

Pixel Stress Statistics Analysis

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1 Statistical Analysis Results

The following sections present the results for each dependent variable analyzed in the study.

1.1 Analysis for: rt_mean

1.1.1 Descriptive Statistics

group	stage	feedback	mean	sd
ctrl	end	above	483.672	101.524
ctrl	end	below	471.185	90.241
ctrl	end	close	478.211	96.810
ctrl	start	above	485.195	91.981
ctrl	start	below	474.770	100.478
ctrl	start	close	469.896	95.576
exp	end	above	450.332	89.388
exp	end	below	447.080	81.980
exp	end	close	429.404	82.561
exp	start	above	470.716	71.194
exp	start	below	445.647	80.072
exp	start	close	436.119	78.416

1.1.2 Mixed ANOVA Results

Effect	df1	df2	F	p (GG)	partial eta ²
group	1.000	63.000	2.217	0.142	0.034

stage	1.000	63.000	0.531	0.469	0.008
group:stage	1.000	63.000	0.877	0.353	0.014
feedback	1.778	112.004	14.334	0.000	0.185
group:feedback	1.778	112.004	3.318	0.045	0.050
stage:feedback	1.536	96.762	1.106	0.322	0.017
group:stage:feedback	1.536	96.762	1.141	0.312	0.018

Post hoc comparisons for feedback (significant main effect):

contrast	estimate	SE	df	t.ratio	p.value
above - below	12.809	4.151	63	3.086	0.009
above - close	19.071	3.629	63	5.256	0.000
below - close	6.263	3.026	63	2.070	0.128

1.1.3 Follow-up Analysis: 2-way Interactions

Significant 2-way interaction: group:feedback

Subset: group = ctrl

Effect	df1	df2	F	p (GG)	partial eta ²
stage	1.000	33.000	0.031	0.862	0.001
feedback	1.762	58.149	3.096	0.059	0.086
stage:feedback	1.573	51.898	0.508	0.561	0.015

No significant main effect of feedback — skipping post hoc tests.

Subset: group = exp

Effect	df1	df2	F	p (GG)	partial eta ²
stage	1.000	30.000	1.031	0.318	0.033
feedback	1.788	53.650	14.416	0.000	0.325
stage:feedback	1.447	43.396	1.952	0.164	0.061

Post hoc comparisons for feedback (significant main effect):

contrast	estimate	SE	df	t.ratio	p.value
above - below	14.161	5.827	30	2.430	0.064
above - close	27.762	5.297	30	5.241	0.000
below - close	13.602	4.265	30	3.189	0.010

1.2 Analysis for: accuracy

1.2.1 Descriptive Statistics

group	stage	feedback	mean	sd
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ctrl	end	above	0.894	0.058
ctrl	end	below	0.880	0.079
ctrl	end	close	0.902	0.043
ctrl	start	above	0.901	0.067
ctrl	start	below	0.891	0.065
ctrl	start	close	0.900	0.041
exp	end	above	0.884	0.060
exp	end	below	0.888	0.054
exp	end	close	0.906	0.042
exp	start	above	0.897	0.068
exp	start	below	0.879	0.074
exp	start	close	0.905	0.034

1.2.2 Mixed ANOVA Results

Effect	df1	df2	F	p (GG)	partial eta ²
group	1.000	63.000	0.041	0.840	0.001
stage	1.000	63.000	0.217	0.643	0.003
group:stage	1.000	63.000	0.099	0.754	0.002
feedback	1.852	116.651	5.059	0.009	0.074
group:feedback	1.852	116.651	0.449	0.624	0.007
stage:feedback	1.867	117.609	0.507	0.591	0.008
group:stage:feedback	1.867	117.609	0.686	0.496	0.011

Post hoc comparisons for feedback (significant main effect):

contrast	estimate	SE	df	t.ratio	p.value
above - below	0.009	0.007	63	1.389	0.509
above - close	-0.010	0.005	63	-1.831	0.215
below - close	-0.019	0.006	63	-3.257	0.005

1.2.3 Follow-up Analysis: 2-way Interactions

1.3 Analysis for: drift_rate

1.3.1 Descriptive Statistics

group	stage	feedback	mean	sd
ctrl	end	above	0.008	0.002
ctrl	end	below	0.007	0.002
ctrl	end	close	0.007	0.001
ctrl	start	above	0.008	0.002
ctrl	start	below	0.007	0.002
ctrl	start	close	0.008	0.001
exp	end	above	0.007	0.002
exp	end	below	0.007	0.002

exp	end	close	0.008	0.002
exp	start	above	0.008	0.002
exp	start	below	0.007	0.002
exp	start	close	0.008	0.001

