

Supplementary material to

Dael, N., Mortillaro, M., & Scherer, K. R. Introducing the Body Action and Posture coding system (BAP): Development and reliability. *Journal of Nonverbal Behavior*

Downloaded from http://www.affective-sciences.org/gemep/BAP_coding

Appendix A

Complete List of Behavioral Variables of the BAP Coding Scheme with Corresponding Kappa Computations of Occurrence Agreement

Behavior variables	Agree occurrence	Agree absence	Disagree type 1	Disagree type 2	Proportion coder 1	Proportion coder 2	κ_{occ}
Head orientation							
Facing	143	2	1	5	.98	.95	.38
Averted	16	125	6	4	.13	.15	.72
Head posture							
Lateral head turn towards a left position	2	146	0	3	.03	.01	.56
Lateral head turn towards a right position	5	139	1	6	.07	.04	.57
Lateral head turn towards the lateral middle position	7	138	3	3	.07	.07	.68
Lateral head tilt towards a left position	9	140	1	1	.07	.07	.89
Lateral head tilt towards a right position	13	136	0	2	.10	.09	.92

Behavior variables	Agree occurrence	Agree absence	Disagree type 1	Disagree type 2	Proportion coder 1	Proportion coder 2	κ_{occ}
Lateral head tilt towards the lateral middle position	7	142	0	2	.06	.05	.87
Vertical head tilt towards an upward position	12	134	0	5	.11	.08	.81
Vertical head tilt towards a downward position	4	144	1	2	.04	.03	.72
Vertical head tilt towards the vertical middle position	9	134	2	6	.10	.07	.66
Neck extension towards a forward head position	8	135	1	7	.10	.06	.64
Neck retraction towards a backward head position	1	148	1	1	.01	.01	.49
Neck extension/retraction towards the frontal middle position	4	143	3	1	.03	.05	.65

Behavior variables	Agree occurrence	Agree absence	Disagree type 1	Disagree type 2	Proportion coder 1	Proportion coder 2	κ_{occ}
Trunk orientation							
Facing	148	2	0	1	.99	.98	.80
Averted	4	144	2	1	.03	.04	.72
Trunk posture							
Trunk lean towards a forward position	10	137	1	3	.09	.07	.82
Trunk lean towards a backward position	3	144	0	4	.05	.02	.59
Trunk lean to the frontal middle position	8	135	1	7	.10	.06	.64
Lateral trunk lean towards a left position	2	146	1	2	.03	.02	.56
Lateral trunk lean towards a right position	0	151	0	0	.00	.00	/
Lateral trunk lean towards the lateral middle position	0	151	0	0	.00	.00	/
Lateral trunk rotation towards a left position	3	146	0	2	.03	.02	.74

Behavior variables	Agree occurrence	Agree absence	Disagree type 1	Disagree type 2	Proportion coder 1	Proportion coder 2	κ_{occ}
Lateral trunk rotation towards a right position	1	147	0	3	.03	.01	.39
Lateral trunk rotation towards the lateral middle position	2	148	0	1	.02	.01	.80
Spine movement toward an erected position	1	147	2	1	.01	.02	.39
Spine movement toward a bent position	1	149	1	0	.01	.01	.66
Spine movement towards the standard position	2	147	1	1	.02	.02	.66
Chest movement towards an upward or forward position	1	148	0	2	.02	.01	.49
Chest movement towards a downward or inward position	0	150	1	0	.00	.01	.00

Behavior variables	Agree occurrence	Agree absence	Disagree type 1	Disagree type 2	Proportion coder 1	Proportion coder 2	κ_{occ}
Whole body posture							
Whole body moves or leans towards a forward position	4	139	4	4	.05	.05	.47
Whole body moves or leans towards a backward position	5	140	4	2	.05	.06	.60
Whole body moves or leans to the frontal middle position	0	149	0	2	.01	.00	.00
Whole body moves or leans towards a left position	5	137	1	8	.09	.04	.50
Whole body moves or leans towards a right position	3	144	2	2	.03	.03	.59
Whole body moves or leans towards the lateral middle position	0	149	1	1	.01	.01	-.01

Behavior variables	Agree occurrence	Agree absence	Disagree type 1	Disagree type 2	Proportion coder 1	Proportion coder 2	κ_{occ}
Arms posture							
Left arm at side	47	100	0	4	.34	.31	.94
Left arm held in front	1	148	2	0	.01	.02	.49
Left arm held behind back	3	145	2	1	.03	.03	.66
Left hand in pocket	10	141	0	0	.07	.07	1
Left hand at waist	6	144	1	0	.04	.05	.92
Left hand at back of head/neck	0	151	0	0	.00	.00	/
Right arm at side	52	94	1	4	.37	.35	.93
Right arm held in front	2	147	1	1	.02	.02	.66
Right arm held behind back	3	146	1	1	.03	.03	.74
Right hand in pocket	9	142	0	0	.06	.06	1
Right hand at waist	6	143	0	2	.05	.04	.85
Right hand at back of head/neck	0	151	0	0	.00	.00	/
Arms crossed	2	149	0	0	.01	.01	1

