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The treatment of apraxia of speech

Hurkmans, Josephus Johannes Stephanus

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Document Version

Publisher's PDF, also known as Version of record

Publication date:

2016

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

Hurkmans, J. J. S. (2016). *The treatment of apraxia of speech: speech and music therapy, an innovative joint effort*. University of Groningen.

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Appendices

A. Appendix to Chapter 7: Prognostic factors of recovery after SMTA treatment in non-fluent aphasia and apraxia of speech

A.1 Pretreatment scores of the subjects

	AAT COM (0-5)	AAT ART (0-5)	AAT AUT (0-5)	AAT SEM (0-5)	AAT PHON (0-5)	AAT SYN (0-5)	AAT TT (0-50)*	AAT REP (0-150)	AAT NAM (0-120)	ANELT COMP (0-50)	ANELT INTEL (0-50)
1	0	0	0	0	0	0	50	0	0	0	0
2	2	3	3	3	2	2	39	125	51	-	-
3	3	4	5	4	2	2	32	90	85	23	45
4	1	3	5	3	2	2	42	58	13	17	46
5	0	1	0	0	0	0	50	10	5	-	-
6	0	5	0	0	0	0	45	37	0	-	-
7	1	0	0	0	0	0	50	7	0	-	-
8	2	2	2	3	4	1	43	109	85	-	-
9	1	4	3	1	4	4	43	52	34	19	21
10	2	5	2	3	4	1	44	75	2	17	43
11	1	2	5	3	2	2	44	111	33	16	20
12	3	3	5	4	4	5	5	125	97	-	-
13	0	0	0	0	0	0	50	47	9	0	0
14	1	1	2	1	2	1	48	41	12	-	-
15	0	0	0	0	0	0	45	0	0	0	0
16	1	2	2	2	2	1	33	79	43	32	43
17	0	0	0	0	0	0	50	0	0	-	-
18	1	0	1	1	1	0	50	0	0	-	-
19	2	4	4	3	2	3	37	31	76	33	39
20	1	3	1	3	1	1	41	89	18	22	38
21	2	3	4	3	2	1	35	36	13	23	23
22	0	0	0	0	0	0	50	4	0	-	-
23	0	1	0	0	0	0	45	4	0	-	-
24	2	3	2	1	4	2	50	97	11	0	0
25	3	3	4	3	2	4	10	120	94	48	50
26	1	4	2	3	3	1	39	112	56	22	43
27	3	3	3	4	2	1	6	11	111	26	40
28	1	5	0	2	0	0	50	81	2	-	-
29	1	1	2	2	2	2	43	89	6	15	15
30	1	2	2	3	2	1	31	69	20	14	15
31	1	2	2	0	0	0	44	67	3	21	20
32	2	3	0	3	3	1	40	98	39	22	43
33	2	0	2	3	2	0	31	34	27	22	36
34	3	3	3	3	2	1	42	74	40	-	-
35	0	0	0	0	0	0	50	9	0	-	-
36	0	0	1	0	0	0	50	36	0	0	0
37	0	0	0	0	0	0	36	0	0	-	-
38	3	3	5	3	2	2	36	98	76	-	-
39	4	3	5	4	3	4	21	124	90	41	31
40	2	2	3	3	2	1	33	13	22	23	27
41	0	0	0	0	0	0	50	59	7	-	-

SP = spontaneous speech, COM = communication, ART = articulation and prosody, AUT = automatic speech, SEM = semantic structure, PHON = phonological structure, SYN = syntactic structure, COMP = comprehensibility, INTEL = intelligibility, *=#incorrect

