	*	30.0	*	*	*	*	*
<i>Female</i>																		
VT12	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	100	*	
RSTR	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	50.0	*	
VT3	80.0	28.3	60.0-100.0	82.1	30.9	46.4-100.0	*	*		72.5	38.9	45.0-100.0	50.0	*		58.2	16.7	46.4-70.0
CSS	47.6	*	*	52.4	8.1	46.7-58.1	57.1	*	*	73.3	37.7	46.7-100.0	*	*	*	61.1	*	*
<i>Both</i>																		
VT12	50.0	*		*	*		*	*	*	*	*	*	*	*	*	100	*	
RSTR	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	50.0	0.0	
VT3	67.6	29.3	42.9-100.0	67.9	29.4	42.9-100.0	100.0	*		72.5	38.9	45.0-100.0	50.0	*		58.8	11.8	46.4-70.0
CSS	47.6	*	*	52.4	8.1	46.7-58.1	57.1	*	*	73.3	37.7	46.7-100.0	30.0	*	*	61.1	*	*

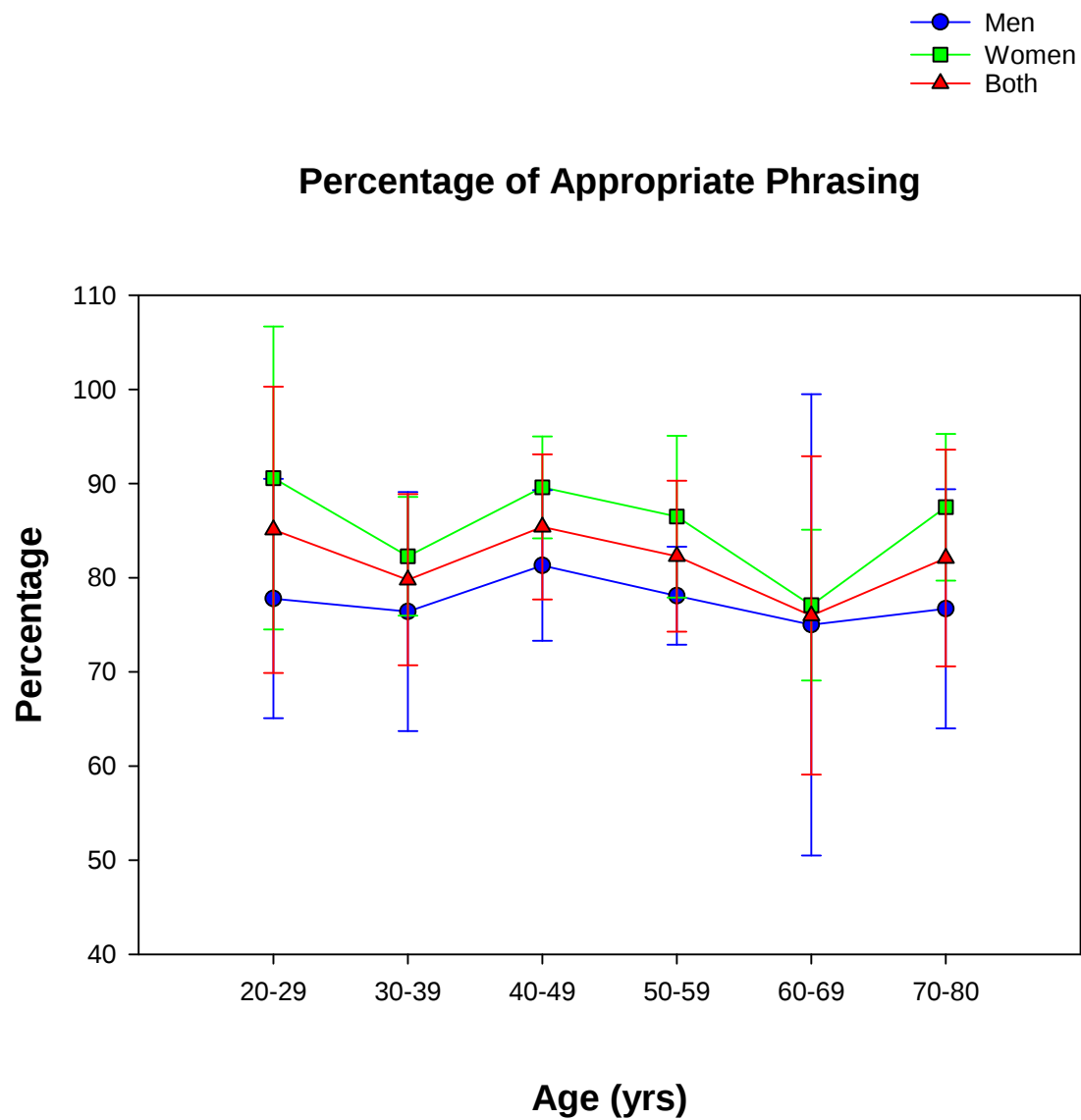
Less Stable Whole Word Errors: Error Types (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
VT12	100.0	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
RSTR	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	100.0	*	
VT3	100.0	*		100.0	0.0		100.0	*		*	*	*	*	*	*	100.0	*	
CSS	*	*	*	*	*	*	*	*	*	*	*	*	0.0	*		*	*	*
<i>Female</i>																		
VT12	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	100.0	*	
RSTR	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	100.0	*	
VT3	100.0	0.0		100.0	0.0		*	*	*	100.0	0.0		100.0	*		100.0	0.0	
CSS	0.0	*		100.0	0.0		100.0	*		100.0	0.0		*	*	*	100.0	*	
<i>Both</i>																		
VT12	100.0	*		*	*	*	*	*	*	*	*	*	*	*	*	100.0	*	
RSTR	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	100.0	0.0	
VT3	100.0	0.0		100.0	0.0		100.0	*		100.0	0.0		100.0	*		100.0	0.0	
CSS	0.0	*		100.0	0.0		100.0	*		100.0	0.0		0.0	*		100.0	*	

Less Stable Percentage of Phonemes Correct
in Complex Words (%)

Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CWT	*	*	*	92.0	*		*	*	*	*	*	*	*	*	*	*	*	*
MWT	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	53.3	*	
VT3	71.4	*		73.2	2.5	71.4-75.0	100.0	*		*	*	*	*	*	*	85.7	*	
CSS	*	*	*	*	*	*	*	*	*	*	*	*	15.0	*		*	*	*
<i>Female</i>																		
CWT	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	80.6	*	
MWT	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	35.9	6.8	31.1-40.7
VT3	92.9	10.1	85.7-100.0	91.1	15.5	73.2-100.0	*	*		86.3	19.4	72.5-100.0	75.0	*		81.3	11.4	73.2-89.3
CSS	23.8	*		76.2	4.0	73.3-79.0	78.6	*		86.7	18.9	73.3-100.0	*	*	*	80.6	*	
<i>Both</i>																		
CWT	*	*	*	92.0	*		*	*	*	*	*	*	*	*	*	80.6	*	
MWT	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	41.7	11.1	31.1-53.3
VT3	85.7	14.3	71.4-100.0	83.9	14.7	71.4-100.0	100.0	*		86.3	19.4	72.5-100.0	75.0	*		82.7	8.4	73.2-89.3
CSS	23.8			76.2	4.0	73.3-79.0	78.6	*		86.7	18.9	73.3-100.0	15.0	*		80.6	*	

Increased Percent of EMMA errors by token (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CWT	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.7	1.4	0.0-2.8	1.7	3.7	0.0-8.3
MWT	0.0	0.0		3.4	4.4	0.0-9.1	0.0	0.0		1.1	2.3	0.0-4.6	2.3	2.6	0.0-4.6	1.8	2.5	0.0-4.6
AT	0.5	1.0	0.0-1.9	0.0	0.0		0.5	0.9	0.0-1.9	0.9	1.1	0.0-1.9	0.9	1.1	0.0-1.9	1.5	0.8	0.0-1.9
CSS	0.2	0.4	0.0-0.7	0.2	0.3	0.0-0.5	0.0	0.0		0.2	0.3	0.0-0.6	0.0	0.0		0.2	0.4	0.0-0.8
<i>Female</i>																		
CWT	0.7	1.4	0.0-2.8	1.4	2.8	0.0-5.6	0.0	0.0		0.0	0.0		0.0	0.0		1.7	3.7	0.0-8.3
MWT	2.3	2.6	0.0-4.6	0.0	0.0		0.0	0.0		2.3	2.6	0.0-4.6	2.3	2.6	0.0-4.6	1.8	2.5	0.0-4.6
AT	0.5	0.9	0.0-1.9	0.5	0.9	0.0-1.9	0.9	1.1	0.0-1.9	0.0	0.0		0.9	1.1	0.0-1.9	1.5	0.8	0.0-1.9
CSS	0.7	0.5	0.0-1.1	0.1	0.2	0.0-0.4	0.1	0.2	0.0-0.4	0.7	1.2	0.0-2.5	0.2	0.3	0.0-0.6	0.2	0.2	0.0-0.5
<i>Both</i>																		
CWT	0.3	1.0	0.0-2.8	0.7	2.0	0.0-5.6	0.0	0.0		0.0	0.0		0.3	1.0	0.0-2.8	1.7	3.5	0.0-8.3
MWT	1.1	2.1	0.0-4.6	1.7	3.4	0.0-9.1	0.0	0.0		1.7	2.4	0.0-4.6	2.3	2.4	0.0-4.6	1.8	2.4	0.0-4.6
AT	0.5	0.9	0.0-1.9	0.2	0.7	0.0-1.9	0.7	1.0	0.0-1.9	0.5	0.9	0.0-1.9	0.9	1.0	0.0-1.9	1.5	0.8	0.0-1.9
CSS	0.5	0.5	0.0-1.1	0.1	0.2	0.0-0.5	0.0	0.1	0.0-0.4	0.5	0.8	0.0-2.5	0.1	0.2	0.0-0.6	0.2	0.3	0.0-0.8

Percentage of Appropriate Phrasing (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	77.8	12.7	66.7-91.7	76.4	12.7	62.5-87.5	81.3	8.0	70.8-87.5	78.1	5.2	70.8-83.3	75.0	24.5	50.0-100.0	76.7	12.7	62.5-91.7
<i>Female</i>																		
CSS	90.6	16.1	66.7-91.7	82.3	6.3	75.0-87.5	89.6	5.4	83.3-95.8	86.5	8.6	75.0-95.8	77.1	8.0	66.7-83.3	87.5	7.8	75.0-95.8
<i>Both</i>																		
CSS	85.1	15.2	66.7-91.7	79.8	9.1	62.5-87.5	85.4	7.7	70.8-95.8	82.3	8.0	70.8-95.8	76.0	16.9	50.0-100.0	82.1	11.5	62.5-95.8



Increased Repetitions and Revisions: 2-4 Word Utterances (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	0.0	*		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		25.0	50.0	0.0-100.0
<i>Female</i>																		
CSS	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
<i>Both</i>																		
CSS	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		14.3	37.8	0.0-100.0

Increased Repetitions and Revisions: 5-7 Word Utterances (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	0.0	0.0		11.3	13.2	0.0-25.0	16.7	28.9	0.0-50.0	0.0	0.0		0.0	0.0		37.5	47.9	0.0-100.0
<i>Female</i>																		
CSS	0.0	0.0		6.7	11.6	0.0-20.0	0.0	0.0		29.2	29.5	0.0-50.0	0.0	0.0		6.7	14.9	0.0-33.3
<i>Both</i>																		
CSS	0.0	0.0		9.3	11.7	0.0-25.0	7.1	18.9	0.0-50.0	9.7	20.0	0.0-50.0	0.0	0.0		20.4	35.1	0.0-100.0

Increased Repetitions and Revisions: 8+ Word Utterances (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	20.4	11.7	10.0-33.3	26.8	15.9	14.3-50.0	17.7	8.9	10.0-30.0	29.6	16.7	10.0-50.0	28.1	25.8	0.0-50.0	24.2	15.4	10.0-45.5
<i>Female</i>																		
CSS	15.8	18.3	0.0-33.3	21.2	15.7	0.0-36.4	13.6	9.4	0.0-20.0	9.4	12.0	0.0-25.0	18.2	19.3	0.0-44.4	14.7	4.8	11.1-22.2
<i>Both</i>																		
CSS	18.1	14.4	0.0-33.3	24.0	14.9	0.0-50.0	15.6	8.8	0.0-30.0	19.5	17.3	0.0-50.0	23.2	21.8	0.0-50.0	19.5	11.8	10.0-45.5