Behavior variables	Agree occurrence	Agree absence	Disagree type 1	Disagree type 2	Proportion coder 1	Proportion coder 2	κ_{occ}
Both arms held in front	6	139	6	0	.04	.08	.65
One arm holds other in front	1	143	0	7	.05	.01	.21
One arm holds other in back	0	150	1	0	.00	.01	.00
Left shoulder up	0	148	0	3	.02	.00	.00
Left shoulder down	0	151	0	0	.00	.00	/
Left shoulder to the front	0	151	0	0	.00	.00	/
Left shoulder to the back	0	151	0	0	.00	.00	/
Right shoulder up	0	147	0	4	.03	.00	.00
Right shoulder down	0	151	0	0	.00	.00	/
Right shoulder to the front	0	151	0	0	.00	.00	/
Right shoulder to the back	0	151	0	0	.00	.00	/
Symmetrical arms posture	63	77	7	4	.44	.46	.85
Asymmetrical arms posture	3	142	1	5	.05	.03	.48

Behavior variables	Agree occurrence	Agree absence	Disagree type 1	Disagree type 2	Proportion coder 1	Proportion coder 2	κ_{occ}
Gaze							
Toward	129	11	7	4	.88	.90	.63
Upward	12	128	6	5	.11	.12	.64
Downward	6	141	0	4	.07	.04	.74
Averted sideways	19	127	2	3	.15	.14	.86
Eyes closed	14	128	2	7	.14	.11	.72
Head action							
Head action	29	116	4	2	.21	.22	.88
Left head turn	4	147	0	0	.03	.03	1
Right head turn	2	148	0	1	.02	.01	.80
Left head tilt	0	150	0	1	.01	.00	.00
Right head tilt	1	150	0	0	.01	.01	1
Upward head tilt	0	150	1	0	.00	.01	.00
Downward head tilt	0	150	1	0	.00	.01	.00

Behavior variables	Agree occurrence	Agree absence	Disagree type 1	Disagree type 2	Proportion coder 1	Proportion coder 2	κ_{occ}
Forward neck extension	1	149	1	0	.01	.01	.66
Backward neck retraction	0	149	2	0	.00	.01	.00
Up-down head shake	3	147	0	1	.03	.02	.85
Left-right head shake	18	133	0	0	.12	.12	1
Forward-backward head shake	1	148	1	1	.01	.01	.49
Head action hold	0	151	0	0	.00	.00	/
Trunk action							
Trunk action	9	133	5	4	.09	.09	.63
Forward trunk lean	6	139	4	2	.05	.07	.65
Backward trunk lean	2	146	2	1	.02	.03	.56
Left trunk lean	0	151	0	0	.00	.00	/
Right trunk lean	0	151	0	0	.00	.00	/
Left trunk turn	0	151	0	0	.00	.00	/
Right trunk turn	0	151	0	0	.00	.00	/

Behavior variables	Agree occurrence	Agree absence	Disagree type 1	Disagree type 2	Proportion coder 1	Proportion coder 2	κ_{occ}
Spine straightening	0	150	1	0	.00	.01	.00
Spine bending	1	150	0	0	.01	.01	1
Upward/forward chest movement	0	151	0	0	.00	.00	/
Downward/inward chest movement	0	151	0	0	.00	.00	/
Up-down chest movement	0	151	0	0	.00	.00	/
Left-right trunk leaning	0	151	0	0	.00	.00	/
Left-right trunk rotation	1	150	0	0	.01	.01	1
Forward-backward trunk leaning	1	148	0	2	.02	.01	.49
Trunk action hold	0	151	0	0	.00	.00	/
Arm action							
Left finger(s) articulation	89	54	1	7	.64	.60	.89
Left wrist articulation	53	79	4	15	.45	.38	.74
Left elbow articulation	25	111	4	11	.24	.19	.71
Left shoulder articulation	65	82	0	4	.46	.43	.95

