MOTOR SKILL ACQUISITION IN CHILDREN WITH LEARNING DIFFICULTIES AND THEIR CHRONOLOGICAL AND MENTAL AGE COUNTERPARTS

by

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VOLUME 2

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APPENDIX 1

Table A1.1: ANOVA TABLE FOR 3 (Group) x 4 (Practice Condition) x 4 (Trial Blocks),(Absolute Error)

Source	Sum of Squares	DF	Mean Square	F	Tail Probability
Mean	114165.11386	1	114165.11386	4022.33	0.0000
Group	2525.88734	2	1262.94367	44.50	0.0000
Practice	1048.31546	3	349.43849	12.31	0.0000
GP	343.57767	6	57.26295	2.02	0.0677
Error	3746.53152	132	28.38281		
Block	1876.54034	3	625.51345	39.83	0.0000
BG	320.75920	6	53.45987	3.40	0.0028
BP	252.08950	9	28.00994	1.78	0.0696
BGP	192.48167	18	10.69343	0.68	0.8307
Error	6219.01768	396	15.70459		

Table A1.2: Tukey HSD Test for differences between practice conditions on practice trials (AE)

	16.01	14.65	13.02	12.62
1. 16.01	---	1.36*	2.99**	3.39**
2. 14.65		---	1.63*	2.03**
3. 13.02			---	0.40
4. 12.62				---

$$HSD = q_{.01;\ 4,\ 132}\sqrt{\frac{28.38}{144}} = 4.50 \times 0.44 = 1.98$$

$$HSD = q_{.05;\ 4,\ 132}\sqrt{\frac{28.38}{144}} = 3.68 \times 0.44 = 1.62$$

** $p < .01$ * $p < .05$

Table A1.3: ANOVA TABLE, Trial Blocks & Group Interaction, Test for simple main effects (AE)

Source	SS	DF	MS	F	P
SS A_{B1}	1609.49	2	804.745	42.64	$<.01$
SS A_{B2}	290.19	2	145.095	7.69	$<.01$
SS A_{B3}	476.89	2	238.445	12.64	$<.01$
SS A_{B4}	470.49	2	235.245	12.47	$<.01$
Error (pooled)		132	18.87		
SS B_{A1}	259.70	3	86.560	5.51	$<.01$
SS B_{A2}	1123.54	3	374.513	23.85	$<.01$
SS B_{A3}	815.74	3	271.913	17.32	$<.01$
Error		396	15.70		

Table A1.4: Tukey HSD Test for differences between groups on trial Block 1 (AE)

		20.35	18.02	12.39
(MA)	20.35	---	2.33*	7.96**
(CA)	18.02	---	---	5.63**
(CLD)	12.39			---

$$\text{HSD} = q_{01;\ 3,\ 132} \sqrt{\frac{18.87}{48}} = 4.20 \times 0.63 = 2.65$$

$$\text{HSD} = q_{05;\ 3,\ 132} \sqrt{\frac{18.87}{48}} = 3.36 \times 0.63 = 2.12$$

$^{**}p < .01$ $^{*}p < .05$

Table A1.5: Tukey HSD Test for differences between groups on trial Block 2 (AE)

		15.85	14.64	12.42
(MA)	15.85	---	1.21	3.43**
(CA)	14.64		---	2.22*
(CLD)	12.42			---

$$\text{HSD} = q_{.01;\ 3,\ 132} \sqrt{\frac{18.87}{48}} = 2.65$$

$$\text{HSD} = q_{.05;\ 3,\ 132} \sqrt{\frac{18.87}{48}} = 2.12$$

$^{**}p < .01$ $^{*}p < .05$

Table A1.6: Tukey HSD Test for differences between groups on trial Block 3 (AE)

		14.97	13.14	10.54
(MA)	14.97	---	1.83	4.43**
(CA)	13.14		---	2.60*
(CLD)	10.54			---

$$HSD = q_{.01;\ 3,\ 132} \sqrt{\frac{18.87}{48}} = 2.65$$

$$HSD = q_{.05;\ 3,\ 132} \sqrt{\frac{18.87}{48}} = 2.12$$

* $p < .01$ ** $p < .05$

Table A1.7: Tukey HSD Test for difference between groups on trial Block 4 (AE)

		14.05	12.83	9.75
(MA)	14.05	---	1.22	4.30**
(CA)	12.83			3.08**
(CLD)	9.75			---

$$HSD = q_{.01;\ 3,\ 132} \sqrt{\frac{18.87}{48}} = 2.65$$

$$HSD = q_{.05;\ 3,\ 132} \sqrt{\frac{18.87}{48}} = 2.12$$

** $p < .01$

Table A1.8: Tukey HSD Test for differences between trial blocks for children with learning difficulties (AE)

		12.42	12.39	10.54	9.75
2	12.42	---	0.02	1.88	2.67**
1	12.39		---	1.85	2.64**
3	10.54			---	0.79
4	9.75				---

$$HSD = q_{.01;\ 4,\ 132}\sqrt{\frac{15.70}{48}} = 4.50 \times 0.57 = 2.57$$

$$HSD = q_{.05;\ 4,\ 132}\sqrt{\frac{15.70}{48}} = 3.68 \times 0.57 = 2.10$$

**p < .01

Table A1.9: Tukey HSD Test for differences between trial blocks for the group matched on mental age (AE)

		20.35	15.85	14.97	14.05
1	20.35	---	4.50**	5.38**	6.30**
2	15.85		---	0.28	1.80
3	14.97			---	0.92
4	14.05				---

$$HSD = q_{.01;\ 4,\ 132}\sqrt{\frac{15.70}{48}} = 4.50 \times 0.57 = 2.57$$

$$HSD = q_{.05;\ 4,\ 132}\sqrt{\frac{15.70}{48}} = 3.68 \times 0.57 = 2.10$$

**p < .01

Table A1.10: Tukey HSD Test for differences between trial blocks for the group matched on chronological age (AE)

		18.02	14.64	13.14	12.83
1	18.02	---	3.38**	4.88**	5.19**
2	14.64		---	1.50	2.21*
3	13.14			---	0.31
4	12.82				---

$$HSD = q_{.01;\ 4,\ 132}\sqrt{\frac{15.70}{48}} = 4.50 \times 0.57 = 2.57$$

$$HSD = q_{.05;\ 4,\ 132}\sqrt{\frac{15.70}{48}} = 3.68 \times 0.57 = 2.10$$

$^{**}p < .01$ $^{*}p < .05$

Table A1.11 <u>ANOVA TABLE for 3 (group) x 4 (practice condition) x 4 (trial blocks), constant error</u>

Source	Sum of Squares	d.f.	Mean Square	F	Trial Probability
Mean	1953.63977	1	1953.63977	16.92	0.0001
Group	1054.90877	2	527.45439	4.57	0.0121
Practice	1404.69825	3	468.23275	4.05	0.0086
GP	797.88672	6	132.98112	1.15	0.3363
Error	15243.02679	132	115.47748		
Blocks	133.31762	3	44.43921	1.39	0.2449
BG	460.63697	6	76.77283	2.40	0.0271
BP	212.90480	9	23.65609	0.74	0.6715
BGP	455.73242	18	25.31847	0.79	0.7094
Error	12647.25949	396	31.93752		

Table A1.12 Tukey HSD Test for differences between practice conditions during the practice trials (CE)

	-0.12	-0.48	-3.10	-3.67
(4) -0.12	---	0.36	2.98	3.55*
(3) -0.48		---	2.62	3.19
(1) -3.10			---	0.57
(2) -3.67				---

$$HSD = q_{.01;\ 4,\ 132}\sqrt{\frac{115.48}{144}} = 4.50 \times 0.9 = 4.05$$

$$HSD = q_{.05;\ 4,\ 132}\sqrt{\frac{115.48}{144}} = 3.68 \times 0.9 = 3.30$$

$^{*}p < .05$

Table A1.13: Anova table for trial blocks x group interaction, tests for simple main effects (CE)

Source	Sum of squares	d.f.	Mean square	F	P
SSA b1	268.115	2	134.0575	2.54	
SSA b2	462.383	2	231.1965	4.38	$< .05$
SSA b3	245.686	2	122.843	2.33	
SSA b4	203.907	2	102.9535	1.95	
Error (pooled)		132	52.825		
SSB a1	178.017	3	59.339	1.86	
SSB a2	285.423	3	95.141	2.98	$< .05$
SSB a_3	105.705	3	35.235	1.10	
Error		396	31.94		

Table A1.14: Tukey HSD Test for differences between groups on trial block 2 (CE)

	0.02	-2.84	-4.29
(CLD) 0.02	---	2.86	4.31*
(MA) -2.84		---	1.45
(CA) -4.29			---

$$HSD = q_{.01;\ 3,\ 132} \sqrt{\frac{58.82}{48}} = 4.20 \times 1.10 = 4.62$$

$$HSD = q_{.05;\ 3,\ 132} \sqrt{\frac{58.82}{48}} = 3.36 \times 1.10 = 3.70$$

$^{*}p < .05$

Table A1.15: Tukey HSD Test for differences between trial blocks by MA match group (CE)

	0.55	-0.69	-0.75	-2.84
(1) 0.55	-	1.24	1.30	3.39*
(4)-0.69		-	0.06	2.15
(3)-0.75			-	2.09
(2)-2.84				-

$$HSD = q_{.01;\ 4,\ 132} \sqrt{\frac{31.94}{48}} = 4.50 \times 0.82 = 3.69$$

$$HSD = q_{.05;\ 4,\ 132} \sqrt{\frac{31.94}{48}} = 3.68 \times 0.82 = 3.00$$

$^{*}p < .05$

Table A1.16: ANOVA TABLE for 3 (group) x 4 (practice condition) x 4 (trial blocks) (VE)

Source	Sum of squares	of	Mean square	F	Tail probability
Mean	149371.88267	1	149371.88267	4122.38	0.0000
Group	4075.42951	2	2037.71475	56.24	0.0000
Practice	1869.89111	3	623.29704	17.20	0.0000
GP	316.23587	6	52.70598	1.45	0.1987
Error	4782.93309	132	36.23434		
Blocks	1777.39546	3	592.46515	28.65	0.0000
BG	299.93605	6	49.98934	2.42	0.0263
BP	279.10124	9	31.01125	1.50	0.1458
BGP	394.76027	18	21.93113	1.06	0.3907
Error	8188.52109	396	20.67808		

Table A1.17: Tukey HSD test for differences between practice conditions during practice trials (VE)

	18.79	16.69	14.46	14.46
(1) 18.79	-	2.10*	4.33**	4.33**
(2) 16.69		-	2.23*	2.23*
(3) 14.46			-	0.00
(4) 14.46				-

$$HSD = q_{.01;\ 4,\ 132} \sqrt{\frac{36.23}{144}} = 4.50 \times 0.50 = 2.25$$

$$HSD = q_{.05;\ 4,\ 132} \sqrt{\frac{36.23}{144}} = 3.68 \times 0.50 = 1.84$$

$^{**}p < .01$ $\quad$ $^{*}p < .05$

Table A1.18: Anova table, trial x group interaction, tests for simple main effects (VE)

Source	Sum of squares	d.f.	Mean square	F	P
SSA b1	2058.71	2	1029.305	41.88	< .01
SSA b2	562.33	2	281.265	11.45	< .01
SSA b3	959.73	2	479.865	19.53	< .01
SSA b4	791.93	2	395.965	16.12	< .01
Error		132	24.57		
SSB a1	228.66	3	76.33	3.69	< .05
SSB a2	994.95	3	331.65	16.04	< .01
SSB a3	852.82	3	284.273	13.75	< .01
Error		396	20.68		

Table A1.19: Tukey HSD test for differences between groups on trial block 1 (VE)

	22.92	19.88	13.83
(MA) 22.92	-	3.04**	9.09**
(CA) 19.88		-	6.05**
(CLD) 13.83			-

$$HSD = q_{.01;\ 3,\ 132} \sqrt{\frac{24.57}{48}} = 4.20 \times 0.72 = 3.00$$

**p <.01

Table A1.20 Tukey HSD Test for differences between groups on trial block 2 (VE)

	18.21	17.01	13.55
(MA) 18.21	---	1.20	4.66**
(CA) 17.01		---	3.46**
(CLD)13.55			-

$$HSD = q_{.01;\ 3,\ 132} \sqrt{\frac{24.57}{48}} = 4.20 \times 0.72 = 3.00$$

$$HSD = q_{.05;\ 3,\ 132} \sqrt{\frac{24.57}{48}} = 3.36 \times 0.72 = 2.42$$

**p <.01

Table A1.21 Tukey HSD Test for differences between groups on trial block 3 (VE)

	18.18	15.12	11.85
(MA) 18.18	-	3.06**	6.33**
(CA) 15.12		---	3.27**
(CLD) 11.85			---

$$HSD = q_{.01;\ 3,\ 132} \sqrt{\frac{24.57}{48}} = 4.20 \times 0.72 = 3.00$$

$^{**}p < .01$

Table A1.22: Tukey HSD Test for differences between groups on trial block 4 (VE)

	16.99	14.44	11.26
(MA) 16.99	---	2.55*	5.73**
(CA) 14.44		---	3.18**
(CLD) 11.26			---

$$HSD = q_{.01;\ 3,\ 132} \sqrt{\frac{24.57}{48}} = 4.20 \times 0.72 = 3.00$$

$$HSD = q_{.05,\ 3,\ 132} \sqrt{\frac{24.57}{48}} = 3.36 \times 0.72 = 2.42$$

$^{**}p < .01$ $^{*}p < .05$

Table A1.23: Tukey HSD Test for differences between trial blocks for children with learning difficulties (VE)

	13.82	13.55	11.85	11.26
(1) 13.82	---	0.27	1.97	2.56*
(2) 13.55		---	1.70	2.29
(3) 11.85			---	0.59
(4) 11.26				---

$$HSD = q_{.01,\ 4,\ 396} \sqrt{\frac{20.68}{48}} = 4.50 \times 0.66 = 2.97$$

$$HSD = q_{.05,\ 4,\ 396} \sqrt{\frac{20.68}{48}} = 3.68 \times 0.66 = 2.43$$

$^{*}p < .05$

Table A1.24: Tukey HSD Test for differences between trial blocks for the mental age matched group (VE)

	22.92	18.21	18.18	16.99
(1) 22.92	---	3.71**	4.74**	5.93**
(2) 18.21		---	0.03	1.22
(3) 18.18			---	1.19
(4) 16.99				---

$$HSD = q_{.01,\ 4,\ 396} \sqrt{\frac{20.68}{48}} = 4.50 \times 0.66 = 2.97$$

$$HSD = q_{.05,\ 4,\ 396} \sqrt{\frac{20.68}{48}} = 3.68 \times 0.66 = 2.43$$

$^{**}p < .01$

Table A1.25: Tukey HSD Test for differences between trial blocks for the chronological age matched group (VE)

	19.88	17.01	15.12	14.44
(1) 19.88	---	2.87*	4.76**	5.44**
(2) 17.01		---	1.89	2.57*
(3) 15.12			---	0.68
(4) 14.44				---

$$HSD = q_{.01,\ 4,\ 396}\sqrt{\frac{20.68}{48}} = 4.50 \times 0.66 = 2.97$$

$$HSD = q_{.05,\ 4,\ 396}\sqrt{\frac{20.68}{48}} = 3.68 \times 0.66 = 2.43$$

$^{**}p < .01$ $\quad$ $^{*}p < .05$

Table A1.26: <u>ANOVA TABLE transfer target 1, Trials 1-5, 6-10 (AE)</u>

Source	Sum of squares	DF	Mean Square	F	Tail Probability
Mean	64120.76863	1	64120.76862	1247.26	0.0000
Group	22.18884	2	11.09442	0.22	0.8062
Product	528.92137	3	176.30712	3.43	0.0190
GP	962.17535	6	160.36256	3.12	0.0069
Error	6786.02659	132	51.40929		
Blocks	21.07092	1	21.07092	0.47	0.4959
BG	63.06804	2	31.53402	0.70	0.4994
BP	31.91980	3	10.63993	0.24	0.8715
BGP	235.58656	6	39.26443	0.87	0.5196
Error	5963.93709	132	45.18134		

Table A1.27: ANOVA TABLE, Group and Practice Interaction on Transfer target 1, Test for Simple Main Effects (AE)

Source	Sum of squares	DF	Mean Square	F	P
SSA_{c1}	185.41	2	92.705	1.80	
SSA_{c2}	192.84	2	96.420	1.88	
SSA_{c3}	201.69	2	100.845	1.96	
SSA_{c4}	404.04	2	202.020	3.93	$< .05$
Error		132	51.409		
SSc_{A1}	1398.06	3	466.020	9.07	$< .01$
SSc_{A2}	473.86	3	157.953	3.07	$< .05$
SSc_{A3}	117.28	3	39.093	0.76	
Error		132	51.409		

Table A1.28: Tukey HSD Test for differences between groups for practice condition 4 at Transfer Target 1 (AE)

	19.29	16.54	13.48
(CLD) 19.29	---	2.75	5.81*
(CA) 16.54		---	3.06
(MA) 13.48			---

$$HSD = q_{.01,\ 3,\ 132} \sqrt{\frac{51.40}{24}} = 4.20 \times 1.46 = 6.15$$

$$HSD = q_{.05,\ 3,\ 132} \sqrt{\frac{51.40}{24}} = 3.36 \times 1.46 = 4.91$$

$^{*}p < .05$

Table A1.29: Tukey HSD Test for differences between practice conditions for children with learning difficulties at transfer target 1 (AE)

	19.29	14.62	14.08	10.71
(4) 19.29	---	4.67	5.21	8.58**
(1) 14.62		---	0.54	3.91
(2) 14.08			---	3.37
(3) 10.71				---

$$HSD = q_{.01,\ 4,\ 132} \sqrt{\frac{51.40}{24}} = 4.50 \times 1.46 = 6.57$$

$$HSD = q_{.05,\ 4,\ 132} \sqrt{\frac{51.40}{24}} = 3.68 \times 1.46 = 5.37$$

$^{*}p < .01$

Table A1.30: Tukey HSD Test for differences between practice conditions for the mental age matched group at transfer target 1 (AE)

		17.64	17.37	13.49	12.71
(1)	17.64	---	0.27	4.15	4.93
(2)	17.37		----	3.88	4.66
(4)	13.49			----	0.78
(3)	12.71				---

$$HSD = q_{.01,\ 4,\ 132} \sqrt{\frac{51.40}{24}} = 4.50 \times 1.46 = 6.57$$

$$HSD = q_{.05,\ 4,\ 132} \sqrt{\frac{51.40}{24}} = 3.68 \times 1.46 = 5.37$$

Table A1.31: Fisher LSD test for differences between practice conditions for the mental age matched group at transfer 1 (AE)

