Ergebnisse

Mixed Model - Pointing X

Model Info

Info	
Estimate	Linear mixed model fit by REML
Call	efrc3d_X_flip ~ 1 + vertical + symmetry + vertical:symmetry+(1 | ppid)
AIC	-675.008
BIC	-597.412
LogLikel.	318.557
R-squared Marginal	0.435
R-squared Conditional	0.547
Converged	yes
Optimizer	bobyqa

[3]

Model Results

Fixed Effect Omnibus tests

	F	Num df	Den df	p
vertical	11.4	2	114	< .001
symmetry	81.1	1	114	< .001
vertical ✻ symmetry	16.2	2	114	< .001

Anmerkung. Satterthwaite method for degrees of freedom

Fixed Effects Parameter Estimates

				95% Confidence Interval				
Names	Effect	Estimate	SE	Lower	Upper	df	t	p
(Intercept)	(Intercept)	0.01687	0.00269	0.0116	0.0221	23.1	6.26	< .001
vertical1	middle - high	0.00803	0.00420	-2.00e−4	0.0163	114.3	1.91	0.058
vertical2	low - high	0.01984	0.00417	0.0117	0.0280	114.1	4.75	< .001
symmetry1	sym - asym	-0.03081	0.00342	-0.0375	-0.0241	114.2	-9.00	< .001
vertical1 ✻ symmetry1	middle - high ✻ sym - asym	-0.02727	0.00840	-0.0437	-0.0108	114.3	-3.25	0.002
vertical2 ✻ symmetry1	low - high ✻ sym - asym	-0.04741	0.00835	-0.0638	-0.0310	114.1	-5.68	< .001

Random Components

Groups	Name	SD	Variance	ICC
ppid	(Intercept)	0.0102	1.04e-4	0.199
Residual		0.0204	4.18e-4	

Anmerkung. Number of Obs: 143 , groups: ppid 24

Post Hoc Tests

Post Hoc Comparisons - vertical

Comparison							
vertical		vertical	Difference	SE	t	df	p_{holm}
high	-	low	-0.01984	0.00417	-4.75	114	< .001
high	-	middle	-0.00803	0.00420	-1.91	114	0.058
middle	-	low	-0.01181	0.00420	-2.81	114	0.012

Post Hoc Comparisons - symmetry

Comparison							
symmetry		symmetry	Difference	SE	t	df	p_{holm}
asym	-	sym	0.0308	0.00342	9.00	114	< .001

Post Hoc Comparisons - vertical ✻ symmetry

Comparison								
vertical	symmetry		vertical	symmetry	Difference	SE	t	df	p_{holm}
high	asym	-	high	sym	0.00592	0.00590	1.002	114	1.000
high	asym	-	low	asym	-0.04354	0.00590	-7.376	114	< .001
high	asym	-	low	sym	0.00978	0.00590	1.657	114	0.501
high	asym	-	middle	asym	-0.02167	0.00598	-3.626	114	0.003
high	asym	-	middle	sym	0.01152	0.00590	1.952	114	0.320
high	sym	-	low	sym	0.00387	0.00590	0.655	114	1.000
high	sym	-	middle	sym	0.00561	0.00590	0.950	114	1.000
low	asym	-	high	sym	0.04946	0.00590	8.379	114	< .001
low	asym	-	low	sym	0.05333	0.00590	9.034	114	< .001
low	asym	-	middle	sym	0.05507	0.00590	9.328	114	< .001
middle	asym	-	high	sym	0.02759	0.00598	4.617	114	< .001
middle	asym	-	low	asym	-0.02188	0.00598	-3.661	114	0.003
middle	asym	-	low	sym	0.03145	0.00598	5.264	114	< .001
middle	asym	-	middle	sym	0.03319	0.00598	5.555	114	< .001
middle	sym	-	low	sym	-0.00174	0.00590	-0.295	114	1.000

Estimated Marginal Means

vertical

				95% Confidence Interval	
vertical	Mean	SE	df	Lower	Upper
high	0.00758	0.00361	66.0	3.70e-4	0.0148
middle	0.01561	0.00364	67.4	0.00835	0.0229
low	0.02742	0.00361	66.0	0.02021	0.0346