Behavior variables	Agree occurrence	Agree absence	Disagree type 1	Disagree type 2	Proportion coder 1	Proportion coder 2	κ_{occ}
Left arm action upward	56	85	6	4	.40	.41	.86
Left arm action downward	42	96	5	8	.33	.31	.80
Left arm action forward	40	100	4	7	.31	.29	.83
Left arm action backward	29	110	2	10	.26	.21	.78
Left arm action to the left	25	114	6	6	.21	.21	.76
Left arm action to the right	35	104	4	8	.28	.26	.80
Left finger(s) articulation	28	109	4	10	.25	.21	.74
Left arm action away from the body	37	101	2	11	.32	.26	.79
Left arm action towards the body	31	107	6	7	.25	.25	.77
Left arm action vertical repetition	12	130	5	4	.11	.11	.69
Left arm action lateral repetition	4	146	1	0	.03	.03	.89
Left arm action frontal repetition	6	143	1	1	.05	.05	.85
Left arm action curved repetition	0	150	1	0	.00	.01	.00
Left arm action hold	32	110	1	8	.26	.22	.84

Behavior variables	Agree occurrence	Agree absence	Disagree type 1	Disagree type 2	Proportion coder 1	Proportion coder 2	κ_{occ}
Left arm action retraction	13	131	1	6	.13	.09	.76
Right arm action	83	57	2	9	.61	.56	.85
Right finger(s) articulation	55	78	6	12	.44	.40	.76
Right wrist articulation	22	113	7	9	.21	.19	.67
Right elbow articulation	64	80	1	6	.46	.43	.91
Right shoulder articulation	52	86	5	8	.40	.38	.82
Right arm action upward	42	96	7	6	.32	.32	.80
Right arm action downward	29	109	5	8	.25	.23	.76
Right arm action forward	31	109	3	8	.26	.23	.80
Right arm action backward	22	111	8	10	.21	.20	.63
Right arm action to the left	26	113	2	10	.24	.19	.76
Right arm action to the right	31	110	1	9	.26	.21	.82
Right arm action away from the body	36	101	3	11	.31	.26	.77
Right arm action towards the body	26	111	6	8	.23	.21	.73

Behavior variables	Agree occurrence	Agree absence	Disagree type 1	Disagree type 2	Proportion coder 1	Proportion coder 2	κ_{occ}
Right arm action vertical repetition	13	131	2	5	.12	.10	.76
Right arm action lateral repetition	5	146	0	0	.03	.03	1
Right arm action frontal repetition	7	142	0	2	.06	.05	.87
Right arm action curved repetition	0	150	1	0	.00	.01	.00
Right arm action hold	31	107	3	10	.27	.23	.77
Right arm action retraction	17	128	2	4	.14	.13	.83
Symmetrical arms action	42	98	6	5	.31	.32	.83
Asymmetrical arms action	27	112	4	8	.23	.21	.77
Other							
Touch	32	111	5	3	.23	.25	.85
Knee bend	6	139	1	5	.07	.05	.65
Leg movement	53	82	11	5	.38	.42	.78

Behavior variables	Agree occurrence	Agree absence	Disagree type 1	Disagree type 2	Proportion coder 1	Proportion coder 2	κ_{occ}
Action function							
Emblem	11	134	0	6	.11	.07	.76
Illustrator	15	111	1	24	.26	.11	.47
Beat	7	136	2	6	.09	.06	.61
Deictic	5	137	1	8	.09	.04	.50
Manipulator	8	132	0	11	.13	.05	.56

Note. Column labels are as follows: “Agree occurrence” = the sum of portrayals where both coders coded the occurrence of the behavior; “Agree absence” = the sum of portrayals where both coders coded the absence of the behavior; “Disagree type 1” = The sum of portrayals where the second coder coded the occurrence of the behavior, and the first coded the absence of the behavior; “Disagree type 2” = The sum of portrayals where the second coder coded the absence of the behavior, and the first coded the presence of the behavior; “Proportion coder 1” = the proportion of portrayals ($N = 151$) where the first coder coded a behavior category at least once; “Proportion coder 2” = the proportion of portrayals ($N = 151$) where the second coder coded a behavior category at least once; “ κ_{occ} ” = kappa computed on the occurrences of a behavior category.

