

## Appendix C

---

**Processed data for sub-aim one: Duration in the FR expressed as a percentage of the duration in the NR for L1 and L2 for each subject and the normal group regarding each temporal parameter for each utterance and utterance group**

**Page2-4**

*Vowel duration* in the fast rate expressed as a percentage of *vowel duration* in the normal rate for utterances beginning with a *voiceless plosive*

	"pak"/puck		"pet"/pet		"pit"/pit		"pad"/putt		"pap"/pup		Utterance group	
	L1	L2	L1	L2	L1	L2	L1	L2	L1	L2	L1	L2
AOS1	-9.8	-9.6	-6.9	0.9	-15.4	-13.1	-16.3	-0.3	-30.4	-4.5	-15.8	-5.3
AOS2	6.0	-0.2	3.4	-8.0	13.0	17.5	-2.2	3.6	-7.4	-9.1	2.6	0.8
AOS3	23.1	5.9	19.2	11.8	20.9	4.7	9.9	-8.8	6.5	-16.5	15.9	-0.6
N1	7.4	23.2	10.0	28.2	10.4	19.9	12.2	18.4	9.6	17.2	9.9	21.4
N2	7.5	14.8	11.4	16.4	14.9	12.0	9.5	16.2	-4.5	7.8	7.8	13.5
N3	-2.2	0.3	3.8	10.8	-13.3	6.6	0.1	7.6	-4.1	21.9	-3.1	9.4
N4	7.4	8.6	8.1	14.6	2.0	4.1	15.0	24.1	15.7	4.7	9.6	11.2
N5	16.6	-9.6	17.2	4.2	19.9	6.2	16.5	3.4	17.4	1.3	17.5	1.1
NGR	7.3	8.5	10.2	15.5	7.5	10.0	10.7	14.3	6.8	10.3	8.5	11.7
PP1	-3.4	24.4	-4.6	11.5	6.1	12.4	7.0	14.1	23.1	9.8	5.6	14.5
PP2	-12.7	-7.6	-8.8	-1.1	-5.8	12.5	0.9	-17.1	5.9	-8.6	-4.1	-4.4
PP3	-4.3	-9.9	-20.8	-15.1	0.7	-5.8	-11.0	-5.1	-0.2	-15.3	-7.1	-10.2

*Vowel duration* in the fast rate expressed as a percentage of *vowel duration* in the normal rate for utterances beginning with a *voiced plosive*

	"byt"/bait		"bak"/buck		"bas"/bus		"bek"/back		"bed"/bet		Utterance group	
	L1	L2	L1	L2	L1	L2	L1	L2	L1	L2	L1	L2
AOS1	11.8	0.6	-23.0	-28.4	-8.5	7.4	-26.3	7.3	10.2	7.5	-7.2	-1.1
AOS2	13.3	6.3	10.3	3.5	6.7	4.6	1.4	1.0	10.2	4.9	8.4	4.0
AOS3	11.4	6.5	31.2	14.4	20.4	20.1	10.0	13.7	15.7	-2.2	17.7	10.5
N1	15.0	31.0	4.1	10.5	13.1	23.6	0.9	20.4	3.1	21.7	7.2	21.4
N2	20.5	17.6	14.4	11.2	18.1	14.7	17.9	16.4	20.8	16.6	18.4	15.3
N3	8.9	19.5	8.9	9.6	11.8	16.0	6.7	21.4	12.9	15.5	9.8	16.4
N4	6.9	17.2	1.4	3.1	14.5	11.5	10.4	14.8	22.1	16.5	11.1	12.6
N5	15.5	6.5	17.5	-2.1	11.5	3.1	14.1	5.7	9.8	2.7	13.7	3.2
NGR	13.6	19.3	9.3	6.7	14.0	14.0	10.5	16.0	14.5	15.1	12.4	14.2
PP1	13.5	15.9	11.9	17.3	19.7	24.7	13.4	22.1	4.5	4.6	12.6	16.9
PP2	-6.8	-3.7	12.4	-8.6	5.5	-3.2	7.9	-15.5	-2.9	-4.8	3.2	-7.1
PP3	2.7	4.1	2.8	-5.5	1.6	2.3	9.7	-6.0	6.2	-4.3	4.6	-1.9

*Vowel duration* in the fast rate expressed as a percentage of *vowel duration* in the normal rate for utterances beginning with a *voiceless fricative*