Anmerkung. Estimated means are estimated averaging across interacting variables

symmetry

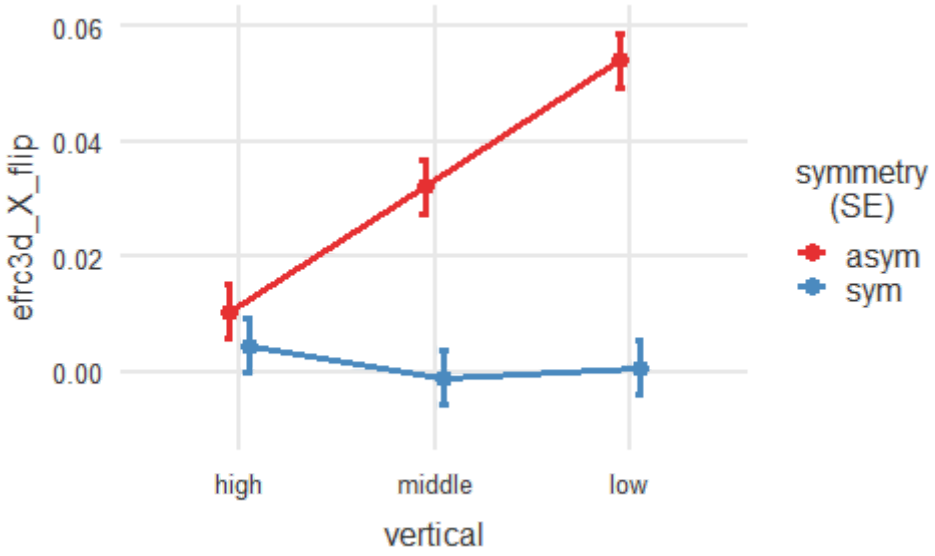
				95% Confidence Interval	
symmetry	Mean	SE	df	Lower	Upper
asym	0.03228	0.00320	44.3	0.02583	0.03872
sym	0.00146	0.00318	43.6	-0.00495	0.00788

Anmerkung. Estimated means are estimated averaging across interacting variables

symmetry:vertical

					95% Confidence Interval	
symmetry	**vertical**	**Mean**	**SE**	**df**	**Lower**	**Upper**
asym	high	0.01054	0.00466	115	0.00130	0.01978
sym	high	0.00462	0.00466	115	-0.00462	0.01386
asym	middle	0.03221	0.00475	117	0.02279	0.04162
sym	middle	-9.86e−4	0.00466	115	-0.01022	0.00825
asym	low	0.05408	0.00466	115	0.04484	0.06332
sym	low	7.54e-4	0.00466	115	-0.00848	0.00999

Effects Plots



Mixed Model - Pointing Y

Model Info

Info	
Estimate	Linear mixed model fit by REML
Call	efrc3d_Y ~ 1 + vertical + symmetry + vertical:symmetry+(1 | ppid)
AIC	-394.811
BIC	-328.960
LogLikel.	184.332
R-squared Marginal	0.369
R-squared Conditional	0.828
Converged	yes
Optimizer	bobyqa

[3]

Model Results

Fixed Effect Omnibus tests

	F	Num df	Den df	p
vertical	152.246	2	114	< .001
symmetry	0.176	1	114	0.675
vertical ✻ symmetry	0.226	2	114	0.798

Anmerkung. Satterthwaite method for degrees of freedom

Fixed Effects Parameter Estimates

				95% Confidence Interval				
Names	Effect	Estimate	SE	Lower	Upper	df	t	p
(Intercept)	(Intercept)	0.27690	0.01597	0.2456	0.3082	23.0	17.342	< .001
vertical1	middle - high	-0.06654	0.00952	-0.0852	-0.0479	114.0	-6.987	< .001
vertical2	low - high	-0.16415	0.00946	-0.1827	-0.1456	114.0	-17.348	< .001
symmetry1	sym - asym	-0.00326	0.00776	-0.0185	0.0119	114.0	-0.420	0.675
vertical1 ✻ symmetry1	middle - high ✻ sym - asym	0.00287	0.01905	-0.0345	0.0402	114.0	0.151	0.881
vertical2 ✻ symmetry1	low - high ✻ sym - asym	0.01217	0.01892	-0.0249	0.0493	114.0	0.643	0.521

Random Components

Groups	Name	SD	Variance	ICC
ppid	(Intercept)	0.0759	0.00576	0.728
Residual		0.0464	0.00215	

Anmerkung. Number of Obs: 143 , groups: ppid 24

Post Hoc Tests

Post Hoc Comparisons - vertical

Comparison							
vertical		vertical	Difference	SE	t	df	p_{holm}
high	-	low	0.1641	0.00946	17.35	114	< .001
high	-	middle	0.0665	0.00952	6.99	114	< .001
middle	-	low	0.0976	0.00952	10.25	114	< .001