Appendix B

Complete List of Behavioral Variables of the BAP Coding Scheme with Corresponding Kappa Computations of Temporal Agreement

Behavior variables	Proportion coder 1	Proportion coder 2	κ_{t1} (40ms)	κ_{t5} (200ms)	κ_{t11} (440ms)
Head orientation					
Facing	.92	.90	.57	.59	.62
Averted	.08	.10	.57	.59	.62
Head posture					
Lateral head turn towards a left position	.02	.01	.69	.71	.74
Lateral head turn towards a right position	.05	.03	.61	.63	.64
Lateral head turn towards the lateral middle position	.04	.04	.59	.62	.64
Lateral head tilt towards a left position	.06	.06	.91	.92	.93
Lateral head tilt towards a right position	.10	.09	.95	.96	.96
Lateral head tilt towards the middle position	.03	.03	.75	.79	.82
Vertical head tilt towards an upward position	.08	.07	.82	.84	.86

Behavior variables	Proportion coder 1	Proportion coder 2	κ_{t1} (40ms)	κ_{t5} (200ms)	κ_{t11} (440ms)
Vertical head tilt towards a downward position	.02	.02	.56	.58	.61
Vertical head tilt towards the vertical middle position	.05	.03	.59	.60	.61
Neck extension towards a forward head position	.07	.04	.62	.63	.65
Neck retraction towards a backward head position	.01	.01	.78	.81	.89
Neck extension/retraction towards the frontal middle position	.02	.04	.50	.52	.53
Trunk orientation					
Facing	.98	.97	.75	.76	.77
Averted	.02	.03	.75	.76	.77
Trunk posture					
Trunk lean towards a forward position	.04	.05	.75	.79	.84
Trunk lean towards a backward position	.05	.02	.60	.61	.62
Trunk lean to the frontal middle position	.03	.03	.64	.68	.74

Behavior variables	Proportion coder 1	Proportion coder 2	κ_{t1} (40ms)	κ_{t5} (200ms)	κ_{t11} (440ms)
Lateral trunk lean towards a left position	.02	.02	.56	.57	.58
Lateral trunk lean towards a right position	.00	.00	/	/	/
Lateral trunk lean towards the lateral middle position	.00	.00	/	/	/
Lateral trunk rotation towards a left position	.03	.02	.74	.74	.75
Lateral trunk rotation towards a right position	.03	.01	.61	.62	.64
Lateral trunk rotation towards the lateral middle position	.01	.01	.62	.65	.69
Spine movement toward an erected position	.00	.02	.26	.27	.23
Spine movement toward a bent position	.00	.01	.35	.36	.39
Spine movement towards the standard position	.01	.01	.42	.41	.39
Chest movement towards an upward or forward position	.02	.00	.10	.08	.05

Behavior variables	Proportion coder 1	Proportion coder 2	κ_{t1} (40ms)	κ_{t5} (200ms)	κ_{t11} (440ms)
Chest movement towards a downward or inward position	.00	.00	.00	.00	.00
Whole body posture					
Whole body moves or leans towards a forward position	.03	.03	.42	.44	.46
Whole body moves or leans towards a backward position	.03	.03	.64	.66	.68
Whole body moves or leans to the frontal middle position	.01	.00	.00	.00	.00
Whole body moves or leans towards a left position	.06	.03	.42	.43	.44
Whole body moves or leans towards a right position	.02	.02	.62	.62	.63
Whole body moves or leans to the lateral middle position	.00	.00	.00	.00	.00
Arms posture					
Left arm at side	.29	.28	.94	.94	.96
Left arm held in front	.00	.02	.28	.28	.28
Left arm held behind back	.04	.03	.76	.77	.77
Left hand in pocket	.06	.06	1	1	1
Left hand at waist	.03	.03	.85	.85	.85

Behavior variables	Proportion	Proportion	κ_{t1}	κ_{t5}	κ_{t11}
	coder 1	coder 2	(40ms)	(200ms)	(440ms)
Left hand at back of head/neck	.00	.00	/	/	/
Right arm at side	.33	.33	.95	.95	.96
Right arm held in front	.01	.01	.38	.39	.39
Right arm held behind back	.04	.03	.80	.80	.80
Right hand in pocket	.06	.06	1	1	1
Right hand at waist	.04	.04	.93	.94	.95
Right hand at back of head/neck	.00	.00	/	/	/
Arms crossed	.01	.01	1	1	1
Both arms held in front	.03	.08	.59	.59	.58
One arm holds other in front	.05	.01	.17	.17	.16
One arm holds other in back	.00	.01	.00	.00	.00
Left shoulder up	.01	.00	.00	.00	.00
Left shoulder down	.00	.00	/	/	/
Left shoulder to the front	.00	.00	/	/	/
Left shoulder to the back	.00	.00	/	/	/
Right shoulder up	.02	.00	.00	.00	.00
Right shoulder down	.00	.00	/	/	/
Right shoulder to the front	.00	.00	/	/	/
Right shoulder to the back	.00	.00	/	/	/
Symmetrical arms posture	.37	.43	.82	.83	.84
Asymmetrical arms posture	.06	.02	.40	.40	.39

