

Appendix B. Factor Analysis for Mixed Data

Table 1. Factor analysis for mixed data: Dimensions

Dimensions	Eigenvalue	Percentage of variance	Cumulative variance
Dimension 1	2.6722	22.2687	22.2687
Dimension 2	1.5194	12.6619	34.9306
Dimension 3	1.2942	10.7847	45.7153
Dimension 4	1.1349	9.4577	55.173
Dimension 5	1.0539	8.7821	63.9551
Dimension 6	0.9585	7.9874	71.9425

Table 2. Factor analysis for mixed data: Factors

Factors	Coordinates					
	Dim.1	Dim.2	Dim.3	Dim.4	Dim.5	Dim.6
duration	0.022	0.3723	0.0027	0.1524	0.0091	0.0541
intensity	$5.0e-04$	0.0159	0.0896	0.2643	0.3295	0.0569
pitch	0.634	0.0527	0.0038	0.0267	0.0011	$7.0e-04$
F1	0.2052	0.1508	0.0973	0.1524	0.0391	0.0457
F2	0.3496	0.001	0.2209	0.0822	0.0091	0.05
F3	0.477	0.0026	0.1911	0.0121	0.0031	0.0067
sex	0.7507	0.0067	0.007	0.0026	0.022	0.0055
stress	0.1005	0.3114	0.1983	0.0033	0.0016	0.018
syllable	0.0827	0.5822	0.1743	0.1956	0.5636	0.6776
style	0.0499	0.0239	0.3091	0.2433	0.0756	0.0433
	Contributions					
duration	0.8221	24.5012	0.2064	13.4281	0.8653	5.644
intensity	0.0197	1.0454	6.9252	23.2887	31.2654	5.9345
pitch	23.7242	3.4675	0.2904	2.3565	0.108	0.0729
F1	7.6795	9.9277	7.5216	13.4307	3.7119	4.7688
F2	13.084	0.0635	17.0712	7.2386	0.8635	5.2204
F3	17.8518	0.1728	14.7661	1.0634	0.2957	0.6949
sex	28.0923	0.4396	0.5433	0.2254	2.0917	0.5686
stress	3.7612	20.4917	15.3238	0.2923	0.153	1.8756
syllable	3.0964	38.32	13.4673	17.2374	53.476	70.6982
style	1.8689	1.5706	23.8847	21.4391	7.1697	4.522
	Cos ²					
duration	$5.0e-04$	0.1386	0	0.0232	$1.0e-04$	0.0029
intensity	0	$3.0e-04$	0.008	0.0699	0.1086	0.0032
pitch	0.4019	0.0028	0	$7.0e-04$	0	0
F1	0.0421	0.0228	0.0095	0.0232	0.0015	0.0021
F2	0.1222	0	0.0488	0.0067	$1.0e-04$	0.0025
F3	0.2276	0	0.0365	$1.0e-04$	0	0
sex	0.5635	0	0	0	$5.0e-04$	0
stress	0.0101	0.0969	0.0393	0	0	$3.0e-04$
syllable	0.0023	0.113	0.0101	0.0128	0.1059	0.1531
style	0.0025	$6.0e-04$	0.0955	0.0592	0.0057	0.0019

Table 3. Principal component analysis

Factors	Coordinates					
	Dim.1	Dim.2	Dim.3	Dim.4	Dim.5	Dim.6
duration	0.1482	0.6101	0.0517	0.3904	0.0955	−0.2326
intensity	−0.0229	−0.126	0.2994	0.5141	0.574	0.2385
pitch	0.7962	−0.2295	−0.0613	0.1635	0.0337	−0.0264
F1	0.453	0.3884	−0.312	0.3904	−0.1978	−0.2138
F2	0.5913	−0.0311	0.47	−0.2866	0.0954	0.2237
F3	0.6907	−0.0512	0.4371	−0.1099	−0.0558	0.0816
	Contributions					
duration	0.8221	24.5012	0.2064	13.4281	0.8653	5.644
intensity	0.0197	1.0454	6.9252	23.2887	31.2654	5.9345
pitch	23.7242	3.4675	0.2904	2.3565	0.108	0.0729
F1	7.6795	9.9277	7.5216	13.4307	3.7119	4.7688
F2	13.084	0.0635	17.0712	7.2386	0.8635	5.2204
F3	17.8518	0.1728	14.7661	1.0634	0.2957	0.6949
	Cos ²					
duration	0.022	0.3723	0.0027	0.1524	0.0091	0.0541
intensity	5.0e−04	0.0159	0.0896	0.2643	0.3295	0.0569
pitch	0.634	0.0527	0.0038	0.0267	0.0011	7.0e−04
F1	0.2052	0.1508	0.0973	0.1524	0.0391	0.0457
F2	0.3496	0.001	0.2209	0.0822	0.0091	0.05
F3	0.477	0.0026	0.1911	0.0121	0.0031	0.0067