Post Hoc Comparisons - symmetry

Comparison							
symmetry		symmetry	Difference	SE	t	df	p_{holm}
asym	-	sym	0.00326	0.00776	0.420	114	0.675

Post Hoc Comparisons - vertical ✻ symmetry

Comparison								
vertical	symmetry		vertical	symmetry	Difference	SE	t	df	p_{holm}
high	asym	-	high	sym	0.00827	0.0134	0.618	114	1.000
high	asym	-	low	asym	0.17024	0.0134	12.722	114	< .001
high	asym	-	low	sym	0.16634	0.0134	12.430	114	< .001
high	asym	-	middle	asym	0.06797	0.0136	5.015	114	< .001
high	asym	-	middle	sym	0.07338	0.0134	5.483	114	< .001
high	sym	-	low	sym	0.15806	0.0134	11.812	114	< .001
high	sym	-	middle	sym	0.06510	0.0134	4.865	114	< .001
low	asym	-	high	sym	-0.16196	0.0134	-12.104	114	< .001
low	asym	-	low	sym	-0.00390	0.0134	-0.291	114	1.000
low	asym	-	middle	sym	-0.09686	0.0134	-7.238	114	< .001
middle	asym	-	high	sym	-0.05970	0.0136	-4.405	114	< .001
middle	asym	-	low	asym	0.10226	0.0136	7.545	114	< .001
middle	asym	-	low	sym	0.09836	0.0136	7.258	114	< .001
middle	asym	-	middle	sym	0.00541	0.0136	0.399	114	1.000
middle	sym	-	low	sym	0.09296	0.0134	6.947	114	< .001

Estimated Marginal Means

vertical

				95% Confidence Interval	
vertical	Mean	SE	df	Lower	Upper
high	0.354	0.0169	28.6	0.319	0.388
middle	0.287	0.0169	28.8	0.253	0.322
low	0.190	0.0169	28.6	0.155	0.224

Anmerkung. Estimated means are estimated averaging across interacting variables

symmetry

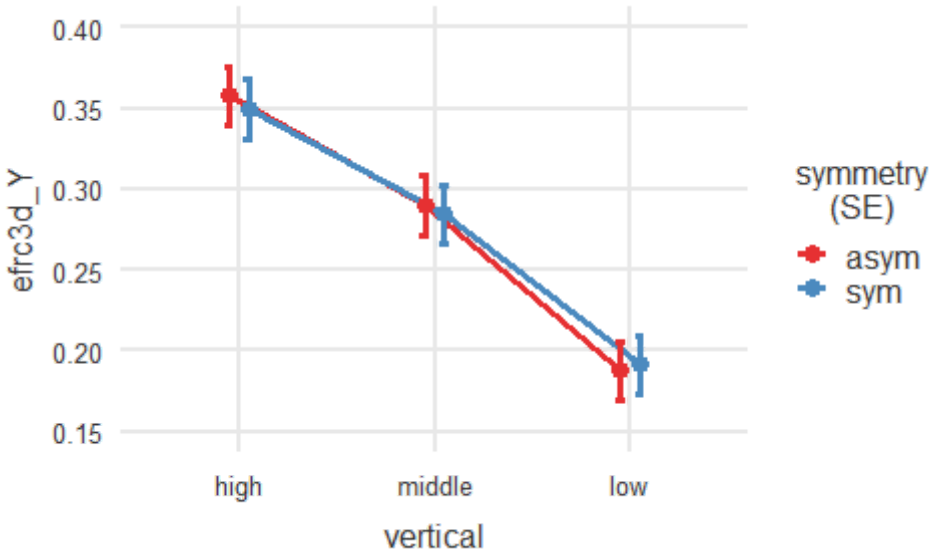
				95% Confidence Interval	
symmetry	**Mean**	**SE**	**df**	**Lower**	**Upper**
asym	0.279	0.0164	25.8	0.245	0.312
sym	0.275	0.0164	25.7	0.241	0.309

Anmerkung. Estimated means are estimated averaging across interacting variables

symmetry:vertical

					95% Confidence Interval	
symmetry	**vertical**	**Mean**	**SE**	**df**	**Lower**	**Upper**
asym	high	0.358	0.0181	37.8	0.321	0.395
sym	high	0.350	0.0181	37.8	0.313	0.386
asym	middle	0.290	0.0183	38.7	0.253	0.327
sym	middle	0.285	0.0181	37.8	0.248	0.321
asym	low	0.188	0.0181	37.8	0.151	0.224
sym	low	0.192	0.0181	37.8	0.155	0.228