Increased Repetitions and Revisions: All Utterances (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	18.8	12.5	8.3-33.3	20.7	5.6	16.7-28.6	16.7	11.8	8.3-33.3	22.9	14.2	8.3-41.7	17.0	17.7	0.0-40.0	25.7	10.3	16.7-41.7
<i>Female</i>																		
CSS	8.3	11.8	0.0-25.0	18.8	10.5	8.3-33.3	10.4	8.0	0.0-16.7	11.7	11.3	0.0-25.0	13.8	14.2	0.0-33.3	11.1	4.6	6.7-16.7
<i>Both</i>																		
CSS	13.5	12.6	0.0-33.3	19.7	7.9	8.3-33.3	13.5	9.9	0.0-33.3	17.3	13.3	0.0-41.7	15.4	15.0	0.0-40.0	18.4	10.8	6.7-41.7

Increased Syllable/Word Segregation: Percentage of Between/Within-Word Pauses (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
MWT	0.00	0.00		0.0	0.0		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00	
AT	0.00	0.00		0.0	0.0		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00	
CSS	1.02	0.52	0.58-1.58	1.5	0.8	0.8-2.6	1.67	0.46	1.08-2.17	1.65	0.69	1.25-2.67	0.86	0.23	0.67-1.20	1.39	0.71	0.67-2.33
<i>Female</i>																		
MWT	0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00	
AT	0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00	
CSS	1.23	1.24	0.38-3.08	1.54	1.15	0.33-2.75	1.33	0.92	0.50-2.17	1.29	0.89	0.15-2.33	0.51	0.07	0.42-0.60	1.04	0.39	0.54-1.50
<i>Both</i>																		
MWT	0.00	0.00		0.0	0.0		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00	
AT	0.00	0.00		0.0	0.0		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00	
CSS	1.12	0.89	0.38-3.08	1.5	0.9	0.3-2.8	1.50	0.69	0.50-2.17	1.47	0.76	0.15-2.67	0.68	0.25	0.42-1.20	1.21	0.57	0.54-2.33

Increased Syllable/Word Segregation: Duration of Between/Within-Word Pauses (ms)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
MWT	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
AT	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
CSS	629.2	72.3	544.4-710.7	558.0	157.3	396.4-716.8	575.0	34.2	540.6-613.3	534.1	135.1	384.7-677.3	522.0	228.0	368.0-858.0	677.2	156.5	491.5-913.2
<i>Female</i>																		
MWT	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
AT	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
CSS	373.3	17.6	352.7-389.7	440.2	57.1	365.8-499.0	460.7	182.0	240.1-655.5	570.2	189.5	406.3-839.8	585.6	46.6	535.2-647.3	553.9	139.1	388.2-714.9
<i>Both</i>																		
MWT	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
AT	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
CSS	501.2	145.2	352.7-710.7	499.1	126.4	365.8-716.8	517.8	135.7	240.1-655.5	552.1	153.6	384.7-839.8	553.7	156.1	368.0-857.5	615.5	154.0	388.2-913.2

Increased Percentage of Inappropriate Pauses (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	0.0	0.0		0.0	0.0		1.1	2.3	0.0-4.6	1.6	3.2	0.0-6.5	7.5	15.0	0.0-30.0	4.4	9.9	0.0-22.2
<i>Female</i>																		
CSS	0.0	0.0		0.0	0.0		0.0	0.0		1.5	2.9	0.0-5.9	11.3	13.2	0.0-20.0	1.4	3.2	0.0-7.1
<i>Both</i>																		
CSS	0.0	0.0		0.0	0.0		0.6	1.6	0.0-4.6	1.5	2.9	0.0-6.5	9.4	13.2	0.0-30.0	2.9	7.1	0.0-22.2

Increased Percentage of Pauses (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	6.9	2.6	4.6-9.3	11.5	4.3	7.2-17.0	9.5	1.1	8.4-10.9	8.6	2.7	5.7-12.1	8.1	2.3	6.5-11.5	8.3	3.6	3.6-11.7
<i>Female</i>																		
CSS	10.4	6.6	4.1-19.6	8.3	4.2	2.9-11.7	8.4	3.8	4.4-11.7	6.8	4.0	2.1-10.8	4.1	1.5	2.7-6.2	9.1	2.7	4.7-11.7
<i>Both</i>																		
CSS	8.7	5.0	4.1-19.6	9.9	4.3	2.9-17.0	9.0	2.6	4.4-11.7	7.7	3.3	2.1-12.1	6.1	2.8	2.7-11.5	8.7	3.0	3.6-11.7

Reduced Speech-Pause Duration Variability Ratio: 2-4 Word Utterances (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
<i>Female</i>																		
CSS	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
<i>Both</i>																		
CSS	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

Reduced Speech-Pause Duration Variability Ratio: 5-7 Word Utterances (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	*	*	*	2.36	2.55	0.56-4.16	0.93	1.27	0.10-2.40	1.20	*		*	*	*	*	*	*
<i>Female</i>																		
CSS	1.40	0.28	1.20-1.60	0.52	*		1.40	0.71	0.90-1.90	1.10	*		*	*	*	0.60	*	
<i>Both</i>																		
CSS	1.40	0.28	1.20-1.60	1.75	2.09	0.52-4.16	1.12	1.00	0.10-2.40	1.15	0.07	1.10-1.20	*	*	*	0.60	*	

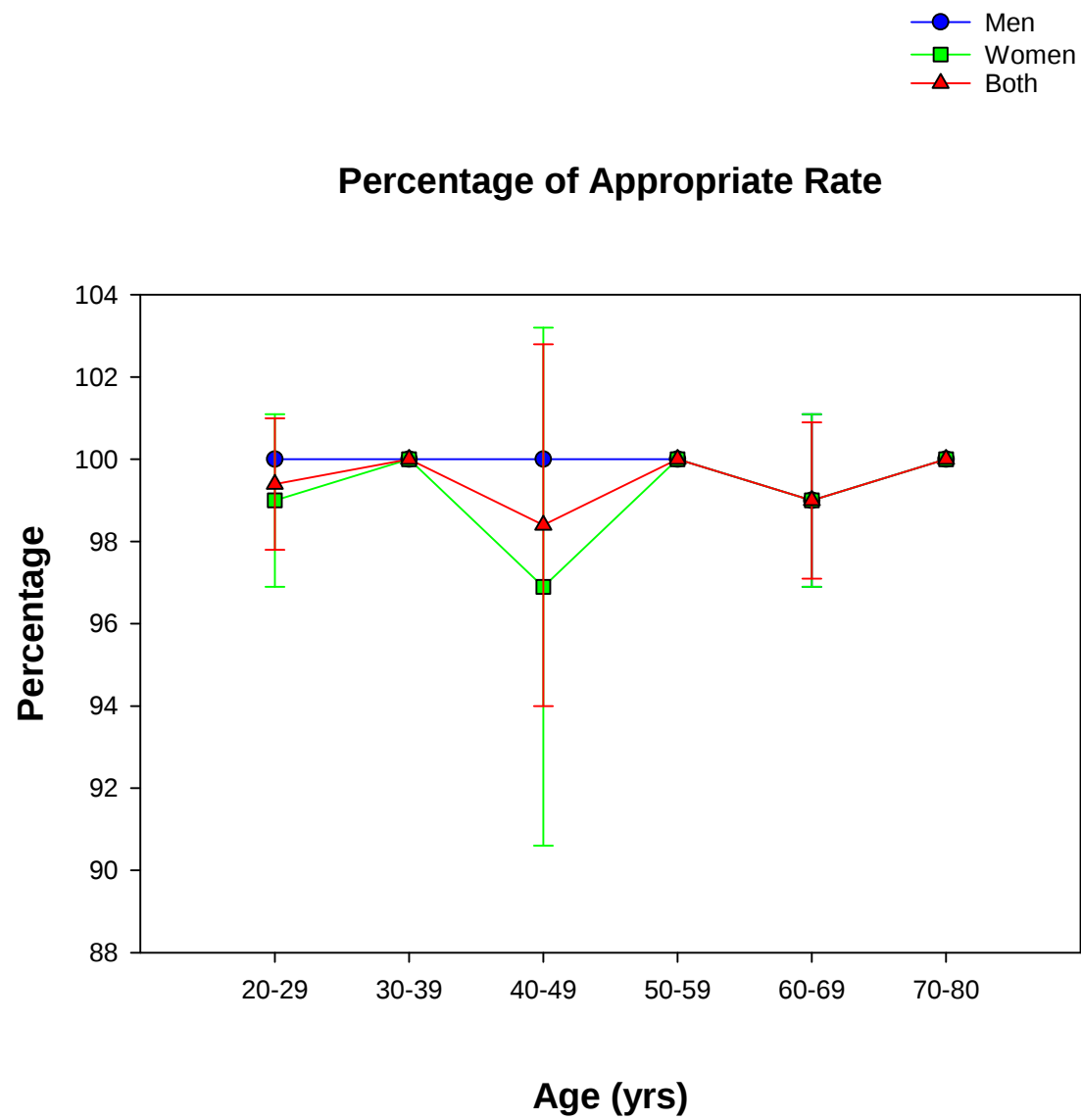
Reduced Speech-Pause Duration Variability Ratio:
8+ Word Utterances (u)

Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	0.55	0.16	0.38-0.76	1.20	0.55	0.55-1.73	0.61	0.27	0.34-0.95	0.75	0.25	0.45-1.04	0.77	0.22	0.51-1.04	0.91	0.27	0.74-1.38
<i>Female</i>																		
CSS	0.99	0.36	0.59-1.47	0.58	0.28	0.33-0.92	0.68	0.20	0.40-0.84	0.65	0.22	0.51-0.90	0.52	0.34	0.16-0.92	0.87	0.39	0.36-1.38
<i>Both</i>																		
CSS	0.77	0.35	0.38-1.47	0.89	0.52	0.33-1.73	0.64	0.22	0.34-0.95	0.71	0.23	0.45-1.04	0.64	0.29	0.16-1.04	0.89	0.31	0.36-1.38

Reduced Speech-Pause Duration Variability Ratio:
All Utterances (u)

Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	0.50	0.09	0.38-0.59	1.04	0.38	0.53-1.35	0.57	0.22	0.36-0.87	0.73	0.23	0.45-0.99	0.71	0.20	0.50-0.94	0.88	0.27	0.70-1.35
<i>Female</i>																		
CSS	0.84	0.18	0.59-0.97	0.56	0.30	0.27-0.92	0.66	0.16	0.45-0.84	0.67	0.18	0.51-0.90	0.52	0.34	0.16-0.92	0.84	0.32	0.38-1.20
<i>Both</i>																		
CSS	0.67	0.22	0.38-0.97	0.80	0.41	0.27-1.35	0.61	0.18	0.36-0.87	0.70	0.19	0.45-0.99	0.62	0.28	0.16-0.94	0.86	0.28	0.38-1.35

Percentage of Appropriate Rate (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0		99.0	2.1	95.8-100.0	100.0	0.0	
<i>Female</i>																		
CSS	99.0	2.1	95.8-100.0	100.0	0.0		96.9	6.3	87.5-100.0	100.0	0.0		99.0	2.1	95.8-100.0	100.0	0.0	
<i>Both</i>																		
CSS	99.4	1.6	95.8-100.0	100.0	0.0		98.4	4.4	87.5-100.0	100.0	0.0		99.0	1.9	95.8-100.0	100.0	0.0	



Slower Speaking Rate: 2-4 Word Utterances (syll/sec)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	5.5	*		3.2	1.6	2.3-5.6	5.5	1.1	4.7-6.2	4.3	0.5	3.9-4.6	4.4	0.7	3.7-5.2	4.5	3.0	1.2-8.3
<i>Female</i>																		
CSS	3.9	1.0	3.2-5.1	7.3	2.8	5.4-9.3	5.1	1.2	4.3-5.9	5.6	0.2	5.4-5.7	4.5	0.6	4.1-5.0	4.3	1.1	3.2-5.4
<i>Both</i>																		
CSS	4.3	1.2	3.2-5.5	4.6	2.7	2.3-9.3	5.3	0.9	4.3-6.2	4.9	0.8	3.9-5.7	4.5	0.6	3.7-5.2	4.4	2.2	1.2-8.3