	17.64	17.37	13.49	12.71
(1) 17.64	---	0.27	4.15*	4.93*
(2) 17.37		---	3.88	4.66*
(4) 13.49			---	0.78
(3) 12.71				---

$$LSD = t_{.01/132} \sqrt{\frac{2(51.40)}{24}} = 2.62 \times 2.07 = 5.42$$

$$LSD = t_{.05/132} \sqrt{\frac{2(51.40)}{24}} = 1.98 \times 2.07 = 4.10$$

$^{*}p < .05$

Table A1.32: <u>ANOVA TABLE for 3 (group) x 4 (practice condition) x 2 (blocks), anova at transfer target 1, (CE)</u>

Source	Sum of squares	DF	Mean square	F	Tail probability
Mean	15379.65227	1	15379.65227	123.54	0.0000
Group	1048.61677	2	524.30838	4.21	0.0169
Practice	140.40816	3	46.80272	0.38	0.7705
GP	703.63597	6	117.27266	0.94	0.4674
Error	16433.13621	132	124.49346		
Blocks	19.11685	1	19.11685	0.37	0.5459
BG	24.061194	2	12.03097	0.23	0.7942
BP	245.35259	3	81.78420	1.57	0.2000
BGP	95.03366	6	15.83894	0.30	0.9340
Error	6881.89265	132	52.13555		

Table A1.33: Tukey HSD Test for differences between groups at transfer target 1 (CE)

	-9.37	-7.78	-4.77
(CA) -9.37	---	1.59	4.60*
(CLD)-7.78		---	3.01
(MA) -4.77			---

$$HSD = q_{.01,\ 3,\ 132} \sqrt{\frac{124.49}{96}} = 4.20 \times 1.14 = 4.79$$

$$HSD = q_{.05,\ 3,\ 132} \sqrt{\frac{124.49}{96}} = 3.36 \times 1.14 = 3.38$$

*p < .05

Table A1.34: ANOVA TABLE for 3 (group) x 4 (practice condition) x 2 (blocks) anova, transfer target 1 (VE)

Source	Sum of Squares	d.f.	Mean Square	F	Tail Probability
Mean	43874.85682	1	43874.85682	1114.28	0.0000
Group	439.11005	2	219.55503	5.58	0.0047
Practice	73.87352	3	24.62451	0.63	0.5998
GP	228.11407	6	38.01901	0.97	0.4512
Error	5197.49552	132	39.37497		
Blocks	58.88839	1	58.88839	2.09	0.1510
BG	83.95508	2	41.97754	1.49	0.2298
BP	146.74860	3	48.91620	1.73	0.1634
BGP	123.76376	6	20.62729	0.73	0.6257
Error	3726.16218	132	28.22850		

Table A1.35: Tukey HSD Test for differences between groups at transfer target 1 (VE)

	13.91	12.23	10.89
(MA) 13.91	---	1.68	3.02**
(CA) 12.23		----	1.34
(CLD) 10.89			----

$$HSD = q_{.01,\ 3,\ 132} \sqrt{\frac{39.37}{96}} = 4.20 \times 0.64 = 2.69$$

$$HSD = q_{.05,\ 3,\ 132} \sqrt{\frac{39.67}{96}} = 3.36 \times 0.64 = 2.15$$

**$p < .01$

Table A1.36: <u>Table for 3 (group) x 4 (practice condition) anova on the first trial at transfer target 1 (AE)</u>

Source	Sum of Squares	d.f.	Mean Square	F	Tail probability
Mean	39634.17361	1	39634.17361	296.24	0.0000
Group	73.09722	2	36.54861	0.27	0.7614
Practice	125.90972	3	41.96991	0.31	0.8154
GP	309.73611	6	51.62269	0.39	0.8870
Error	17660.08333	132	133.78851		

Table A1.37: Table for 3 (group) x 4 (practice conditon) anova on the first trial at transfer target 1 (CE)

Source	Sum of Squares	d.f.	Mean Square	F	Tail probability
Mean	8387.50694	1	8387.50694	25.14	0.0000
Group	3309.43056	2	1654.71528	4.98	0.0082
Practice	442.68750	3	147.56250	0.44	0.7219
GP	1802.62500	6	300.43750	0.90	0.4941
Error	43860.75000	132	332.27841		

Table A1.38: Tukey HSD test for differences between groups on the first error score at transfer target 1 (CE)

		-13.33	-7.96	-1.60
(CA)	-13.33	----	5.37	11.73**
(CLD)	- 7.96		----	6.36
(MA)	- 1.60			----

$$HSD = q_{.01,\ 3,\ 132} \sqrt{\frac{332.28}{48}} = 4.20 \times 2.63 = 11.05$$

$$HSD = q_{.05,\ 3,\ 132} \sqrt{\frac{332.28}{48}} = 3.36 \times 2.63 = 8.84$$

** $p < .01$

Table A1.39: Table for 3 (group) x 4 (practice condition) x 2 (blocks) anova at transfer target 2 (AE)

Source	Sum of Squares	d.f.	Mean Square	F	Tail probability
Mean	289103.97105	1	289103.97105	1417.00	0.0000
Group	1253.58967	2	626.79484	3.07	0.0496
Practice	270.92754	3	90.30918	0.44	0.7229
GP	1286.29548	6	214.38258	1.05	0.3957
Error	26931.26172	132	204.02471		
Blocks	302.17042	1	302.17042	4.37	0.0385
BG	206.06852	2	103.03426	1.49	0.2291
BP	20.41600	3	6.80533	0.10	0.9608
BGP	249.76021	6	41.62670	0.60	0.7283
Error	9126.52342	132	69.14033		

Table A1.40: Tukey HSD Test for differences between groups on transfer target 2 (AE)

	34.63	30.35	30.06
(MA) 34.63	----	4.28	4.59
(CLD) 30.35		----	0.29
(CA) 30.06			----

$$HSD = q_{.01,\ 3,\ 132}\sqrt{\frac{204.02}{96}} = 4.20 \times 1.46 = 6.13$$

$$HSD = q_{.05,\ 3,\ 132}\sqrt{\frac{204.02}{96}} = 3.36 \times 1.46 = 4.91$$

Table A1.41: LSD Test for differences between groups on transfer target 2 (AE)

	34.63	30.35	30.06
(MA) 34.63	----	4.28*	4.59*
(CLD) 30.35		----	0.29
(CA) 30.06			----

$$LSD = t_{.01/132}\sqrt{\frac{2(204.02)}{96}} = 2.58 \times 2.06 = 5.31$$

$$LSD = t_{.05/132}\sqrt{\frac{2(204.02)}{96}} = 1.96 \times 2.06 = 4.04$$

$^{*}p < .05$

Table A1.42: Performance at transfer target 2, of all groups and practice conditions over trial blocks (AE)

		Practice Condition 1	Practice Condition 2	Practice Condition 3	Practice Condition 4
CLD	B_1	29.08	36.57	29.45	32.62
	B_2	28.20	29.78	26.05	31.07
MA	B_1	36.97	33.87	33.30	33.70
	B_2	36.70	37.98	30.83	33.68
CA	B_1	28.78	29.75	33.52	34.88
	B_2	25.17	25.60	30.93	31.90

Table A1.43: Table for 3 (groups) x 4 (practice conditions) x 2 (blocks) anova at transfer target 2 (CE)

Source	Sum of Squares	d.f.	Mean Square	F	Tail Probability
Mean	175710.79932	1	175710.79932	433.66	0.0000
Group	602.79435	2	301.39718	0.74	0.4773
Practice	465.39291	3	155.13097	0.38	0.7655
GP	3389.39650	6	564.89942	1.39	0.2216
Error	53483.54544	132	405.17837		
Blocks	1284.82289	1	1284.82289	11.57	0.0009
BG	268.47080	2	134.23540	1.21	0.3018
BP	581.06531	3	193.68844	1.74	0.1611
BGP	613.64629	6	102.27438	0.92	0.4821
Error	14658.39440	132	111.04844		

Table A1.44: Error scores at transfer target 2, of all groups and practice conditions, over trial blocks (CE)

		Practice Condition 1	Practice Condition 2	Practice Condition 3	Practice Condition 4
CLD	B_1	-16.25	-33.90	-24.67	-26.10
	B_2	-20.97	-24.52	-20.78	-22.96
MA	B_1	-33.60	-22.10	-29.50	-27.37
	B_2	-29.73	-22.42	-24.27	-24.97
CA	B_1	-19.15	-27.25	-29.15	-32.72
	B_2	-19.33	-15.40	-19.72	-26.00

Table A1.45: Table for 3 (group) x 4 (practice condition) x 2 (blocks) anova on transfer target 2 (VE)

Source	Sum of Squares	d.f.	Mean Square	F	Tail Probability
Mean	130142.17571	1	130142.17571	1181.60	0.0000
Group	621.85363	2	310.92681	2.82	0.0630
Practice	94.99222	3	31.66407	0.29	0.8344
GP	752.79883	6	125.46647	1.14	0.3432
Error	14538.55879	132	110.14060		
Blocks	146.16206	1	146.16206	1.85	0.1757
BG	62.75006	2	31.37503	0.40	0.6725
BP	153.51752	3	51.17251	0.65	0.5849
BGP	385.05527	6	64.17588	0.81	0.5609
Error	10407.43915	132	78.84424		

Table A1.46: Means for all groups and practice conditions over trial blocks on transfer target 2 (VE)

Group		Practice Condition 1	Practice Condition 2	Practice Condition 3	Practice Condition 4
CLD	B_1	21.24	17.72	16.93	18.31
	B_2	20.28	19.56	17.80	22.23
MA	B_1	18.89	22.66	20.14	24.05
	B_2	22.95	27.70	22.77	22.72
CA	B_1	25.45	21.83	21.88	17.33
	B_2	19.53	23.29	25.54	19.28

Table A1.47: Table for 3 (group) x 4 (Practice condition) anova on 2nd transfer target 1st trial (AE)

Source	Sum of Squares	d.f.	Mean Square	F	Tail probability
Mean	148481.77778	1	148481.77778	369.71	0.0000
Group	1603.01389	2	801.50694	2.00	0.1400
Practice	900.72222	3	300.24074	0.75	0.5256
GP	2345.15278	6	390.85880	0.97	0.4460
Error	53013.33333	132	401.61616		

Table A1.48: Means for all groups and practice conditions on the 1st trial, transfer target 2 (AE)

Group	Practice Condition 1	Practice Condition 2	Practice Condition 3	Practice Condition 4
CLD	24.75	27.75	24.83	35.58
MA	31.92	40.42	32.00	22.58
CA	33.17	40.67	34.42	37.25

Table A1.49: *Table for 3 (group) x 4 (practice condition) anova on 1st trial, transfer target 2 (CE)*

Source	Sum of Squares	d.f.	Mean Squares	F	Tail probability
Mean	76452.25000	1	76452.25000	82.17	0.0000
Group	259.62500	2	129.81250	0.14	0.8699
Practice	2974.58333	3	991.52778	1.07	0.3660
GP	3841.20833	6	640.20139	0.69	0.0596
Error	122816.33333	132	930.42677		

Table A1.50: Means for all groups and practice conditions on trial 1, transfer target 2 (CE)

Group	Practice Condition 1	Practice Condition 2	Practice Condition 3	Practice Condition 4
CLD	-15.58	-23.42	-21.33	-24.25
MA	-24.42	-28.25	-29.00	-13.92
CA	-9.83	-36.33	-21.75	-28.42

Table A1.51: Means for all groups and practice conditions over trial blocks on transfer target 1 (AE)

Group	Practice Condition 1	Practice Condition 2	Practice Condition 3	Practice Condition 4
CLD B_1	13.08	15.02	11.40	21.77
B_2	16.25	13.15	10.02	16.83
MA B_1	18.08	16.05	12.23	13.32
B_2	17.22	18.71	13.20	13.68
CA B_1	14.47	14.60	16.00	16.28
B_2	13.42	12.90	13.62	16.82

Table A1.52: Means for all groups and practice conditions over trial blocks, on transfer target 1 (CE)

Group	Practice Condition 1	Practice Condition 2	Practice Condition 3	Practice Condition 4
CLD B_1	-8.52	-10.75	-5.05	-7.27
B_2	-9.38	-7.18	-6.52	-7.57
MA B_1	-5.32	-8.15	-2.92	-2.68
B_2	-4.28	-3.63	-5.43	-5.75
CA B_1	-7.07	-9.00	-10.55	-13.52
B_2	-6.47	-6.28	-8.75	-13.35

Table A1.53: Means for all groups and practice conditions over trial blocks, on transfer target 1 (VE)

Group	Practice Condition 1	Practice Condition 2	Practice Condition 3	Practice Condition 4
CLD B_1	9.62	10.38	10.12	11.76
B_2	12.96	10.96	8.97	12.36
MA B_1	13.85	13.04	12.12	12.11
B_2	15.26	18.35	13.81	12.73
CA B_1	13.50	9.98	14.54	11.66
B_2	13.13	12.39	10.51	12.10

Table A1.54: Mean error for all groups and practice conditions on the 1st attempt at transfer target 1 (CE)

Group	Practice Condition 1	Practice Condition 2	Practice Condition 3	Practice Condition 4
CLD	-3.17	-10.42	-8.42	-9.83
MA	-6.08	1.50	-7.08	5.25
CA	-8.17	-12.25	-16.08	-16.83

Table A1.55: Standard Deviations of group scores for transfer target 2, 1st trial (AE)

Group	Practice Condition 1	Practice Condition 2	Practice Condition 3	Practice Condition 4
CLD	13.78	18.05	11.20	20.17
MA	22.96	26.19	25.65	14.75
CA	17.47	22.31	24.71	16.41

Table A1.56: *Standard deviations of group scores for transfer target 2, 1st trial (CE)*

Group	Practice Condition 1	Practice Condition 2	Practice Condition 3	Practice Condition 4
CLD	24.36	23.82	17.37	33.86
MA	31.44	39.97	29.28	23.72
CA	37.41	29.36	37.23	30.03

APPENDIX 2

Table A2.1: Table for 3 (group) x 4 (practice condition) x 4 (trial blocks) ANOVA with repeated measures on the last factor (AE)

Source	Sum of Squares	d.f.	Mean Square	F	Tail probability
Mean	325968.77785	1	325968.77785	1205.41	0.0000
Group	6196.02818	2	3098.01409	11.46	0.0000
Practice	3359.52412	3	1119.84137	4.14	0.0081
GP	275.81998	6	45.97000	0.17	0.9843
Error	29205.44975	108	270.42083		
Blocks	3736.00846	3	1245.33615	17.69	0.0000
BG	526.48214	6	87.74702	1.25	0.2820
BP	107.46147	9	11.94016	0.17	0.9968
BGP	516.78717	18	28.71040	0.41	0.9859
Error	22802.88515	324	70.37928		

Table A2.2: Tukey HSD test for differences between groups during the practice trials (AE)

	30.92	24.89	22.30
MA 30.92	----	6.03**	8.56**
CLD 24.89		----	2.53
CA 22.30			----

$$HSD = q_{.01,\ 3,\ 108} \sqrt{\frac{270.42}{160}} = 4.22 \times 1.30 = 5.49$$

$$HSD = q_{.05,\ 3,\ 108} \sqrt{\frac{270.42}{160}} = 3.37 \times 1.30 = 4.38$$

$^{**}p < .01$

Table A2.3: Tukey HSD test for differences between practice conditions during the practice trials (AE)

	30.37	26.08	24.01	23.77
1. 30.37	----	4.29	6.36*	6.60*
2. 26.08		----	2.07	2.31
4. 24.01			----	0.24
3. 23.77				----

$$HSD = q_{.01,\ 4,\ 108} \sqrt{\frac{270.42}{120}} = 4.52 \times 1.50 = 6.78$$

$$HSD = q_{.05,\ 4,\ 108} \sqrt{\frac{270.42}{120}} = 3.69 \times 1.50 = 5.53$$

$^{*}p < .05$

Table A2.4: Tukey HSD test for differences between trial blocks (AE)

	30.86	24.74	24.68	23.96
1. 30.86	--	6.12**	6.18**	6.90**
2. 24.74		--	0.06	0.78
3. 24.68			--	0.72
4. 23.96				--

$$HSD = q_{.01,\ 4,\ 324} \sqrt{\frac{79.38}{120}} = 4.12 \times 0.77 = 3.17$$

$$HSD = q_{.05,\ 4,\ 324} \frac{79.38}{120} = 3.31 \times 0.77 = 2.55$$

**p <.01

Table A2.5: Table for 3 (group) x 4 (practice condition) x 4 (blocks) ANOVA with repeated measures on the last factor (CE)

Source	Sum of Squares	d.f.	Mean Square	F	Tail Probability
Mean	75684.02625	1	75684.02625	212.09	0.0000
Group	950.54949	2	475.27475	1.33	0.2683
Practice	1358.68450	3	452.89483	1.27	0.2887
GP	1922.20901	6	320.36817	0.90	0.4994
Error	38538.75568	108	356.84033		
Blocks	4458.78012	3	1486.26004	14.04	0.0000
BG	546.51438	6	91.08573	0.86	0.5241
BP	878.50641	9	97.61182	0.92	0.5057
BGP	1285.23007	18	71.40167	0.67	0.8359
Error	34286.21769	324	105.82166		

Table A2.6: Tukey HSD Test for differences between trial blocks (CE)

	-17.82	-11.16	-10.65	-10.58
1. -17.82	--	6.66**	7.17**	7.24**
4. -11.16		--	0.51	0.58
2. -10.65			--	0.07
3. -10.58				--

$$HSD = q_{.01,\ 4,\ 324} \sqrt{\frac{105.82}{120}} = 4.12 \times 0.94 = 3.87$$

$$HSD = q_{.05,\ 4,\ 324} \sqrt{\frac{105.82}{120}} = 3.31 \times 0.94 = 3.11$$

$^{**}p < .01$

Table A2.7: Table for 3 (group) x 4 (practice condition) x 4 (trial blocks) Anova with repeated measures on the last factor (VE)

Source	Sum of Squares	d.f.	Mean Square	F	Tail Probability
Mean	343545.80296	1	343545.80296	2345.44	0.0000
Group	7764.39223	2	3882.19611	26.50	0.0000
Practice	1797.14751	3	599.04917	4.09	0.0086
GP	180.31938	6	30.05323	0.21	0.9745
Error	15819.18853	108	146.47397		
Blocks	1137.57343	3	379.19114	6.26	0.0004
BG	365.06958	6	60.84493	1.01	0.4219
BP	681.82246	9	75.75805	1.25	0.2629
BGP	596.18826	18	33.12157	0.55	0.9339
Error	19614.96630	324	60.54002		

Table A2.8: Tukey HSD Test for differences between the 3 groups during practice trials (VE)