Effects Plots



Mixed Model - Gaze X

Model Info

Info	
Estimate	Linear mixed model fit by REML
Call	final_gaze3d_X_flip ~ 1 + vertical + symmetry + vertical:symmetry+(1 | ppid)
AIC	-696.582
BIC	-618.079
LogLikel.	328.891
R-squared Marginal	0.350
R-squared Conditional	0.537
Converged	yes
Optimizer	bobyqa

[3]

Model Results

Fixed Effect Omnibus tests

	F	Num df	Den df	p
vertical	11.7	2	114	< .001
symmetry	62.6	1	114	< .001
vertical ✻ symmetry	10.8	2	114	< .001

Anmerkung. Satterthwaite method for degrees of freedom

Fixed Effects Parameter Estimates

				95% Confidence Interval				
Names	Effect	Estimate	SE	Lower	Upper	df	t	p
(Intercept)	(Intercept)	0.0130	0.00285	0.00745	0.0186	23.1	4.57	< .001
vertical1	middle - high	0.0105	0.00379	0.00305	0.0179	114.3	2.76	0.007
vertical2	low - high	0.0182	0.00377	0.01080	0.0256	114.1	4.83	< .001
symmetry1	sym - asym	-0.0244	0.00309	-0.03049	-0.0184	114.2	-7.91	< .001
vertical1 ✻ symmetry1	middle - high ✻ sym - asym	-0.0262	0.00758	-0.04110	-0.0114	114.3	-3.46	< .001
vertical2 ✻ symmetry1	low - high ✻ sym - asym	-0.0332	0.00754	-0.04797	-0.0184	114.1	-4.41	< .001

Random Components

Groups	Name	SD	Variance	ICC
ppid	(Intercept)	0.0117	1.38e-4	0.288
Residual		0.0185	3.41e-4	

Anmerkung. Number of Obs: 143 , groups: ppid 24

Post Hoc Tests

Post Hoc Comparisons - vertical ✻ symmetry

Comparison								
vertical	symmetry		vertical	symmetry	Difference	SE	t	df	p_{holm}
high	asym	-	high	sym	0.00462	0.00533	0.868	114	1.000
high	asym	-	low	asym	-0.03479	0.00533	-6.527	114	< .001
high	asym	-	low	sym	0.00304	0.00533	0.571	114	1.000
high	asym	-	middle	asym	-0.02360	0.00540	-4.374	114	< .001
high	asym	-	middle	sym	0.00726	0.00533	1.363	114	1.000
high	sym	-	low	sym	-0.00158	0.00533	-0.297	114	1.000
high	sym	-	middle	sym	0.00264	0.00533	0.495	114	1.000
low	asym	-	high	sym	0.03941	0.00533	7.394	114	< .001
low	asym	-	low	sym	0.03783	0.00533	7.097	114	< .001
low	asym	-	middle	sym	0.04205	0.00533	7.890	114	< .001
middle	asym	-	high	sym	0.02822	0.00540	5.231	114	< .001
middle	asym	-	low	asym	-0.01119	0.00540	-2.073	114	0.283
middle	asym	-	low	sym	0.02664	0.00540	4.937	114	< .001
middle	asym	-	middle	sym	0.03086	0.00540	5.720	114	< .001
middle	sym	-	low	sym	-0.00422	0.00533	-0.792	114	1.000

Post Hoc Comparisons - symmetry

Comparison							
symmetry		symmetry	Difference	SE	t	df	p_{holm}
asym	-	sym	0.0244	0.00309	7.91	114	< .001

Post Hoc Comparisons - vertical

Comparison							
vertical		vertical	Difference	SE	t	df	p_{holm}
high	-	low	-0.01818	0.00377	-4.83	114	< .001
high	-	middle	-0.01048	0.00379	-2.76	114	0.013
middle	-	low	-0.00770	0.00379	-2.03	114	0.045

Estimated Marginal Means

vertical

				95% Confidence Interval	
vertical	Mean	SE	df	Lower	Upper
high	0.00348	0.00358	53.9	-0.00371	0.0107
middle	0.01396	0.00361	55.0	0.00673	0.0212
low	0.02167	0.00358	53.9	0.01448	0.0289