Behavior variables	Proportion coder 1	Proportion coder 2	κ_{t1} (40ms)	κ_{t5} (200ms)	κ_{t11} (440ms)
Gaze					
Toward	.79	.82	.71	.73	.76
Upward	.08	.07	.71	.72	.73
Downward	.01	.01	.75	.86	.95
Averted sideways	.04	.04	.75	.80	.81
Eyes closed	.07	.06	.75	.78	.83
Head action					
Head action	.10	.10	.83	.87	.92
Left head turn	.00	.00	.91	.98	1
Right head turn	.00	.00	.51	.68	.86
Left head tilt	.00	.00	.00	.00	/
Right head tilt	.00	.00	.95	1	1
Upward head tilt	.00	.00	.00	.00	.00
Downward head tilt	.00	.00	.00	.00	.00
Forward neck extension	.00	.00	.33	.29	.00
Backward neck retraction	.00	.00	.00	.00	.00
Up-down head shake	.01	.01	.76	.82	.88
Left-right head shake	.07	.07	.90	.93	.97
Forward-backward head shake	.01	.01	.37	.39	.39
Head action hold	.00	.00	/	/	/

Behavior variables	Proportion coder 1	Proportion coder 2	κ_{t1} (40ms)	κ_{t5} (200ms)	κ_{t11} (440ms)
Trunk action					
Trunk action	.06	.04	.58	.61	.63
Forward trunk lean	.01	.02	.47	.52	.56
Backward trunk lean	.01	.00	.37	.42	.48
Left trunk lean	.00	.00	/	/	/
Right trunk lean	.00	.00	/	/	/
Left trunk turn	.00	.00	/	/	/
Right trunk turn	.00	.00	/	/	/
Spine straightening	.00	.00	.00	.00	/
Spine bending	.00	.00	.73	.82	.91
Upward/forward chest movement	.00	.00	/	/	/
Downward/inward chest movement	.00	.00	/	/	/
Up-down chest movement	.00	.00	/	/	/
Left-right trunk leaning	.00	.00	/	/	/
Left-right trunk rotation	.01	.01	1	1	1
Forward-backward trunk leaning	.02	.00	.36	.35	.35
Trunk action hold	.00	.00	/	/	/
Arm action					
Left arm action	.48	.47	.91	.93	.95
Left finger(s) articulation	.25	.18	.62	.67	.72
Left wrist articulation	.11	.10	.65	.69	.75

Behavior variables	Proportion	Proportion	κ_{t1}	κ_{t5}	κ_{t11}
	coder 1	coder 2	(40ms)	(200ms)	(440ms)
Left elbow articulation	.25	.26	.86	.91	.94
Left shoulder articulation	.23	.23	.76	.81	.86
Left arm action upward	.10	.10	.73	.79	.83
Left arm action downward	.09	.09	.68	.75	.81
Left arm action forward	.06	.07	.66	.76	.85
Left arm action backward	.05	.07	.57	.63	.68
Left arm action to the left	.08	.08	.74	.80	.85
Left arm action to the right	.07	.07	.70	.76	.82
Left arm action away from the body	.09	.09	.61	.70	.79
Left arm action towards the body	.06	.07	.64	.69	.74
Left arm action vertical repetition	.08	.07	.69	.70	.72
Left arm action lateral repetition	.01	.02	.91	.94	.97
Left arm action frontal repetition	.04	.03	.83	.85	.87
Left arm action curved repetition	.00	.00	.00	.00	.00
Left arm action hold	.10	.07	.78	.84	.89
Left arm action retraction	.03	.02	.56	.66	.79
Right arm action	.44	.41	.82	.85	.88
Right finger(s) articulation	.22	.20	.61	.66	.72
Right wrist articulation	.09	.07	.56	.61	.66
Right elbow articulation	.25	.24	.82	.86	.90

Behavior variables	Proportion	Proportion	κ_{t1}	κ_{t5}	κ_{t11}
	coder 1	coder 2	(40ms)	(200ms)	(440ms)
Right shoulder articulation	.20	.19	.81	.84	.88
Right arm action upward	.10	.09	.68	.73	.75
Right arm action downward	.07	.07	.62	.70	.78
Right arm action forward	.07	.07	.69	.76	.81
Right arm action backward	.06	.06	.64	.69	.75
Right arm action to the left	.06	.05	.66	.73	.81
Right arm action to the right	.08	.07	.72	.79	.86
Right arm action away from the body	.10	.08	.65	.73	.79
Right arm action towards the body	.06	.06	.66	.71	.76
Right arm action vertical repetition	.07	.06	.79	.81	.83
Right arm action lateral repetition	.01	.02	.93	.96	.98
Right arm action frontal repetition	.03	.03	.82	.85	.90
Right arm action curved repetition	.00	.00	.00	.00	.00
Right arm action hold	.09	.07	.67	.73	.79
Right arm action retraction	.03	.02	.62	.69	.78
Symmetrical arms action	.17	.16	.82	.85	.88
Asymmetrical arms action	.10	.09	.68	.75	.81