Table 4. Multiple correspondence analysis

Factor levels	Coordinates					
	Dim.1	Dim.2	Dim.3	Dim.4	Dim.5	Dim.6
f	1.4449	-0.1028	-0.0973	0.055	-0.1555	-0.0737
m	-1.3883	0.0988	0.0935	-0.0528	0.1494	0.0708
Stressed	1.0799	-1.4333	-1.0557	0.1279	-0.0859	-0.2735
Unstressed	-0.2487	0.3301	0.2431	-0.0294	0.0198	0.063
Closed	-0.4813	-0.2301	1.0161	-0.5364	-0.7029	-1.1198
Closed_Final	-0.6821	1.4095	-0.173	1.4854	-4.5233	4.4434
Open	-0.151	-0.6211	-0.2399	0.3219	0.1771	0.1352
Open_Final	0.8372	1.653	-0.1781	-0.5387	0.526	0.1339
Speech	-0.1834	-0.0956	0.3176	0.2638	-0.1417	-0.1023
WordList	0.7276	0.3793	-1.2597	-1.0466	0.562	0.406
Contributions						
f	14.3266	0.2242	0.2771	0.115	1.0667	0.29
m	13.7657	0.2154	0.2662	0.1105	1.025	0.2786
Stressed	3.0571	16.6559	12.4554	0.2376	0.1244	1.5245
Unstressed	0.704	3.8358	2.8684	0.0547	0.0286	0.3511
Closed	0.5802	0.41	11.0258	3.9949	7.9568	24.416
Closed_Final	0.1355	1.7899	0.0372	3.563	38.316	44.6991
Open	0.1842	9.6339	1.9806	4.6382	1.6274	1.1465
Open_Final	2.1965	26.4862	0.4237	5.0413	5.5757	0.4366
Speech	0.3763	0.3162	4.8087	4.3164	1.4435	0.9104
WordList	1.4926	1.2544	19.076	17.1227	5.7262	3.6116
Cos ²						
f	0.9337	0.0047	0.0042	0.0014	0.0108	0.0024
m	0.9337	0.0047	0.0042	0.0014	0.0108	0.0024
Stressed	0.2113	0.3722	0.2019	0.003	0.0013	0.0136
Unstressed	0.2113	0.3722	0.2019	0.003	0.0013	0.0136
Closed	0.0483	0.011	0.2153	0.06	0.103	0.2615
Closed_Final	0.0097	0.0415	6.0e-04	0.0461	0.4274	0.4125
Open	0.027	0.4566	0.0681	0.1226	0.0371	0.0216
Open_Final	0.1557	0.6068	0.007	0.0644	0.0615	0.004
Speech	0.1165	0.0317	0.3492	0.2411	0.0695	0.0363
WordList	0.1165	0.0317	0.3492	0.2411	0.0695	0.0363
v.test						
f	30.0264	-2.8324	-2.9061	1.7528	-5.1453	-2.5585
m	-30.0264	2.8324	2.9061	-1.7528	5.1453	2.5585
Stressed	10.9868	-19.3375	-15.433	1.996	-1.3917	-4.6466
Unstressed	-10.9868	19.3375	15.433	-1.996	1.3917	4.6466
Closed	-4.7619	-3.0187	14.4466	-8.1433	-11.0745	-18.501
Closed_Final	-2.1076	5.7755	-0.7683	7.0425	-22.2544	22.9234
Open	-3.7364	-20.3754	-8.5262	12.2186	6.9743	5.5828
Open_Final	9.5299	24.9536	-2.9129	-9.4089	9.5351	2.5445
Speech	-7.7446	-5.3535	19.2676	17.0945	-9.526	-7.2149
WordList	7.7446	5.3535	-19.2676	-17.0945	9.526	7.2149