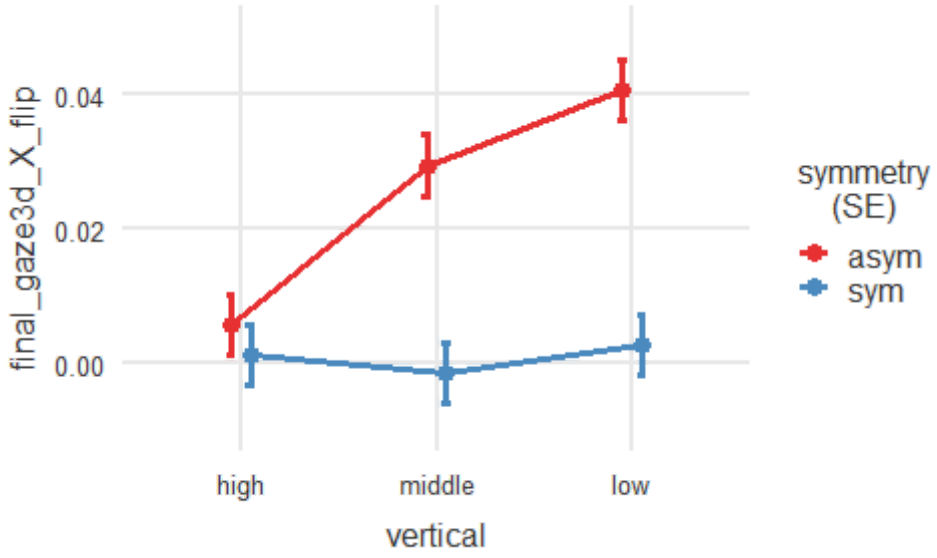
symmetry

				95% Confidence Interval	
symmetry	Mean	SE	df	Lower	Upper
asym	0.0253	0.00325	38.2	0.01868	0.03183
sym	8.17e-4	0.00324	37.7	-0.00574	0.00737

symmetry:vertical

					95% Confidence Interval	
symmetry	vertical	Mean	SE	df	Lower	Upper
asym	high	0.00579	0.00447	97.2	-0.00307	0.01466
sym	high	0.00117	0.00447	97.2	-0.00770	0.01003
asym	middle	0.02939	0.00454	100.0	0.02038	0.03841
sym	middle	-0.00147	0.00447	97.2	-0.01033	0.00740
asym	low	0.04058	0.00447	97.2	0.03171	0.04944
sym	low	0.00275	0.00447	97.2	-0.00611	0.01162

Effects Plots



Mixed Model - Gaze Y

Model Info

Info	
Estimate	Linear mixed model fit by REML
Call	final_gaze3d_Y ~ 1 + vertical + symmetry + vertical:symmetry+(1 | ppid)
AIC	-392.147
BIC	-326.413
LogLikel.	183.058
R-squared Marginal	0.416
R-squared Conditional	0.726
Converged	yes
Optimizer	bobyqa

[3]

Model Results

Fixed Effect Omnibus tests

	F	Num df	Den df	p
vertical	107.165	2	114	< .001
symmetry	0.873	1	114	0.352
vertical ✻ symmetry	0.273	2	114	0.761

Anmerkung. Satterthwaite method for degrees of freedom

Fixed Effects Parameter Estimates

Names	Effect	Estimate	SE	95% Confidence Interval		df	t	p
				Lower	Upper			
(Intercept)	(Intercept)	0.38057	0.01165	0.35775	0.4034	23.0	32.680	< .001
vertical1	middle - high	-0.07485	0.01026	-0.09496	-0.0547	114.1	-7.294	< .001
vertical2	low - high	-0.14929	0.01020	-0.16928	-0.1293	114.0	-14.640	< .001
symmetry1	sym - asym	0.00781	0.00836	-0.00858	0.0242	114.1	0.934	0.352
vertical1 ✻ symmetry1	middle - high ✻ sym - asym	-0.00252	0.02052	-0.04275	0.0377	114.1	-0.123	0.902
vertical2 ✻ symmetry1	low - high ✻ sym - asym	0.01166	0.02039	-0.02831	0.0516	114.0	0.572	0.569

Random Components

Groups	Name	SD	Variance	ICC
ppid	(Intercept)	0.0532	0.00284	0.532
Residual		0.0500	0.00250	