Behavior variables	Proportion coder 1	Proportion coder 2	κ_{t1} (40ms)	κ_{t5} (200ms)	κ_{t11} (440ms)
Other					
Touch	.12	.11	.84	.88	.90
Knee bend	.02	.01	.53	.58	.62
Leg movement	.19	.22	.62	.68	.74
Action function					
Emblem	.07	.05	.75	.79	.84
Illustrator	.16	.07	.35	.39	.45
Beat	.06	.06	.63	.68	.74
Deictic	.03	.02	.38	.45	.49
Manipulator	.06	.03	.57	.64	.74

Note. Column labels are as follows: “Proportion coder 1” = the proportion of frames ($N = 9433$) where the first coder coded a behavior category; “Proportion coder 2” = the proportion of frames ($N = 9433$) where the second coder coded a behavior category; “ κ_{t1} ” = kappa computed with a tolerance window of 1 frame (i.e. 40 milliseconds); “ κ_{t5} ” = kappa computed with a tolerance window of 5 frames (i.e. 200 milliseconds); “ κ_{t11} ” = kappa computed with a tolerance window of 11 frames (i.e. 440 milliseconds).

Appendix C:

Pooled Variables and their Constituent Variables

Pooled variable	Constituent variables
Orientation	
Head orientation	Head orientation facing; averted
Trunk orientation	Trunk orientation facing; averted
Symmetry	
Arm posture symmetry	Symmetrical arm posture; asymmetrical arm posture
Arm action symmetry	Symmetrical arm action; asymmetrical arm action
Arm posture	
Arm(s) at side	Left arm at side, right arm at side
Arm(s) in front	Left arm held in front; right arm held in front; one arm holds other in front; both arms held in front; arms crossed
Arm(s) held behind back	Left arm held behind back; right arm held behind back; one holds other in back
Arm(s) in pocket(s)	Left hand in pocket; right hand in pocket
Arm(s) at waist	Left hand at waist; right hand at waist
Head posture	
Lateral head turn	Lateral head turn towards a left position; towards a right position; towards the middle position
Lateral head tilt	Lateral head tilt towards a left position; towards a right position; towards the middle position

Pooled variable	Constituent variables
Vertical head tilt	Vertical head tilt towards an upward position; towards a downward position; towards the middle position
Frontal neck posture	Neck extension or retraction towards a forward head position; towards a backward position; towards the middle position
Trunk posture	
Frontal trunk lean	Trunk lean towards a forward position; towards a backward position; towards the middle position
Lateral trunk lean or rotation	Lateral trunk lean towards a left position; towards a right position; towards the middle position; lateral trunk rotation towards a left position; a right position; the middle position
Spine or chest movement	Spine movement towards an erected position; a bent position; the standard position; chest movement towards an upward or forward position; towards a downward or inward position
Trunk erect	Spine movement towards an erected position; chest movement towards an upward or forward position
Trunk inward or bent	Spine movement towards a bent position, chest movement towards a downward or inward position
Whole body posture	
Frontal body movement	Whole body moves or leans towards a forward position; towards a backward position; towards the middle position
Lateral body movement	Whole body moves or leans towards a left position; towards a right position; towards the middle position

Pooled variable	Constituent variables
Head action	
Head articulation	Head action
Lateral head rotation or tilt	Left head turn; right head turn; left head tilt; right head tilt
Head shake vertical or lateral	Up-down head shake; left-right head shake
Trunk action	
Trunk articulation	Trunk action
Frontal trunk leaning	Forward trunk lean, backward trunk lean
Trunk action repetition	Up-down chest movement; left-right trunk leaning; left-right trunk rotation; forward-backward trunk leaning
Arm action	
Arm(s) articulation	Left arm action; right arm action
Finger(s) articulation	Left finger(s) articulation; right finger(s) articulation
Wrist articulation	Left wrist articulation; right wrist articulation
Elbow articulation	Left elbow articulation; right elbow articulation
Shoulder articulation	Left shoulder articulation; right shoulder articulation
Vertical arm(s) action	Left arm action upward; left arm action downward; right arm action upward; right arm action downward
Arm(s) upward	Left arm action upward; right arm action upward
Arm(s) downward	Left arm action downward; right arm action downward
Frontal arm(s) action	Left arm action forward; left arm action backward; right arm action forward; right arm action backward
Arm(s) forward	Left arm action forward; right arm action forward