	32.41	24.37	23.46
MA 32.41	--	8.04**	8.95**
CLD 24.37		--	0.91
CA 23.46			--

$$HSD = q_{.01,\ 3,\ 108} \sqrt{\frac{146.47}{160}} = 4.22 \times 0.96 = 4.05$$

$$HSD = q_{.05,\ 3,\ 108} \sqrt{\frac{146.47}{160}} = 3.37 \times 0.96 = 3.24$$

$^{**}p < .01$

Table A2.9: Tukey HSD Test for differences between practice conditions during practice trials (VE)

	29.11	28.17	25.26	24.48
1. 29.11	--	0.94	3.85	4.63*
2. 28.17		--	2.91	3.69
4. 25.26			--	0.78
3. 24.48				--

$$HSD = q_{.01,\ 4,\ 108} \sqrt{\frac{146.47}{120}} = 4.52 \times 1.10 = 4.97$$

$$HSD = q_{.05,\ 4,\ 108} \sqrt{\frac{146.47}{120}} = 3.69 \times 1.10 = 4.06$$

$^{*}p < .05$

Table A2.10: Tukey HSD Test for differences between trial blocks (VE)

	29.39	26.13	25.96	25.54
1. 29.39	--	3.26**	3.43**	3.85**
2. 26.13		--	0.17	0.59
3. 25.96				0.42
4. 25.54				--

$$HSD = q_{.01,\ 4,\ 324} \sqrt{\frac{60.54}{120}} = 4.12 \times 0.71 = 2.93$$

$$HSD = q_{.05,\ 4,\ 324} \sqrt{\frac{60.54}{120}} = 3.31 \times 0.71 = 2.35$$

**p < .01

Table A2.11: Table for 3 (group) x 4 (practice condition) x 2 (blocks) anova for transfer distance 1, trials 1-5, 6-10 with repeated measures on the last factor (AE)

Source	Sum of Squares	d.f.	Mean Square	F	Tail probability
Mean	114498.34102	1	114498.34102	1119.31	0.0000
Group	2724.00072	2	1362.00036	13.31	0.0000
Practice	274.73304	3	97.57768	0.90	0.4462
GP	573.49244	6	95.58207	0.93	0.4735
Error	11047.74681	108	102.29395		
Blocks	157.95024	1	157.95024	2.53	0.1147
BG	172.50030	2	86.25015	1.38	0.2558
BP	278.07034	3	92.69011	1.48	0.2231
BGP	214.41528	6	35.73588	0.57	0.7518
Error	6746.78661	108	62.47025		

Table A2.12: Tukey HSD test for differences between groups at Transfer Distance 1, Trials 1-5, 6-10 (AE)

	26.42	20.68	18.42
MA 26.42	----	5.74**	8.00**
CLD 20.68		----	2.26
CA 18.42			----

$$HSD = q_{.01,\ 3,\ 108} \sqrt{\frac{102.29}{80}} = 4.22 \times 1.13 = 4.77$$

$$HSD = q_{.05,\ 3,\ 108} \sqrt{\frac{102.29}{80}} = 3.81 \times 1.13 = 4.31$$

** $p < .01$

Table A2.13 Table for 3 (groups) x 4 (practice condition) x 2 (blocks) anova for transfer distance 1, trials 1-5, 6-10 with repeated measures on the last factor (CE)

Source	Sum of Squares	d.f.	Mean Square	F	Tail probability
Mean	27441.22060	1	27441.22060	155.27	0.0000
Group	1843.15788	2	921.57894	5.21	0.0069
Practice	244.00728	3	81.33576	0.46	0.7106
GP	1171.20001	6	195.20000	1.10	0.3645
Error	19086.75881	108	176.72925		
Blocks	551.15693	1	551.15693	3.71	0.0566
BG	204.17855	2	102.08928	0.69	0.5049
BP	469.38438	3	156.46146	1.05	0.3719
BGP	575.80836	6	95.96806	0.65	0.6928
Error	16032.09132	108	148.44529		

Table A2.14: Tukey HSD Test for differences between groups at transfer distance 1, trials 1-5, 6-10 (CE)

	-14.56	-13.59	-8.23
MA -14.56	----	0.97	6.33**
CLD -13.59		----	5.36*
CA -8.23			----

$$HSD = q_{.01,\ 3,\ 108} \sqrt{\frac{176.73}{80}} = 4.22 \times 1.49 = 6.29$$

$$HSD = q_{.05,\ 3,\ 108} \sqrt{\frac{176.73}{80}} = 3.37 \times 1.49 = 5.02$$

**$p < .01$ * $p < .05$

Table A2.15: Table for 3 (group) x 4 (practice condition) x 2 (blocks) anova for transfer distance 1, trials 1-5, 6-10 with repeated measures on the last factor (VE)

Source	Sum of squares	d.f.	Mean square	F	Tail probability
Mean	113030.46944	1	113030.46944	1036.41	0.0000
Group	2570.39555	2	1285.19778	11.78	0.0000
Practice	390.82157	3	130.27386	1.19	0.3154
GP	324.57962	6	54.09660	0.50	0.8101
Error	11778.38705	108	109.05914		
Blocks	22.19811	1	22.19811	0.27	0.6034
BG	190.11897	2	95.05949	1.16	0.3165
BP	97.28320	3	32.42773	0.40	0.7557
BGP	198.60769	6	33.10128	0.40	0.8744
Error	8829.87214	108	81.75808		

Table A2.16: Tukey HSD test for differences between groups at transfer distance 1, trials 1-5, 6-10 (VE)

	26.29	19.88	18.93
MA 26.29	----	6.41**	7.36**
CLD 19.88		----	0.95
CA 18.93			----

$$HSD = q_{.01,\ 3,\ 108}\sqrt{\frac{109.06}{80}} = 4.22 \times 1.17 = 4.94$$

$$HSD = q_{.05,\ 3,\ 108}\sqrt{\frac{109.06}{80}} = 3.37 \times 1.17 = 3.94$$

$^{**}p < .01$

Table A2.17: Table for 3 (groups) x 4 (practice condition) anova, for Transfer Distance 1, 1st trial (AE)

Source	Sum of squares	d.f.	Mean Square	F	Tail probability
Mean	47600.83333	1	47600.83333	156.84	0.0000
Group	4011.31667	2	2005.65833	6.61	0.0020
Practice	678.56667	3	226.18889	0.75	0.5274
GP	1483.88333	6	247.31389	0.81	0.5606
Error	32777.40000	108	303.49444		

Table A2.18: Tukey HSD test for differences between groups at transfer Distance 1, Trial 1 (AE)

	28.02	16.77	14.95
MA 28.02	----	11.25*	13.07**
CA 16.77		----	1.82
CLD 14.95			----

$$HSD = q_{.01,\ 3,\ 108} \sqrt{\frac{303.49}{40}} = 4.22 \times 2.75 = 11.60$$

$$HSD = q_{.05,\ 3,\ 108} \sqrt{\frac{303.49}{40}} = 3.37 \times 2.75 = 9.27$$

$^{**}p < .01$

$^{*}p < .05$

Table A2.19: Table for 3 (group) x 4 (practice condition) anova for transfer distance 1, Trial 1 (CE)

Source	Sum of squares	d.f.	Mean square	F	Tail probability
Mean	929.63333	1	929.63333	1.28	0.2613
Group	1559.11667	2	779.55833	1.07	0.3469
Practice	1532.70000	3	510.90000	0.70	0.5536
GP	4029.55000	6	671.59107	0.92	0.4828
Error	78741.00000	108	729.08333		

Table A2.20: Table for 3 (group) x 4 (practice conditions) x 2 (blocks) anova for Transfer Distance 2, Trials 1-5, 6-10 with repeated measures on the last factor (AE)

Source	Sum of squares	d.f.	Mean Square	F	Tail probability
Mean	278665.24861	1	278665.24861	1133.04	0.0000
Group	9353.08641	2	4676.54321	19.01	0.0000
Practice	2131.11168	3	710.37056	2.89	0.0389
GP	2107.40143	6	351.23357	1.43	0.2105
Error	26562.07893	108	245.94518		
Blocks	1636.99244	1	1636.99244	14.54	0.0002
BG	261.75774	2	130.87887	1.16	0.3167
BP	90.45563	3	30.15188	0.27	0.8485
BGP	231.34298	6	38.55716	0.34	0.9129
Error	12162.79926	108	112.61851		

Table A2.21: Tukey HSD test for differences between groups at transfer Distance 2 (AE)

	42.56	31.93	27.73
MA 42.56	----	10.63**	14.83**
CLD 31.93		----	4.20
CA 27.73			----

$$HSD = q_{.01,\ 3,\ 108} \sqrt{\frac{245.95}{80}} = 4.22 \times 1.75 = 7.38$$

$$HSD = q_{.05,\ 3,\ 108} \sqrt{\frac{245.95}{80}} = 3.37 \times 1.75 = 5.90$$

** $p < .01$

Table A2.22: Tukey HSD test for differences between practice conditions at transfer distance 2 (AE)

	37.80	36.20	31.30	31.00
2. 37.80	----	1.60	6.50	6.80
4. 36.20		----	4.90	5.20
3. 31.30			----	0.30
1. 31.00				----

$$HSD = q_{.01,\ 4,\ 108} \sqrt{\frac{245.95}{60}} = 4.52 \times 2.02 = 9.13$$

$$HSD = q_{.05,\ 4,\ 108} \sqrt{\frac{245.95}{60}} = 3.69 \times 2.02 = 7.45$$

Table A2.23: LSD test for differences between practice conditions at transfer distance 2 trials 1-5, 6-10 (AE)

	37.80	36.20	31.30	31.00
2. 37.80	----	1.60	6.50*	6.80*
4. 36.20		----	4.90	5.20
3. 31.30			----	0.30
1. 31.00				----

$$LSD = t_{.01/2,\ 108}\sqrt{\frac{2(245.95)}{60}} = 2.63 \times 2.86 = 7.52$$

$$LSD = t_{.05/2,\ 108}\sqrt{\frac{2(245.95)}{60}} = 1.99 \times 2.86 = 5.69$$

$^{*}p < .05$

Table A2.24: Table for 3 (group) x 4 (practice condition) x 2 (blocks) anova at Transfer Distance 2, trials 1-5, 6-10 with repeated measures on the last factor (VE)

Source	Sum of Squares	d.f.	Mean square	F	Tail probability
Mean	176804.53445	1	176804.53445	1213.41	0.0000
Group	4413.60773	2	2206.80387	15.15	0.0000
Practice	758.18179	3	252.72726	1.73	0.1642
GP	791.88788	6	131.98131	0.91	0.4937
Error	15736.55557	108	145.70885		
Blocks	373.12739	1	373.12739	3.04	0.0839
BG	245.62941	2	122.81470	1.00	0.3706
BP	336.73099	3	112.24366	0.92	0.4360
BGP	363.95443	6	60.65907	0.49	0.8110
Error	13240.21665	108	122.59460		

Table A2.25: Tukey HSD test for difference between groups at transfer distance 2, trials 1-5, 6-10 (VE)

	33.09	25.20	23.14
MA 33.09	----	7.89**	9.95**
CLD 25.20		----	2.06
CA 23.14			----

$$HSD = q_{.01,\ 3,\ 108}\sqrt{\frac{145.71}{80}} = 4.22 \times 1.35 = 5.70$$

$$HSD = q_{.05,\ 3,\ 108}\sqrt{\frac{145.71}{80}} = 3.37 \times 1.35 = 4.55$$

$^{**}p < .01$

Table A2.26: Table for 3 (group) x 4 (practice condition) anova for transfer distance 1, trial 1 (AE)

Source	Sum of squares	d.f.	Mean square	F	Tail probability
Mean	128445.63333	1	128445.63333	230.80	0.0000
Group	1976.11667	2	988.05833	1.78	0.1743
Practice	5960.70000	3	1986.90000	3.57	0.0165
GP	2044.15000	6	340.69167	0.61	0.7201
Error	60105.40000	108	556.53148		

Table A2.27: Tukey HSD Test for differences between practice conditions at Transfer Distance 2, trial 1 (AE)

	43.60	33.27	29.70	24.30
2. 43.60	--	10.33	14.10	19.30*
4. 33.27		--	3.57	8.97
3. 29.70			--	5.40
1. 24.30				--

$$HSD = q_{.01,\ 4,\ 108}\sqrt{\frac{556.53}{30}} = 4.52 \times 4.31 = 19.48$$

$$HSD = q_{.05,\ 4,\ 108}\sqrt{\frac{556.53}{30}} = 3.69 \times 4.31 = 15.90$$

*$p < .05$

Table A2.28 <u>*Table for 3 (group) x 4 (practice condition) anova for Transfer Distance 2, Trial 1 (CE)*</u>

Source	Sum of Squares	d.f.	Mean Square	F	Tail probability
Mean	32078.70000	1	32078.70000	21.99	0.0000
Group	2052.45000	2	1026.22500	0.70	0.4972
Practice	1526.56667	3	508.85556	0.35	0.7901
GP	5306.48333	6	884.41389	0.61	0.7249
Error	1577567.80000	108	1458.96111		

APPENDIX 3

Table A3.1: Anova Table for 3 (group) x 2 (practice condition) x 3 (blocks) anova, mean time on target

Source	Sum of Squares	d.f.	Mean Square	F	Tail probability
Mean	5571.39801	1	5571.39801	608.55	0.0000
Group	345.83573	2	172.91786	18.89	0.0000
Speed	1126.93915	1	1126.93915	123.09	0.0000
GS	15.69175	2	7.84587	0.86	0.4281
Error	769.03486	84	9.15518		
Blocks	431.58790	2	215.79395	369.55	0.0000
BG	13.97942	4	3.49485	5.98	0.0002
BS	27.53659	2	13.76829	23.58	0.0000
BGS	1.90122	4	0.47530	0.81	0.5179
Error	98.10180	168	0.58394		

Table A3.2: <u>Anova Table for Test for simple Main Effects Speed x block interaction, time on target</u>

Source	Sum of Squares	d.f.	Mean Square	F	Tail probability
SSC_{B1}	229.281	1	229.281	66.65	$<.01$
SSC_{B2}	434.413	1	434.413	126.28	$<.01$
SSC_{B3}	499.589	1	499.589	145.33	$<.01$
Error		84	3.44		
SSB_{C1}	338.545	2	169.2725	289.90	$<.01$
SSB_{C2}	117.381	2	58.6905	100.52	$<.01$
Error		168	0.5839		

Table A3.3: Tukey HSD Test for differences between trial blocks for the slow target rotation speed, Time on target

	8.193	7.129	4.435
3. 8.193	-	1.064**	3.758**
2. 7.129		-	2.694**
1. 4.435			-

$$HSD = q_{.01,\ 3,\ 168}\sqrt{\frac{0.5839}{45}} = 4.20 \times 0.1139 = 0.478$$

$^{**}p < .01$

Table A3.4: Tukey HSD Test for differences between trial blocks for the fast target rotation speed, time on target

	3.525	2.735	1.238
3. 3.525	-	0.79**	2.287**
2. 2.735		-	1.497**
1. 1.238			-

$$HSD = q_{.01,\ 3,\ 168}\sqrt{\frac{0.5839}{45}} = 4.20 \times 0.1139 = 0.478$$

$^{**}p < .01$

Table A3.5: Anova Table for tests for simple main effects, group x block interaction, time on target

Source	Sum of Squares	d.f.	Mean Square	F	Tail probability
SSA_{B1}	72.189	2	36.0945	10.49	$<.01$
SSA_{B2}	167.005	2	83.5025	24.27	$<.01$
SSA_{B3}	129.489	2	64.7445	18.82	$<.01$
Error		84	3.44		
SSB_{A1}	96.753	2	48.3765	82.85	$<.01$
SSB_{A2}	148.02	2	74.01	126.75	$<.01$
SSB_{A3}	292.617	2	146.3065	250.57	$<.01$
Error		168	0.5839		

Table A3.6: Tukey HSD Test for Differences between groups on Trial block 1, Time on Target

	4.056	2.573	1.930
(CA) 4.056	-	1.483**	2.121**
(CLD) 2.573		-	0.643
(MA) 1.930			-

$$HSD = q_{.01,\ 3,\ 84}\sqrt{\frac{3.44}{30}} = 4.26 \times 0.337 = 1.436$$

$$HSD = q_{.01,\ 3,\ 84}\sqrt{\frac{3.44}{30}} = 3.39 \times 0.337 = 1.142$$

$^{**}p < .01$

Table A3.7: Tukey HSD Test for Differences between groups on trial block 1, Time on Target

	6.854	4.075	3.866
(CA) 6.854	-	2.779**	2.988**
(CLD) 4.075		-	0.209
(MA) 3.866			-

$$HSD = q_{.01,\ 3,\ 84}\sqrt{\frac{3.44}{30}} = 4.26 \times 0.337 = 1.436$$

$$HSD = q_{.05,\ 3,\ 84}\sqrt{\frac{3.44}{30}} = 3.39 \times 0.337 = 1.142$$

$^{**}p < .01$

Table A3.8: Tukey HSD Test for differences between groups on trial block 3, Time on Target

	7.496	5.041	5.040
(CA) 7.496	-	2.455**	2.456**
(MA) 5.041		-	0.001
(CLD) 5.040			-

$$HSD = q_{.01,\ 3,\ 84} \sqrt{\frac{3.44}{30}} = 4.26 \times 0.337 = 1.436$$

$$HSD = q_{.05,\ 3,\ 84} \sqrt{\frac{3.44}{30}} = 3.39 \times 0.337 = 1.142$$

** $p < .01$

Table A3.9: Tukey HSD Test for Differences between trial blocks for children with learning difficulties, Time on Target

	5.040	4.075	2.573
3. 5.040	-	0.965**	2.467**
2. 4.075		-	1.502**
1. 2.573			-

$$HSD = q_{.01,\ 3,\ 168} \sqrt{\frac{0.5839}{30}} = 4.20 \times 0.14 = 0.588$$

** $p < .01$

Table A3.10: Tukey HSD Test for differences between trial blocks for the mental age matched group, time on target

	5.041	3.866	1.930
3. 5.041	---	1.175**	3.111**
2. 3.866		----	1.936**
1. 1.930			----

$$HSD = q_{.01,\ 3,\ 168} \sqrt{\frac{0.5839}{30}} = 4.20 \times 0.14 = 0.588$$

$^{**}p < .01$

Table A3.11: Tukey HSD test for differences between trial blocks for the chronological age matched group, Time on Target

	7.496	6.854	4.056
3. 7.496	----	0.642**	3.440**
2. 6.854		----	2.798**
1. 4.056			

$$HSD = q_{.01,\ 3,\ 168} \sqrt{\frac{0.5839}{30}} = 4.20 \times 0.14 = 0.588$$

$^{**}p < .01$

Table A3.12: Table for 3 (group) x 2 (practice condition) x 3 (blocks) anova, standard deviations