	"set"/set		"vas"/fuss		"feit"/fête		"voet"/foot		Utterance group	
	L1	L2	L1	L2	L1	L2	L1	L2	L1	L2
AOS1	-2.7	-10.3	-4.2	-6.7	-6.9	16.2	-17.9	-29.7	-7.9	-7.6
AOS2	23.6	14.5	1.8	1.4	7.7	-3.0	11.2	-10.6	11.1	0.6
AOS3	21.3	12.4	18.8	18.6	15.1	-8.0	37.6	4.4	23.2	6.9
N1	5.9	8.0	6.0	23.3	22.4	30.6	1.6	10.7	9.0	18.1
N2	12.2	11.9	11.6	8.8	15.2	14.0	17.5	17.3	14.1	13.0
N3	-16.5	-8.9	-1.8	11.5	1.7	12.1	-5.9	10.5	-5.6	6.3
N4	3.3	6.7	10.5	1.6	10.2	23.1	33.7	22.2	14.4	13.4
N5	19.9	14.9	17.9	7.5	24.8	11.4	19.7	9.2	20.6	10.7
NGR	5.7	6.9	9.3	10.9	15.4	19.0	14.2	14.2	11.1	12.8
PP1	-2.8	10.8	27.7	16.9	4.3	23.3	8.4	4.5	9.4	13.9
PP2	-14.0	-11.4	6.4	-3.4	-18.8	-25.2	4.2	9.2	-5.6	-7.7
PP3	-7.2	-4.2	-12.3	-12.0	-4.5	-1.5	-5.5	-19.9	-7.4	-9.4

## University of Pretoria, etd - Theron, K

*Utterance duration* in the fast rate expressed as a percentage of *utterance duration* in the normal rate for utterance beginning with a *voiceless plosive*

	"pak"/puck		"pet"/pet		"pit"/pit		"pad"/putt		"pap"/pup		Utterance group	
	L1	L2	L1	L2	L1	L2	L1	L2	L1	L2	L1	L2
AOS1	8.1	-8.5	-7.9	18.8	30.5	4.7	-0.8	2.9	10.9	11.5	8.2	5.9
AOS2	29.3	19.3	29.9	13.6	24.9	16.3	23.0	2.6	37.6	33.8	29.0	17.1
AOS3	10.1	18.6	22.2	22.4	25.0	20.8	8.8	-1.9	-12.5	-16.9	10.7	8.6
N1	10.1	30.2	18.0	31.1	20.0	31.3	27.8	24.9	27.9	26.6	20.7	28.8
N2	6.5	25.6	14.8	10.3	11.4	22.4	14.7	20.8	9.5	4.7	11.4	16.7
N3	9.9	3.4	8.7	12.4	8.5	12.6	0.4	18.5	16.3	24.8	8.8	14.3
N4	25.1	18.4	16.4	17.5	11.7	15.6	16.9	27.8	12.1	21.5	16.4	20.2
N5	14.9	28.0	21.8	21.1	34.1	16.2	24.2	20.8	44.2	6.8	27.8	18.6
NGR	13.9	21.6	16.0	18.0	17.3	19.6	17.0	22.8	21.6	17.6	17.1	19.9
PP1	-1.1	-7.6	12.9	7.5	18.9	-10.6	24.8	24.3	11.0	35.4	13.3	9.8
PP2	19.5	-11.3	-4.9	-0.4	13.6	1.3	16.1	-4.0	13.6	-8.3	11.6	-4.5
PP3	3.8	17.1	-7.7	-3.7	4.1	-2.3	-1.9	-2.8	11.4	-1.2	1.9	1.4

*Utterance duration* in the fast rate expressed as a percentage of *utterance duration* in the normal rate for utterance beginning with a *voiced plosive*