Anmerkung. Number of Obs: 143 , groups: ppid 24

Post Hoc Tests

Post Hoc Comparisons - vertical

Comparison			Difference	SE	t	df	p_{holm}
vertical		vertical					
high	-	low	0.1493	0.0102	14.64	114	< .001
high	-	middle	0.0749	0.0103	7.29	114	< .001
middle	-	low	0.0744	0.0103	7.25	114	< .001

Estimated Marginal Means

vertical

vertical	Mean	SE	df	95% Confidence Interval	
				Lower	Upper
high	0.455	0.0130	35.8	0.429	0.482
middle	0.380	0.0131	36.3	0.354	0.407
low	0.306	0.0130	35.8	0.280	0.332

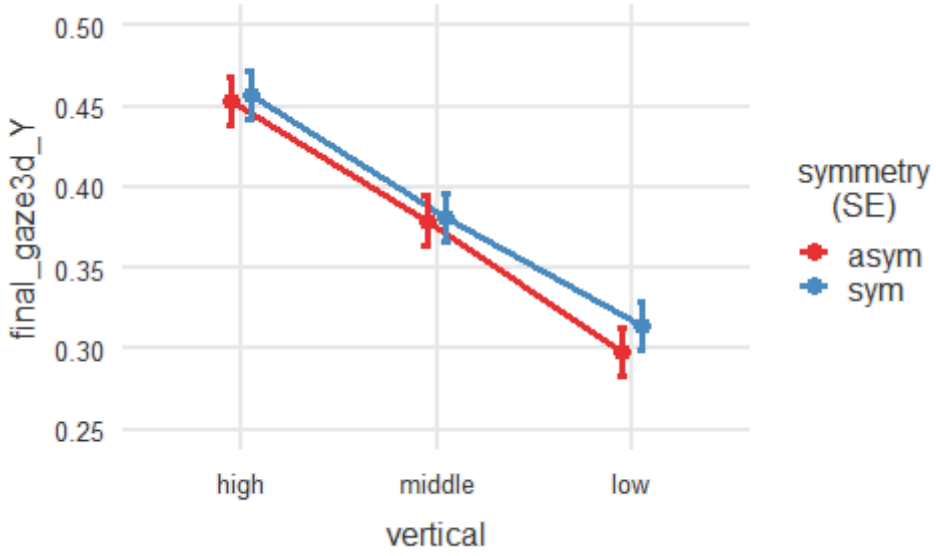
symmetry

				95% Confidence Interval	
symmetry	**Mean**	**SE**	**df**	**Lower**	**Upper**
asym	0.377	0.0124	29.4	0.351	0.402
sym	0.384	0.0124	29.2	0.359	0.410

symmetry:vertical

					95% Confidence Interval	
symmetry	**vertical**	**Mean**	**SE**	**df**	**Lower**	**Upper**
asym	high	0.453	0.0149	57.1	0.423	0.483
sym	high	0.458	0.0149	57.1	0.428	0.488
asym	middle	0.379	0.0151	59.2	0.349	0.409
sym	middle	0.382	0.0149	57.1	0.352	0.411
asym	low	0.298	0.0149	57.1	0.268	0.328
sym	low	0.314	0.0149	57.1	0.284	0.344

Effects Plots



Mixed Model - Gaze Z

Model Info

Info	
Estimate	Linear mixed model fit by REML
Call	final_gaze3d_Z ~ 1 + vertical + symmetry + vertical:symmetry+(1 | ppid)
AIC	-717.3173
BIC	-637.9457
LogLikel.	338.8242
R-squared Marginal	0.0794
R-squared Conditional	0.2776
Converged	yes
Optimizer	bobyqa

[3]

Model Results

Fixed Effect Omnibus tests

	F	Num df	Den df	p
vertical	2.11	2	114	0.126
symmetry	6.38	1	114	0.013
vertical ✻ symmetry	2.45	2	114	0.091

Anmerkung. Satterthwaite method for degrees of freedom

Fixed Effects Parameter Estimates

				95% Confidence Interval				
Names	Effect	Estimate	SE	Lower	Upper	df	t	p
(Intercept)	(Intercept)	4.73e-4	0.00238	-0.00420	0.00514	23.1	0.199	0.844
vertical1	middle - high	-0.00721	0.00360	-0.01427	-1.44e−4	114.3	-2.000	0.048
vertical2	low - high	-0.00208	0.00358	-0.00910	0.00494	114.1	-0.581	0.562
symmetry1	sym - asym	-0.00741	0.00294	-0.01317	-0.00166	114.3	-2.525	0.013
vertical1 ✻ symmetry1	middle - high ✻ sym - asym	0.00595	0.00721	-0.00817	0.02008	114.3	0.826	0.411
vertical2 ✻ symmetry1	low - high ✻ sym - asym	-0.00983	0.00716	-0.02388	0.00421	114.1	-1.373	0.173