Slower Speaking Rate: 5-7 Word Utterances (syll/sec)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	5.0	1.7	3.8-6.2	5.4	1.1	3.8-6.2	3.8	0.6	3.4-4.5	4.1	1.2	2.4-5.1	4.8	1.3	3.4-6.6	4.0	1.0	3.1-5.3
<i>Female</i>																		
CSS	5.9	2.8	4.0-10.0	4.8	0.7	4.4-5.6	4.7	0.3	4.4-5.1	4.9	0.5	4.5-5.2	4.9	1.1	4.1-5.7	4.6	0.6	3.7-5.1
<i>Both</i>																		
CSS	5.6	2.3	3.8-10.0	5.1	0.9	3.8-6.2	4.3	0.6	3.4-5.1	4.3	1.0	2.4-5.2	4.8	1.2	3.4-6.6	4.3	0.8	3.1-5.3

Slower Speaking Rate: 8+ Word Utterances (syll/sec)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	4.5	0.7	3.5-5.3	4.0	0.3	3.6-4.2	4.4	0.5	3.7-4.7	3.9	0.7	3.2-4.6	4.0	0.7	3.2-4.6	3.9	0.8	2.7-4.6
<i>Female</i>																		
CSS	4.8	1.3	3.9-6.7	4.6	0.5	3.9-5.1	4.4	0.6	3.9-5.2	4.4	0.4	4.0-5.0	4.1	0.7	3.1-4.8	4.2	0.6	3.6-5.2
<i>Both</i>																		
CSS	4.6	1.0	3.5-6.7	4.3	0.5	3.6-5.1	4.4	0.5	3.7-5.2	4.2	0.6	3.2-5.0	4.1	0.6	3.1-4.8	4.1	0.7	2.7-5.2

Slower Speaking Rate: All Word Utterances (syll/sec)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	4.6	0.8	3.5-5.3	4.2	0.5	3.7	4.84.3	0.5	3.6-4.8	4.0	0.7	3.4-4.6	4.2	0.9	3.3-5.4	3.9	1.0	2.5-4.8
<i>Female</i>																		
CSS	4.6	0.8	3.9-5.8	4.7	0.2	4.6-5.0	4.5	0.6	4.0-5.3	4.5	0.5	4.0-5.1	4.2	0.6	3.5-4.9	4.4	0.5	3.8-5.0
<i>Both</i>																		
CSS	4.6	0.8	3.5-5.8	4.4	0.5	3.7-5.0	4.4	0.5	3.6-5.3	4.3	0.6	3.4-5.1	4.2	0.7	3.3-5.4	4.1	0.8	2.5-5.0

Slower Articulation Rate: 2-4 Word Utterances (syll/sec)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	6.6	*		4.3	1.6	2.9-6.6	5.5	1.1	4.7-6.2	4.3	0.5	3.9-4.6	4.6	0.6	4.0-5.2	4.6	2.7	1.8-8.3
<i>Female</i>																		
CSS	4.2	1.0	3.2-5.1	7.3	2.8	5.4-9.3	5.1	1.2	4.3-5.9	5.6	0.2	5.4-5.7	4.5	0.6	4.1-5.0	4.3	1.1	3.2-5.4
<i>Both</i>																		
CSS	4.8	1.5	3.2-6.6	5.3	2.4	2.9-9.3	5.3	0.9	4.3-6.2	4.9	0.8	3.9-5.7	4.6	0.5	4.0-5.2	4.5	2.0	1.8-8.3

Slower Articulation Rate: 5-7 Word Utterances (syll/sec)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	5.0	1.7	3.8-6.2	5.7	0.9	4.3-6.3	4.7	0.8	4.0-5.6	4.4	1.0	3.2-5.6	5.5	1.4	3.9-6.7	4.5	1.1	3.1-5.3
<i>Female</i>																		
CSS	6.1	2.7	4.2-10.0	4.9	0.6	4.4-5.6	5.0	0.4	4.6-5.5	5.1	0.6	4.6-5.5	5.0	1.1	4.2-5.7	4.8	0.4	4.3-5.1
<i>Both</i>																		
CSS	5.7	2.3	3.8-10.0	5.3	0.9	4.3-6.3	4.8	0.6	4.0-5.6	4.6	0.9	3.2-5.6	5.3	1.2	3.9-6.7	4.6	0.7	3.1-5.3

Slower Articulation Rate: 8+ Word Utterances (syll/sec)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	4.9	0.6	4.1-5.5	4.9	0.1	4.8-4.9	5.1	0.5	4.4-5.4	4.4	0.7	3.6-5.0	4.5	0.8	3.6-5.2	4.4	1.0	3.0-5.5
<i>Female</i>																		
CSS	5.4	1.2	4.5-7.2	5.0	0.6	4.2-5.7	4.8	0.5	4.4-5.4	4.9	0.6	4.4-5.8	4.4	0.7	3.6-5.1	4.8	0.6	4.1-5.6
<i>Both</i>																		
CSS	5.2	0.9	4.1-7.2	4.9	0.4	4.2-5.7	4.9	0.5	4.4-5.4	4.6	0.7	3.6-5.8	4.5	0.7	3.6-5.2	4.6	0.8	3.0-5.6

Slower Articulation Rate: All Utterances (syll/sec)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	5.0	0.7	4.1-5.7	5.0	0.4	4.4-5.5	5.0	0.5	4.3-5.5	4.4	0.7	3.7-5.0	4.7	0.8	3.7-5.7	4.4	1.1	2.8-5.5
<i>Female</i>																		
CSS	5.2	0.8	4.3-6.2	5.1	0.4	4.8-5.6	4.9	0.5	4.4-5.5	5.0	0.5	4.5-5.7	4.5	0.6	3.8-5.1	4.8	0.5	4.1-5.3
<i>Both</i>																		
CSS	5.1	0.7	4.1-6.2	5.0	0.4	4.4-5.6	5.0	0.5	4.3-5.5	4.7	0.6	3.7-5.7	4.6	0.7	3.7-5.7	4.6	0.8	2.8-5.5

Less Stable Speaking Rate: 1-4 Word Utterances (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	71.25	*		47.73	*		*	*		28.48	*		72.00	3.36	68.41-75.08	*	*	
<i>Female</i>																		
CSS	73.14	*		80.14	*		46.52	*		86.02	4.16	83.07-88.96	88.43	14.00	78.53-98.33	83.76	0.81	83.18-84.33
<i>Both</i>																		
CSS	72.20	1.34	71.25-73.14	63.90	22.90	47.70-80.10	46.52	*		66.80	33.30	28.50-89.00	78.57	11.65	68.41-98.33	83.76	0.81	83.18-84.33

Less Stable Speaking Rate: 5-7 Word Utterances (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	88.80	*		72.94	4.50	69.10-77.89	73.10	45.20	20.90-99.70	88.63	9.13	80.90-98.70	57.20	31.80	37.20-93.90	38.90	*	
<i>Female</i>																		
CSS	80.53	3.13	77.70-83.90	66.10	11.88	57.70-74.50	69.95	0.97	68.90-71.00	80.70	19.60	66.80-94.50	46.00	*		82.55	13.12	68.70-96.40
<i>Both</i>																		
CSS	82.60	4.86	77.70-88.80	70.22	7.70	57.74-77.89	71.30	26.16	20.90-99.70	85.44	12.52	66.80-98.70	54.40	26.60	37.20-93.90	73.80	22.60	38.90-96.40

Less Stable Speaking Rate: 8+ Word Utterances (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	73.08	3.92	69.01-76.86	79.11	7.17	72.08-87.58	81.23	8.12	71.13-90.26	81.46	7.62	70.50-87.64	78.30	7.07	70.39-85.31	80.91	3.40	76.54-85.98
<i>Female</i>																		
CSS	73.27	4.11	69.30-77.06	71.62	7.34	66.43-82.48	75.71	3.31	71.85-79.50	79.56	9.80	66.27-89.76	82.92	3.31	79.83-87.07	78.50	3.60	74.35-83.64
<i>Both</i>																		
CSS	73.17	3.72	69.01-77.06	75.36	7.82	66.43-87.58	78.47	6.46	71.13-90.26	80.51	8.19	66.27-89.76	80.61	5.68	70.39-87.07	79.71	3.53	74.35-85.98

Less Stable Speaking Rate: All Utterances (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	73.34	3.02	69.74-75.99	73.34	3.02	69.74-75.99	80.19	11.11	65.57-91.47	76.67	7.24	70.44-86.78	69.53	10.93	55.66-79.04	75.73	8.15	68.32-86.63
<i>Female</i>																		
CSS	69.30	8.56	56.64-75.47	69.13	9.63	59.45-82.25	72.84	3.73	68.14-77.02	75.87	8.16	66.27-83.00	79.81	9.32	66.54-87.91	77.92	2.53	74.76-81.32
<i>Both</i>																		
CSS	71.32	6.32	56.64-75.99	71.24	6.98	59.45-82.25	76.51	8.62	65.57-91.47	76.27	7.15	66.27-86.78	74.67	10.89	55.66-87.91	76.83	5.81	68.32-86.63

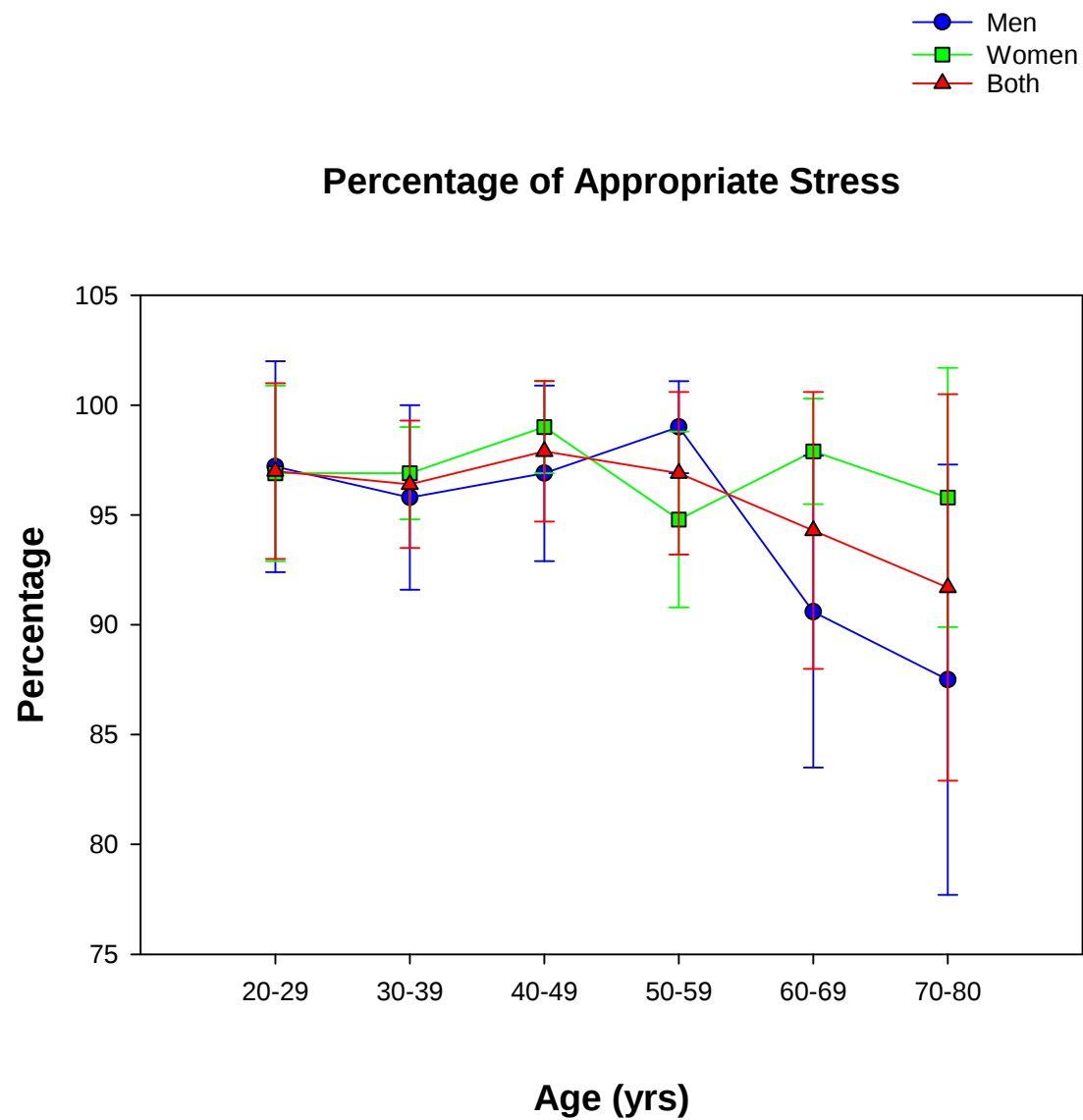
Less Stable Articulation Rate: 1-4 Word Utterances (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	98.33	*		76.47	*		*	*		28.48	*		79.02	10.13	68.41-88.60	*	*	
<i>Female</i>																		
CSS	49.34	*		80.14	*		46.52	*		86.02	4.16	83.07-88.96	88.43	14.00	78.53-98.33	83.76	0.81	83.18-84.33
<i>Both</i>																		
CSS	73.80	34.6	49.30-98.30	78.31	2.6	76.47-80.14	46.52	*		66.80	33.30	28.50-89.00	82.79	11.27	68.41-98.33	83.76	0.81	83.18-84.33