Pooled variable	Constituent variables
Arm(s) backward	Left arm action backward; right arm action backward
Lateral arm(s) action	Left arm action to the left; left arm action to the right; right arm action to the left; right arm action to the right
Arm(s) left	Left arm action to the left; right arm action to the left
Arm(s) right	Left arm action to the right; right arm action to the right
Arm(s) away from the body	Left arm action away from the body; right arm action away from the body
Arm(s) toward the body	Left arm action towards the body; right arm action towards the body
Arm(s) vertical repetition	Left arm action vertical repetition; right arm action vertical repetition
Arm(s) lateral repetition	Left arm action lateral repetition; right arm action lateral repetition
Arm(s) frontal repetition	Left arm action frontal repetition; right arm action frontal repetition
Arm(s) hold	Left arm action hold; right arm action hold
Arm(s) retraction	Left arm action retraction, right arm action retraction
Other	
Lower limb movement	knee bend; leg movement

Appendix D

Pooled Variables with Kappa Computation of Occurrence Agreement

Pooled variables	Agree occurrence	Agree absence	Disagree type 1	Disagree type 2	Proportion coder 1	Proportion coder 2	κ_{occ}
Head posture							
Lateral head turn	14	124	3	10	.16	.11	.63
Lateral head tilt	23	124	1	3	.17	.16	.90
Vertical head tilt	19	124	1	7	.17	.13	.80
Frontal neck posture	10	130	4	7	.11	.09	.60
Trunk posture							
Frontal trunk lean	18	123	1	9	.18	.13	.74
Lateral trunk lean or rotation	8	137	0	6	.09	.05	.71
Trunk erect	3	147	0	1	.03	.02	.85
Trunk inward or bent	1	149	1	0	.01	.01	.66
Spine or chest movement	6	144	1	0	.04	.05	.92

Pooled variables	Agree occurrence	Agree absence	Disagree type 1	Disagree type 2	Proportion coder 1	Proportion coder 2	κ_{occ}
Whole body posture							
Frontal body movement	11	131	5	4	.10	.11	.68
Lateral body movement	9	131	2	9	.12	.07	.58
Arm posture							
Arm(s) at side	58	90	1	2	.40	.39	.96
Arm(s) in front	18	131	1	1	.13	.13	.94
Arm(s) held behind back	4	145	2	0	.03	.04	.79
Arm(s) in pocket(s)	10	141	0	0	.07	.07	1
Arm(s) at waist	10	141	0	0	.07	.07	1
Head action							
Lateral head rotation or tilt	6	143	0	2	.05	.04	.85
Head shake vertical or lateral	20	130	0	1	.14	.13	.97
Trunk action							
Frontal trunk leaning	6	137	5	3	.06	.07	.57

Pooled variables	Agree occurrence	Agree absence	Disagree type 1	Disagree type 2	Proportion coder 1	Proportion coder 2	κ_{occ}
Trunk action repetition	2	147	0	2	.03	.01	.66
Arm action							
Arm(s) articulation	104	40	1	6	.73	.70	.89
Finger(s) articulation	70	62	3	16	.57	.48	.75
Wrist articulation	35	95	6	15	.33	.27	.67
Elbow articulation	79	68	0	4	.55	.52	.95
Shoulder articulation	68	71	6	6	.49	.49	.84
Vertical arm(s) action	65	76	5	5	.46	.46	.87
Arm(s) upward	54	86	5	6	.40	.39	.85
Arm(s) downward	46	93	5	7	.35	.34	.82
Frontal arm(s) action	49	85	4	13	.41	.35	.76
Arm(s) forward	37	98	4	12	.32	.27	.75
Arm(s) backward	32	99	8	12	.29	.26	.67
Lateral arm(s) action	53	82	3	13	.44	.37	.78

Pooled variables	Agree occurrence	Agree absence	Disagree type 1	Disagree type 2	Proportion coder 1	Proportion coder 2	κ_{occ}
Arm(s) left	46	92	2	11	.38	.32	.81
Arm(s) right	48	90	2	11	.39	.33	.81
Arm(s) away from the body	48	88	3	12	.40	.34	.79
Arm(s) toward the body	39	96	4	12	.34	.28	.75
Arm(s) vertical repetition	14	126	4	7	.14	.12	.68
Arm(s) lateral repetition	6	144	1	0	.04	.05	.92
Arm(s) frontal repetition	10	138	1	2	.08	.07	.86
Arm(s) hold	41	97	2	11	.34	.28	.80
Arm(s) retraction	20	123	2	6	.17	.15	.80
Other							
Lower limb movement	60	79	8	4	.42	.45	.84