Random Components

Groups	Name	SD	Variance	ICC
ppid	(Intercept)	0.00919	8.45e-5	0.215
Residual		0.01755	3.08e-4	

Anmerkung. Number of Obs: 143 , groups: ppid 24

Estimated Marginal Means

vertical

				95% Confidence Interval	
vertical	**Mean**	**SE**	**df**	**Lower**	**Upper**
high	0.00357	0.00315	63.5	-0.00273	0.00987
middle	-0.00364	0.00318	64.8	-0.00998	0.00271
low	0.00149	0.00315	63.5	-0.00481	0.00779

Anmerkung. Estimated means are estimated averaging across interacting variables

symmetry

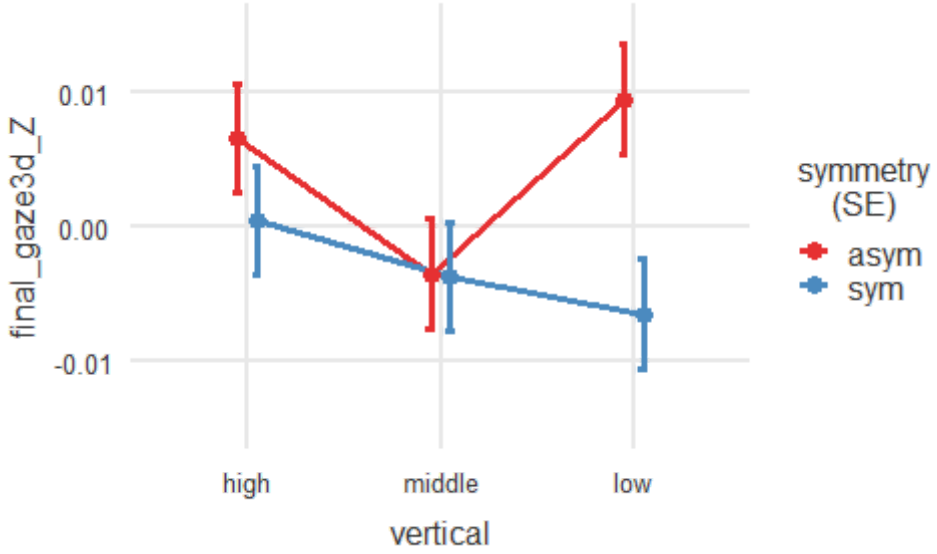
				95% Confidence Interval	
symmetry	**Mean**	**SE**	**df**	**Lower**	**Upper**
asym	0.00418	0.00280	43.0	-0.00148	0.00984
sym	-0.00323	0.00279	42.4	-0.00887	0.00240

Anmerkung. Estimated means are estimated averaging across interacting variables

symmetry:vertical

					95% Confidence Interval	
symmetry	**vertical**	**Mean**	**SE**	**df**	**Lower**	**Upper**
asym	high	0.00663	0.00404	112	-0.00138	0.01464
sym	high	5.09e-4	0.00404	112	-0.00750	0.00852
asym	middle	-0.00355	0.00412	114	-0.01171	0.00461
sym	middle	-0.00372	0.00404	112	-0.01173	0.00429
asym	low	0.00947	0.00404	112	0.00145	0.01748
sym	low	-0.00649	0.00404	112	-0.01450	0.00152

Effects Plots



Mixed Model - Pointing Z

Model Info

Info	
Estimate	Linear mixed model fit by REML
Call	efrc3d_Z ~ 1 + vertical + symmetry + vertical:symmetry+(1 | ppid)
AIC	-696.8365
BIC	-618.3210
LogLikel.	329.0119
R-squared Marginal	0.0574
R-squared Conditional	0.4435
Converged	yes
Optimizer	bobyqa

[3]

Model Results

Fixed Effect Omnibus tests

	F	Num df	Den df	p
vertical	3.746	2	114	0.027
symmetry	6.069	1	114	0.015
vertical ✻ symmetry	0.484	2	114	0.618