Less Stable Articulation Rate: 5-7 Word Utterances (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	88.80	*		78.38	10.09	67.66-87.70	73.03	5.35	69.70-79.20	96.00	3.11	92.60-98.70	65.00	24.70	41.90-91.00	79.10	*	
<i>Female</i>																		
CSS	86.70	4.36	81.70-89.70	71.04	14.04	61.11-80.97	71.10	9.56	58.80-80.90	77.65	10.11	70.50-84.80	50.90	*		89.97	5.04	84.30-96.40
<i>Both</i>																		
CSS	87.22	3.71	81.70-89.70	75.44	10.79	61.11-87.70	71.93	7.50	58.80-80.90	88.66	11.46	70.50-98.70	61.50	21.30	41.90-91.00	87.80	6.53	79.10-96.40

Less Stable Articulation Rate: 8+ Word Utterances (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	79.25	5.11	74.34-86.43	80.09	6.55	70.40-84.83	85.63	5.15	78.07-88.95	85.12	5.02	78.01-89.76	84.67	3.29	81.04-87.83	87.48	4.46	82.55-94.72
<i>Female</i>																		
CSS	78.25	2.89	75.32-80.85	76.02	8.73	67.58-87.61	81.75	2.99	77.27-83.46	85.01	10.27	70.65-95.03	82.42	6.45	74.58-90.10	84.31	1.99	81.35-86.65
<i>Both</i>																		
CSS	78.75	3.88	74.34-86.43	78.06	7.47	67.58-87.61	83.69	4.42	77.27-88.95	85.06	7.48	70.65-95.03	83.54	4.89	74.58-90.10	85.89	3.66	81.35-94.72

Less Stable Articulation Rate: All Word Utterances (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	79.27	3.81	76.32-84.85	76.08	4.36	71.70-80.67	84.52	4.62	77.89-88.61	81.90	7.40	72.91-90.28	74.84	10.67	59.06-82.64	83.55	7.37	74.75-94.47
<i>Female</i>																		
CSS	71.47	5.73	67.41-79.61	74.42	11.00	63.25-87.84	78.51	6.26	69.61-83.59	80.27	8.79	70.65-88.03	81.25	9.03	69.19-90.83	84.45	2.40	81.89-87.94
<i>Both</i>																		
CSS	75.37	6.14	67.41-84.85	75.25	7.80	63.25-87.84	81.51	6.02	69.61-88.61	81.09	7.57	70.65-90.28	78.04	9.77	59.06-90.83	84.00	5.19	74.75-94.47

Percentage of Appropriate Stress (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	97.2	4.8	91.7-100.0	95.8	4.2	91.7-100.0	96.9	4.0	91.7-100.0	99.0	2.1	95.8-100.0	90.6	7.1	83.3-100.0	87.5	9.8	70.8-95.8
<i>Female</i>																		
CSS	96.9	4.0	91.7-100.0	96.9	2.1	95.8-100.0	99.0	2.1	95.8-100.0	94.8	4.0	91.7-100.0	97.9	2.4	95.8-100.0	95.8	5.9	87.5-100.0
<i>Both</i>																		
CSS	97.0	4.0	91.7-100.0	96.4	2.9	91.7-100.0	97.9	3.2	91.7-100.0	96.9	3.7	91.7-100.0	94.3	6.3	83.3-100.0	91.7	8.8	70.8-100.0



Lexical Stress: Trochees (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
LST	1.1	0.1	1.1-1.2	1.1	0.2	0.9-1.3	1.9	1.4	1.1-3.9	1.1	0.3	0.8-1.4	1.1	0.2	0.8-1.3	1.2	0.1	1.1-1.3
<i>Female</i>																		
LST	0.9	0.1	0.8-1.1	1.3	0.6	1.0-2.2	0.9	0.1	0.8-1.1	1.0	0.1	0.9-1.1	1.4	0.4	0.9-1.9	1.1	0.2	0.9-1.4
<i>Both</i>																		
LST	1.0	0.1	0.8-1.2	1.2	0.4	0.9-2.2	1.4	1.0	0.8-3.9	1.0	0.2	0.8-1.4	1.2	0.4	0.8-1.9	1.1	0.2	0.9-1.4

Lexical Stress: All (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
LST	1.1	0.1	1.1-1.2	1.1	0.2	0.9-1.3	1.9	1.4	1.1-3.9	1.1	0.3	0.8-1.4	1.1	0.2	0.8-1.3	1.2	0.1	1.1-1.3
<i>Female</i>																		
LST	0.9	0.1	0.8-1.1	1.3	0.6	1.0-2.2	0.9	0.1	0.8-1.1	1.0	0.1	0.9-1.1	1.4	0.4	0.9-1.9	1.1	0.2	0.9-1.4
<i>Both</i>																		
LST	1.0	0.1	0.8-1.2	1.2	0.4	0.9-2.2	1.4	1.0	0.8-3.9	1.0	0.2	0.8-1.4	1.2	0.4	0.8-1.9	1.1	0.2	0.9-1.4

Emphatic Stress (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
EST	1.8	0.1	1.7-1.9	1.5	0.1	1.3-1.7	1.6	0.1	1.5-1.8	1.6	0.1	1.4-1.7	1.7	0.2	1.5-1.9	1.5	0.2	1.3-1.8
<i>Female</i>																		
EST	1.7	0.2	1.4-1.8	1.7	0.3	1.5-2.2	1.6	0.1	1.5-1.7	1.6	0.1	1.4-1.7	1.7	0.2	1.6-1.9	1.6	0.2	1.4-2.0
<i>Both</i>																		
EST	1.7	0.2	1.4-1.9	1.6	0.2	1.3-2.2	1.6	0.1	1.5-1.8	1.6	0.1	1.4-1.7	1.7	0.2	1.5-1.9	1.5	0.2	1.3-2.0

Sentential Stress (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	1.5	0.4	1.1-2.0	1.6	0.2	1.5-1.8	1.3	0.2	1.0-1.5	1.3	0.1	1.1-1.4	1.0	0.2	0.8-1.2	1.4	0.3	1.1-1.7
<i>Female</i>																		
CSS	1.6	0.8	0.7-2.7	1.5	0.8	0.7-2.5	1.5	0.2	1.2-1.7	1.3	0.1	1.1-1.4	1.5	0.3	1.2-1.8	1.1	0.2	0.9-1.3
<i>Both</i>																		
CSS	1.5	0.6	0.7-2.7	1.5	0.5	0.7-2.5	1.4	0.2	1.0-1.7	1.3	0.1	1.1-1.4	1.2	0.3	0.8-1.8	1.3	0.2	0.9-1.7

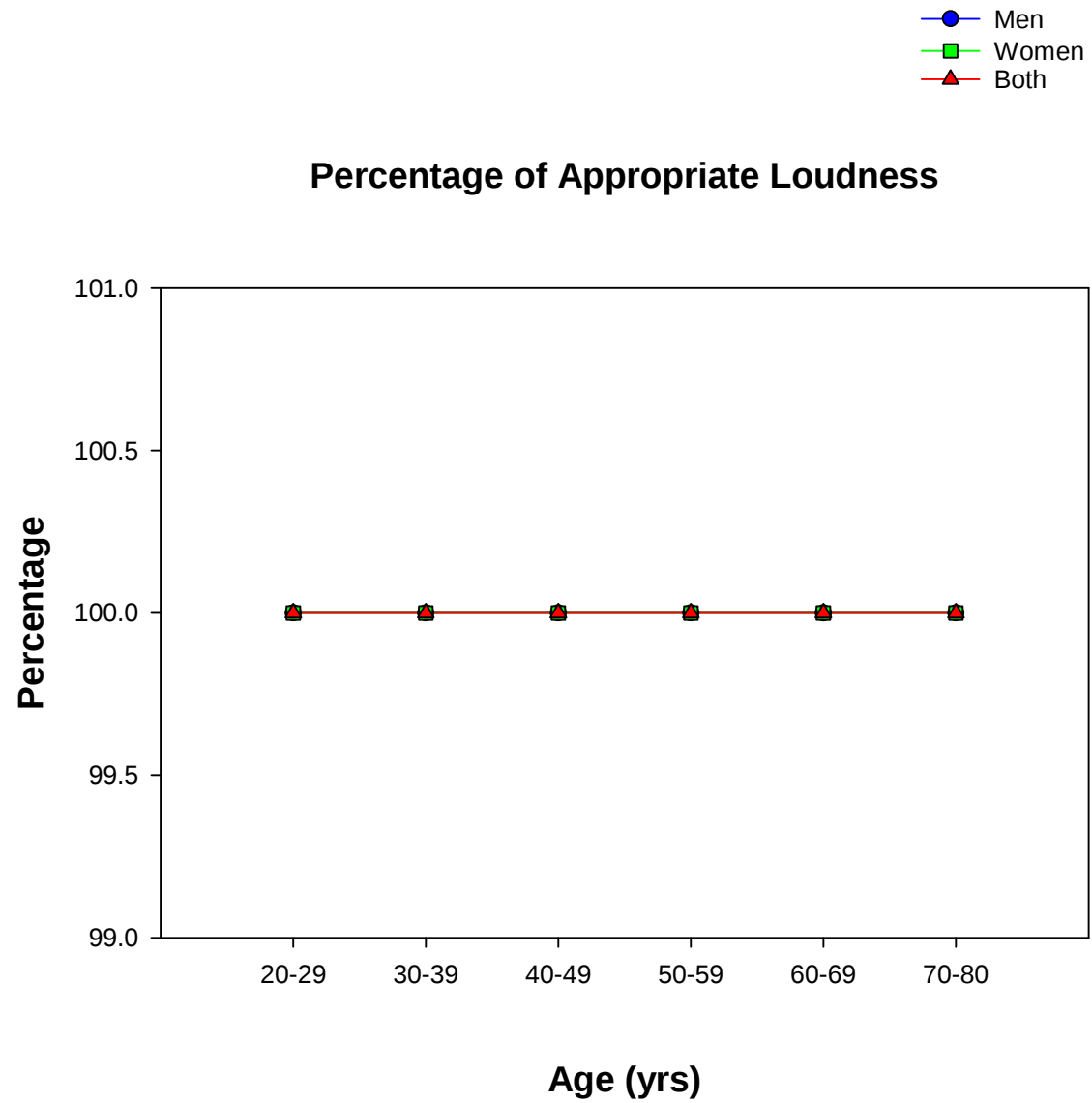
Less Stable Lexical Stress: Trochees (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
LST	56.0	6.0	50.8-62.2	52.3	18.1	25.3-64.0	58.4	15.7	40.5-70.0	57.1	3.2	54.5-61.5	60.2	9.7	45.7-65.6	58.6	7.8	46.4-67.8
<i>Female</i>																		
LST	56.6	7.3	46.8-63.6	55.3	6.5	46.4-61.1	61.2	8.8	50.2-70.9	53.2	9.3	39.8-60.3	53.1	9.5	40.1-62.4	63.1	6.8	56.5-74.6
<i>Both</i>																		
LST	56.3	6.2	46.8-63.6	53.8	12.7	25.3-64.0	60.0	11.1	40.5-70.9	55.1	6.8	39.8-61.5	56.7	9.6	40.1-65.6	60.9	7.3	46.4-74.6