Source	Sum of Squares	d.f.	Mean Square	F	Tail probability
Mean	228.28877	1	228.28877	715.18	0.0000
Group	4.33987	2	2.16993	6.80	0.0018
Speed	23.08555	1	23.08555	72.32	0.0000
GS	0.06588	2	0.03294	0.10	0.9021
Error	26.81311	84	0.31920		
Blocks	1.57135	2	0.78567	4.37	0.0142
BG	1.46553	4	0.36638	2.04	0.0916
BS	2.37979	2	1.18989	6.61	0.0017
BGS	0.32288	4	0.08072	0.45	0.7734
Error	30.23824	168	0.17999		

Table A3.13: Tukey HSD Test for differences between 3 groups, standard deviations

	1.09	0.88	0.79
CA 1.09	--	0.21	0.30
CLD 0.88		--	0.90
MA 0.79			--

$$HSD = q_{.01,\ 3,\ 84} \sqrt{\frac{0.32}{30}} = 4.27 \times 0.1 = 0.43$$

$$HSD = q_{.05,\ 3,\ 84} \sqrt{\frac{0.32}{30}} = 3.39 \times 0.1 = 0.34$$

Table A3.14: LSD Test for differences between the 3 groups, standard deviations

	1.09	0.88	0.79
CA 1.09	--	0.21	0.30*
CLD 0.88		--	0.09
MA 0.79			--

$$LSD = t_{.01/2,\ 84} \sqrt{\frac{2 \times 0.32}{30}} = 2.65 \times 0.15 = 0.40$$

$$LSD = t_{.05/2,\ 84} \sqrt{\frac{2 \times 0.32}{30}} = 2.00 \times 0.15 = 0.30$$

*$p < .05$

Table A3.15: <u>Anova Table for tests of simple main effects, block x speed interaction, standard deviations</u>

Source	Sum of Squares	d.f.	Mean Square	F	Tail probability
SSC_{B1}	15.88	1	15.88	69.04	$<.01$
SSC_{B2}	6.24	1	6.24	27.13	$<.01$
SSC_{B3}	3.42	1	3.42	14.87	$<.01$
Error		84	0.23		
SSB_{C1}	0.10	2	0.05	0.28	
SSB_{C2}	3.84	2	1.92	10.67	$<.01$
Error		168	0.18		

Table A3.16: Tukey HSD Test for differences between blocks for the slower rotation speed, standard deviations

	1.45	1.13	1.06
B1 1.45	--	0.32**	0.39**
B2 1.13		--	0.07
B3 1.06			--

$$HSD = q_{.01,\ 3,\ 168} \sqrt{\frac{0.23}{45}} = 4.20 \times 0.07 = 0.29$$

$$HSD = q_{.05,\ 3,\ 168} \sqrt{\frac{0.23}{45}} = 3.36 \times 0.07 = 0.24$$

$^{**}p < .01$

Table A3.17: Mean Coefficient of variation for the children with learning difficulties. Slow rotation speed

Subject	Block 1	Block 2	Block 3	Overall	
1	22.98	15.76	15.93	18.22	
2	18.16	6.79	12.71	12.55	*L
3	28.49	9.86	6.14	14.83	
4	23.23	49.18	24.60	32.34	
5	41.81	18.10	25.85	28.59	
6	65.07	21.38	14.97	33.81	*H
7	47.40	36.67	17.97	34.01	*H
8	7.42	7.79	21.54	12.15	*L
9	24.85	23.22	16.11	21.39	
10	31.61	37.46	13.05	27.37	
11	25.42	25.54	10.77	20.58	
12	46.22	36.24	18.86	33.77	*H
13	44.37	14.13	9.02	22.51	
14	10.33	14.49	9.69	11.50	*L
15	25.69	7.44	49.62	27.58	
Group	30.87	21.60	17.79		

$^{*}_{H}$ 3 highest coefficients of variation (Overall)

$^{*}_{L}$ 3 lowest coefficients of variation (Overall)

Table A3.18: Mean Coefficient of Variation for the children with learning difficulties, fast rotation speed

Subject	Block 1	Block 2	Block 3	Overall	
1	68.82	20.00	48.28	45.70	
2	77.78	65.85	113.95	85.86	*H
3	49.30	34.21	43.56	42.36	
4	37.56	12.48	22.45	24.16	*L
5	60.38	26.09	22.13	36.20	*L
6	115.79	54.43	52.78	74.33	
7	110.00	32.00	56.60	66.20	
8	96.30	67.74	85.51	83.18	
9	71.43	76.92	138.71	95.69	*H
10	58.97	35.87	48.10	47.65	
11	66.67	71.43	146.15	94.75	*H
12	63.29	56.18	16.20	45.22	
13	68.35	27.51	25.40	40.42	
14	57.59	33.81	28.25	39.88	
15	44.00	16.08	32.05	30.71	*L
Group	69.75	42.04	58.67		

*H 3 highest coefficients of variation (Overall)

*L 3 lowest coefficients of variation (Overall)

Table A3.19: Mean Coefficient of variation for the mental age matched group. Slow rotation speed

Subject	Block 1	Block 2	Block 3	Overall	
1	48.49	24.26	17.47	46.24	*H
2	53.08	18.80	7.66	26.51	
3	39.75	8.28	16.37	21.47	
4	19.18	15.85	8.23	14.42	*L
5	49.44	12.03	5.22	22.23	
6	50.33	11.81	22.92	28.35	
7	57.14	28.41	24.06	36.54	*H
8	33.19	16.26	5.49	18.31	*L
9	73.11	34.52	22.65	43.43	*H
10	40.67	20.65	12.18	24.50	
11	35.22	22.55	18.07	25.28	
12	26.15	14.06	22.32	20.84	*L
13	48.00	13.12	10.68	23.93	
14	42.05	14.00	19.76	25.27	
15	61.01	8.56	9.59	26.39	
Group	45.12	17.54	14.84		

*H 3 highest coefficients of variation (overall)

*L 3 lowest coefficients of variation (overall)

Table A3.20: Mean Coefficients of variation for the mental age matched group, fast rotation speed

Subject	Block 1	Block 2	Block 3	Overall	
1	110.26	15.51	33.56	53.11	
2	100.00	108.33	52.73	87.02	*H
3	118.31	37.88	10.13	55.44	*H
4	59.00	27.17	13.18	33.12	
5	59.14	28.29	6.49	31.31	*L
6	63.86	26.18	11.32	33.79	
7	109.09	58.33	44.30	70.57	*H
8	57.47	13.02	26.32	32.27	*L
9	56.52	16.28	19.14	30.65	*L
10	36.96	25.47	48.54	36.99	
11	80.68	14.34	4.04	33.02	
12	80.43	36.21	12.29	42.98	
13	65.52	20.17	43.68	43.12	
14	59.26	21.78	18.42	33.15	
15	107.41	22.50	22.47	50.79	
Group	81.39	31.43	24.44		

*H 3 highest coefficients of variation (Overall)

*L 3 lowest coefficients of variation (Overall)

Table A3.21: Mean coefficient of variation for the chronological age matched group, slow rotation speed

Subject	Block 1	Block 2	Block 3	Overall	
1	34.39	13.92	11.50	19.94	
2	43.75	12.10	13.87	23.24	
3	11.72	14.43	11.98	12.71	*L
4	47.34	12.37	28.22	29.31	*H
5	63.09	6.64	2.89	24.21	*H
6	16.67	8.84	12.62	12.71	*L
7	28.67	25.63	19.29	24.53	*H
8	32.72	9.50	9.58	17.27	
9	39.14	8.22	7.12	18.16	
10	32.56	17.31	7.55	19.14	
11	34.40	21.53	10.33	22.09	
12	36.11	11.80	6.87	18.26	
13	11.83	12.86	14.14	12.94	
14	19.44	7.78	7.65	11.62	*L
15	26.26	8.75	10.92	15.31	
Group	31.87	12.78	11.64		

*H 3 highest coefficients of variation (Overall)

*L 3 lowest coefficients of variation (Overall)

Table A3.22: Mean Coefficients of variation for the chronological age matched group, fast rotation speed

Subject	Block 1	Block 2	Block 3	Overall	
1	33.13	9.25	27.36	23.25	
2	26.86	11.37	22.87	20.37	*L
3	43.43	12.10	31.40	28.98	
4	27.92	27.20	29.00	28.04	
5	40.13	15.42	25.71	27.09	
6	19.33	22.22	25.85	22.47	*L
7	32.17	29.84	34.11	32.04	
8	68.66	16.83	37.56	41.02	
9	60.16	12.23	13.20	34.53	
10	80.28	43.37	39.61	54.42	*H
11	43.00	18.55	32.61	31.39	
12	26.10	13.47	26.84	22.14	*L
13	69.77	37.66	42.41	49.95	*H
14	59.72	41.62	38.26	46.53	*H
15	43.91	6.32	26.40	25.54	
Group	44.97	21.16	31.41		

*H 3 highest coefficients of variations (Overall)

*L 3 lowest coefficients of variations (Overall)

Table A3.23: Mean time on target for the children with learning difficulties, slow rotation speed

Subject	Block 1	Block 2	Block 3	Overall	
1	3.96	6.22	6.59	5.59	
2	5.52	7.66	7.87	7.02	
3	7.23	10.04	10.58	9.28	
4	2.54	3.64	4.96	3.72	
5	2.32	3.37	4.41	3.37	*L
6	1.46	4.91	6.28	4.22	
7	1.54	2.40	3.84	2.59	
8	3.91	5.26	5.34	4.83	
9	3.34	2.67	5.09	3.70	*L
10	6.96	10.17	11.34	9.49	*H
11	4.17	6.89	8.26	6.44	
12	3.70	4.58	5.30	4.53	
13	6.13	9.34	13.64	9.70	*H
14	9.10	11.80	12.80	11.23	*H
15	1.09	2.42	2.62	2.04	*L
Group	4.20	6.09	7.26	5.85	

*H 3 highest time on target scores (overall)

*L 3 lowest time on target scores (overall)

Table A3.24: Mean time on target for the children with learning difficulties, fast rotation speed

Subject	Block 1	Block 2	Block 3	Overall	
1	0.93	2.25	2.91	2.03	
2	0.18	0.41	0.71	0.43	*L
3	0.71	1.52	2.67	1.63	
4	3.86	5.77	6.82	5.48	*H
5	1.59	4.60	4.79	3.66	*H
6	0.19	0.79	1.17	0.72	
7	0.10	0.50	0.97	0.53	
8	0.27	0.62	1.19	0.69	
9	0.07	0.39	0.46	0.31	*L
10	0.78	1.84	4.19	2.89	
11	0.06	0.14	0.59	0.26	*L
12	0.79	1.78	1.68	1.42	
13	1.58	3.89	5.87	3.78	*H
14	1.11	3.52	4.60	3.08	
15	0.50	2.86	3.67	2.34	
Group	0.85	2.06	2.82	1.91	

*H 3 highest time on target scores (overall)

*L 3 lowest time on target scores (overall)

Table A3.25: Mean time on target for the mental age matched group, slow rotation speed

Subject	Block 1	Block 2	Block 3	Overall	
1	3.32	6.10	6.01	5.14	
2	5.20	9.52	11.75	8.83	*H
3	2.44	3.02	3.97	3.14	*L
4	6.31	8.14	9.11	7.85	*H
5	3.58	6.07	9.19	6.28	
6	1.51	4.15	4.93	3.53	*L
7	1.47	4.47	6.36	4.10	
8	4.67	7.75	8.74	7.05	*H
9	1.19	2.81	4.15	2.72	*L
10	3.86	6.73	7.39	5.99	
11	3.01	6.12	7.25	5.46	
12	2.83	5.05	7.75	5.21	
13	2.50	6.02	8.80	5.78	
14	3.90	6.00	6.58	5.49	
15	2.18	4.79	5.94	4.30	
Group	3.20	5.78	7.18	5.39	

*H 3 highest time on target scores (overall)

*L 3 lowest time on target scores (overall)

Table A3.26: Mean time on target for the mental age matched group, fast rotation speed

Subject	Block 1	Block 2	Block 3	Overall	
1	0.39	1.87	2.98	1.74	
2	0.22	0.24	0.55	0.34	*L
3	0.71	2.64	3.75	2.37	
4	1.10	2.76	4.40	2.75	*H
5	0.93	2.58	3.85	2.46	*H
6	0.83	2.75	3.71	2.43	
7	0.22	0.96	1.58	0.92	*L
8	0.87	2.15	3.80	2.27	
9	1.15	1.88	2.09	1.70	
10	0.46	1.61	2.06	1.38	
11	1.24	2.51	3.71	2.49	*H
12	0.46	1.74	2.36	1.52	
13	0.29	1.19	1.74	1.07	*L
14	0.54	2.25	2.28	1.69	
15	0.54	1.60	4.45	2.20	
Group	0.66	1.92	2.89	1.85	

*H 3 highest time on target scores (overall)

*L 3 lowest time on target scores (overall)

Table A3.27: Mean time on target for the chronological age matched group, slow rotation speed

Subject	Block 1	Block 2	Block 3	Overall	
1	4.42	8.91	9.39	7.64	
2	6.08	11.16	10.89	9.38	
3	6.74	8.80	10.85	8.80	
4	3.95	9.54	9.07	7.52	
5	4.01	8.43	9.37	7.20	*L
6	6.66	8.59	9.19	8.14	
7	4.57	6.71	7.93	6.40	*L
8	6.57	10.74	12.42	9.91	
9	6.49	12.53	11.65	10.22	*H
10	4.73	8.32	9.98	7.67	
11	6.89	10.36	11.04	9.43	
12	8.39	8.90	11.07	9.46	
13	8.71	10.50	10.11	9.77	*H
14	6.84	10.92	11.37	9.71	*H
15	3.58	7.77	7.51	6.29	*L
Group	5.95	9.48	10.12	8.52	

*H 3 highest time on target scores (overall)

*L 3 lowest time on target scores (overall)

Table A3.28: Mean time on target for the chronological age matched group, fast rotation speed

Subject	Block 1	Block 2	Block 3	Overall	
1	3.29	5.30	5.92	4.85	
2	4.43	6.86	7.87	6.38	*H
3	0.99	2.48	2.58	2.02	*L
4	1.97	2.61	2.24	2.27	
5	4.61	6.94	6.30	5.95	*H
6	3.00	5.22	6.19	4.80	
7	1.15	2.48	4.31	2.65	
8	2.17	6.12	5.93	4.74	
9	2.56	5.23	5.48	4.42	
10	0.71	2.49	4.09	2.43	
11	1.00	2.48	3.22	2.23	*L
12	2.49	4.53	5.29	4.11	
13	0.43	2.39	2.90	1.90	*L
14	0.72	1.85	4.13	2.24	
15	3.53	6.49	6.59	5.53	*H
Group	2.21	4.23	4.85	3.77	

*H 3 highest time on target scores (overall)

*L 3 lowest time on target scores (overall)

Table A3.29: 3 Highest and 3 Lowest time on Target (overall) subjects, data for 3 blocks of trials, and the mean of the subjects' scores for each block, slow rotation speed

Group & subject	Highest Block 1	Block 2	Block 3	Lowest Block 1	Block 2	Block 3
CLD 1	9.10	11.80	12.80	1.09	2.42	2.62
2	6.13	9.34	13.64	2.32	3.37	4.41
3	6.96	10.17	11.34	3.34	2.67	5.09
$\bar{x}$	8.40	10.44	12.59	2.25	2.87	4.04
MA 1	5.20	9.52	11.75	1.19	2.81	4.15
2	6.31	8.14	9.11	2.44	3.02	3.97
3	4.67	7.75	8.74	1.51	4.15	4.93
$\bar{x}$	5.39	8.47	9.87	1.71	3.23	4.35
CA 1	6.49	12.53	11.65	3.58	7.77	7.51
2	8.71	10.50	10.11	4.57	6.71	7.93
3	6.84	10.92	11.37	4.01	8.43	9.37
$\bar{x}$	7.35	11.32	11.04	4.05	7.64	8.27

Table A3.30: 3 Highest and 3 Lowest time on target (overall) subjects, data for 3 blocks of trials and the mean of the 3 subjects' scores for each block, fast rotation speed

Group & subjects	Highest Block 1	Block 2	Block 3	Lowest Block 1	Block 2	Block 3
CLD 1	3.86	5.77	6.82	0.06	0.14	0.59
2	1.58	3.89	5.87	0.07	0.39	0.46
3	1.59	4.60	4.79	0.18	0.41	0.71
$\bar{x}$	2.34	4.75	5.83	0.10	0.31	0.59
MA 1	1.10	2.76	4.40	0.22	0.24	0.55
2	1.24	2.51	3.71	0.22	0.96	1.58
3	0.93	2.58	3.85	0.29	1.19	1.74
$\bar{x}$	1.09	2.62	3.99	0.24	0.80	1.29
CA 1	4.43	6.86	7.87	0.43	2.39	2.90
2	4.61	6.94	6.30	0.99	2.48	2.58
3	3.53	6.49	6.59	1.00	2.48	3.22
$\bar{x}$	4.19	6.76	6.92	0.81	2.45	2.90

Table A3.31: 3 highest and 3 lowest coefficients of variation (overall) subjects, mean coefficients of variation for 3 blocks of trials, and the mean of the 3 subjects' scores for each block, slow rotation period

Group & Subjects	Highest Block 1	Block 2	Block 3	Lowest Block 1	Block 2	Block 3
CLD 1	47.40	36.67	17.97	10.33	14.49	9.69
2	65.07	21.38	14.97	7.42	7.79	21.54
3	46.22	36.24	18.86	18.16	6.79	12.71
$\bar{x}$	52.90	31.43	17.27	11.97	9.69	14.65
MA 1	48.49	24.26	17.47	19.18	15.85	8.23
2	73.11	34.52	22.65	33.19	16.26	5.49
3	57.14	28.41	24.06	26.15	14.06	22.32
$\bar{x}$	59.58	29.06	21.39	26.17	15.39	12.01
CA 1	47.34	12.37	28.22	19.44	7.78	7.68
2	28.67	25.63	19.29	11.72	14.43	11.98
3	63.09	6.64	2.89	16.67	8.84	12.62
$\bar{x}$	46.37	14.88	16.80	15.94	10.35	10.76

Table A3.32: 3 highest and 3 lowest coefficients of variation (overall) subjects, mean coefficients of variation for 3 blocks of trials and the mean of the 3 subjects' scores for each block, fast rotation speed