A.2 Posttreatment scores of the subjects

	AAT COM (0-5)	AAT ART (0-5)	AAT AUT (0-5)	AAT SEM (0-5)	AAT PHON (0-5)	AAT SYN (0-5)	AAT TT (0-50)*	AAT REP (0-150)	AAT NAM (0-120)	ANELT COMP (0-50)	ANELT INTEL (0-50)
1	0	0	0	0	0	0	50	10	0	-	-
2	4	4	5	4	4	4	27	132	86	-	-
3	3	4	5	4	4	2	16	116	108	42	48
4	2	5	3	3	3	2	21	94	54	27	39
5	1	0	1	0	0	1	45	73	45	-	-
6	0	5	1	0	0	0	33	71	0	-	-
7	2	3	3	3	4	1	44	118	68	-	-
8	3	4	3	3	4	4	37	123	102	-	-
9	1	3	3	0	2	1	35	68	56	-	-
10	2	5	5	2	3	1	38	91	27	23	22
11	3	3	3	4	3	3	42	118	50	-	-
12	4	4	5	5	4	5	2	142	114	-	-
13	0	0	0	0	0	0	43	48	14	-	-
14	1	5	4	3	3	2	37	62	32	-	-
15	1	0	0	0	0	0	16	56	26	-	-
16	3	3	4	4	4	2	17	103	94	33	41
17	0	0	0	0	0	0	50	11	0	-	-
18	2	3	3	3	3	2	17	80	66	-	-
19	3	4	5	4	3	3	21	82	94	38	39
20	3	5	2	3	5	1	47	76	38	-	-
21	2	4	5	5	3	1	5	52	93	-	-
22	0	3	4	0	3	1	43	29	3	-	-
23	1	1	1	1	1	1	31	43	22	-	-
24	2	5	3	3	4	4	50	130	69	-	-
25	5	5	5	5	4	4	2	138	116	-	-
26	2	4	2	3	4	1	38	117	60	-	-
27	3	3	4	4	3	3	5	139	115	-	-
28	2	3	2	3	5	1	34	101	41	-	-
29	1	2	4	3	2	2	46	106	28	15	16
30	1	2	2	3	2	1	27	96	47	-	-
31	1	2	1	0	0	0	47	97	15	-	-
32	3	4	4	3	4	4	29	130	100	40	45
33	4	5	4	4	4	4	11	114	115	45	47
34	3	4	5	3	4	3	35	77	95	-	-
35	0	0	0	0	0	0	50	23	0	-	-
36	1	0	1	0	0	0	50	38	0	-	-
37	3	3	4	4	3	4	6	122	106	-	-
38	4	3	5	5	3	4	13	132	109	-	-
39	4	3	5	5	3	4	6	137	111	49	39
40	2	3	3	3	3	2	19	125	107	24	33
41	2	5	5	3	0	1	39	98	23	-	-

SP = spontaneous speech, COM = communication, ART = articulation and prosody, AUT = automatic speech, SEM = semantic structure, PHON = phonological structure, SYN = syntactic structure, COMP = comprehensibility, INTEL = intelligibility,*=#incorrect

A.3 Regression model of the significant correlations between the outcomes on the AAT Token Test and the prognostic factor ‘duration’ (in weeks)

Model	Unstandardised coefficients		Standardised coefficients	t	Significance level
	B	SD	Beta		
1.					
duration	0.22	0.09	0.42	2.38	0.02
number of sessions SLT	0.04	0.03	0.26	1.48	0.14
2.					
duration	0.31	0.07	0.60	4.42	0.001

A.4 Regression model of the significant correlations between the outcomes on the AAT naming test and the prognostic factor ‘type’

Model	Unstandardised coefficients		Standardised coefficients	t	Significance level
	B	SD	Beta		
1.					
type	42.95	15.77	0.77	2.72	0.009
syndrome	-17.20	10.59	-0.46	-1.62	0.11
2.					
type	20.65	7.93	0.37	2.60	0.01

A.5 Regression model of the non-significant correlation between the outcome on the phonology measure of the spontaneous speech of the AAT and the prognostic factors ‘type’ and ‘severity’

Model	Unstandardised coefficients		Standardised coefficients	t	Significance level
	B	SD	Beta		
type	0.78	0.53	0.27	1.47	0.14
severity	0.05	0.53	0.02	0.10	0.91

A.6 Regression model of the non-significant correlation between the outcome on the intelligibility measure of the ANELT and the prognostic factors ‘syndrome’, ‘type’ and ‘severity’

Model	Unstandardised coefficients		Standardised coefficients Beta	t	Significance level
	B	SD			
syndrome	5.36	4.29	0.001	0.001	1.00
type	18.00	7.61	0.63	2.36	0.06
severity	7.00	4.29	0.37	1.63	0.15

B. Appendix to Chapter 8: The Modified Diadochokinesis Test, an evaluation instrument for the treatment of Apraxia of Speech