Less Stable Lexical Stress: All (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
LST	56.0	6.0	50.8-62.2	52.3	18.1	25.3-64.0	58.4	15.7	40.5-70.0	57.1	3.2	54.5-61.5	60.2	9.7	45.7-65.6	58.6	7.8	46.4-67.8
<i>Female</i>																		
LST	56.6	7.3	46.8-63.6	55.3	6.5	46.4-61.1	61.2	8.8	50.2-70.9	53.2	9.3	39.8-60.3	53.1	9.5	40.1-62.4	63.1	6.8	56.5-74.6
<i>Both</i>																		
LST	56.3	6.2	46.8-63.6	53.8	12.7	25.3-64.0	60.0	11.1	40.5-70.9	55.1	6.8	39.8-61.5	56.7	9.6	40.1-65.6	60.9	7.3	46.4-74.6

Less Stable Emphatic Stress (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
EST	65.0	13.7	48.5-77.3	68.9	2.9	64.8-71.3	68.1	6.9	61.5-76.3	67.8	8.0	60.3-79.2	69.2	6.9	60.3-74.8	69.5	9.7	57.9-79.6
<i>Female</i>																		
EST	66.0	10.4	52.6-76.8	64.2	12.1	46.7-72.5	72.9	3.3	68.3-76.0	64.6	5.0	57.2-68.3	61.9	11.1	45.4-68.6	68.6	13.6	53.7-82.1
<i>Both</i>																		
EST	65.5	11.3	48.5-77.3	66.6	8.5	46.7-72.5	70.5	5.6	61.5-76.3	66.2	6.4	57.2-79.2	65.6	9.4	45.4-74.8	69.0	11.2	53.7-82.1

Less Stable Sentential Stress (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	54.5	20.1	24.5-65.9	46.2	23.8	21.9-76.1	51.0	21.9	31.7-79.0	74.1	11.4	61.9-85.8	61.4	13.3	46.2-77.9	58.5	8.2	49.0-70.0
<i>Female</i>																		
CSS	45.5	2.1	43.3-48.1	35.8	10.6	22.7-47.4	50.8	2.3	49.0-54.0	56.9	12.5	45.5-73.0	48.2	17.6	27.9-59.2	49.6	15.1	31.0-67.0
<i>Both</i>																		
CSS	50.0	14.1	24.5-65.9	41.0	17.9	21.9-76.1	50.9	14.4	31.7-79.0	65.5	14.4	45.5-85.8	55.7	15.5	27.9-77.9	54.0	12.4	31.0-70.0

Percentage of Appropriate Loudness (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0	
<i>Female</i>																		
CSS	100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0	
<i>Both</i>																		
CSS	100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0	



Vowels-Consonants Intensity Ratios: Vowels-Stops (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
VT12	13.8	2.4	11.5-17.1	7.8	3.7	4.4-12.1	8.1	1.6	5.9-9.4	9.7	3.7	5.8-14.7	6.2	3.9	2.4-11.5	7.6	4.0	2.9-13.3
LST	12.5	1.9	11.1-15.1	12.6	2.9	10.1-15.5	10.9	2.9	7.0-13.9	12.1	4.3	6.8-17.0	9.5	3.8	4.7-13.8	9.0	2.1	6.4-11.6
AT	9.1	2.8	5.0-10.9	7.8	3.8	2.6-11.1	10.0	1.6	8.9-12.3	11.7	3.2	8.9-14.6	7.6	3.6	2.7-11.2	6.9	3.0	2.2-10.4
CSS	14.1	3.9	10.8-19.6	9.5	2.4	6.7-12.6	8.9	3.6	4.7-13.4	10.0	3.5	6.0-13.6	7.6	2.2	5.8-10.3	11.3	3.7	8.6-17.8
<i>Female</i>																		
VT12	7.9	2.0	6.1-10.6	11.4	1.3	10.2-13.3	10.3	2.8	7.2-12.7	9.2	2.6	6.7-12.6	7.4	3.5	2.3-10.4	11.6	0.9	10.4-12.4
LST	10.8	2.3	8.6-13.6	13.0	1.2	11.8-14.4	15.7	4.1	11.8-20.6	13.8	4.0	9.9-19.3	12.6	2.1	10.0-14.7	13.3	1.7	10.7-14.7
AT	9.3	1.7	7.5-11.5	9.3	2.8	6.0-12.5	14.7	4.1	9.1-18.7	11.1	4.5	7.2-17.5	10.5	5.3	4.8-16.9	10.7	3.1	7.3-14.3
CSS	8.8	3.0	5.7-12.5	8.4	2.0	6.3-10.9	9.6	3.1	5.4-12.5	12.2	2.8	9.1-15.4	11.1	3.8	7.2-15.5	13.8	2.6	11.2-18.0
<i>Both</i>																		
VT12	10.8	3.8	6.1-17.1	9.6	3.2	4.4-13.3	9.2	2.4	5.9-12.7	9.4	3.0	5.8-14.7	6.8	3.5	2.3-11.5	9.6	3.5	2.9-13.3
LST	11.7	2.1	8.6-15.1	12.8	2.1	10.1-15.5	13.3	4.2	7.0-20.6	12.9	3.9	6.8-19.3	11.1	3.3	4.7-14.7	11.2	2.9	6.4-14.7
AT	9.2	2.1	5.0-11.5	8.5	3.2	2.6-12.5	12.4	3.8	8.9-18.7	11.4	3.7	7.2-17.5	9.0	4.4	2.7-16.9	8.8	3.5	2.2-14.3
CSS	11.5	4.3	5.7-19.6	8.9	2.1	6.3-12.6	9.2	3.1	4.7-13.4	11.1	3.2	6.0-15.4	9.3	3.4	5.8-15.5	12.5	3.3	8.6-18.0

Vowels-Consonants Intensity Ratios:
Vowels-Affricates/Fricatives (u)

Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
LST	6.8	2.8	4.0-9.5	5.4	2.8	2.5-7.8	6.8	0.9	6.2-8.1	3.8	3.2	0.6-7.8	8.1	1.6	6.7-10.4	8.4	4.8	2.9-16.0
AT	9.2	2.5	7.2-12.7	10.4	2.2	8.6-13.4	9.5	2.7	6.6-12.8	9.0	2.8	5.0-11.1	10.1	4.3	5.0-14.7	9.3	4.3	3.0-13.5
CSS	10.7	4.3	7.4-16.9	8.3	1.9	5.6-10.0	6.4	2.1	4.5-9.3	7.8	2.8	6.2-12.0	10.3	3.4	5.6-13.0	8.9	3.4	4.1-12.7
<i>Female</i>																		
LST	4.2	2.0	1.1-5.3	9.8	2.6	6.0-12.0	6.7	3.7	1.4-9.6	5.1	3.0	1.3-7.7	4.8	1.7	2.9-6.1	4.0	4.7	0.4-11.4
AT	6.4	2.8	4.1-10.2	11.8	3.2	8.3-15.9	10.4	3.6	5.2-13.3	9.2	2.8	5.2-11.7	7.6	5.7	0.2-13.6	9.9	2.2	8.1-13.0
CSS	5.5	1.6	3.7-7.0	8.4	1.8	6.7-10.5	11.4	1.5	9.8-13.2	11.7	2.2	9.4-14.5	9.6	2.8	5.7-11.8	8.4	2.6	6.5-12.7
<i>Both</i>																		
LST	5.5	2.7	1.1-9.5	7.6	3.4	2.5-12.0	6.8	2.5	1.4-9.6	4.5	2.9	0.6-7.8	6.7	2.3	2.9-10.4	6.2	5.0	0.4-16.0
AT	7.8	2.9	4.1-12.7	11.1	2.6	8.3-15.9	10.0	3.0	5.2-13.3	9.1	2.6	5.0-11.7	8.8	4.9	0.2-14.7	9.6	3.2	3.0-13.5
CSS	8.1	4.1	3.7-16.9	8.4	1.7	5.6-10.5	8.9	3.1	4.5-13.2	9.8	3.1	6.2-14.5	10.0	2.9	5.6-13.0	8.7	2.8	4.1-12.7

Vowels-Consonants Intensity Ratios: All (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
VT12	13.6	2.1	11.6-16.5	7.5	3.9	4.3-12.3	7.8	1.8	5.4-9.4	9.0	4.0	4.6-14.1	6.1	3.6	2.8-11.2	7.1	4.2	2.3-13.3
LST	10.3	1.4	8.7-12.0	10.2	3.1	7.6-14.3	10.3	1.3	9.2-12.1	9.3	2.1	6.9-11.3	9.2	4.2	4.8-14.7	8.1	3.3	2.8-11.1
AT	9.3	1.8	7.7-11.8	9.4	2.0	7.6-12.0	9.7	2.2	7.6-12.6	10.1	2.6	6.5-12.4	9.3	4.2	4.1-13.3	8.3	3.6	2.7-10.9
CSS	12.1	3.9	9.1-17.7	8.8	1.5	7.5-10.8	7.2	2.5	4.6-10.6	8.8	2.6	6.3-12.1	9.0	1.9	7.4-11.4	10.0	3.0	5.7-13.4
<i>Female</i>																		
VT12	7.4	1.8	5.8-10.0	11.0	1.6	9.8-13.3	9.7	2.5	7.3-12.0	8.7	2.5	6.5-12.2	7.1	3.4	2.2-10.1	11.3	1.0	9.8-12.2
LST	6.8	3.2	3.0-10.4	11.5	1.7	10.2-13.9	11.6	4.2	7.2-15.2	11.4	2.0	9.0-13.4	9.5	1.0	8.6-10.9	10.9	2.2	7.8-13.3
AT	7.6	2.1	6.1-10.7	10.9	1.9	9.6-13.6	12.2	1.3	10.6-13.2	10.0	2.7	6.7-13.3	8.5	5.3	2.1-13.1	10.2	2.5	7.9-13.5
CSS	7.8	2.3	4.9-9.8	8.2	0.5	7.7-8.9	10.9	1.0	10.2-12.4	12.2	2.0	10.1-14.7	10.2	2.6	6.9-12.4	10.7	1.1	9.8-12.5
<i>Both</i>																		
VT12	10.5	3.8	5.8-16.5	9.3	3.3	4.3-13.3	8.8	2.3	5.4-12.0	8.9	3.1	4.6-14.1	6.6	3.3	2.2-11.2	9.2	3.6	2.3-13.3
LST	8.5	3.0	3.0-12.0	10.8	2.4	7.6-14.3	10.9	2.9	7.2-15.2	10.3	2.2	6.9-13.4	9.4	2.8	4.8-14.7	9.5	3.0	2.8-13.3
AT	8.4	2.0	6.1-11.8	10.1	1.9	7.6-13.6	10.9	2.1	7.6-13.2	10.0	2.4	6.5-13.3	8.9	4.4	2.1-13.3	9.3	3.1	2.7-13.5
CSS	9.9	3.8	4.9-17.7	8.5	1.1	7.5-10.8	9.1	2.6	4.6-12.4	10.5	2.8	6.3-14.7	9.6	2.2	6.9-12.4	10.3	2.1	5.7-13.4

Less Stable Vowels-Consonants Intensity Ratios:
Vowels-Stops (u)