Group & Subjects	Highest Block 1	Block 2	Block 3	Lowest Block 1	Block 2	Block 3
CLD 1	71.43	76.92	138.71	37.56	12.48	22.45
2	66.67	71.43	146.15	44.00	16.08	32.05
3	77.78	65.85	113.95	60.38	26.09	22.13
$\bar{x}$	71.96	71.40	123.94	47.31	18.22	25.54
MA 1	100.00	108.33	52.73	56.52	16.28	19.14
2	109.09	58.33	44.30	59.14	28.29	6.49
3	118.31	37.88	10.13	57.47	13.02	26.32
$\bar{x}$	109.13	68.18	35.72	57.71	19.20	17.32
CA 1	80.28	43.37	39.61	26.86	11.37	22.87
2	69.77	37.66	42.41	26.10	13.47	26.84
3	59.72	41.62	38.26	19.33	22.22	25.85
$\bar{x}$	69.92	40.88	40.09	24.10	15.69	25.19

APPENDIX FOUR

Table A4.1 Table for 3 (group) x 2 (curve) x 10 (trials) anova, practice trials, percentage pen on paper

Source	Sum of Squares	d.f.	Mean Square	F	Trial Probability
Mean	8344395.11111	1	8344395.11111	19524.09	0.0000
Group	4091.04889	2	2045.52444	4.79	0.0108
Curve	145.60444	1	145.60444	0.34	0.5610
GC	881.50222	2	440.75111	1.03	0.3610
Error	35900.73333	84	427.38908		
Trials	26661.86667	9	2962.42963	25.10	0.0000
TG	5856.30667	18	325.35037	2.76	0.0001
TC	3763.90667	9	418.21185	3.54	0.0003
TGC	1765.32000	18	98.07333	0.83	0.6642
Error	89224.60000	756	118.02196		

Table A4.2: Anova Table for tests of simple main effects, group x trial interaction, practice trials (%)

Source	Sum of Squares	d.f.	Mean Square	F	P
A at B_1	6004.96	2	3002.48	20.16	$<.01$
A at B_2	955.14	2	477.57	3.21	$<.05$
A at B_3	759.07	2	379.53	2.55	
A at B_4	1076.12	2	538.06	3.61	$<.05$
A at B_5	839.83	2	419.91	2.82	
A at B_6	177.77	2	88.88	0.60	
A at B_7	46.35	2	23.17	0.16	
A at B_8	39.18	2	19.59	0.13	
A at B_9	8.32	2	4.16	0.03	
A at B_{10}	39.80	2	19.90	0.41	
Error		84	148.96		
B at A_1	15350.50	9	1705.61	14.45	$<.01$
B at A_2	1541.18	9	171.24	1.45	
B at A_3	15626.78	9	1736.31	14.71	$<.01$
Error		756	118.02		

Table A4.3: Tukey HSD test for differences between groups on practice trial 1 (%)

	92.00	75.26	74.13
CA 92.00	-	16.74**	17.87**
MA 75.26		-	1.13
CLD 74.13			-

$$HSD = q_{.01;\ 3,\ 84} \sqrt{\frac{427.39}{30}} = 4.26 \times 3.77 = 16.08$$

$$HSD = q_{.05;\ 3,\ 84} \sqrt{\frac{427.39}{30}} = 3.39 \times 3.77 = 12.78$$

$^{**}p$ .01

Table A4.4: <u>Tukey HSD test for differences between groups on practice trial 2 (%)</u>

		98.93	95.73	91.00
CA	98.93	-	3.20	7.93
MA	95.73		-	4.73
CLD	91.00			-

$$HSD = q_{.01,\ 3,\ 84} \sqrt{\frac{427.39}{30}} = 4.26 \times 3.77 = 16.08$$

$$HSD = q_{.05,\ 3,\ 84} \sqrt{\frac{427.39}{30}} = 3.39 \times 3.77 = 12.78$$

Table A4.4: <u>Tukey HSD test for differences between groups on practice trial 4 (%)</u>

		99.07	99.00	91.70
CA	99.07	-	0.07	7.37
MA	99.00		-	7.30
CLD	91.70			-

$$HSD = q_{.01,\ 3,\ 84} \sqrt{\frac{427.39}{30}} = 4.26 \times 3.77 = 16.08$$

$$HSD = q_{.05,\ 3,\ 84} \sqrt{\frac{427.39}{30}} = 3.39 \times 3.77 = 12.78$$

Table A4.6: Fisher LSD Test for differences between groups on practice trial 2 (%)

	98.93	95.73	91.00
CA 98.93	-	3.20	7.93
MA 95.73		-	4.73
CLD 91.00			-

$$LSD = t_{.01/2,\ 84} \sqrt{\frac{2(427.39)}{30}} = 2.65 \times 5.34 = 14.14$$

$$LSD = t_{.05/2,84} \sqrt{\frac{2(427.39)}{30}} = 2.00 \times 5.34 = 10.68$$

Table A4.7: Fisher LSD test for differences between groups on practice trial 4 (%)

	99.07	99.00	91.70
CA 99.07	-	0.07	7.37
MA 99.00		-	7.30
CLD 91.70			-

$$LSD = t_{.01/2,84} \sqrt{\frac{2(427.39)}{30}} = 2.65 \times 5.34 = 14.14$$

$$LSD = t_{.05/2,84} \sqrt{\frac{2(427.39)}{30}} = 2.00 \times 5.34 = 10.68$$

Table A4.8: Tukey HSD Test for differences between trials for the group with learning difficulties, practice trials (%)

	99.36	99.30	98.50	98.46	96.53	93.36	92.97	91.70	91.00	74.13
1 99.36	-	0.06	0.86	0.90	2.83	6.10	6.39	7.66	8.36	25.23**
9 99.30		-	0.80	0.84	2.77	6.04	6.33	7.60	8.30	25.17**
10 98.50			-	0.04	1.97	5.14	5.53	6.80	7.50	24.37**
8 98.46				-	1.93	5.10	5.49	6.76	7.46	24.33**
6 96.53					-	3.17	3.56	4.83	5.53	22.40**
3 93.36						-	0.39	1.90	2.36	19.23**
5 92.97							-	1.27	1.97	18.84**
4 91.70								-	0.70	17.57**
2 91.00									-	16.87**
1 74.13										-

$$HSD = q_{.01,\ 10,\ 756} \sqrt{\frac{118.02}{30}} = 5.16 \times 1.98 = 10.22$$

$$HSD = q_{.05,\ 10,\ 756} \sqrt{\frac{118.02}{30}} = 4.47 \times 1.98 = 8.85$$

**$p < .01$

Table A4.9: Tukey HSD Test for differences between trials for the MA matched group, practice trials (%)

		100	99.80	99.70	99.67	99.46	99.43	99.07	99.93	95.73	75.26
9	100	-	0.20	0.30	0.33	0.54	0.57	0.93	2.07	4.27	24.74**
10	99.8		-	0.10	0.13	0.34	0.37	0.73	1.87	4.07	24.54**
3	99.7			-	0.03	0.24	0.27	0.63	1.77	3.97	24.44**
8	99.67				-	0.21	0.24	0.60	1.74	3.94	24.41**
6	99.46					-	0.03	0.39	1.53	3.73	24.20**
5	99.43						-	0.36	1.50	3.70	24.17**
4	99.07							-	1.14	3.34	23.33**
7	97.93								-	0.20	22.64**
2	95.73									-	22.44**
1	75.26										-

$$HSD = q_{.01,\ 10,756} \sqrt{\frac{118.02}{30}} = 5.16 \times 1.98 = 10.22$$

$$HSD = q_{.05,\ 10,756} \sqrt{\frac{118.02}{30}} = 4.47 \times 1.98 = 8.85$$

$^{**}p < .01$

Table A4.10: Anova Table for tests of simple main effects, curve x trial interaction, practice trials (%)

Source	Sum of Squares	d.f.	Mean Square	F	P
C at B_1	1976.84	1	1976.84	16.75	$p < .01$
C at B_2	683.10	1	683.10	5.79	$p < .05$
C at B_3	321.48	1	321.48	2.72	
C at B_4	512.65	1	512.65	4.34	
C at B_5	336.39	1	336.39	2.85	
C at B_6	46.65	1	46.65	0.40	
C at B_7	4.83	1	4.83	0.04	
C at B_8	7.48	1	7.48	0.06	
C at B_9	0.04	1	0.04	0.00	
C at B_{10}	16.90	1	16.90	0.14	
Error		756	118.02		
B at C_1	22139.83	9	2459.98	20.84	$p < .01$
B at C_2	8674.90	9	963.88	8.17	$p < .01$
Error		756	118.02		

Table A4.11: Tukey HSD Test for differences between trials for the regular track (%)

		99.56	99.36	99.24	99.22	99.09	99.00	98.98	98.71	97.98	75.78
9	99.56	-	0.20	0.32	0.34	0.47	0.56	0.58	0.85	1.58	23.78**
3	99.36		-	0.12	0.14	0.27	0.36	0.38	0.65	1.38	23.58**
6	99.24			-	0.02	0.15	0.24	0.26	0.53	1.26	23.46**
5	99.22				-	0.13	0.22	0.24	0.51	1.24	23.44**
8	99.09					-	0.09	0.11	0.38	1.11	23.31**
10	99.00						-	0.02	0.29	1.02	23.22**
4	98.98							-	0.27	1.00	23.20**
7	98.71								-	0.73	22.97**
2	97.98									-	22.24**
1	75.78										-

$$HSD = q_{.01,\ 10,756}\sqrt{\frac{118.02}{45}} = 5.16 \times 1.62 = 8.36$$

$$HSD = q_{.05,\ 10,756}\sqrt{\frac{118.02}{45}} = 4.47 \times 1.62 = 7.24$$

$^{**}p < .01$

Table A4.12: Tukey HSD Test for differences between practice trials for the irregular track (%)

		99.87	99.67	99.60	99.18	97.80	95.58	95.36	94.20	92.47	85.15
10	99.87	-	0.20	0.27	0.69	2.07	4.29	4.51	5.67	7.40*	14.72**
8	99.67		-	0.07	0.49	1.87	4.09	4.31	5.47	7.20	14.52**
9	99.60			-	0.42	1.80	4.02	4.24	5.40	7.13	14.45**
7	99.18				-	1.38	3.60	3.82	4.98	6.71	14.03**
6	97.80					-	2.22	2.44	3.60	5.33	12.65**
3	95.58						-	0.22	1.38	3.11	10.43**
5	95.36							-	1.16	2.89	10.21**
4	94.20								-	1.73	9.05**
2	92.47									-	7.32*
1	85.15										-

$$HSD = q_{.01,\ 10,\ 756}\sqrt{\frac{118.02}{45}} = 5.16 \times 1.62 = 8.36$$

$$HSD = q_{.05,\ 10,\ 756}\sqrt{\frac{118.02}{45}} = 4.47 \times 1.62 = 7.24$$

$^{**}p < .01$

$^{*}p < .05$

Table A4.13: Table for 3 (group) x 2 (curve) anova on the recall trial (%)

Source	Sum of Squares	d.f.	Mean Square	F	Trial Probability
Mean	892416.04444	1	892416.04444	247130.56	0.0000
Group	14.68889	2	7.34444	2.03	0.1372
Curve	1.11111	1	1.11111	0.31	0.5806
GC	0.82222	2	0.41111	0.11	0.8925
Error	303.33333	84	3.61111		

Table A4.14: Table for 3 (group) x 2 (curve) anova on the transfer trial (%)

Source	Sum of Squares	d.f.	Mean Square	F	Trial Probability
Mean	894807.51111	1	894807.51111	475319.31	0.0000
Group	15.02222	2	7.51111	3.99	0.0221
Curve	1.11111	1	1.11111	0.59	0.4445
GC	2.22222	2	1.11111	0.59	0.5565
Error	158.13333	84	1.88254		

Table A4.15: Tukey HSD test for differences between groups on the transfer trial (%)

	100.00	100.00	99.13
CA 100.00	-	0.00	0.87*
MA 100.00		-	0.87*
CLD 99.13			-

$$HSD = q_{.01,\ 3,\ 84} \sqrt{\frac{1.88}{30}} = 4.26 \times 0.25 = 1.06$$

$$HSD = q_{.05,\ 3,\ 84} \sqrt{\frac{1.88}{30}} = 3.39 \times 0.25 = 0.85$$

* $p < .05$

Table A4.16: Table for 3 (group) x 2 (curve) x 2 (trial) anova day 2 (%)

Source	Sum of Squares	d.f.	Mean Square	F	Trial Probability
Mean	1787222.75556	1	1787222.75556	676449.56	0.0000
Group	11.67778	2	5.83889	2.21	0.1160
Curve	2.22222	1	2.22222	0.84	0.3617
GC	1.41111	2	0.70556	0.27	0.7663
Error	221.93333	84	2.64206		
Trial	0.80000	1	0.80000	0.28	0.5977
TG	18.03333	2	9.01667	3.16	0.0474
TC	0.00000	1	0.00000	0.00	1.0000
TGC	1.63333	2	0.81667	0.29	0.7517
Error	239.53333	84	2.85159		

Table A4.17: Anova table for tests of simple main effects, group x trial interaction, day 2, percentage pen on paper

Source	Sum of Squares	d.f.	Mean Square	F	P
A at B_1	14.64	2	7.32	2.67	
A at B_2	14.97	2	7.48	2.73	
Error		84	2.74		
B at A_1	4.76	1	4.76	1.67	
B at A_2	0.00	1	0.00	0.00	
B at A_3	13.97	1	13.97	4.90	$<.05$
Error		84	2.85		

Table A4.18: Anova table for 3 (group) x 2 (curve) x 10 (trials) anova, modulus mean

Source	Sum of Squares	d.f.	Mean Square	F	P
Mean	153899.29000	1	153899.29000	596.53	0.0000
Group	15628.02667	2	7814.01333	30.29	0.0000
Curve	4923.36111	1	4923.36111	19.08	0.0000
GC	2091.55556	2	1045.77778	4.05	0.0209
Error	21671.06667	84	257.98889		
Trials	6274.87667	9	697.20852	34.42	0.0000
TG	429.77333	18	23.87630	1.18	0.2722
TC	1209.07224	9	134.34136	6.63	0.0000
TGC	217.57778	18	12.08765	0.60	0.9036
Error	15314.40000	756	20.25714		

Table A4.19: Anova Table for tests of simple main effects, group x curve interaction, practice trials, modulus mean

Source	Sum of Squares	d.f.	Mean Square	F	P
A at C_1	14574.30	2	7287.15	28.20	<.01
A at C_2	3331.80	2	1665.90	6.50	<.01
Error		84	257.99		
C at A_1	5241.70	1	5241.70	20.30	<.01
C at A_2	60.80	1	60.80	0.20	
C at A_3	1706.40	1	1706.40	6.60	<.05
Error		84	257.99		

Table A4.20: Tukey HSD test for differences between groups, attempting the regular track during practice trials, (MM)

		22.39	15.40	8.45
CLD	22.39	-	6.99**	13.94**
MA	15.40		-	6.95**
CA	8.45			-

$$HSD = q_{.01,\ 3,\ 84} \sqrt{\frac{257.99}{150}} = 4.27 \times 1.61 = 6.87$$

$^{**}p < .01$

Table A4.21: Tukey HSD test for differences between groups attempting the irregular track, during practice trials (MM)

		14.03	10.63	7.55
CLD	14.03	-	3.40	6.48*
MA	10.63		-	3.08
CA	7.55			-

$$HSD = q_{.01,\ 3,\ 84} \sqrt{\frac{257.99}{150}} = 4.27 \times 1.61 = 6.87$$

$$HSD = q_{.05,\ 3,84} \sqrt{\frac{257.99}{150}} = 3.39 \times 1.61 = 5.46$$

$^{*}p < .05$

Table A4.22: Anova table for tests of simple main effects, trial x curve interaction, practice trials (MM)

Source	Sum of Squares	d.f.	Mean Square	F	P
C at B_1	2637.38	1	2637.38	59.90	$<.01$
C at B_2	851.93	1	851.93	19.35	$<.01$
C at B_3	499.14	1	499.14	11.34	$<.01$
C at B_4	401.32	1	401.32	9.11	$<.01$
C at B_5	376.38	1	376.38	8.55	$<.01$
C at B_6	417.96	1	417.96	9.49	$<.01$
C at B_7	187.48	1	187.48	4.26	$<.01$
C at B_8	187.92	1	187.92	4.27	$<.05$
C at B_9	97.96	1	97.96	2.22	
C at B_{10}	476.10	1	476.10	10.81	$<.01$
Error		84	44.03		
B at C_1	6170.14	9	685.57	33.84	$<.01$
B at C_2	1115.97	9	123.99	6.12	$<.01$
Error		756	20.26		

Table A4.23: <u>Tukey HSD test for differences between practice trials for the regular curve (MM)</u>

	25.38	18.29	16.11	15.36	14.07	14.07	13.40	12.86	12.44	12.18
1 25.38	-	7.09**	9.27**	10.02**	11.31**	11.31**	11.98**	12.52**	12.94**	13.20**
2 18.29		-	2.18	2.93	4.22**	4.22**	4.89**	5.43**	5.85**	6.11**
3 16.11			-	0.75	2.04	2.04	2.71	3.25*	3.67**	3.93**
4 15.36				-	1.29	1.29	1.96	2.50	2.92	3.18*
5 14.07					-	0.00	0.67	1.21	1.63	1.89
6 14.07						-	0.67	1.21	1.63	1.89
10 13.40							-	0.54	0.96	1.22
7 12.86								-	0.42	0.68
8 12.44									-	0.26
9 12.18										-

$$HSD = q_{.01,\ 10,\ 756} \sqrt{\frac{20.26}{45}} = 5.16 \times 0.67 = 3.46$$

$$HSD = q_{.05,\ 10,\ 756} \sqrt{\frac{20.26}{45}} = 4.47 \times 0.67 = 2.99$$

$^{**}p < .01$

$^{*}p < .05$

Table A4.24: Tukey HSD test for differences between practice trials for the irregular curve (MM)

		14.55	12.13	11.40	11.13	10.09	9.98	9.98	9.76	9.55	8.80
1	14.55	-	2.42	3.15*	3.42*	4.46**	4.57**	4.57**	4.79**	5.00**	5.75**
2	12.13		-	0.73	1.00	2.04	2.15	2.15	2.37	2.58	3.30*
3	11.40			-	0.27	1.31	1.42	1.42	1.64	1.85	2.60
4	11.13				-	1.04	1.15	1.15	1.37	1.58	2.33
9	10.09					-	0.11	0.11	0.33	0.54	1.29
5	9.98						-	0.00	0.22	0.43	1.18
7	9.98							-	0.22	0.43	1.18
6	9.76								-	0.21	0.96
8	9.55									-	0.75
10	8.80										-

$$HSD = q_{.01,\ 10,\ 756} \sqrt{\frac{20.26}{45}} = 5.16 \times 0.67 = 3.46$$

$$HSD = q_{.05,\ 10,\ 756} \sqrt{\frac{20.26}{45}} = 4.47 \times 0.67 = 2.99$$

$^{**}p < .01$

$^{*}p < .05$

Table A4.25: Table for 3 (group) x 2 (curve) anova, recall trial (MM)