1.3.2 Mixed ANOVA Results

Effect	df1	df2	F	p (GG)	partial eta ²
group	1.000	63.000	0.098	0.755	0.002
stage	1.000	63.000	0.085	0.771	0.001
group:stage	1.000	63.000	0.041	0.841	0.001
feedback	1.830	115.267	2.612	0.083	0.040
group:feedback	1.830	115.267	1.655	0.198	0.026
stage:feedback	1.871	117.858	0.011	0.986	0.000
group:stage:feedback	1.871	117.858	0.200	0.805	0.003

No significant main effect of feedback — skipping post hoc tests.

1.3.3 Follow-up Analysis: 2-way Interactions

1.4 Analysis for: boundary_seperation

1.4.1 Descriptive Statistics

group	stage	feedback	mean	sd
ctrl	end	above	3.086	0.600
ctrl	end	below	2.983	0.567
ctrl	end	close	3.168	0.566
ctrl	start	above	3.184	0.720
ctrl	start	below	3.119	0.607
ctrl	start	close	3.019	0.523
exp	end	above	2.947	0.498
exp	end	below	3.034	0.559
exp	end	close	2.958	0.560
exp	start	above	3.142	0.649
exp	start	below	2.995	0.625
exp	start	close	2.930	0.505

1.4.2 Mixed ANOVA Results

Effect	df1	df2	F	p (GG)	partial eta ²
group	1.000	63.000	0.644	0.425	0.010
stage	1.000	63.000	0.461	0.500	0.007
group:stage	1.000	63.000	0.018	0.895	0.000
feedback	1.757	110.711	1.316	0.271	0.020
group:feedback	1.757	110.711	0.741	0.463	0.012

stage:feedback	1.912	120.436	3.940	0.024	0.059
group:stage:feedback	1.912	120.436	1.938	0.150	0.030

No significant main effect of feedback — skipping post hoc tests.

1.4.3 Follow-up Analysis: 2-way Interactions

Significant 2-way interaction: stage:feedback

Subset: stage = end

Effect	df1	df2	F	p (GG)	partial eta ²
group	1.00	63.000	0.685	0.411	0.011
feedback	1.97	124.114	0.454	0.633	0.007
group:feedback	1.97	124.114	2.447	0.092	0.037

No significant main effect of feedback — skipping post hoc tests.

Subset: stage = start

Effect	df1	df2	F	p (GG)	partial eta ²
group	1.000	63.000	0.417	0.521	0.007
feedback	1.794	113.002	4.358	0.018	0.065
group:feedback	1.794	113.002	0.211	0.786	0.003

Post hoc comparisons for feedback (significant main effect):

contrast	estimate	SE	df	t.ratio	p.value
above - below	0.106	0.072	63	1.468	0.441
above - close	0.188	0.066	63	2.867	0.017
below - close	0.083	0.053	63	1.568	0.365

1.5 Analysis for: non_decision_time

1.5.1 Descriptive Statistics

group	stage	feedback	mean	sd
ctrl	end	above	312.449	67.807
ctrl	end	below	310.952	66.325
ctrl	end	close	300.035	62.414
ctrl	start	above	307.682	60.149
ctrl	start	below	301.171	67.495
ctrl	start	close	306.044	67.173
exp	end	above	288.944	62.414
exp	end	below	277.099	52.810
exp	end	close	272.628	41.355
exp	start	above	300.577	48.976

exp	start	below	280.867	54.418
exp	start	close	281.349	51.603

1.5.2 Mixed ANOVA Results

Effect	df1	df2	F	p (GG)	partial eta ²
group	1.000	63.000	3.088	0.084	0.047
stage	1.000	63.000	0.508	0.479	0.008
group:stage	1.000	63.000	2.230	0.140	0.034
feedback	1.857	116.983	7.318	0.001	0.104
group:feedback	1.857	116.983	1.810	0.171	0.028
stage:feedback	1.823	114.848	0.888	0.406	0.014
group:stage:feedback	1.823	114.848	0.422	0.638	0.007

Post hoc comparisons for feedback (significant main effect):

contrast	estimate	SE	df	t.ratio	p.value
above - below	9.890	3.873	63	2.553	0.039
above - close	12.399	3.200	63	3.875	0.001
below - close	2.509	3.161	63	0.794	1.000