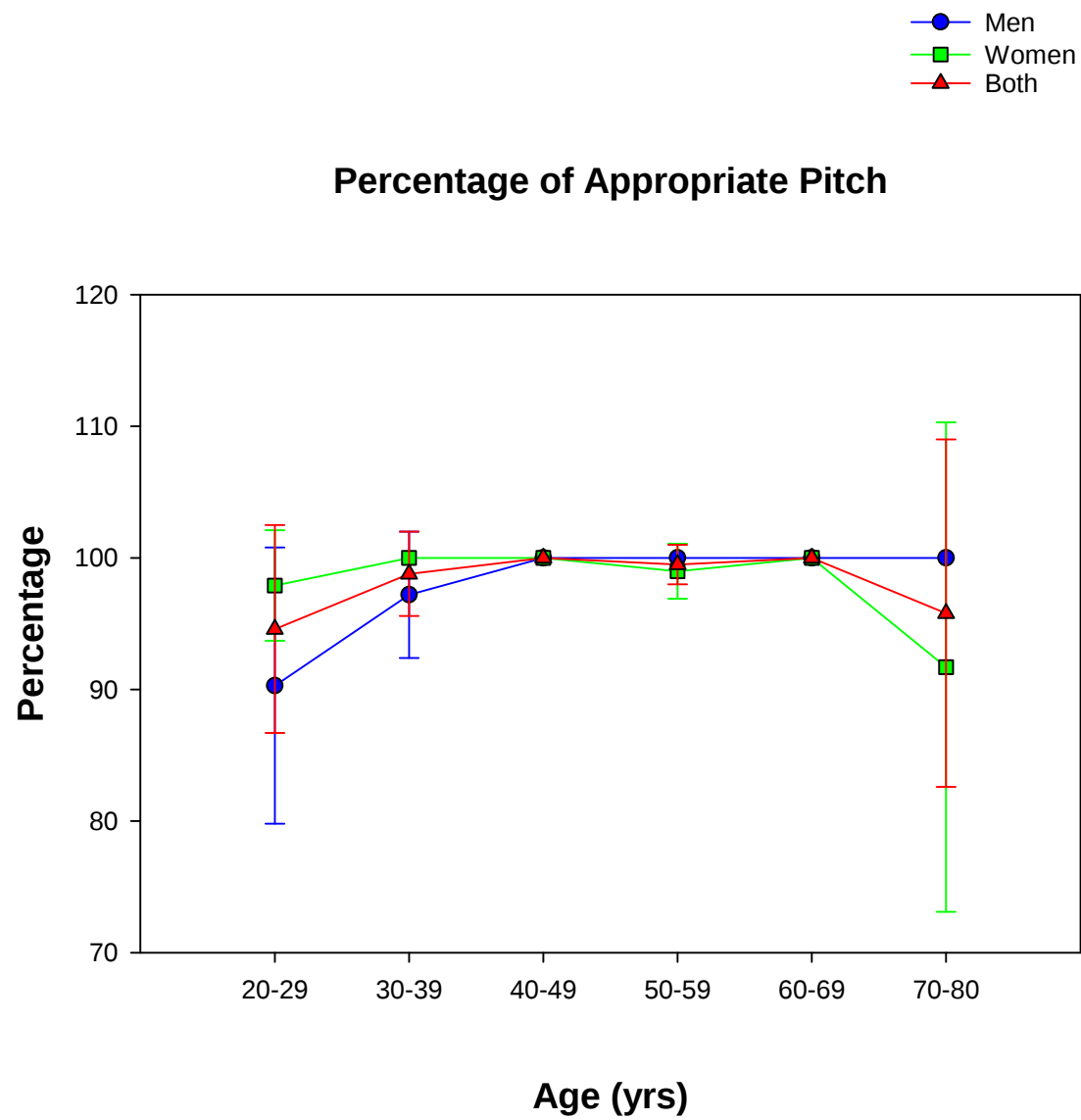
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
VT12	55.3	18.6	32.1-74.1	33.1	8.7	26.1-42.8	30.1	15.5	9.7-46.6	50.2	3.3	47.8-52.6	30.2	15.5	12.8-42.5	31.1	19.7	17.2-45.1
LST	66.8	11.6	53.7-79.5	74.5	11.9	62.8-90.8	58.7	23.8	24.9-77.9	67.0	18.7	49.1-85.1	81.9	7.1	74.4-88.5	49.4	25.0	21.2-78.8
AT	29.0	11.0	20.1-44.1	37.3	38.5	8.8-81.1	55.5	18.5	28.5-68.9	55.9	24.7	33.1-82.0	48.8	*		66.4	28.8	24.2-88.5
CSS	58.6	3.6	55.4-62.3	56.1	20.6	41.5-79.6	65.9	34.2	30.0-97.9	49.2	7.9	38.8-56.6	24.9	28.9	4.5-45.4	44.9	19.3	31.0-76.8
<i>Female</i>																		
VT12	31.9	10.0	21.5-41.5	38.3	12.8	29.4-57.3	37.1	9.7	23.5-46.2	26.2	4.4	21.7-32.0	34.3	16.6	20.4-52.7	46.2	11.8	33.0-57.2
LST	52.7	32.4	21.2-92.1	65.5	11.5	53.8-77.0	61.3	40.1	3.7-96.6	81.9	13.6	63.4-92.9	65.3	20.8	44.9-90.2	65.4	15.4	47.6-89.4
AT	46.1	29.7	11.4-72.4	60.0	26.4	37.8-89.2	33.8	26.8	2.6-66.4	43.3	28.4	3.7-69.1	39.2	22.7	13.6-56.9	41.5	27.9	9.8-79.4
CSS	24.9	28.5	2.4-65.9	49.3	25.3	21.2-70.1	56.1	9.7	49.3-62.9	41.8	21.8	14.9-60.0	38.4	22.3	16.9-62.5	68.0	12.1	54.6-86.4
<i>Both</i>																		
VT12	45.2	19.0	21.5-74.1	36.1	10.7	26.1-57.3	33.6	12.5	9.7-46.6	34.2	12.9	21.7-52.6	32.3	14.5	12.8-52.7	41.9	14.5	17.2-57.2
LST	59.7	23.7	21.2-92.1	70.0	11.9	53.8-90.8	60.0	30.6	3.7-96.6	74.5	17.1	49.1-92.9	72.4	17.7	44.9-90.2	58.3	20.6	21.2-89.4
AT	37.5	22.7	11.4-72.4	48.7	32.0	8.8-89.2	44.6	24.3	2.6-68.9	48.7	25.5	3.7-82.1	41.6	19.1	13.6-56.9	52.5	29.6	9.8-88.5
CSS	41.7	26.1	2.4-65.9	52.7	21.0	21.2-79.6	62.0	25.2	30.0-97.9	45.5	15.7	14.9-60.0	33.9	22.7	4.5-62.5	56.4	19.4	31.0-86.4

Less Stable Vowels-Consonants Intensity Ratios:
Vowels-Affricates/Fricatives (u)

Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
LST	61.6	27.6	29.4-91.7	75.5	20.2	63.3-98.7	77.1	14.5	60.6-95.9	55.1	6.4	50.6-59.6	67.0	30.5	26.9-96.4	65.2	31.3	30.1-96.1
AT	65.3	18.2	40.6-79.8	79.7	18.8	51.7-90.9	65.8	21.0	47.1-88.5	65.3	12.1	47.5-74.1	64.6	26.0	37.4-89.1	47.8	23.6	23.8-81.6
CSS	36.4	25.4	9.5-69.8	30.4	17.8	15.7-51.9	40.5	20.1	28.6-63.6	43.0	22.1	11.1-60.3	39.9	3.0	37.8-43.4	46.9	10.7	34.8-55.2
<i>Female</i>																		
LST	41.6	34.7	9.1-78.1	78.9	27.1	38.7-96.0	65.6	27.1	27.8-88.2	62.3	30.3	21.9-93.1	80.2	12.0	71.7-96.1	86.5	8.9	76.6-93.7
AT	60.8	14.3	44.3-70.2	63.4	9.3	52.9-75.4	46.8	28.3	8.1-70.5	53.4	6.4	46.4-58.9	63.2	10.6	51.8-72.8	69.3	15.3	52.3-85.8
CSS	39.0	20.3	15.8-53.3	37.7	16.9	24.8-61.0	56.3	12.5	45.4-71.9	47.9	14.0	34.9-62.7	52.6	12.7	43.9-67.2	44.1	15.1	26.3-63.3
<i>Both</i>																		
LST	53.1	29.9	9.1-91.7	77.4	22.5	38.7-98.7	71.4	21.0	27.8-95.9	59.9	23.9	21.9-93.1	71.4	25.2	26.9-96.4	73.2	26.6	30.1-96.1
AT	63.4	15.5	40.6-79.8	71.5	16.3	51.7-90.9	54.9	25.5	8.1-88.5	60.2	11.3	46.4-74.1	63.9	17.8	37.4-89.1	58.5	21.9	23.8-85.8
CSS	37.5	21.5	9.5-69.8	34.1	16.5	15.7-61.0	49.5	16.9	28.6-71.9	45.1	17.8	11.1-62.7	46.2	10.8	37.8-67.2	45.3	12.5	26.3-63.3

Less Stable Vowels-Consonants Intensity Ratios: All (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
VT12	55.4	17.5	31.9-70.2	33.2	4.3	28.3-36.5	27.7	20.4	2.3-49.3	49.2	0.9	48.6-49.9	29.1	16.3	10.6-41.6	31.1	20.4	16.7-45.6
LST	10.3	1.4	8.7-12.0	10.2	3.1	7.6-14.3	10.3	1.3	9.2-12.1	9.3	2.1	6.9-11.3	9.2	4.2	4.8-14.7	8.1	3.3	2.8-11.1
AT	50.6	10.3	41.7-60.2	47.1	20.5	16.9-61.1	62.5	4.2	57.7-65.6	48.9	22.8	19.2-73.8	49.4	37.2	6.8-75.9	49.9	17.6	26.6-74.2
CSS	46.2	12.7	34.4-63.9	34.1	21.7	4.3-53.3	24.5	18.2	4.7-40.5	44.6	11.0	30.4-55.7	15.6	11.9	8.6-33.3	35.7	17.2	5.9-47.4
<i>Female</i>																		
VT12	26.6	11.0	18.5-39.0	38.6	13.5	29.3-58.6	35.0	8.3	24.4-44.4	24.3	5.2	18.4-29.9	33.4	15.7	18.9-50.0	44.8	13.9	27.8-58.1
LST	6.8	3.2	3.0-10.4	11.5	1.7	10.2-13.9	11.6	4.2	7.2-15.2	11.4	2.0	9.0-13.4	9.5	1.0	8.6-10.9	10.9	2.2	7.8-13.3
AT	40.3	30.8	11.9-73.6	57.8	10.8	46.7-69.2	41.4	17.2	17.7-56.8	36.5	21.3	6.3-56.0	52.6	2.6	49.6-54.5	61.2	15.5	41.9-75.1
CSS	20.3	10.5	8.4-33.7	35.7	11.5	18.6-42.8	42.6	20.7	20.6-68.5	44.3	12.8	29.8-59.4	31.0	21.3	4.6-56.9	46.3	16.9	21.9-67.3
<i>Both</i>																		
VT12	43.1	20.7	18.5-70.2	36.3	10.3	28.3-58.6	31.3	14.9	2.3-49.3	32.6	13.5	18.4-49.9	31.3	14.5	10.6-50.0	40.9	15.6	16.7-58.1
LST	8.5	3.0	3.0-12.0	10.8	2.4	7.6-14.3	10.9	2.9	7.2-15.2	10.3	2.2	6.9-13.4	9.4	2.8	4.8-14.7	9.5	3.0	2.8-13.3
AT	45.4	22.0	11.9-73.6	52.4	16.2	16.9-69.2	50.5	16.8	17.7-65.6	42.7	21.5	6.3-73.8	51.0	23.7	6.8-75.9	55.5	16.7	26.6-75.1
CSS	33.3	17.5	8.4-63.9	34.9	16.1	4.3-53.3	34.8	20.5	4.7-68.5	44.5	11.0	29.8-59.4	23.3	18.0	4.6-56.9	41.0	17.0	5.9-67.3

Percentage of Appropriate Pitch (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	90.3	10.5	79.2-100.0	97.2	4.8	91.7-100.0	100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0	
<i>Female</i>																		
CSS	97.9	4.2	91.7-100.0	100.0	0.0		100.0	0.0		99.0	2.1	95.8-100.0	100.0	0.0		91.7	18.6	58.3-100.0
<i>Both</i>																		
CSS	94.6	7.9	79.2-100.0	98.8	3.2	91.7-100.0	100.0	0.0		99.5	1.5	95.8-100.0	100.0	0.0		95.8	13.2	58.3-100.0