B.1 Scores of the participants with AoS

	Consistency (0-64)	Accuracy (0-240)	Fluency (0-80)	CV (0-96)	CVC (0-96)	CVC C (0-96)	CCVC (0-96)	Place (0-96)	Manner (0-96)	V change (0-96)
1	13	41	20	35	39	0	0	18	19	11
2	60	234	70	96	95	86	85	87	86	95
3	53	219	68	69	91	89	64	85	88	91
4	63	239	60	90	91	92	89	88	93	90
5	8	37	19	42	18	4	0	16	8	9
6	7	40	9	37	19	0	0	0	0	16
7	57	231	65	69	85	81	91	86	92	84
8	19	166	51	78	59	58	41	50	58	54
9	38	135	58	65	66	60	36	41	61	47
10	48	72	77	66	73	29	27	57	42	70
11	52	210	50	94	83	60	75	65	79	81
12	17	105	25	61	55	13	18	28	20	21
13	23	162	40	81	60	54	30	69	53	46
14	28	161	48	80	79	59	19	51	61	64
15	62	236	62	90	87	92	91	85	87	94
16	23	124	19	72	61	15	18	32	29	30
17	20	40	25	57	28	0	0	33	14	0
18	63	239	57	93	90	87	89	90	86	91
19	17	52	30	71	28	0	0	31	11	19
20	19	63	25	44	43	20	0	0	0	48
21	50	212	72	96	69	71	71	69	90	84
22	42	184	55	85	76	70	50	75	75	69
23	19	78	38	79	47	9	0	25	41	30
24	61	236	74	96	69	89	91	90	93	69
Patients (N=24)	M 35 SD 19.8	M 146 SD 77.4	M 46 SD 20.7	M 75 SD 20.1	M 65 SD 65.2	M 47 SD 35.4	M 41 SD 36.3	M 52 SD 29.8	M 53 SD 33.6	M 55 SD 32.2
Controls (N=12)	M 63 SD 1.4	M 238 SD 1.3	M 76 SD 2.6	M 95 SD 0.2	M 95 SD 1.2	M 94 SD 2.1	M 93 SD 2.3	M 93 SD 2.3	M 95 SD 1.4	M 95 SD 1.4

C=consonant, V=vowel, M=mean, SD=standard deviation

C. Appendix to Chapter 9: The effectiveness of the Speech-Music Therapy for Aphasia (SMTA) in five speakers with AoS and aphasia

C.1 Raw scores of the MDT and PALPA 12 of J.V.

Outcome measure (maximum score)	Consistency (0-64)	Accuracy (0-240)	Fluency (0-80)	PALPA 12 (0-30)
Baseline 1	31	171	70	
Baseline 2	31	181	58	
Baseline 3	34	162	58	
Baseline 4	39	197	59	10
Week 1	44	130	62	13
Week 2	42	189	68	11
Week 3	42	210	65	10
Week 4	45	180	70	11
Week 5	37	194	66	10
Week 6	45	202	61	11
Week 7	49	210	65	11
Week 8	44	205	65	13
Week 9	55	210	71	14
Week 10	50	217	72	15
Week 11	45	203	64	15
Week 12	48	210	71	14
Week 13	53	216	69	17
Week 14	50	223	74	15
Week 15	56	216	72	14
Week 16	50	213	78	16
Week 18	49	215	72	17
Week 19	53	222	75	17
Week 20	55	216	75	15

C.2 Raw scores of the MDT and PALPA 12 of J.A.

Outcome measure (maximum score)	Consistency (0-64)	Accuracy (0-240)	Fluency (0-80)	PALPA 12 (0-30)
Baseline 1	28	90	43	
Baseline 2	23	109	51	
Baseline 3	20	117	50	
Baseline 4	30	123	45	10
Week 1	27	134	45	10
Week 2	28	142	60	15
Week 3	29	159	48	15
Week 4	38	167	59	12
Week 5	41	183	57	12
Week 6	40	186	52	14
Week 7	39	185	61	13
Week 8	46	202	60	16
Week 9	48	217	67	12
Week 10	47	215	64	13
Week 11	53	218	75	16
Week 12	61	235	75	14
Week 13	56	229	67	13
Week 14	63	239	78	12
Week 15	62	238	79	14

C.3 Raw scores of the MDT and PALPA 12 of J.K.

Outcome measure (maximum score)	Consistency (0-64)	Accuracy (0-240)	Fluency (0-80)	PALPA 12 (0-30)
Baseline 1	17	103	30	
Baseline 2	27	110	43	
Baseline 3	22	93	36	
Baseline 4	28	112	44	10
Week 1	25	107	34	13
Week 2	39	128	45	14
Week 3	33	140	45	12
Week 4	42	150	60	13
Week 5	42	164	64	13
Week 6	47	181	69	11
Week 7	47	181	63	13
Week 8	42	178	68	15
Week 9	41	178	77	14
Week 10	49	193	74	13
Week 11	50	194	72	14
Week 12	51	190	75	13

C.4 Raw scores of the MDT and PALPA 12 of M.A.

Outcome measure (maximum score)	Consistency (0-64)	Accuracy (0-240)	Fluency (0-80)	PALPA 12 (0-30)
Baseline 1	25	145	36	
Baseline 2	27	147	30	
Baseline 3	35	163	30	
Baseline 4	33	168	43	10
Week 1	45	186	45	10
Week 2	40	184	39	10
Week 3	47	177	47	10
Week 4	44	182	59	10
Week 5	44	186	55	13
Week 6	43	176	56	16
Week 7	45	184	52	18
Week 8	45	183	54	18
Week 9	44	179	50	17
Week 10	52	190	55	17
Week 11	46	188	66	16
Week 12	52	206	66	18
Week 13	47	187	59	17
Week 14	49	187	63	17
Week 15	51	191	70	17

C.5 Raw scores of the MDT and PALPA 12 of F.P.