Note. For the pooled categories of orientation and symmetry the kappa had to be computed differently so they are not included in this table. Column labels are as follows: “Agree occurrence” = the sum of portrayals where both coders coded the occurrence of the behavior; “Agree absence” = the sum of portrayals where both coders coded the absence of the behavior; “Disagree type 1= The sum of portrayals where the second coder coded the occurrence of the behavior, and the first coded the absence of the behavior; “Disagree

type 2” = The sum of portrayals where the second coder coded the absence of the behavior, and the first coded the presence of the behavior; “Proportion coder 1” = the proportion of portrayals ($N = 151$) where the first coder coded a behavior category at least once; “Proportion coder 2” = the proportion of portrayals ($N = 151$) where the second coder coded a behavior category at least once; “ κ_{occ} ” = kappa computed on the occurrences of a behavior category.

Appendix E

Pooled Variables with Kappa Computation of Temporal Agreement

Pooled variables	Proportion coder 1	Proportion coder 1	κ_{t1} (40ms)	κ_{t5} (200ms)	κ_{t11} (440ms)
Head posture					
Lateral head turn	.08	.12	.59	.61	.63
Lateral head tilt	.18	.19	.93	.94	.94
Vertical head tilt	.12	.15	.81	.82	.83
Frontal neck posture	.08	.10	.60	.61	.62
Trunk posture					
Frontal trunk lean	.10	.12	.72	.75	.78
Lateral trunk lean or rotation	.06	.09	.80	.81	.82
Trunk erect	.02	.02	.86	.89	.91
Trunk inward or bent	.01	.00	.35	.36	.39
Spine or chest movement	.04	.03	.82	.84	.86
Whole body posture					
Frontal body movement	.06	.07	.58	.60	.61
Lateral body movement	.04	.08	.47	.48	.48
Arm posture					
Arm(s) at side	.36	.36	.95	.96	.96
Arm(s) in front	.11	.11	.92	.92	.93
Arm(s) held behind back	.04	.04	.89	.89	.90
Arm(s) in pocket(s)	.06	.06	1	1	1

Pooled variables	Proportion coder 1	Proportion coder 1	κ_{t1} (40ms)	κ_{t5} (200ms)	κ_{t11} (440ms)
Arm(s) at waist	.05	.06	.97	.97	.97
Head action					
Lateral head rotation or tilt	.01	.01	.72	.84	.94
Head shake vertical or lateral	.07	.08	.88	.91	.96
Trunk action					
Frontal trunk leaning	.02	.02	.45	.49	.53
Trunk action repetition	.01	.03	.53	.54	.54
Arm action					
Arm(s) articulation	.55	.57	.91	.93	.95
Finger(s) articulation	.26	.33	.62	.68	.73
Wrist articulation	.13	.15	.61	.66	.72
Elbow articulation	.33	.33	.84	.88	.92
Shoulder articulation	.27	.28	.76	.81	.86
Vertical arm(s) action	.22	.23	.72	.78	.82
Arm(s) upward	.14	.14	.73	.79	.83
Arm(s) downward	.11	.11	.68	.76	.83
Frontal arm(s) action	.16	.15	.67	.72	.77
Arm(s) forward	.10	.09	.65	.73	.78
Arm(s) backward	.09	.08	.57	.63	.69
Lateral arm(s) action	.17	.19	.71	.76	.82

Pooled variables	Proportion	Proportion	κ_{t1}	κ_{t5}	κ_{t11}
	coder 1	coder 1	(40ms)	(200ms)	(440ms)
Arm(s) left	.13	.14	.70	.76	.82
Arm(s) right	.14	.14	.71	.77	.83
Arm(s) away from the body	.11	.12	.66	.74	.82
Arm(s) toward the body	.09	.09	.66	.72	.77
Arm(s) vertical repetition	.08	.09	.67	.69	.71
Arm(s) lateral repetition	.02	.02	.91	.94	.96
Arm(s) frontal repetition	.05	.06	.84	.86	.89
Arm(s) hold	.10	.13	.75	.82	.88
Arm(s) retraction	.03	.04	.64	.73	.83
Other					
Lower limb movement	.23	.21	.67	.72	.78

Note. Column labels are as follows: “Proportion coder 1” = the proportion of frames ($N = 9433$) where the first coder coded a behavior category; “Proportion coder 2” = the proportion of frames ($N = 9433$) where the second coder coded a behavior category; “ κ_{t1} ” = kappa computed with a tolerance window of 1 frame (i.e. 40 milliseconds); “ κ_{t5} ” = kappa computed with a tolerance window of 5 frames (i.e. 200 milliseconds); “ κ_{t11} ” = kappa computed with a tolerance window of 11 frames (i.e. 440 milliseconds).