Source	Sum of Squares	d.f.	Mean Square	F	Trial Probability
Mean	7398.40000	1	7398.40000	202.62	0.0000
Group	1219.26667	2	609.63333	16.70	0.0000
Curve	71.11111	1	71.11111	1.95	0.1665
GC	44.02222	2	22.01111	0.60	0.5496
Error	3067.20000	84	36.51429		

Table A4.26: Tukey HSD test for differences between groups on the recall trial (MM)

		14.11	7.57	5.50
CLD	14.11	-	6.54**	8.61**
MA	7.57		-	2.07
CA	5.50			-

$$HSD = q_{.01,\ 3,\ 84} \sqrt{\frac{36.51}{30}} = 4.26 \times 1.10 = 4.70$$

$$HSD = q_{.05,\ 3,\ 84} \sqrt{\frac{36.51}{30}} = 3.39 \times 1.10 = 3.73$$

** $p < .01$

Table A4.27: Table for 3 (group) x 2 (curve) anova for the transfer trial (MM)

Source	Sum of Squares	d.f.	Mean Square	F	P
Mean	7544.17778	1	7544.17778	291.93	0.0000
Group	1038.68889	2	519.34444	20.10	0.0000
Curve	224.04444	1	224.04444	8.67	0.0042
GC	134.28889	2	67.14444	2.60	0.0804
Error	2170.80000	84	25.84286		

Table A4.28: Tukey HSD test for differences between groups on the transfer trial (MM)

		13.70	8.23	5.53
CLD	13.70	-	5.47**	8.17**
MA	8.23		-	2.70
CA	5.53			-

$$HSD = q_{.01,\ 3,\ 84} \sqrt{\frac{25.84}{30}} = 4.26 \times 0.93 = 3.96$$

$$HSD = q_{.05,\ 3,\ 84} \sqrt{\frac{25.84}{30}} = 3.39 \times 0.93 = 3.15$$

$^{**}p < .01$

Table A4.29: Table for 3 (group) x 2 (curve) x 2 (trial) anova recall and transfer (MM)

Source	Sum of Squares	d.f.	Mean Square	F	P
Mean	14942.22222	1	14942.22222	292.66	0.0000
Group	2248.81111	2	1124.40556	22.02	0.0000
Curve	21.35556	1	21.35556	0.42	0.5196
GC	20.87778	2	10.43889	0.20	0.8155
Error	4288.73333	84	51.05635		
Trials	0.35556	1	0.35556	0.03	0.8596
TG	9.14444	2	4.57222	0.40	0.6685
TC	273.80000	1	273.80000	24.23	0.0000
TGC	157.43333	2	78.71667	6.97	0.0016
Error	949.26667	84	11.30079		

Table A4.30: Anova table for tests of simple main effects, group x curve x trials interaction on recall x transfer (MM)

Source	Sum of Squares	d.f.	Mean Square	F	P
A at B_1C_1	817.51	2	408.75	13.11	$<.01$
A at B_1C_2	425.82	2	212.91	6.83	$<.01$
A at B_2C_1	241.20	2	120.60	3.87	$<.05$
A at B_2C_2	948.42	2	474.21	15.21	$<.01$
Error		84	31.18		
B at A_1C_1	229.35	1	229.35	20.30	$<.01$
B at A_1C_2	163.56	1	163.56	14.47	$<.01$
B at A_2C_1	17.78	1	17.78	1.57	
B at A_2C_2	10.79	1	10.79	0.97	
B at A_3C_1	0.29	1	0.29	0.03	
B at A_3C_2	20.91	1	20.91	1.85	
Error		84	11.30		
C at A_1B_1	97.19	1	97.19	3.12	
C at A_1B_2	326.70	1	326.70	10.48	$<.01$
C at A_2B_1	13.46	1	13.46	0.43	
C at A_2B_2	14.69	1	14.69	0.47	
C at A_3B_1	0.54	1	0.54	0.02	
C at A_3B_2	856.20	1	856.20	27.46	$<.01$
Error		84	31.18		

cont'd

Table A4.30 cont'd

Source	Sum of Squares	d.f.	Mean Square	F	P
AB at C_1	1190.25	2	595.12	52.67	$<.01$
AB at C_2	1516.37	2	758.18	67.10	$<.01$
Error		84	11.30		
AC at B_1	1311.19	2	655.59	21.03	$<.01$
AC at B_2	1420.02	2	710.01	22.77	$<.01$
Error		84	31.18		
BC at A_1	426.67	1	426.67	37.76	$<.01$
BC at A_2	28.59	1	28.59	2.53	
BC at A_3	107.23	1	107.23	9.49	$<.01$
Error		84	11.30		

Table A4.31: Tukey HSD test for differences between groups, on the recall trial, attempting the regular track (MM)

	15.93	7.67	6.27
CLD 15.93	-	8.26**	9.66**
MA 7.67		-	1.40
CA 6.27			-

$$HSD = q_{.01,\ 3,\ 84} \sqrt{\frac{51.06}{30}} = 4.26 \times 1.30 = 5.54$$

$$HSD = q_{.05,\ 3,\ 84} \sqrt{\frac{51.06}{30}} = 3.39 \times 1.30 = 4.41$$

** $p < .01$

Table A4.32: Tukey HSD test for differences between groups, on the recall trial, attempting the irregular track (MM)

	12.33	7.47	4.73
CLD 12.33	-	4.86*	7.60**
MA 7.47		-	2.74
CA 4.73			-

$$HSD = q_{.01,\ 3,\ 84} \sqrt{\frac{51.06}{30}} = 4.26 \times 1.30 = 5.54$$

$$HSD = q_{.05,\ 3,\ 84} \sqrt{\frac{51.06}{30}} = 3.39 \times 1.30 = 4.41$$

** $p < .01$

* $p < .05$

Table A4.33: Tukey HSD test for differences between groups attempting the regular track on recall and irregular track on transfer, on the transfer trial (MM)

		10.40	7.40	4.93
CLD	10.40	-	3.00	5.47*
MA	7.40		-	2.47
CA	4.93			-

$$HSD = q_{.01,\ 3,\ 84} \sqrt{\frac{51.06}{30}} = 4.26 \times 1.30 = 5.54$$

$$HSD = q_{.05,\ 3,\ 84} \sqrt{\frac{51.06}{30}} = 3.39 \times 1.30 = 4.41$$

$^{*}p < .05$

Table A4.34: Tukey HSD test for differences between groups attempting the irregular track on recall and regular track on transfer, on the transfer trial (MM)

		17.00	9.07	6.13
CLD	17.00	-	7.93**	10.87**
MA	9.07		-	2.94
CA	6.13			-

$$HSD = q_{.01,\ 3,\ 84} \sqrt{\frac{51.06}{30}} = 4.26 \times 1.30 = 5.56$$

$$HSD = q_{.05,\ 3,\ 84} \sqrt{\frac{51.06}{30}} = 3.39 \times 1.30 = 4.41$$

$^{**}p < .01$

Table A4.35: Table for 3 (group) x 2 (curve) x 10 (trials) anova, day 1 (RMS)

Source	Sum of Squares	d.f.	Mean Square	F	P
Mean	236455.27111	1	236455.27111	657.04	0.0000
Group	21768.96889	2	10884.48444	30.24	0.0000
Curve	6136.11111	1	6136.11111	17.05	0.0001
GC	2568.67556	2	1284.33778	3.57	0.0325
Error	30229.97333	84	359.88063		
Trials	8971.46222	9	996.82914	35.92	0.0000
TG	610.16444	18	33.89802	1.22	0.2364
TC	1878.22222	9	208.69136	7.52	0.0000
TGC	370.59111	18	20.58840	0.74	0.7687
Error	20980.56000	756	27.75206		

Table A4.36: Anova table for tests of simple main effects, group x curve interaction, practice trials (RMS)

Source	Sum of Squares	d.f.	Mean Square	F	P
A at C_1	19639.80	2	9819.90	27.30	$<$ .01
A at C_2	24694.00	2	2347.00	6.50	$<$ .01
Error		84	359.88		
C at A_1	6403.30	1	6403.30	17.80	$<$ .01
C at A_2	70.60	1	70.60	0.20	
C at A_3	2227.70	1	2227.70	6.20	$<$ .05
Error		84	359.88		

Table A4.37: Tukey HSD test for differences between groups during practice trials, regular track (RMS)

		26.83	18.97	10.65
CLD	26.83	-	7.86**	16.18**
MA	18.97		-	8.32**
CA	10.65			-

$$HSD = q_{.01,\ 3,\ 84} \sqrt{\frac{359.88}{150}} = 4.26 \times 1.55 = 6.60$$

**p < .01

Table A4.38: Tukey HSD test for differences between groups during practice trials, irregular track (RMS)

		17.59	13.52	9.68
CLD	17.59	-	4.07	7.91**
MA	13.52		-	3.84
CA	9.68			-

$$HSD = q_{.01,\ 3,\ 84} \sqrt{\frac{359.88}{150}} = 4.26 \times 1.55 = 6.60$$

$$HSD = q_{.05,\ 3,\ 84} \sqrt{\frac{359.88}{150}} = 3.39 \times 1.55 = 5.25$$

**p < .01

Table A4.39: Anova table for tests of simple main effects, curve x trial interaction practice trials (RMS)

Source	Sum of Squares	d.f.	Mean Square	F	P
C at B_1	3648.11	1	3648.11	59.84	$<.01$
C at B_2	1247.68	1	1247.68	20.47	$<.01$
C at B_3	656.92	1	656.92	10.78	$<.01$
C at B_4	454.27	1	454.27	7.45	$<.01$
C at B_5	409.60	1	409.60	6.72	$<.05$
C at B_6	597.52	1	597.52	9.80	$<.01$
C at B_7	233.77	1	233.77	3.83	
C at B_8	236.68	1	236.68	1.08	
C at B_{10}	474.72	1	474.72	7.79	$<.01$
Error		84	60.96		
B at C_1	9352.66	9	1039.18	37.45	$<.01$
B at C_2	1492.38	9	165.82	5.98	$<.01$
Error		756	27.75		

Table A4.40: Tukey HSD test for differences between the 10 practice trials for the regular curve (RMS)

	30.89	22.36	19.76	18.54	17.31	17.13	16.33	15.65	15.27	14.98
1 30.89	-	8.53**	11.13**	12.35**	13.58**	13.76**	14.56**	15.24**	15.62**	15.91**
2 22.36		-	2.60	3.82*	5.05**	5.23**	6.03**	6.71**	7.09**	7.38**
3 19.76			-	1.22	2.45	2.63	3.43	4.11**	4.49**	4.78**
4 18.54				-	1.23	1.41	2.21	2.89	3.27	3.56*
6 17.31					-	0.18	0.98	1.66	2.04	2.33
5 17.13						-	0.80	1.48	1.86	2.15
10 16.33							-	0.68	1.06	1.35
7 15.65								-	0.38	0.67
8 15.27									-	0.29
9 14.98										

$$HSD = q_{.01,\ 10,\ 756} \sqrt{\frac{27.75}{45}} = 5.16 \times 0.79 = 4.08$$

$$HSD = q_{.05,\ 10,\ 756} \sqrt{\frac{27.75}{45}} = 4.47 \times 0.79 = 3.53$$

$^{**}p < .01$

$^{*}p < .05$

Table A4.41: Tukey HSD test for differences between the 10 practice trials, irregular curve (RMS)

		18.15	14.91	14.35	14.04	13.27	12.87	12.42	12.20	12.02	11.74
1	18.15	-	3.24	3.80*	4.11**	4.88**	5.28**	5.73**	5.95**	6.13**	6.41**
2	14.91		-	0.56	0.86	1.64	2.04	2.49	2.71	2.89	3.17
3	14.35			-	0.31	1.08	1.48	1.93	2.15	2.33	2.61
4	14.04				-	0.77	1.17	1.62	1.84	2.02	2.30
9	13.27					-	0.40	0.85	1.07	1.25	1.53
5	12.87						-	0.45	0.67	0.85	1.13
7	12.42							-	2.22	0.40	0.68
6	12.20								-	0.18	0.46
8	12.02									-	0.28
10	11.74										-

$$HSD = q_{.01,\ 10,\ 756} \sqrt{\frac{27.75}{45}} = 5.16 \times 0.79 = 4.08$$

$$HSD = q_{.05,\ 10,\ 756} \sqrt{\frac{27.45}{45}} = 4.47 \times 0.79 = 3.53$$

$^{**}p < .01$

$^{*}p < .05$

Table A4.42: Table for 3 (group) x 2 (curve) anova, recall trial (RMS)

Source	Sum of Squares	d.f.	Mean Square	F	Trial Probability
Mean	12017.77778	1	12017.77778	237.61	0.0000
Group	1856.08889	2	928.04444	18.35	0.0000
Curve	82.17778	1	82.17778	1.62	0.2059
GC	45.42222	2	22.71111	2.45	0.6398
Error	4248.53333	84	50.57778		

Table A4.43: Tukey HSD test for differences between groups on the recall trial (RMS)

		17.80	9.73	7.13
CLD	17.80	-	8.07**	10.67**
MA	9.73		-	2.60
CA	7.13			-

$$HSD = q_{.01,\ 3,\ 84} \sqrt{\frac{50.58}{30}} = 4.26 \times 1.30 = 5.54$$

$$HSD = q_{.05,\ 3,\ 84} \sqrt{\frac{50.58}{30}} = 3.39 \times 1.30 = 4.41$$

$^{**}p < .01$

Table A4.44: Table for 3 (group) x 2 (curve) anova for the transfer trial (RMS)

Source	Sum of Squares	d.f.	Mean Square	F	Trial Probability
Mean	12343.51111	1	12343.51111	295.24	0.0000
Group	1643.62222	2	821.81111	19.72	0.0000
Curve	298.84444	1	298.84444	7.17	0.0089
GC	176.02222	2	88.01111	2.11	0.1273
Error	3500.00000	84	41.66667		

Table A4.45: Tukey HSD test for differences between groups on the transfer trial (RMS)

		17.40	10.63	7.10
CLD	17.40	-	6.77**	10.30**
MA	10.63		-	3.53
CA	7.10			

$$HSD = q_{.01,\ 3,\ 84} \sqrt{\frac{41.67}{30}} = 4.26 \times 1.18 = 5.03$$

$$HSD = q_{.05,\ 3,\ 84} \sqrt{\frac{41.67}{30}} = 3.39 \times 1.18 = 4.00$$

** $p < .01$

Table A4.46: Table for 3 (group) x 2 (curve) x 2 (trial) anova for RMS on recall and transfer

Source	Sum of Squares	d.f.	Mean Square	F	Trial Probability
Mean	24360.20000	1	24360.20000	319.92	0.0000
Group	3486.23333	2	1743.11667	22.89	0.0000
Curve	33.80000	1	33.80000	0.44	0.5071
GC	29.63333	2	14.81667	0.19	0.8235
Error	6396.13333	84	76.14444		
Trials	10.8889	1	1.08889	0.07	0.7955
TG	13.47778	2	6.73889	0.42	0.6594
TC	347.22222	1	347.22222	21.57	0.0000
TGC	191.81111	2	95.90556	5.96	0.0038
Error	1352.40000	84	16.10000		

Table A4.47: Anova table for tests of simple main effects, group x curve x trial interaction, recall and transfer

Source	Sum of Squares	d.f.	Mean Square	F	P
A at B_1C_1	1178.62	2	589.31	12.78	$<$ .01
A at B_1C_2	722.36	2	361.18	7.83	$<$ .01
A at B_2C_1	403.15	2	201.57	4.37	$<$ .05
A at B_2C_2	1416.48	2	708.24	15.36	$<$ .01
Error		84	46.12		
B at A_1C_1	276.33	1	276.33	17.12	$<$ .01
B at A_1C_2	208.29	1	208.29	12.94	$<$ .01
B at A_2C_1	22.44	1	22.44	1.39	
B at A_2C_2	20.66	1	20.66	1.28	
B at A_3C_1	0.03	1	0.03	0.00	
B at A_3C_2	26.22	1	26.22	1.63	
Error		84	16.10		
C at A_1B_1	104.90	1	104.90	2.27	
C at A_1B_2	433.20	1	433.20	9.39	$<$ .01
C at A_2B_1	22.44	1	22.44	0.49	
C at A_2B_2	20.66	1	20.66	0.45	
C at A_3B_1	0.54	1	0.54	0.01	
C at A_3B_2	20.91	1	20.91	0.45	
Error		84	46.12		
AB at C_1	1736.61	2	868.30	59.93	$<$ .01
AB at C_2	2332.44	2	1166.22	72.44	$<$ .01
Error		84	16.10		

cont'd

Table A4.47: cont'd

Source	Sum of Squares	d.f.	Mean Square	F	P
AC at B_1	1983.35	2	991.67	21.46	$< .01$
AC at B_2	2118.29	2	1059.14	22.93	$< .01$
Error		84	46.20		
BC at A_1	540.60	1	540.60	33.58	$< .01$
BC at A_2	43.12	1	43.12	2.68	
BC at A_3	33.61	1	33.61	2.09	
Error		84	16.10		

Table A4.48: Tukey HSD test for differences between groups, attempting the regular curve on recall (RMS)

		19.67	9.87	8.00
CLD	19.67	-	9.80**	11.67**
MA	9.87		-	1.87
CA	8.00			-

$$HSD = q_{.01,\ 3,\ 84} \sqrt{\frac{76.14}{15}} = 4.26 \times 2.25 = 9.58$$

$$HSD = q_{.05,\ 3,\ 84} \sqrt{\frac{76.14}{15}} = 3.39 \times 2.25 = 7.63$$

**p < .01

Table A4.49: Tukey HSD test for differences between groups attempting the irregular curve on recall (RMS)

		15.93	9.60	6.27
CLD	15.93	-	6.33**	9.66**
MA	9.60		-	3.33
CA	6.27			-

$$HSD = q_{.01,\ 3,\ 84} \sqrt{\frac{76.14}{15}} = 4.26 \times 2.25 = 9.58$$

$$HSD = q_{.05,\ 8,\ 84} \sqrt{\frac{76.14}{15}} = 3.39 \times 2.25 = 7.63$$

**p < .01

Table A4.50: Tukey HSD test for differences between groups attempting the irregular curve on transfer (R - 1) (RMS)

		13.60	9.80	6.27
CLD	13.60	-	3.80	7.33
MA	9.80		-	3.35
CA	6.27			-

$$HSD = q_{.01,\ 3,\ 84} \sqrt{\frac{76.14}{15}} = 4.26 \times 2.25 = 9.58$$

$$HSD = q_{.05,\ 3,\ 84} \sqrt{\frac{76.14}{15}} = 3.39 \times 2.25 = 7.63$$

Table A4.51: Fisher LSD test for differences between groups attempting the irregular curve on transfer (R-1) (RMS)