	"byt"/bait		"bak"/buck		"bas"/bus		"bek"/back		"bed"/bet		Utterance group	
	L1	L2	L1	L2	L1	L2	L1	L2	L1	L2	L1	L2
AOS1	13.0	11.4	13.0	5.7	13.4	21.7	2.4	6.4	15.0	15.1	11.4	12.1
AOS2	30.0	13.9	26.6	21.8	41.6	23.6	30.2	5.1	29.6	9.0	31.6	14.7
AOS3	17.6	12.0	24.8	8.4	19.9	3.3	0.9	14.3	24.9	15.2	17.6	10.6
N1	25.8	30.4	26.2	23.5	26.5	32.3	15.3	28.7	14.9	25.4	21.7	28.1
N2	11.9	-16.7	14.5	14.4	12.9	9.4	18.2	29.7	24.2	2.2	16.4	7.8
N3	20.0	27.1	17.4	14.6	15.9	22.3	11.2	22.0	8.8	9.4	14.7	19.1
N4	13.8	30.1	10.4	18.6	29.9	21.9	21.6	29.8	17.4	35.9	18.6	27.3
N5	20.0	15.5	36.6	8.0	12.5	31.9	39.0	2.9	7.4	15.9	23.1	14.8
NGR	18.0	16.7	21.0	16.5	19.7	23.2	21.8	24.0	14.9	19.3	19.1	19.9
PP1	18.2	16.0	11.5	56.7	13.4	-37.4	28.2	17.5	28.7	9.9	20.0	12.6
PP2	9.7	2.0	3.9	-5.0	19.6	-1.5	-0.2	-6.3	0.9	-2.7	6.8	-2.7
PP3	-4.4	29.1	12.7	10.6	15.5	10.8	5.8	6.1	3.1	-9.3	6.5	9.5

*Utterance duration* in the fast rate expressed as a percentage of *utterance duration* in the normal rate for utterance beginning with a *voiceless fricative*

	"set"/set		"vas"/fuss		"feit"/fête		"voet"/foot		Utterance group	
	L1	L2	L1	L2	L1	L2	L1	L2	L1	L2
AOS1	0.9	-3.6	1.8	-1.5	21.7	2.5	6.3	10.6	7.7	2.0
AOS2	26.8	5.6	12.9	4.4	5.3	-3.1	26.7	15.0	17.9	5.5
AOS3	21.8	22.8	20.6	24.0	25.6	8.5	22.7	7.3	22.7	15.7
N1	24.6	30.5	32.6	37.0	34.4	33.1	33.5	35.8	31.3	34.1
N2	17.0	15.6	20.1	16.7	23.8	13.2	22.0	19.5	20.7	16.3
N3	21.9	11.1	24.8	24.0	16.7	27.2	11.0	16.9	18.6	19.8
N4	7.0	17.9	18.1	21.6	23.8	20.1	30.9	22.2	19.9	20.5
N5	33.6	24.9	30.6	38.2	30.1	25.8	15.8	17.3	27.5	26.6
NGR	20.4	19.8	24.9	27.4	25.9	23.4	23.2	22.5	23.6	23.3
PP1	29.7	-0.3	23.5	20.0	28.8	25.8	22.1	-1.6	26.0	11.0
PP2	4.1	2.5	4.3	12.3	8.6	-1.4	-18.4	7.2	-0.3	5.2
PP3	18.0	7.5	14.1	-17.2	-2.7	-3.8	4.4	10.2	8.4	-0.8

*Utterance onset duration* in the fast rate expressed as a percentage of *utterance onset duration* in the normal rate for utterances beginning with a *voiceless plosive*

	"pak"/puck		"pet"/pet		"pit"/pit		"pad"/putt		"pap"/pup		Utterance group	
	L1	L2	L1	L2	L1	L2	L1	L2	L1	L2	L1	L2
AOS1	-121.4	25.1	36.0	-34.5	-64.2	-32.3	-12.2	-0.3	-74.6	-13.1	-47.3	-11.0
AOS2	17.8	-116.4	45.2	-90.6	35.7	24.2	58.3	-115.0	-1.8	37.7	31.1	-52.0
AOS3	46.8	-4.7	41.8	30.3	57.0	-15.6	-18.2	-3.7	53.6	17.2	36.2	4.7
N1	38.9	53.6	49.6	58.7	48.4	51.3	46.3	54.0	40.2	50.2	44.7	53.5
N2	47.1	26.6	42.9	43.8	39.9	33.4	43.3	26.4	34.9	32.0	41.6	32.4
N3	34.0	32.4	36.2	29.1	32.3	13.0	28.0	35.4	34.3	23.9	33.0	26.8
N4	21.8	11.4	19.1	30.5	34.8	15.6	28.2	8.2	16.5	17.8	24.1	16.7
N5	18.0	3.8	22.0	11.9	26.5	16.3	21.2	10.3	14.5	11.0	20.4	10.7
NGR	32.1	27.3	34.8	37.2	37.4	27.6	34.3	27.6	28.2	28.2	33.4	29.6
PP1	28.7	56.6	59.0	67.2	58.7	19.9	90.1	50.9	70.9	59.1	61.5	50.7
PP2	78.4	9.2	5.8	3.6	31.7	-49.3	-25.5	-36.6	13.0	-33.3	20.7	-21.3
PP3	19.8	-133.0	13.9	-7.5	31.2	7.3	41.0	-23.5	63.3	28.1	33.8	-25.7