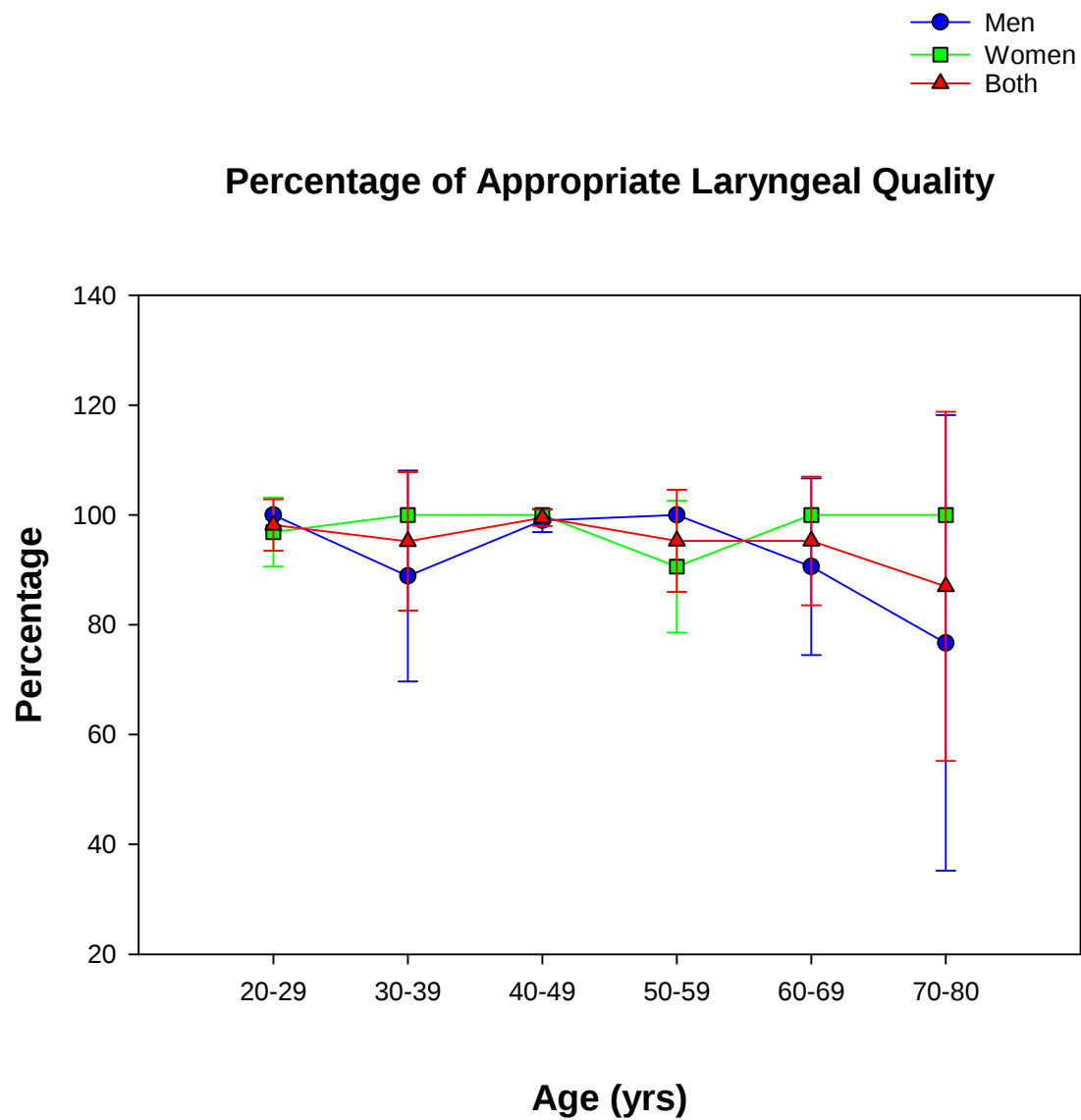


Midpoint Fundamental Frequency Mean (Hz)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
VT12	106.3	6.5	100.1-113.5	110.4	15.7	94.3-127.6	106.2	13.4	94.2-121.3	109.3	15.9	94.9-131.8	118.1	26.5	87.3-141.2	127.9	19.8	108.5-159.3
CSS	102.8	11.1	87.9-113.6	108.6	16.5	94.3-129.2	109.4	16.8	90.4-129.0	109.7	20.7	82.6-131.3	108.0	18.0	86.9-123.7	113.7	14.1	96.0-130.0
<i>Female</i>																		
VT12	187.4	14.0	175.5-207.3	183.3	15.5	166.4-199.3	172.3	8.1	166.9-184.3	182.9	16.6	168.5-206.8	161.1	27.7	120.2-180.7	170.3	21.6	144.1-198.6
CSS	177.8	6.6	169.5-185.4	171.4	19.1	145.5-191.5	162.1	14.3	149.1-176.5	174.5	10.0	161.3-182.6	160.8	25.6	127.8-189.2	152.3	29.3	127.6-184.9
<i>Both</i>																		
VT12	146.8	44.5	100.1-207.3	146.8	41.6	94.3-199.3	139.3	36.8	94.2-184.3	146.1	42.1	94.9-206.8	139.6	34.1	87.3-180.7	149.1	29.7	108.5-198.6
CSS	140.3	40.9	87.9-185.4	140.0	37.5	94.3-191.5	135.8	31.7	90.4-176.5	142.1	37.8	82.6-182.6	134.4	34.9	86.9-189.2	133.0	29.7	96.0-184.9

Midpoint Fundamental Frequency Range (Hz)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
VT12	80.7	51.0	27.6-149.9	101.3	67.8	27.2-181.4	67.1	33.3	32.7-109.8	72.6	24.7	47.0-106.0	70.0	37.2	25.6-115.2	110.7	97.1	30.3-238.5
CSS	184.9	126.5	96.7-371.8	139.2	66.9	53.1-199.0	213.4	89.5	100.8-318.0	223.4	119.2	126.5-395.3	145.2	33.2	109.6-176.6	214.2	65.1	147.8-287.9
<i>Female</i>																		
VT12	110.6	53.5	48.5-157.1	120.8	86.7	51.4-236.6	98.3	74.6	57.7-210.2	107.3	33.6	72.9-143.4	81.4	30.2	53.1-123.8	83.4	85.0	37.3-235.1
CSS	231.3	12.7	214.7-241.4	243.2	45.3	193.8-302.2	217.8	24.1	183.8-235.6	231.4	75.9	128.2-301.0	232.5	76.9	159.7-325.9	202.6	44.0	147.1-269.5
<i>Both</i>																		
VT12	95.6	50.9	27.6-157.1	111.0	72.8	27.2-236.6	82.7	56.0	32.7-210.2	89.9	33.0	47.0-143.4	75.7	32.0	25.6-123.8	97.1	87.3	30.3-238.5
CSS	208.1	86.8	96.7-371.8	191.2	76.7	53.1-302.2	215.6	60.7	100.8-318.0	227.4	92.6	126.5-395.3	188.9	72.0	109.6-325.9	208.4	52.8	147.1-287.9

Less Stable Mean Midpoint Fundamental Frequency (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
VT12	85.7	11.1	69.4-93.7	83.7	10.6	69.2-93.2	89.3	3.3	84.6-91.9	86.9	4.4	81.9-92.6	90.3	3.3	87.0-94.9	82.2	15.3	58.7-95.2
CSS	75.1	8.0	65.9-85.1	78.7	9.7	71.2-92.1	69.9	10.7	61.7-85.6	77.2	6.5	68.3-83.5	80.3	8.1	71.7-87.7	71.8	10.8	59.0-84.1
<i>Female</i>																		
VT12	89.3	4.9	84.7-95.1	90.3	5.3	82.6-94.4	89.1	4.8	81.8-91.6	87.6	3.4	83.5-91.1	90.2	2.9	87.5-93.3	91.1	6.0	80.7-94.8
CSS	71.2	5.3	64.9-76.7	74.3	1.7	72.6-76.2	80.4	5.1	75.8-87.3	79.7	6.6	72.7-87.7	81.4	1.1	80.0-82.4	80.9	5.6	72.0-85.2
<i>Both</i>																		
VT12	87.5	8.2	69.4-95.1	87.0	8.5	69.2-94.4	89.2	3.8	81.8-91.9	87.3	3.6	81.9-92.6	90.3	2.9	87.0-94.9	86.6	11.9	58.7-95.2
CSS	73.2	6.6	64.9-85.1	76.5	6.9	71.2-92.1	75.1	9.6	61.7-87.3	78.5	6.2	68.3-87.7	80.9	5.4	71.7-87.7	76.4	9.4	59.0-85.2

Percentage of Appropriate Laryngeal Quality (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	100.0	0.0		88.9	19.2	66.7-100.0	99.0	2.1	95.8-100.0	100.0	0.0		90.6	16.1	66.7-100.0	76.7	41.5	4.2-100.0
<i>Female</i>																		
CSS	96.9	6.3	87.5-100.0	100.0	0.0		100.0	0.0		90.6	12.0	75.0-100.0	100.0	0.0		100.0	0.0	
<i>Both</i>																		
CSS	98.2	4.7	87.5-100.0	95.2	12.6	66.7-100.0	99.5	1.5	95.8-100.0	95.3	9.3	75.0-100.0	95.3	11.7	66.7-100.0	87.0	31.8	4.2-100.0



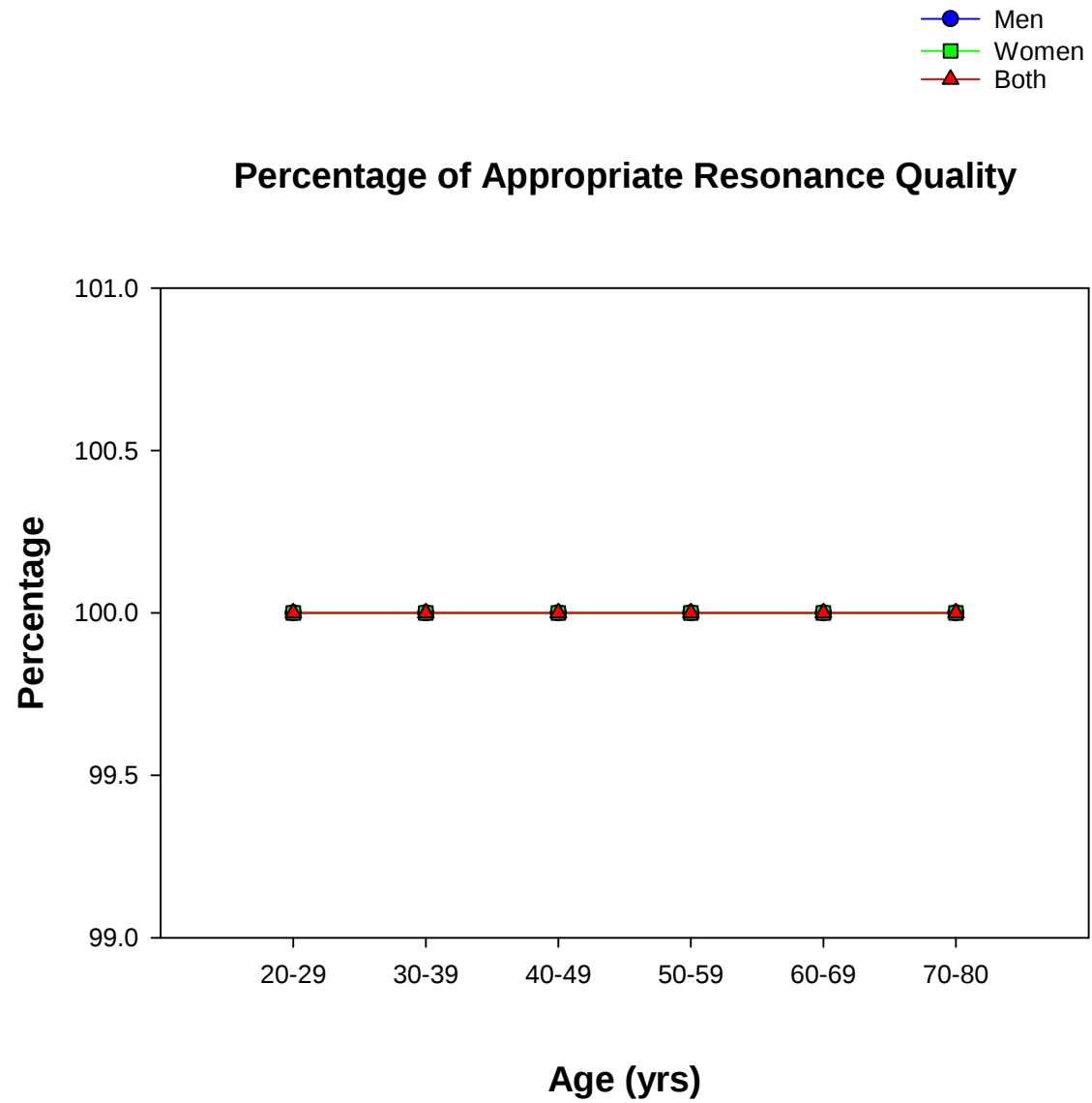
Percentage of Breathy Utterances (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
<i>Female</i>																		
CSS	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
<i>Both</i>																		
CSS	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	

Percentage of Rough Utterances (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	0.0	0.0		5.2	10.4	0.0-20.8	0.0	0.0		0.0	0.0		8.3	14.0	0.0-29.2	23.3	41.5	0.0-95.8
<i>Female</i>																		
CSS	3.1	6.3	0.0-12.5	0.0	0.0		0.0	0.0		9.4	12.0	0.0-25.0	0.0	0.0		0.0	0.0	
<i>Both</i>																		
CSS	1.6	4.4	0.0-12.5	2.6	7.4	0.0-20.8	0.0	0.0		4.7	9.3	0.0-25.0	4.2	10.2	0.0-29.2	11.7	30.3	0.0-95.8