		13.60	9.80	6.27
CLD	13.60	-	3.80	7.33*
MA	9.80		-	3.53
CA	6.27			-

$$LSD = t_{.01/2,\ 84} \sqrt{\frac{2(76.14)}{15}} = 2.65 \times 3.19 = 8.45$$

$$LSD = t_{.05/2,\ 84} \sqrt{\frac{2(76.14)}{15}} = 2.00 \times 3.19 = 6.38$$

$^{*}p < .05$

Table A4.52: Tukey HSD test for differences between groups attempting the regular curve on transfer (1 - R) (RMS)

		21.20	11.47	7.93
CLD	21.20	-	9.73**	13.27**
MA	11.47		-	3.54
CA	7.93			-

$$HSD = q_{.01,\ 3,\ 84} \sqrt{\frac{76.14}{15}} = 4.26 \times 2.25 = 9.58$$

$$HSD = q_{.05,\ 3,\ 84} \sqrt{\frac{76.14}{15}} = 3.39 \times 2.25 = 7.63$$

**$p < .01$

Table A4.53: Table for 3 (group) x 2 (curve) x 10 (trials) anova, day 1, 5 greatest RMS error scores

Source	Sum of Squares	d.f.	Mean Square	F	Trial Probability
Mean	1171228.98778	1	1171228.98778	1019.14	0.0000
Group	70409.35556	2	35204.66778	30.63	0.0000
Curve	15179.02778	1	15170.02778	13.20	0.0005
GC	5703.62889	2	2851.81444	2.48	0.0897
Error	96535.72000	84	1149.23476		
Trials	26245.66778	9	2916.29642	23.99	0.0000
TG	3624.77556	18	201.37642	1.66	0.0421
TC	8952.78333	9	994.75370	8.18	0.0000
TGC	1705.99333	18	94.77741	0.78	0.7258
Error	91913.08000	756	121.57815		

Table A4.54: Anova table for tests of simple main effects, group x trial interaction, practice trials (5 greatest RMS error)

Source	Sum of Squares	d.f.	Mean Square	F	P
A at B_1	3526.75	2	1763.37	7.86	$<.01$
A at B_2	7720.46	2	3860.23	17.21	$<.01$
A at B_3	8608.95	2	4304.47	19.19	$<.01$
A at B_4	8702.18	2	4351.09	19.40	$<.01$
A at B_5	7583.07	2	3791.53	16.90	$<.01$
A at B_6	6496.99	2	3248.49	14.48	$<.01$
A at B_7	6659.76	2	3329.88	14.84	$<.01$
A at B_8	7316.85	2	3658.42	16.31	$<.01$
A at B_9	9643.40	2	4821.70	21.49	$<.01$
A at B_{10}	7811.54	2	3905.77	17.41	$<.01$
Error		84	224.34		
B at A_1	4912.25	9	545.81	4.49	$<.01$
B at A_2	10486.99	9	1165.22	9.58	$<.01$
B at A_3	14528.51	9	1614.28	13.28	$<.01$
Error		756	21.58		

Table A4.55: Tukey HSD Test for differences between groups on practice trial 1 (5 greatest RMS error)

		56.86	52.26	41.97
CLD	56.86	-	4.60	14.89
MA	52.26		-	10.29
CA	41.97			-

$$HSD = q_{.01,\ 3,\ 84} \sqrt{\frac{11.49}{30}} = 4.26 \times 6.19 = 26.37$$

$$HSD = q_{.01,\ 3,\ 84} \sqrt{\frac{11.49}{30}} = 3.39 \times 6.19 = 20.98$$

Table A4.56: Tukey HSD test for differences between groups on practice trial 2 (5 greatest RMS error)

		47.63	45.00	26.80
CLD	47.63	-	2.63	20.83
MA	45.00		-	18.20
CA	26.80			-

$$HSD = q_{.01,\ 3,\ 84} \sqrt{\frac{1149}{30}} = 4.26 \times 6.19 = 26.37$$

$$HSD = q_{.01,\ 3,\ 84} \sqrt{\frac{1149}{30}} = 3.39 \times 6.19 = 20.98$$

Table A4.57: Tukey HSD test for differences between groups on practice trial 3 (5 greatest RMS error)

		47.56	41.76	24.53
CLD	47.56	-	5.80	23.03*
MA	41.76		-	17.23
CA	24.53			-

$$HSD = q_{.01,\ 3,\ 84} \sqrt{\frac{11.49}{30}} \approx 4.26 \times 6.19 = 26.37$$

$$HSD = q_{.05,\ 3,\ 84} \sqrt{\frac{11.49}{30}} = 3.39 \times 6.19 = 20.98$$

*$p < .05$

Table A4.58: Tukey HSD test for differences between groups on practice trial 4 (5 greatest RMS error)

		47.27	36.00	23.20
CLD	47.27	-	11.27	24.07*
MA	36.00		-	12.80
CA	23.20			-

$$HSD = q_{.01,\ 3,\ 84} \sqrt{\frac{11.49}{30}} = 4.26 \times 6.19 = 26.37$$

$$HSD = q_{.05,\ 3,\ 84} \sqrt{\frac{11.49}{30}} = 3.39 \times 6.19 = 20.98$$

*$p < .05$

Table A4.59: Tukey HSD test for differences between groups on practice trial 5, (5 greatest RMS error)

	45.53	32.70	23.13
CLD 45.53	-	12.83	22.40*
MA 32.70		-	9.57
CA 23.13			-

$$\text{HSD} = q_{.01,\ 3,\ 84} \sqrt{\frac{11.49}{30}} = 4.26 \times 6.19 = 26.37$$

$$\text{HSD} = q_{.05,\ 3,\ 84} \sqrt{\frac{11.49}{30}} = 3.39 \times 6.19 = 20.98$$

$^{*}p < .05$

Table A4.60: Tukey HSD test for differences between groups on practice trial 6 (5 greatest RMS error)

	42.36	34.63	21.76
CLD 42.36	-	7.73	20.60
MA 34.63		-	12.87
CA 21.70			-

$$\text{HSD} = q_{.01,\ 3,\ 84} \sqrt{\frac{11.49}{30}} = 4.26 \times 6.19 = 26.37$$

$$\text{HSD} = q_{.05,\ 3,\ 84} \sqrt{\frac{11.49}{30}} = 3.39 \times 6.19 = 20.98$$

Table A4.61: Tukey HSD test for differences between groups on practice trial 7 (5 greatest RMS error)

		42.36	32.26	21.30
CLD	42.36	-	10.10	21.06*
MA	32.26		-	10.96
CA	21.30			-

$$HSD = q_{.01,\ 3,\ 84} \sqrt{\frac{11.49}{30}} = 4.26 \times 6.19 = 26.37$$

$$HSD = q_{.05,\ 3,\ 84} \sqrt{\frac{11.49}{30}} = 3.39 \times 6.19 = 20.98$$

$^{*}p < .05$

Table A4.62: Tukey HSD test for differences between groups on practice trial 8 (5 greatest RMS error)

		42.60	29.40	20.67
CLD	42.60	-	13.20	21.93*
MA	29.40		-	8.73
CA	20.67			-

$$HSD = q_{.01,\ 3,\ 84} \sqrt{\frac{11.49}{30}} = 4.26 \times 6.19 = 26.37$$

$$HSD = q_{.05,\ 3,\ 84} \sqrt{\frac{11.49}{30}} = 3.39 \times 6.19 = 20.98$$

$^{*}p < .05$

Table A4.63: Tukey HSD test for differences between groups on practice trial 9 (5 greatest RMS error)

		47.43	30.70	22.56
CLD	47.43	-	16.73	24.87*
MA	30.70		-	8.14
CA	22.56			-

$$HSD = q_{.01,\ 3,\ 84} \sqrt{\frac{11.49}{30}} = 4.26 \times 6.19 = 26.37$$

$$HSD = q_{.05,\ 3,\ 84} \sqrt{\frac{11.49}{30}} = 3.39 \times 6.19 = 20.98$$

$^{*}p < .05$

Table A4.64: Tukey HSD test for differences between groups on practice trial 10 (5 greatest RMS error)

		46.07	32.47	23.40
CLD	46.07	-	13.60	22.67*
MA	32.47		-	9.07
CA	23.40			-

$$HSD = q_{.01,\ 3,\ 84} \sqrt{\frac{11.49}{30}} = 4.26 \times 6.19 = 26.37$$

$$HSD = q_{.05,\ 3,\ 84} \sqrt{\frac{11.49}{30}} = 3.39 \times 6.19 = 20.98$$

$^{*}p < .05$

Table A4.65: Fisher LSD test for differences between groups on practice trial 1 (5 greatest RMS error)

		56.86	52.26	41.97
CLD	56.86	-	4.60	14.89
MA	52.26		-	10.29
CA	41.97			-

$$LSD = t_{.01/2,\ 84} \sqrt{\frac{11.49 \times 2}{30}} = 2.65 \times 8.75 = 23.19$$

$$LSD = t_{.05/2,\ 84} \sqrt{\frac{11.49 \times 2}{30}} = 2.00 \times 8.75 = 17.50$$

Table A4.66: Fisher LSD test for differences between groups on practice trial 2 (5 greatest RMS error)

		47.63	45.00	26.80
CLD	47.63	-	2.63	20.83*
MA	45.00		-	18.20*
CA	26.80			-

$$LSD = t_{.01/2,\ 84} \sqrt{\frac{11.49 \times 2}{30}} = 2.65 \times 8.75 = 23.19$$

$$LSD = t_{.05/2,\ 84} \sqrt{\frac{11.49 \times 2}{30}} = 2.00 \times 8.75 = 17.50$$

*$p < .05$

Table A4.67: Fisher LSD test for differences between groups on practice trial 6 (5 greatest RMS error)

		42.36	34.63	21.76
CLD	42.36	-	7.73	20.60*
MA	34.63		-	12.87
CA	21.76			-

$$LSD = t_{.01,\ 2,\ 84} \sqrt{\frac{11.49 \times 2}{30}} = 2.65 \times 8.75 = 23.19$$

$$LSD = t_{.05,\ 2,\ 84} \sqrt{\frac{11.49 \times 2}{30}} = 2.00 \times 8.75 = 17.50$$

$^{*}p < .05$

Table A4.68: Tukey HSD test for differences between trials for the group with learning difficulties (5 greatest RMS error scores)

	56.86	47.63	47.56	47.43	47.27	46.07	45.33	42.60	42.36	42.36
1 56.86	-	9.23*	9.30*	9.43*	9.59*	10.79**	11.53**	14.36**	14.50**	14.50**
2 47.63		-	0.07	0.20	0.36	1.56	2.30	5.03	5.27	5.27
3 47.56			-	0.13	0.29	1.49	2.23	4.96	5.20	5.20
9 47.43				-	0.16	1.36	2.10	4.83	5.07	5.07
4 47.27					-	1.20	0.94	4.67	4.91	4.91
10 46.07						-	0.74	3.47	3.71	3.71
5 45.33							-	2.73	2.97	2.97
8 42.60								-	0.14	0.14
6 42.36									-	0
7 42.36										-

$$HSD = q_{.01,\ 10,\ 756} \sqrt{\frac{121.58}{30}} = 5.16 \times 2.01 = 10.37$$

$$HSD = q_{.05,\ 10,\ 756} \sqrt{\frac{121.58}{30}} = 4.47 \times 2.01 = 8.98$$

** $p < .01$

* $p < .05$

Table A4.69: Tukey HSD test for differences between trials for the MA matched group (5 greatest RMS error scores)

	52.26	45.00	41.76	36.00	34.68	32.70	32.47	32.26	30.70	29.40
1 52.26	-	7.26	10.50**	16.26**	17.58**	19.56**	19.79**	20.00**	21.56**	22.86**
2 45.00		-	3.24	9.00*	10.32*	12.30**	12.53**	12.74**	14.30**	15.60**
3 41.76			-	5.76	7.08	9.06*	9.29*	9.50*	11.06**	12.36**
4 36.00				-	1.32	3.30	3.53	3.74	5.30	6.60
6 34.68					-	1.98	2.21	2.42	3.98	5.28
5 32.70						-	0.23	0.44	2.00	3.30
10 32.47							-	0.21	1.77	3.07
7 32.26								-	1.56	2.86
9 30.70									-	1.30
8 29.40										-

$$\text{HSD} = q_{.01,\ 10,\ 756}\sqrt{\frac{121.58}{30}} = 5.16 \times 2.01 = 10.37$$

$$\text{HSD} = q_{.05,\ 10,\ 756}\sqrt{\frac{121.58}{30}} = 4.47 \times 2.01 = 8.98$$

$^{**}p < .01$

$^{*}\ p < .05$

Table A4.70: <u>Tukey HSD test for differences between trials for the CA matched group (5 greatest RMS error scores)</u>

		41.97	26.80	24.53	23.40	23.20	23.13	22.56	21.76	21.30	20.67
1	41.97	-	15.17**	17.44**	17.57**	17.77**	17.84**	19.41**	20.21**	20.67**	21.30**
2	26.80		-	2.27	2.40	2.60	2.67	4.24	5.04	5.50	6.13
3	24.53			-	0.13	0.33	0.40	1.97	2.77	3.23	3.86
10	23.40				-	0.20	0.27	1.84	2.64	3.10	3.73
4	23.20					-	0.07	1.64	2.44	2.90	3.53
5	23.13						-	1.57	2.37	2.83	3.46
9	22.56							-	0.80	1.26	1.89
6	21.76								-	0.46	1.09
7	21.30									-	0.63
8	20.67										-

$$HSD = q_{.01,\ 10,\ 756}\sqrt{\frac{121.58}{30}} = 5.16 \times 2.01 = 10.37$$

$$HSD = q_{.05,\ 10,\ 756}\sqrt{\frac{121.58}{30}} = 4.47 \times 2.01 = 8.98$$

$^{**}p < .01$

Table A4.71: Anova Table for tests of simple main effects, curve x trial interaction, practice trials (5 greatest RMS error scores)

Source	Sum of Squares	d.f.	Mean Square	F	P
C at B_1	12320.10	1	12320.10	54.92	$< .01$
C at B_2	5396.33	1	5396.33	24.05	$< .01$
C at B_3	1604.02	1	1604.02	7.15	$< .01$
C at B_4	872.35	1	872.35	3.89	
C at B_5	1742.39	1	1742.39	7.77	$< .01$
C at B_6	1481.08	1	1481.08	6.60	$< .05$
C at B_7	651.25	1	651.25	2.90	
C at B_8	683.10	1	683.10	3.04	
C at B_9	0.01	1	0.01	0.00	
C at B_{10}	250.00	1	250.00	1.11	
Error		84	224.34		
B at C_1	31428.38	9	3492.04	28.72	$< .01$
B at C_2	13165.14	9	1462.79	12.03	$< .01$
Error		756	121.58		

Table A4.72: <u>Tukey HSD test for differences between trials for the regular curve, practice trials (5 greatest RMS error scores)</u>

	62.07	47.55	42.18	38.60	36.98	36.89	35.65	34.67	33.64	33.58
1 62.07	-	14.52**	19.94**	23.47**	25.09**	25.18**	26.42**	27.40**	28.43**	25.49**
2 47.55		-	5.42	8.95**	10.57**	10.66**	11.90**	12.88**	13.91**	13.97**
3 42.18			-	3.58	5.15	5.24	6.48	7.46*	8.49**	28.16**
4 38.60				-	1.62	1.73	2.90	3.93	4.96	5.02
6 36.98					-	0.09	1.28	2.31	3.34	3.40
5 36.89						-	1.19	2.22	3.25	3.31
10 35.65							-	0.98	2.01	2.07
7 34.67								-	1.03	1.09
8 33.64									-	0.06
9 33.58										-

$$\text{HSD} = q_{.01,\ 10,\ 756}\sqrt{\frac{121.58}{45}} = 5.10 \times 1.64 = 8.46$$

$$\text{HSD} = q_{.05,\ 10,\ 756}\sqrt{\frac{121.58}{45}} = 4.47 \times 1.64 = 7.33$$

$^{**}p < .01$

$^{*}p < .05$

Table A4.73: Tukey HSD test for differences between trials for the irregular curve, practice trials (5 greatest RMS error scores)

		43.69	38.67	33.73	33.55	32.38	32.31	32.07	29.29	28.86	28.13
5	43.69	-	5.02	9.96**	10.14**	11.31**	11.38**	11.62**	14.40**	14.83**	15.56**
1	38.67		-	4.94	5.12	6.29	6.36	6.60	9.38**	23.84**	10.54**
3	33.73			-	0.18	1.35	1.42	1.66	4.40	4.87	5.60
9	33.55				-	1.17	1.24	1.48	4.26	4.69	5.42
4	32.38					-	0.07	0.31	3.09	3.52	4.25
10	32.31						-	0.24	3.02	3.45	4.18
2	32.07							-	2.78	3.21	3.94
7	29.29								-	0.43	1.16
6	28.86									-	0.73
8	28.13										-

$$HSD = q_{.01,\ 10,\ 756} \sqrt{\frac{121.58}{45}} = 5.16 \times 1.64 = 8.46$$

$$HSD = q_{.05,\ 10,\ 756} \sqrt{\frac{121.58}{45}} = 4.47 \times 1.64 = 7.33$$

$^{**}p < .01$

Table A4.74: Table for 3 (group) x 2 (curve) anova on the recall trial (5 greatest RMS error scores)

Source	Sum of Squares	d.f.	Mean Square	F	Trial Probability
Mean	68392.90000	1	68392.90000	343.70	0.0000
Group	7745.40000	2	3872.70000	19.46	0.0000
Curve	340.27778	1	340.27778	1.71	0.1945
GC	109.35556	2	54.67778	0.27	0.7604
Error	16715.06667	84	198.98889		

Table A4.75: Tukey HSD test for differences between groups on the recall trial (5 greatest RMS error scores)

		40.27	24.06	18.37
CLD	40.27	-	16.21**	21.90**
MA	24.06		-	5.69
CA	18.37			-

$$HSD = q_{.01,\ 3,\ 84} \sqrt{\frac{198.99}{30}} = 4.26 \times 2.58 = 10.99$$

$$HSD = q_{.05,\ 3,\ 84} \sqrt{\frac{198.99}{30}} = 3.39 \times 2.58 = 8.75$$

$^{**}p < .01$

Table A4.76: Table for 3 (group) x 2 (curve) anova for the transfer trial (5 greatest RMS error scores)

Source	Sum of Squares	d.f.	Mean Square	F	P
Mean	77264.10000	1	77264.10000	365.36	0.0000
Group	8961.86667	2	4480.93333	21.19	0.0000
Curve	1384.54444	1	1384.54444	6.55	0.0123
GC	760.62222	2	380.31111	1.80	0.1719
Error	17763.86667	84	211.47460		