Anmerkung. Satterthwaite method for degrees of freedom

Fixed Effects Parameter Estimates

Names	Effect	Estimate	SE	95% Confidence Interval		df	t	p
				Lower	Upper			
(Intercept)	(Intercept)	-8.80e−5	0.00338	-0.00671	0.00653	23.1	-0.0260	0.979
vertical1	middle - high	-0.00990	0.00366	-0.01707	-0.00272	114.2	-2.7030	0.008
vertical2	low - high	-0.00353	0.00364	-0.01066	0.00360	114.1	-0.9698	0.334
symmetry1	sym - asym	-0.00735	0.00298	-0.01320	-0.00150	114.1	-2.4636	0.015
vertical1 ✻ symmetry1	middle - high ✻ sym - asym	0.00426	0.00732	-0.01009	0.01861	114.2	0.5821	0.562
vertical2 ✻ symmetry1	low - high ✻ sym - asym	-0.00290	0.00728	-0.01716	0.01136	114.1	-0.3987	0.691

Random Components

Groups	Name	SD	Variance	ICC
ppid	(Intercept)	0.0148	2.20e-4	0.410
Residual		0.0178	3.18e-4	

Anmerkung. Number of Obs: 143 , groups: ppid 24

Estimated Marginal Means

vertical

vertical	Mean	SE	df	95% Confidence Interval	
				Lower	Upper
high	0.00439	0.00398	42.9	-0.00363	0.01240
middle	-0.00551	0.00400	43.7	-0.01356	0.00255
low	8.58e-4	0.00398	42.9	-0.00716	0.00888

Anmerkung. Estimated means are estimated averaging across interacting variables

symmetry

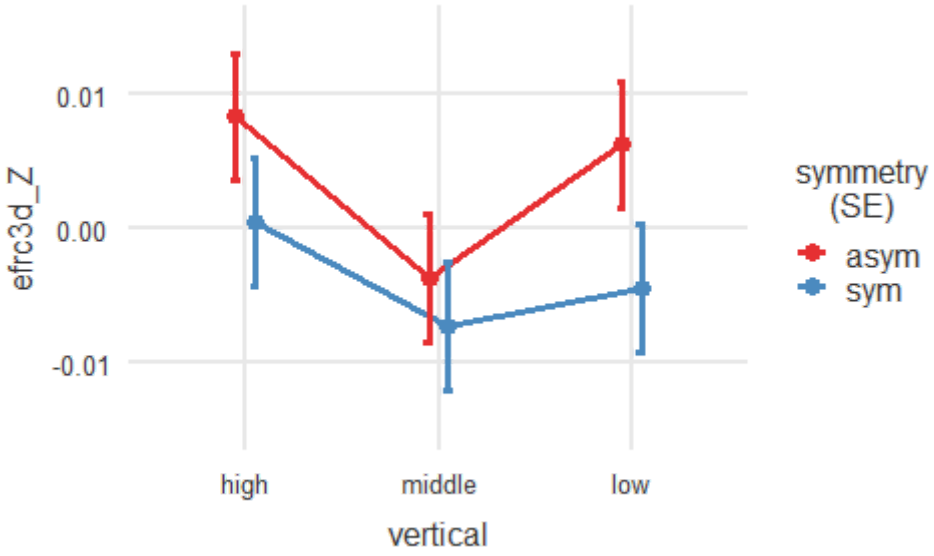
symmetry	Mean	SE	df	95% Confidence Interval	
				Lower	Upper
asym	0.00359	0.00370	32.8	-0.00394	0.01111
sym	-0.00376	0.00369	32.5	-0.01127	0.00374

Anmerkung. Estimated means are estimated averaging across interacting variables

symmetry:vertical

					95% Confidence Interval	
symmetry	**vertical**	**Mean**	**SE**	**df**	**Lower**	**Upper**
asym	high	0.00829	0.00474	74.9	-0.00114	0.01772
sym	high	4.85e-4	0.00474	74.9	-0.00895	0.00992
asym	middle	-0.00374	0.00480	77.6	-0.01331	0.00583
sym	middle	-0.00728	0.00474	74.9	-0.01671	0.00215
asym	low	0.00621	0.00474	74.9	-0.00322	0.01564
sym	low	-0.00449	0.00474	74.9	-0.01393	0.00494

Effects Plots



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[2] R Core Team (2022). *R: A Language and environment for statistical computing*. (Version 4.1) [Computer software]. Retrieved from https://cran.r-project.org. (R packages retrieved from CRAN snapshot 2023-04-07).

[3] Gallucci, M. (2019). *GAMLj: General analyses for linear models*. [jamovi module]. Retrieved from https://gamlj.github.io/.