1.5.3 Follow-up Analysis: 2-way Interactions

1.6 Analysis for: cnv_Fz

1.6.1 Descriptive Statistics

group	stage	feedback	mean	sd
ctrl	end	above	-0.661	2.344
ctrl	end	below	-0.456	1.884
ctrl	end	close	-0.434	1.963
ctrl	start	above	-0.632	1.513
ctrl	start	below	-0.281	1.932
ctrl	start	close	-0.729	1.979
exp	end	above	-1.423	2.031
exp	end	below	-1.340	1.714
exp	end	close	-1.648	1.679
exp	start	above	-1.335	1.578
exp	start	below	-1.216	2.213
exp	start	close	-1.523	1.862

1.6.2 Mixed ANOVA Results

Effect	df1	df2	F	p (GG)	partial eta ²
group	1.000	63.000	4.804	0.032	0.071
stage	1.000	63.000	0.103	0.749	0.002

group:stage	1.000	63.000	0.306	0.582	0.005
feedback	1.709	107.677	1.959	0.152	0.030
group:feedback	1.709	107.677	0.513	0.571	0.008
stage:feedback	1.827	115.075	0.437	0.629	0.007
group:stage:feedback	1.827	115.075	0.473	0.607	0.007

No significant main effect of feedback — skipping post hoc tests.

1.6.3 Follow-up Analysis: 2-way Interactions

1.7 Analysis for: cnv_Cz

1.7.1 Descriptive Statistics

group	stage	feedback	mean	sd
ctrl	end	above	-2.137	2.485
ctrl	end	below	-2.414	2.351
ctrl	end	close	-2.276	2.091
ctrl	start	above	-1.984	2.184
ctrl	start	below	-2.262	2.025
ctrl	start	close	-3.122	2.152
exp	end	above	-2.947	2.450
exp	end	below	-2.548	2.248
exp	end	close	-3.205	2.455
exp	start	above	-2.042	2.222
exp	start	below	-2.831	2.397
exp	start	close	-3.370	2.109

1.7.2 Mixed ANOVA Results

Effect	df1	df2	F	p (GG)	partial eta ²
group	1.000	63.000	0.885	0.350	0.014
stage	1.000	63.000	0.006	0.937	0.000
group:stage	1.000	63.000	0.895	0.348	0.014
feedback	1.851	116.628	13.125	0.000	0.172
group:feedback	1.851	116.628	0.358	0.683	0.006
stage:feedback	1.670	105.233	8.242	0.001	0.116
group:stage:feedback	1.670	105.233	3.390	0.046	0.051

Post hoc comparisons for feedback (significant main effect):

contrast	estimate	SE	df	t.ratio	p.value
above - below	0.236	0.161	63	1.468	0.441
above - close	0.716	0.135	63	5.307	0.000
below - close	0.479	0.129	63	3.713	0.001

1.7.3 Follow-up Analysis: 3-way Interaction

Significant 3-way interaction: running follow-up ANOVAs by group

1.7.3.1 Subset: group = ctrl

Effect	df1	df2	F	p (GG)	partial eta ²
stage	1.000	33.000	0.414	0.525	0.012
feedback	1.907	62.917	4.891	0.012	0.129
stage:feedback	1.734	57.215	4.854	0.015	0.128

Significant 2-way interaction: stage:feedback

Subset: stage = end

Effect	df1	df2	F	p (GG)	partial eta ²
feedback	1.73	57.074	0.455	0.608	0.014

No significant main effect of feedback — skipping post hoc tests.

Subset: stage = start

Effect	df1	df2	F	p (GG)	partial eta ²
feedback	1.939	63.992	10.369	0	0.239

Post hoc comparisons for feedback (significant main effect):

contrast	estimate	SE	df	t.ratio	p.value
above - below	0.278	0.283	33	0.985	0.996
above - close	1.138	0.249	33	4.574	0.000
below - close	0.860	0.249	33	3.457	0.005

1.7.3.2 Subset: group = exp

Effect	df1	df2	F	p (GG)	partial eta ²
stage	1.000	30.000	0.565	0.458	0.018
feedback	1.761	52.833	8.870	0.001	0.228
stage:feedback	1.580	47.389	7.012	0.004	0.189

Significant 2-way interaction: stage:feedback

Subset: stage = end

Effect	df1	df2	F	p (GG)	partial eta ²
feedback	1.785	53.55	3.222	0.053	0.097

No significant main effect of feedback — skipping post hoc tests.

