

**Supplementary table 1. Statistical details for acoustic analysis of read sentences**

	Descriptives (PD)			Descriptives (CP)			Group	Mean difference			MoCA	MoCA *Gender
	Male	Female	All	Male	Female	All		Gender	Group *	Gender		
Intensity	59.54 (4.73)	62.27 (4.81)	61.98 (8.22)a	63.49 (1.81)	62.90 (2.75)	63.13 (2.39)	4.13*	2.81	-2.89	6.87**	-10.1*	
Intensity decay	5.42 (4.72)	5.05 (3.87)	5.52 (4.60)	3.83 (3.34)	3.17 (5.67)	3.43 (4.79)	-1.73	-0.69	0.04	1.55	1.04	
Mean F <sub>0</sub>	137.30 (18.46)	185.80 (25.32)	155.96 (30.83)	116.00 (11.41)	190.10 (27.78)	161.28 (43.38)	-19.80?	42.80***	30.70*	28.70*	1.04	
SD of F <sub>0</sub>	21.36 (8.18)	26.60 (6.09)	23.32 (7.70)	20.73 (6.52)	38.13 (9.26)	31.36 (11.90)	0.95	7.01*	9.63?	6.92?	-14.5*	
Speech rate	3.73 (0.43)	3.83 (0.80)	3.77 (0.57)	4.18 (0.43)	3.54 (0.33)	3.79 (0.48)	0.57*	0.26	-0.92**	0.64?	-0.34	
Acceleration	40.28 (31.49)	55.63 (35.22)a	42.31 (30.06)	51.76 (8.80)	43.94 (14.50)	46.98 (12.90)	9.97	1.19	-9.02	-15.9	-1.85	
Adjusted speech rate	3.90 (0.39)	4.03 (0.69)	3.95 (0.50)	4.27 (0.37)	3.63 (0.31)	3.88 (0.46)	0.38?	0.14	-0.81**	0.48	-0.12	
Adjusted acceleration	41.96 (15.37)	50.49 (23.91)	45.16 (18.72)	49.97 (14.63)	48.41 (14.41)	49.01 (14.08)	6.31	3.43	-5.00	-2.19	-15.50	
Pause	2.65 (3.86)a	1.62 (5.52)a	2.39 (3.84)a	0.61 (4.74)a	2.34 (1.69)	1.40 (3.78)a	-5.13*	-4.09?	4.50	-5.23	6.85	
Within-word pause	0.00 (4.51)a	0.00 (6.25)a	0.00 (4.74)a	0.00 (NA)a	0.00 (0.00)a	0.00 (0.00)a	-2.54?	-0.16	0.68	-2.45	6.26	
Iteration	0.00 (0.22)a	0.45 (0.59)	0.03 (0.41)a	0.00 (0.00)a	0.00 (0.06)a	0.00 (0.06)a	-0.15	0.22	-0.18	-0.22	0.50	
Within-word iteration	0.00 (11.81)a	6.25 (9.94)a	0.63 (9.36)a	0.00 (NA)a	0.00 (5.20)a	0.00 (0.52)a	-4.94	3.73	-2.00	-5.60	12.10	
Jitter /i/	2.43 (0.58)	1.94 (0.74)a	2.19 (0.78)a	2.81 (0.65)	2.24 (0.44)	2.45 (0.58)	0.39	-0.16	-0.42	-0.03	0.49	
Jitter /α/	2.07 (1.22)a	1.73 (0.82)	1.97 (1.50)a	1.90 (0.60)	1.54 (0.48)	1.67 (0.54)	-0.50	-0.71?	0.36	-0.83	1.77	

Jitter /u/	1.76 (0.75)	1.55 (0.68)	1.69 (0.71)	1.98 (0.41)	1.79 (0.83)	1.86 (0.70)	0.18	-0.27	0.09	-0.57	1.08
Shimmer /i/	15.12 (2.28)	13.43 (2.62)	14.53 (2.48)	16.87 (1.70)	14.18 (1.41)	15.17 (1.99)	1.71?	-1.59?	-1.11	-1.67	3.51
Shimmer /ɑ/	15.10 (2.41)	14.67 (2.89)	14.95 (2.52)	17.25 (3.13)	15.20 (2.70)	15.95 (2.96)	2.07	-0.56	-1.49	-0.91	3.73
Shimmer /u/	13.39 (2.75)	11.61 (2.99)	12.77 (2.89)	16.21 (2.90)	12.81 (3.06)	14.06 (3.37)	2.64?	-2.00	-1.40	-1.72	2.84
HNR /i/	8.95 (2.70)	11.55 (2.68)	9.86 (2.92)	7.29 (1.38)	10.43 (1.29)	9.27 (2.02)	-1.58	2.47*	0.67	3.77*	-4.65?
HNR /ɑ/	8.20 (2.66)	9.94 (2.07)	8.81 (2.56)	7.31 (1.49)	10.00 (2.26)	9.01 (2.37)	-0.82	1.69	0.99	4.10**	-6.12**
HNR/u/	11.36 (3.02)	14.25 (2.88)	12.46 (3.28)	9.67 (1.51)	13.24 (2.27)	11.89 (2.72)	-1.68	2.55*	1.02	3.74*	-3.29
FCR	1.37 (0.24)a	1.37 (0.11)	1.35 (0.18)a	1.35 (0.09)	1.29 (0.12)	1.31 (0.11)	-0.08	-0.07	0.01	-0.09	0.13
SD of /s/ amplitude	1.91 (1.37)a	2.43 (0.83)	2.28 (0.71)	1.87 (0.32)	2.25 (0.36)	2.11 (0.40)	-0.33	0.20	0.19	-0.51	0.78
VOT /pə/	0.24 (0.06)	0.27 (0.08)	0.26 (0.07)	0.27 (0.07)	0.27 (0.06)	0.28 (0.06)	0.02	0.00	0.00	0.03	0.01
VOT /tɛ/	0.37 (0.12)	0.40 (0.06)	0.38 (0.10)	0.40 (0.06)	0.35 (0.08)	0.37 (0.07)	0.03	0.01	-0.07	0.09	-0.11
VOT /pɑ/	0.18 (0.08)	0.24 (0.08)	0.20 (0.86)	0.19 (0.06)a	0.16 (0.04)	0.16 (0.04)a	0.02	0.00	0.00	-0.01	0.01
VOT /tu/	0.32 (0.07)	0.36 (0.05)	0.34 (0.07)	0.35 (0.09)	0.30 (0.05)	0.32 (0.07)	0.03	0.03	-0.09?	0.05	-0.08
VOT /kə/	0.34 (0.07)	0.34 (0.06)	0.34 (0.07)	0.35 (0.04)	0.32 (0.07)	0.34 (0.06)	0.00	0.56	-0.01	0.07	-0.05

Descriptives are shown as mean (SD), unless marked with 'a' in which case they refer to median (IQR). \* = p<0.05, \*\* = p<0.01, \*\*\* = p<0.001, ? = 0.05 < p <0.1.

PD = people with Parkinson's disease, CP = conversation partner controls,  $F_0$  = fundamental frequency, MoCA = Montreal Cognitive Assessment, symbols in // are phonemes transcribed using the International Phonetic Alphabet. HNR = Harmonic to Noise Ratio, FCR = Formant Centralization Ratio, VOT = Voice Onset Time