*Utterance onset duration* in the fast rate expressed as a percentage of *utterance onset duration* in the normal rate for utterances beginning with a *voiced plosive*

	"byt"/bait		"bak"/buck		"bas"/bus		"bek"/back		"bed"/bet		Utterance group	
	L1	L2	L1	L2	L1	L2	L1	L2	L1	L2	L1	L2
AOS1	56.9	-29.7	16.4	41.5	-11.0	54.1	49.8	16.6	32.6	35.3	28.9	23.6
AOS2	-1.3	5.0	47.1	34.2	-5.7	3.8	-6.7	36.6	13.4	25.0	9.4	20.9
AOS3	63.7	-50.1	51.6	46.5	-2.1	-66.7	60.1	-105.8	-26.3	-23.4	29.4	-39.9
N1	46.5	61.0	55.4	72.9	44.2	63.7	40.2	62.5	48.1	55.6	46.9	63.2
N2	51.2	41.3	45.0	31.4	42.5	40.7	42.2	31.1	50.9	46.2	46.4	38.1
N3	47.0	22.8	36.1	32.3	38.0	24.8	37.5	23.6	30.7	30.7	37.8	26.8
N4	12.5	32.0	7.7	28.2	10.2	8.1	20.7	16.0	18.2	1.7	13.9	17.2
N5	24.1	-6.9	23.4	2.0	20.0	9.6	21.8	9.6	26.1	7.8	23.1	4.4
NGR	36.8	34.2	35.5	41.0	31.7	34.6	33.1	32.6	36.6	31.4	34.7	34.8
PP1	62.9	72.8	57.7	25.9	84.2	12.5	-166.6	20.8	83.6	84.0	24.4	43.2
PP2	24.1	29.3	24.8	-36.3	54.4	34.9	1.1	-1.7	-42.5	-5.6	12.4	4.1
PP3	53.6	-116.9	-19.8	24.0	34.1	-123.1	73.9	10.2	-4.3	65.0	27.5	-28.2

*Voice onset time* in the fast rate expressed as a percentage of *voice onset time* in the normal rate for utterances beginning with a *voiceless plosive*

	"pak"/puck		"pet"/pet		"pit"/pit		"pad"/putt		"pap"/pup		Utterance group	
	L1	L2	L1	L2	L1	L2	L1	L2	L1	L2	L1	L2
AOS1	0.2	17.6	2.8	10.1	-49.4	-4.0	6.3	-7.4	0.8	-8.6	-7.9	1.5
AOS2	-2.8	-18.6	-0.2	36.5	3.5	9.0	-9.6	27.8	16.4	-22.8	1.5	6.4
AOS3	-6.4	31.9	34.8	1.0	17.4	17.5	-26.0	59.9	26.6	50.5	9.3	32.2
N1	15.5	38.3	1.8	41.4	10.5	47.5	9.3	21.8	30.7	15.6	13.6	32.9
N2	-24.3	8.2	-25.4	16.6	11.5	-4.7	22.9	-0.4	5.6	-8.7	-2.0	2.2
N3	3.0	16.2	-19.5	16.1	23.0	4.2	-9.7	-1.2	-7.1	-19.3	-2.1	3.2
N4	13.6	-1.9	16.2	-6.9	-4.9	13.8	20.5	6.7	0.8	4.0	9.2	3.1
N5	3.7	29.9	-1.0	12.4	12.1	2.7	8.4	1.1	15.8	36.6	7.8	16.5
NGR	2.3	19.0	-6.1	15.7	11.9	14.4	10.9	4.5	8.1	4.8	5.4	11.7
PP1	23.4	16.1	-11.9	39.8	13.6	-0.7	28.0	40.9	-7.3	28.6	9.1	24.9
PP2	51.9	-3.3	11.4	-35.1	32.0	-3.3	25.2	-45.4	-12.3	-79.8	21.6	-33.4
PP3	-6.7	-22.8	-2.4	17.1	-7.7	-6.7	-3.1	3.2	34.6	21.1	2.9	2.4