Subset: stage = start

Effect	df1	df2	F	p (GG)	partial eta ²
feedback	1.532	45.967	12.735	0	0.298

Post hoc comparisons for feedback (significant main effect):

contrast	estimate	SE	df	t.ratio	p.value
above - below	0.789	0.324	30	2.436	0.063
above - close	1.328	0.259	30	5.125	0.000
below - close	0.539	0.195	30	2.760	0.029

1.8 Analysis for: mft_target_cross

1.8.1 Descriptive Statistics

group	stage	feedback	mean	sd
ctrl	end	above	1.585	1.372
ctrl	end	below	1.487	1.134
ctrl	end	close	1.535	1.335
ctrl	start	above	1.672	1.722
ctrl	start	below	1.460	1.483
ctrl	start	close	1.821	1.526
exp	end	above	2.288	1.138
exp	end	below	2.041	1.296
exp	end	close	2.376	1.103
exp	start	above	2.566	1.493
exp	start	below	2.219	1.334
exp	start	close	2.504	1.331

1.8.2 Mixed ANOVA Results

Effect	df1	df2	F	p (GG)	partial eta ²
group	1.000	63.000	5.349	0.024	0.078
stage	1.000	63.000	4.554	0.037	0.067
group:stage	1.000	63.000	0.297	0.587	0.005
feedback	1.892	119.184	12.324	0.000	0.164
group:feedback	1.892	119.184	0.842	0.428	0.013
stage:feedback	1.929	121.551	0.798	0.449	0.013
group:stage:feedback	1.929	121.551	1.718	0.185	0.027

Post hoc comparisons for feedback (significant main effect):

contrast	estimate	SE	df	t.ratio	p.value
above - below	0.226	0.063	63	3.595	0.002

above - close	-0.031	0.053	63	-0.577	1.000
below - close	-0.257	0.053	63	-4.879	0.000

1.8.3 Follow-up Analysis: 2-way Interactions

1.9 Analysis for: posterior_alpha_cti

1.9.1 Descriptive Statistics

group	stage	feedback	mean	sd
ctrl	end	above	-1.865	1.809
ctrl	end	below	-1.888	1.677
ctrl	end	close	-1.974	1.707
ctrl	start	above	-2.977	1.831
ctrl	start	below	-2.186	1.770
ctrl	start	close	-2.438	1.840
exp	end	above	-2.227	1.996
exp	end	below	-1.973	1.838
exp	end	close	-2.277	1.967
exp	start	above	-3.073	2.160
exp	start	below	-2.551	1.942
exp	start	close	-2.729	2.131

1.9.2 Mixed ANOVA Results

Effect	df1	df2	F	p (GG)	partial eta ²
group	1.000	63.000	0.305	0.583	0.005
stage	1.000	63.000	73.764	0.000	0.539
group:stage	1.000	63.000	0.000	0.996	0.000
feedback	1.671	105.263	21.844	0.000	0.257
group:feedback	1.671	105.263	0.235	0.751	0.004
stage:feedback	1.871	117.874	13.421	0.000	0.176
group:stage:feedback	1.871	117.874	2.667	0.077	0.041

Post hoc comparisons for feedback (significant main effect):

contrast	estimate	SE	df	t.ratio	p.value
above - below	-0.386	0.070	63	-5.520	0.000
above - close	-0.181	0.049	63	-3.716	0.001
below - close	0.205	0.055	63	3.754	0.001

1.9.3 Follow-up Analysis: 2-way Interactions

Significant 2-way interaction: stage:feedback

Subset: stage = end

Effect	df1	df2	F	p (GG)	partial eta ²
group	1.000	63.000	0.312	0.578	0.005
feedback	1.959	123.428	3.637	0.030	0.055
group:feedback	1.959	123.428	2.008	0.140	0.031

Post hoc comparisons for feedback (significant main effect):

contrast	estimate	SE	df	t.ratio	p.value
above - below	-0.116	0.076	63	-1.533	0.391
above - close	0.079	0.067	63	1.178	0.730
below - close	0.195	0.075	63	2.596	0.035

Subset: stage = start

Effect	df1	df2	F	p (GG)	partial eta ²
group	1.000	63.000	0.283	0.597	0.004
feedback	1.601	100.838	26.214	0.000	0.294
group:feedback	1.601	100.838	1.131	0.317	0.018

Post hoc comparisons for feedback (significant main effect):

contrast	estimate	SE	df	t.ratio	p.value
above - below	-0.657	0.113	63	-5.813	0.000
above - close	-0.442	0.084	63	-5.249	0.000
below - close	0.215	0.076	63	2.818	0.019