Percentage of Strained Utterances (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	0.0	0.0		3.1	6.3	0.0-12.5	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
<i>Female</i>																		
CSS	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
<i>Both</i>																		
CSS	0.0	0.0		1.6	4.4	0.0-12.5	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	

Percentage of Break/Shift/Tremulous Utterances (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	0.0	0.0		0.0	0.0		1.0	2.1	0.0-4.2	0.0	0.0		1.0	2.1	0.0-4.2	0.0	0.0	
<i>Female</i>																		
CSS	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
<i>Both</i>																		
CSS	0.0	0.0		0.0	0.0		0.5	1.5	0.0-4.2	0.0	0.0		0.5	1.5	0.0-4.2	0.0	0.0	

Percentage of Appropriate Resonance Quality (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0	
<i>Female</i>																		
CSS	100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0	
<i>Both</i>																		
CSS	100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0		100.0	0.0	



Percentage of Nasal Utterances (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
<i>Female</i>																		
CSS	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
<i>Both</i>																		
CSS	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	

Lowered /ɑ/ F1 (Nasal) (Hz)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
VT12	836.9	53.1	796.5-915.0	783.1	52.9	742.8-861.0	844.9	59.3	775.0-904.3	801.9	41.6	764.3-861.0	828.8	94.2	732.0-914.8	766.4	73.5	689.0-839.5
SVT	667.5	55.5	603.0-732.0	786	215	560-1077.0	560.0	105.3	474.0-689.0	560.0	149.0	345.0-689.0	746.3	24.8	732.0-775.0	620.2	99.0	517.0-775.0
CSS	631.7	23.4	603.0-660.3	655.9	98.7	545.7-775.0	554.6	74.8	452.5-631.7	724.9	133.3	545.7-861.3	673.0	150.2	452.5-775.3	614.5	44.6	560.0-660.3
<i>Female</i>																		
VT12	1028.4	114.8	861.0-1120.0	950.1	80.1	861.0-1023.0	995.9	69.3	936.3-1066.0	1079.6	65.3	1023.3-1173.8	950.1	35.8	915.0-990.8	962.5	83.1	861.3-1055.5
SVT	818	211	646-1077.0	753.5	113.8	646.0-904.0	796.5	24.8	775.0-818.0	764.3	137.7	646.0-904.0	775.3	195.9	560.0-1034.0	775.0	86.0	689.0-904.0
CSS	831.6	85.5	775.0-958.3	724.9	92.6	603.0-804.0	843.3	110.7	732.3-976.0	816.4	131.3	624.5-918.7	721.3	61.2	631.7-760.7	719.1	82.4	588.7-789.3
<i>Both</i>																		
VT12	932.6	131.6	796.5-1120.0	866.6	109.2	742.8-1023.0	920.4	100.4	775.0-1066.0	940.8	156.9	764.3-1173.8	889.5	92.5	732.0-990.8	864.5	127.1	689.0-1055.5
SVT	742.9	164.0	603.0-1077.0	769.8	160.2	560.0-1077.0	678.3	144.9	474.0-818.0	662.1	171.9	345.0-904.0	762.9	140.1	560.0-1034.0	697.6	119.6	517.0-904.0
CSS	731.6	121.6	603.0-958.3	690.4	96.0	545.7-804.0	698.9	177.3	452.5-976.0	770.6	131.9	545.7-918.7	697.1	109.3	452.5-775.3	666.8	83.3	560.0-789.3

Percentage of Nasopharyngeal Utterances (%)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
CSS	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
<i>Female</i>																		
CSS	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
<i>Both</i>																		
CSS	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	

Lowered /i/ F2 (Nasopharyngeal) (Hz)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
VT12	2285.1	173.5	2110.0-2455.0	2285.0	252.0	1949.0-2541.0	2255.6	161.8	2088.5-2433.5	2447.0	299.0	2196.0-2875.0	2444.0	253.0	2153.0-2745.0	2351.3	222.4	2174.5-2723.8
CSS	2063.7	113.2	1938.0-2196.3	2081.4	129.9	1981.0-2253.7	2026.0	123.9	1873.5-2168.0	2196.0	341.0	1708.0-2498.0	2146.0	207.0	1909.0-2340.0	2006.2	168.1	1819.8-2225.0
<i>Female</i>																		
VT12	2934.0	189.9	2680.8-3090.3	2756.3	133.0	2605.5-2929.0	2740.0	227.0	2433.0-2972.0	2872.0	116.1	2745.3-3015.0	2871.0	238.0	2656.0-3209.0	2827.3	106.2	2637.8-2885.5
CSS	2607.2	98.3	2469.0-2684.3	2416.0	224.0	2153.0-2638.0	2499.8	113.8	2369.0-2605.5	2565.9	144.3	2354.0-2670.0	2325.0	339.0	1917.0-2746.0	2407.4	176.9	2124.3-2605.5
<i>Both</i>																		
VT12	2610.0	386.0	2110.0-3090.3	2521.0	313.0	1949.0-2929.0	2498.0	317.0	2089.0-2972.0	2659.0	309.0	2196.0-3015.0	2657.0	322.0	2153.0-3209.0	2589.3	299.9	2174.5-2885.5
CSS	2335.0	307.0	1938.0-2684.0	2248.8	246.5	1981.0-2637.8	2262.9	276.1	1873.5-2498.0	2381.0	312.0	1708.0-2670.0	2235.5	276.8	1909.3-2746.5	2206.8	266.8	1819.8-2605.5

Lowered /u/ F2 (Nasopharyngeal) (Hz)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
VT12	1103.8	48.5	1044.8-1163.0	1292.0	118.7	1184.5-1410.3	1149.4	147.2	936.8-1270.5	1168.1	192.0	925.5-1356.5	1135.1	114.5	976.0-1249.0	1197.4	116.6	1044.8-1367.3
CSS	1625.8	143.8	1450.0-1794.7	1656.0	289.0	1292.0-1952.0	1561.0	255.0	1335.0-1895.0	1474.1	127.6	1313.5-1625.8	1351.0	239.0	1077.0-1658.0	1394.0	238.0	1185.0-1766.0
<i>Female</i>																		
VT12	1421.1	136.4	1259.8-1582.5	1569	256	1217-1809.0	1243.6	93.5	1120.0-1335.0	1219.4	125.3	1076.8-1378.0	1326.9	98.3	1195.3-1421.0	1221.0	166.5	1077.0-1485.5
CSS	1735.0	258.0	1529.0-2024.0	1798.0	71.7	1722.5-1866.3	1798.0	390.0	1335.0-2211.0	1291.3	86.2	1191.7-1378.3	1619.0	236.0	1335.0-1909.0	1553.3	192.0	1277.7-1780.3
<i>Both</i>																		
VT12	1262.4	194.2	1044.8-1582.5	1430.7	236.9	1184.5-1809.0	1196.5	124.8	936.8-1335.0	1193.8	152.6	925.5-1378.0	1231.0	142.4	976.0-1421.0	1209.2	136.1	1044.8-1485.5
CSS	1672.4	189.5	1450.0-2024.0	1727.1	209.1	1292.0-1952.0	1680.0	330.0	1335.0-2211.0	1382.7	140.4	1191.7-1625.8	1485.3	262.4	1076.7-1909.0	1473.6	220.5	1184.5-1780.3

Less Stable /ɑ/ F1 (Nasal) (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
VT12	94.8	1.9	92.6-96.9	96.1	2.1	92.9-97.2	96.0	2.9	93.2-100.0	96.2	1.1	94.8-97.2	93.1	6.1	84.5-97.7	92.9	2.5	91.1-97.3
CSS	88.8	7.0	79.2-96.1	92.0	8.7	80.2-100.0	83.9	7.0	77.1-93.3	84.0	17.1	60.9-100.0	83.9	15.2	61.5-93.5	88.3	2.6	84.4-90.6
<i>Female</i>																		
VT12	96.4	2.9	92.9-100.0	93.5	5.2	87.2-100.0	95.4	2.3	92.3-97.7	94.8	2.6	91.6-97.7	91.3	7.7	80.2-96.8	92.7	4.5	87.7-97.8
CSS	81.4	9.3	74.7-92.0	86.1	11.7	73.0-100.0	86.7	19.0	58.8-100.0	88.8	6.9	82.1-95.1	84.3	12.4	65.7-91.7	92.0	5.6	82.5-96.0
<i>Both</i>																		
VT12	95.6	2.4	92.6-100.0	94.8	4.0	87.2-100.0	95.7	2.4	92.3-100.0	95.5	2.0	91.6-97.7	92.2	6.5	80.2-97.7	92.8	3.4	87.7-97.8
CSS	85.6	8.3	74.7-96.1	89.1	10.0	73.0-100.0	85.3	13.3	58.8-100.0	86.4	12.3	60.9-100.0	84.1	12.9	61.5-93.5	90.2	4.6	82.5-96.0

Less Stable /i/ F2 (Nasopharyngeal) (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
VT12	95.9	5.4	88.1-100.0	97.6	1.7	95.2-98.9	97.6	1.0	96.5-98.8	96.6	0.4	96.2-97.2	95.7	3.1	93.0-99.2	95.8	1.3	94.3-97.1
CSS	90.7	4.5	87.1-96.6	97.0	2.4	94.2-98.9	91.6	3.7	86.8-95.1	93.1	3.3	88.3-96.0	90.5	3.6	85.6-93.5	93.6	5.6	87.1-100.0
<i>Female</i>																		
VT12	97.8	1.5	95.7-99.3	98.6	1.1	97.5-100.0	96.8	2.6	93.1-99.1	97.5	1.2	95.9-98.5	96.9	1.1	95.5-98.1	97.5	1.6	95.2-99.1
CSS	95.0	2.9	91.8-98.8	96.0	2.1	94.3-98.8	93.9	3.9	88.2-97.3	93.2	5.4	87.4-98.1	93.2	1.1	92.1-94.2	92.3	4.2	86.5-97.5
<i>Both</i>																		
VT12	96.9	3.8	88.1-100.0	98.1	1.4	95.2-100.0	97.2	1.9	93.1-99.1	97.1	1.0	95.9-98.5	96.3	2.2	93.0-99.2	96.7	1.6	94.3-99.1
CSS	92.9	4.2	87.1-98.8	96.4	2.1	94.2-98.9	92.8	3.7	86.8-97.3	93.2	4.1	87.4-98.1	91.8	2.9	85.6-94.2	92.9	4.7	86.5-100.0

Less Stable /u/ F2 (Nasopharyngeal) (u)																		
Source	20-29 Yrs			30-39 Yrs			40-49 Yrs			50-59 Yrs			60-69 Yrs			70-80 Yrs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
<i>Male</i>																		
VT12	93.5	6.3	84.1-98.1	94.8	2.7	90.9-96.6	94.6	3.5	89.8-98.2	96.2	1.2	94.5-97.3	93.4	2.4	90.8-96.4	93.7	3.5	89.6-98.0
CSS	78.5	15.7	62.8-93.5	86.4	7.5	79.2-96.6	77.7	15.2	60.8-90.7	87.0	10.3	77.8-98.3	81.9	11.8	69.9-93.3	75.3	23.9	40.3-94.0
<i>Female</i>																		
VT12	91.0	3.0	88.1-93.7	94.2	1.9	92.2-96.8	92.9	6.0	85.8-100.0	92.1	4.4	87.3-97.5	93.4	2.8	90.1-95.8	92.3	4.8	84.1-96.8
CSS	74.4	17.3	62.2-86.6	84.9	8.0	75.3-93.0	87.9	5.6	80.7-94.4	78.8	9.1	70.2-88.4	86.4	6.9	80.0-94.8	84.7	6.8	73.4-91.5
<i>Both</i>																		
VT12	92.3	4.8	84.1-98.1	94.5	2.2	90.9-96.8	93.7	4.6	85.8-100.0	94.2	3.7	87.3-97.5	93.4	2.4	90.1-96.4	93.0	4.0	84.1-98.0
CSS	77.1	14.5	62.2-93.5	85.6	7.2	75.3-96.6	82.8	11.9	60.8-94.4	83.5	10.0	70.2-98.3	84.2	9.3	69.9-94.8	80.5	16.2	40.3-94.0