Outcome measure (maximum score)	Consistency (0-64)	Accuracy (0-240)	Fluency (0-80)	PALPA 12 (0-30)
Baseline 1	18	117	53	
Baseline 2	20	124	61	
Baseline 3	24	80	56	
Baseline 4	18	105	55	8
Week 1	28	134	61	10
Week 2	39	147	69	6
Week 3	32	145	65	8
Week 4	31	152	67	10
Week 5	39	182	73	14
Week 6	43	171	71	8
Week 7	43	183	74	11
Week 8	42	170	69	8
Week 9	43	171	70	8
Week 10	43	176	69	7
Week 11	40	186	65	9
Week 12	50	205	70	14
Week 13	52	207	70	9
Week 14	50	208	74	16
Week 15	58	219	77	14

C.6 Pre- and posttreatment measures and 3 months post-treatment measures (follow-up) of the 5 participants

Participant	1			2			3			4			5		
	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3
Outcome Measures (maximum score; critical difference)															
ANELT															
Intelligibility (50;5)	27	38*	32#	37	47*	49	32	43*	39	0	42*	39	35	47*	46
Comprehensibility (50; 7)	22	23	23	29	50*	46	19	31*	34	0	26*	30	21	46*	43
AAI															
Repetition (150; 15)	92	119*	121	67	125*	130	98	132*	129	96	111*	113	22	85*	90
Token Test (50;8)	22	29	37*	10	39*	45	2	15*	9	12	29*	27	0	20*	28
Auditory comprehension (60; 22)	41	40	42	55	55	58	38	49	47	25	47*	50	31	38	43
DIAS															
Articulation of phonemes (30; 3)	15	18*	19	17	29*	29	25	29*	28	28	29	27	15	19*	21
Diadochokinesis (NA; 15)	59	58	61	6	45*	76*	4	35*	22	8	28*	25	0	49*	53
Articulation of words (264; 29)	222	238	252	61	231*	245	214	235	228	231	258	260	62	235*	240

*=significant improvement according to the norms of the test, #=significant decrease according to the norms of the test, NA=not applicable, T1=pre-treatment, T2=post-treatment, T3=follow up (3 months post-treatment), scores of the Token Test are transformed to good scores

About the author

Joost Hurkmans werd op 14 oktober 1974 geboren in Someren. In 1992 startte zijn Opleiding voor Logopedie aan de Fontys Paramedische Hogeschool in Eindhoven. Deze studie rondde hij in 1996 af en aansluitend studeerde hij Algemene Taalwetenschap, afstudeerrichting Neurolinguïstiek aan de Rijksuniversiteit Groningen, alwaar hij in 1999 zijn bul ontving. Nog tijdens zijn studie Neurolinguïstiek begon hij in 1997 als logopedist bij Revalidatie Friesland. In 2003 mocht hij daar de nieuwe functie “klinisch linguïst” inhoud geven en een afasieteam opzetten waar hij coördinator van werd. Naast het klinisch werk kreeg hij steeds meer belangstelling voor wetenschappelijk onderzoek. Hij werd lid van de research commissie van Revalidatie Friesland en ging intensief samenwerken met de onderzoeksgroep Neurolinguïstiek van de Rijksuniversiteit Groningen. Tegelijkertijd werkten twee collega’s van Revalidatie Friesland, Tea Reitsma en Madeleen de Bruijn, aan een combinatiebehandeling van logopedie en muziektherapie. Joost werd al vrij snel betrokken in deze ontwikkeling en in 2005 werd het SMTA behandelprogramma op de markt gezet. De ontwikkeling van SMTA mondde in 2007 uit in een promotieonderzoek naar de effectiviteit van het programma. Eind 2011 werd hij verbonden aan de Graduate School for the Humanities van de Rijksuniversiteit Groningen.

Sinds 2003 is Joost actief lid van de Vereniging voor Klinische Linguïstiek. In 2010 werd hij lid van het bestuur en vanaf 2012 is hij voorzitter. Daarnaast is Joost betrokken bij AfasieNet, een kennisnetwerk voor professionals die zich bezig houden met afasie. Hij heeft zitting in de stuurgroep en hij is voorzitter van de programmacommissie voor de jaarlijkse afasieconferentie.

Joost woont samen met Elske Zoomers en samen hebben zij twee kinderen: Job en Sepp.

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