Table A4.77: Tukey HSD test for differences between groups on the transfer trial (5 greatest RMS error scores)

		42.56	26.83	18.50
CLD	42.56	-	15.73**	24.06**
MA	26.83		-	8.33
CA	18.50			-

$$HSD = q_{.01,\ 3,\ 84} = \sqrt{\frac{211.47}{30}} = 4.26 \times 2.65 = 11.29$$

$$HSD = q_{.05,\ 3,\ 84} = \sqrt{\frac{211.47}{30}} = 3.39 \times 2.65 = 8.98$$

**p $<$ .01

Table A4.78: Table for 3 (group) x 2 (curve) x 2 (trial) anova on recall and transfer trials(5 greatest RMS error scores)

Source	Sum of Squares	d.f.	Mean Square	F	Trial Probability
Mean	145521.80000	1	145521.80000	421.27	0.0000
Group	16648.03333	2	8324.01667	24.10	0.0000
Curve	176.02222	1	176.02222	0.51	0.4773
GC	164.74444	2	82.37222	0.24	0.7884
Error	29016.40000	84	345.43333		
Trials	135.20000	1	135.20000	2.08	0.1531
TG	59.23333	2	29.61667	0.46	0.6357
TC	1548.80000	1	1548.80000	23.82	0.0000
TGC	705.23333	2	352.61667	5.42	0.0061
Error	5462.53333	84	65.03016		

Table A4.49: Anova table for test of simple main effects, group x curve x trial interaction recall and transfer (5 greatest RMS error)

Source	Sum of Squares	d.f.	Mean Square	F	P
A at B_1C_1	4677.04	2	2333.52	11.37	$<$ .01
A at B_1C_2	3178.63	2	1589.31	7.74	$<$ .01
A at B_2C_1	2414.33	2	1207.16	5.88	$<$ .01
A at B_2C_2	7237.20	2	3518.60	17.63	$<$ .01
Error			205.23		
B at A_1C_1	626.54	1	626.54	9.63	$<$ .01
B at A_1C_2	1413.84	1	1413.84	21.74	$<$ .01
B at A_2C_1	90.30	1	90.30	1.39	
B at A_2C_2	104.34	1	104.34	1.60	
B at A_3C_1	0.30	1	0.30	0.00	
B at A_3C_2	255.80	1	255.80	3.93	
Error			65.03		
C at A_1B_1	346.79	1	346.79	1.69	
C at A_1B_2	1936.83	1	1936.83	9.44	$<$ .01
C at A_2B_1	86.69	1	86.69	0.42	
C at A_2B_2	103.30	1	103.30	0.53	
C at A_3B_1	16.20	1	16.20	0.08	
C at A_3B_2	129.59	1	129.59	0.63	
Error			205.23		
AB at C_1	7476.39	2	3738.19	57.48	$<$ .01
AB at C_2	11776.55	2	5888.27	90.55	$<$ .01
Error			65.03		

cont'd

Table A4.79: cont'd

Source	Sum of Squares	d.f.	Mean Square	F	P
AC at B_1	8196.14	2	4098.07	19.97	$< .01$
AC at B_2	11099.94	2	5549.97	27.04	$< .01$
Error			205.23		
BC at A_1	2362.63	1	2362.63	36.33	$< .01$
BC at A_2	195.25	1	195.25	3.00	
BC at A_3	284.11	1	284.11	4.37	$< .05$
Error			65.03		

Table A4.80: Tukey HSD test for differences between groups attempting the regular curve on recall (5 greatest RMS error scores)

		43.67	24.80	20.07
CLD	43.67	-	18.87*	23.60**
MA	24.80		-	4.73
CA	20.07			-

$$HSD = q_{.01,\ 3,\ 84} \sqrt{\frac{345.43}{15}} = 4.26 \times 4.80 = 20.45$$

$$HSD = q_{.05,\ 3,\ 84} \sqrt{\frac{345.43}{15}} = 3.39 \times 4.80 = 16.27$$

** $p < .01$

* $p < .05$

Table A4.81: Tukey HSD test for differences between groups attempting the irregular curve on recall (5 greatest RMS error scores)

		36.87	23.33	16.67
CLD	36.87	-	13.54	20.20*
MA	23.33		-	6.66
CA	16.67			-

$$HSD = q_{.01,\ 3,\ 84} \sqrt{\frac{345.43}{15}} = 4.26 \times 4.80 = 20.45$$

$$HSD = q_{.05,\ 3,\ 84} \sqrt{\frac{345.43}{15}} = 3.39 \times 4.80 = 16.27$$

*p .05

Table A4.82: Tukey HSD test for differences between groups attempting the irregular curve on transfer (R - 1) (5 greatest RMS error scores)

		34.53	25.00	16.60
CLD	34.53	-	9.53	17.93*
MA	25.00		-	8.40
CA	16.60			-

$$HSD = q_{.01,\ 3,\ 84} \sqrt{\frac{345.43}{15}} = 4.26 \times 4.80 = 20.45$$

$$HSD = q_{.05,\ 3,\ 84} \sqrt{\frac{345.43}{15}} = 3.39 \times 4.80 = 16.27$$

$^{*}p < .05$

Table A4.83: Tukey HSD test for differences between groups attempting the regular curve on transfer (1 - R) (5 greatest RMS error scores)

		50.60	28.67	20.40
CLD	50.60	-	21.93**	30.20**
MA	28.67		-	7.73
CA	20.40			-

$$HSD = q_{.01,\ 3,\ 84} \sqrt{\frac{345.43}{15}} = 4.26 \times 4.80 = 20.45$$

$$HSD = q_{.05,\ 3,\ 84} \sqrt{\frac{345.43}{15}} = 3.30 \times 4.80 = 16.27$$

$^{**}p < .01$

Table A4.84: Mean of the marks given by the two markers for each subject and trial, marks out of 10

Subject Number	Trial 1	Trial 2	Trial 3	Trial 4	Trial 5	Trial 6	Trial 7	Trial 8	Trial 9	Trial 10	Recall	Transfer
101	3	4.5	4.5	5	5	5.5	5	5	5	6	6	5
102	1	1.5	3	4.5	4	5	6	6	6.5	6.5	6	5.5
103	0.5	1.5	2.5	5.5	5	5	6	5.5	6.5	6.5	6.5	5.5
104	4	5	5	4	4.5	3	4	3.5	3	4	5.5	5
105	3.5	4.5	6.5	6.5	6.5	5.5	6*	5.5	6.5	7*	6.5	6*
106	2	6	7	5.5	6	6	6	6.5	7	4.5	5	4.5
107	1	1	1	1.5	1.5	2	2	2	2	3	2.5	5.5
108	0.5	1.5	3*	4.5	5	6	5	6	6	6.5	6.5	5.5
109	1	1.5	2	2.5	3.5	3.5	5	5	5	4.5	5	5.5
110	2	5.5	6	7	6	7.5	7	5.5	8	6.5	7	6.5
111	1	4*	3.5	3*	3.5	4.5	5	5	5	4.5	4	3.5
112	4	6	6	6	5	6	6	7	7	5	7	7
113	1.5	4	6	5	6	5.5	5.5	5.5	5	5	7	5.5
114	4*	7.5	7.5	7	7.5	6	7.5	7.5	8.5	7.5	8	7.5

cont'd

Table A4.84: cont'd

Subject Number	Trial 1	Trial 2	Trial 3	Trial 4	Trial 5	Trial 6	Trial 7	Trial 8	Trial 9	Trial 10	Recall	Transfer
115	0	6	6	5.5	5	6	6.5	6.5	6.5	6	6	6
201	4	6	6	5	5	6.5	6	5.5	5.5	6	6.5	7.5
202	1	1	1	1	1.5	2	3	3	2.5	3	2.5	2.5
203	3	5.5	5	5	5	5	5.5	5	4.5	5.5	4.5	6
204	1.5	4	4*	6	6	6.5	7	7.5	5*	7	7.5	6.5
205	1	2	1	3.5	3.5	4.5	4.5	4.5	5	6	4.5	5.5
206	2	4	3	4	3	4.5	4.5	6	6	7	6*	5.5
207	0	1.5	0.5	0.5	1*	1.5	1.5	3*	2	3	2	2
208	6	6.5	6	5.5	7.5	7	6.5	6	7	7	6	7
209	5	5.5	5	4.5	4*	3.5	5.5	5.5	6	6.5	5.5	5.5
210	6	6	7	7	7.5	7.5	8	6.5	7	7	7.5	6.5
211	2	1	3	5	4	4.5	4	4.5	5	6	6	5

Table A4.84: cont'd

Subject Number	Trial 1	Trial 2	Trial 3	Trial 4	Trial 5	Trial 6	Trial 7	Trial 8	Trial 9	Trial 10	Recall	Transfer
212	1.5	3.5	5*	4	4.5	5	5.5	5.5	5.5	6	6.5	6
213	4.5	6	6	7	6	7	6	7	6.5	8	7	7
214	0	3*	4*	4*	5.5	5.5	5*	6	7	6.5	6.5	6
215	4.5	4.5	6	6	6	6	6.5	6.5	7	6.5	6.5	7.5
301	5.5	5.5	6	6.5	7*	6.5	6	7.5	7	7	7	6.5
302	7	8	8	8	9	9	9	8	7	9	8	8
303	3.5	6	7.5	6.5	6.5	7.5	8	8.5	7*	8	7	6.5
304	4	6	5	6	7	6.5	7.5	7.5	7	7.5	7.5	6.5
305	0.5	7	7.5	8.5	7.5	7.5	7.5	7.5	8*	7.5	7	7.5
306	7.5	8.5	8	8.5	8.5	8.5	7.5	8.5	9	5.5	9	8.5
307	1	6	6	7	6.5	7.5	7.5	7.5	7.5	7.5	8	6.5
308	7	8	7.5	7.5	8.5	8.5	7	7*	8	8	8	8
309	4*	6	6.5	7	8	7.5	7	7.5	7.5	8	7.5	7.5
310	6	6	7	7	7	8	8	8	8	8	8	7.5
311	8	8.5	7	8	7.5	8.5	8	8	7.5	8	8	8

cont'd

Table A4.84: cont'd

Subject Number	Trial 1	Trial 2	Trial 3	Trial 4	Trial 5	Trial 6	Trial 7	Trial 8	Trial 9	Trial 10	Recall	Transfer
312	6.5	7.5	6*	8	7.5	8	9	7	7.5	8	7	6
313	6.5	7	6.5	7*	8	7	8	7	6.5	8	8	6.5
314	2	7	7.5	8	8	8	8.5	8	8.5	8	7.5	7.5
315	5	7	7.5	7.5	6.5	7	8.5	7.5	8*	7.5	7.5	8.5
401	5.5	5.5	7	7	7.5	7	6.5	6.5	7.5	7.5	6.5	7.5
402	6	7	7	6	7.5	7	7	8	7	7.5	7.5	8
403	4.5	6	7	6.5	7.5	8*	7*	7	8.5	7.5	7.5	7
404	6.5	6.5	7.5	6.5	7.5	6.5	7.5	7.5	7.5	7.5	7	7
405	6	6	6	7	7	7	6.5	7.5	7.5	7.5	8	7
406	7	7	7	8	8	7	7.5	7	7	8	7.5	8
407	5	7	6	6	5.5	6	7	7	6.5	6.5	7.5	7.5
408	3.5	6	6.5	3	6	6.5	7.5	7.5	6	7*	7.5	8
409	5.5	6.5	7	8	7.5	7.5	7.5	8	7	8	8.5	8.5
410	5	6.5	7	7.5	6	7	8	7	7	8	8.5	8

cont'd

Table A4.84: cont'd

Subject Number	Trial 1	Trial 2	Trial 3	Trial 4	Trial 5	Trial 6	Trial 7	Trial 8	Trial 9	Trial 10	Recall	Transfer
411	8	8	9	9	8	8	8.5	8	8	9	9	9
412	6	6.5	7	7	7.5	8	7	7	6.5	7	8	9
413	5	6	5.5	5.5	5	5.5	5	6	5.5	6.5	7	7
414	2.5	6.5	5.5	6.5	7*	7*	6.5	6*	7*	7*	7*	7.5
415	6	8.5	7.5	8	8.5	8.5	8	7.5	8.5	8	8.5	8.5
501	5	5.5	7	6.5	6.5	7	6.5	7	7*	7.5	6*	8.5
502	0	5	4	3.5	4.5	5	5	5.5	5	5	6	6.5
503	5.5	7	7.5	8	8	8	8	7.5	7.5	8.5	7	7.5
504	1	1.5	5.5	4.5	5	6	7	7.5	8	7.5	8	6.5
505	5.5	6	6	6	7	7	7	7.5	6.5	8	8	6.5
506	2.5	3.5	5	4.5	4	4	4	5	6.5	6	7	7.5
507	4.5	4.5	6	6	6	5	6	6	5	5.5	6	5
508	5	6.5	7.5	7.5	6.5	6.5	7.5	7	8.5	7.5	8	6.5

Table A4.84: cont'd

Subject Number	Trial 1	Trial 2	Trial 3	Trial 4	Trial 5	Trial 6	Trial 7	Trial 8	Trial 9	Trial 10	Recall	Transfer
509	2.5	5.5	6.5	5.5	7	6.5	6	6.5	7	6	6	6
510	1	1	3.5	4	6	6	6	7	7.5	8	7	8
511	4.5	5.5	7	7	8	7.5	7.5	7.5	7.5	8	8	7
512	2.5	6	7	7.5	7.5	7.5	7.5	8	7.5	7	6.5	6
513	3	3	5	8	7.5	7	8	7.5	7	7	7.5	7
514	5	6.5	6.5	6.5	6	6	7	7.5	6.5	7	6.5	6.5
515	0.5	1	5	5	6	6	4.5	4.5	6	5.5	6	6
601	3	5	6	7	5.5	6	7	7	7.5	8	7	8.5
602	6	7.5	8*	6.5	7	7	6.5	7.5	7	7.5	7.5	8
603	5	6.5	7	6	7	6	6	6.5	6.5	7.5	8	7
604	4	5.5	6.5	6	6	6.5	8	8	7	8	7	8
605	1	2	4	6.5	6	7	6.5	7	7.5	8	5	4.5
606	3	3.5	4.5	5	6	7	7	7	6.5	7.5	6.5	6.5
607	1	2.5	3	4.5	4	5.5	5.5	6	6	6.5	6.5	7

cont'd

Table A4.84: cont'd

Subject Number	Trial 1	Trial 2	Trial 3	Trial 4	Trial 5	Trial 6	Trial 7	Trial 8	Trial 9	Trial 10	Recall	Transfer
608	3	4	4	4.5	5	5.5	5.5	6	5	6.5	6*	7.5
609	3*	4	5	6	6	6	6	7	7	7	6.5	7.5
610	5	6	5.6	6.5	6	6	7	6	6	6.5	7*	6.5
611	3	4	5.5	5.5	6.5	7.5	8	7.5	7.5	7	8	7
612	3.5	5	5.5	5	5	4.5	5	5.5	6	6.5	6.5	6.5
613	1	3*	6	6	6.5	6	6	6.5	7*	7.5	6.5	6.5
614	5	6*	6.5	5	5.5	6	6.5	6	7	6	5.5	6
615	1.5	3	3.5	3.5	4	5	4.5	5	5	5	6	6.5

* Denotes disagreement by 2 marks on the part of the markers

Table A4.85: Spearman rank correlation coefficient for the two marks given over 12 trials, subject no. 5

Trial	Mark 1	R	Mark 2	R	d	d^2
1	6	11.5	5	11.5	0	0
2	6	11.5	5	11.5	0	0
3	7	8	7	3.5	-4.5	20.25
4	7	8	7	3.5	-4.5	20.25
5	8	3	7	3.5	.5	.25
6	8	3	6	8.5	5.5	30.25
7	7	8	6	8.5	.5	.25
8	7	8	6	8.5	.5	.25
9	8	3	7	3.5	.5	.25
10	8	3	7	3.5	.5	.25
11	7	8	6	8.5	.5	.25
12	8	3	7	3.5	.5	.25

$\sum d^2 = 72.50$

$$\sum x^2 = \frac{N^3 - N}{12} - \sum T_x = 143 - \left(\frac{5^3 - 5}{12} + \frac{5^3 - 5^3}{12} + \frac{2^3 - 2}{12}\right)$$

$$= 122.5$$

$$\sum y^2 = \frac{N^3 - N}{12} - \sum Ty = 143 - \left(\frac{6^3 - 6}{12} + \frac{4^3 - 4}{12} + \frac{2^3 - 2}{12}\right)$$

$$= 123$$

$$r_s = \frac{\sum x^2 - \sum y^2 - \sum d^2}{2\sqrt{\sum x^2 \sum y^2}}$$

$$= .71$$

Table A4.86: Spearman rank correlation coefficient for the two marks given over 12 trials, subject no. 10

Trial	Mark 1	R	Mark 2	R	d	d^2
1	1	10.5	1	10	-.5	.25
2	1	10.5	1	10	-.5	.25
3	1	10.5	1	10	-.5	.25
4	1	10.5	1	10	-.5	.25
5	2	7.5	1	10	2.5	6.25
6	2	7.5	2	5.5	-2	4
7	3	3.5	3	2	-1.5	2.25
8	3	3.5	3	2	-1.5	2.25
9	3	3.5	2	5.5	2	4
10	3	3.5	3	2	-1.5	2.25
11	3	3.5	2	5.5	2	4
12	3	3.5	2	5.5	2	4

$\sum d^2 = 30$

$$\sum x^2 = \frac{N^3 - N}{12} - \sum T_x = 143 - \left(\frac{6^3 - 6}{12} = \frac{2^3 - 2}{12} + \frac{4^3 - 4}{12}\right)$$

$$= 120.67$$

$$\sum y^2 = \frac{N^3 - N}{12} - \sum T_y = 143 - \left(\frac{3^3 - 3}{12} + \frac{4^3 - 4}{12} + \frac{5^3 - 5}{12}\right)$$

$$= 126.67$$

$$r_s = \frac{\sum x^2 + \sum y^2 - \sum d^2}{2\sqrt{\sum x^2 \sum y^2}}$$

$$= 0.88$$

Table A4.87: Spearman rank correlation coefficient for the two marks given over 12 trials, subject no. 26

Trial	Mark 1	R	Mark 2	R	d	d^2
1	6	9	5	11.5	2.5	6.25
2	6	9	5	11.5	2.5	6.25
3	6	9	6	9	0	0
4	6	9	7	4.5	-4.5	20.25
5	6	9	8	1	-8	64
6	6	9	7	4.5	-4.5	20.25
7	6	9	6	9	3	9
8	8	1	7	4.5	3.5	12.25
9	7	3.5	7	4.5	1	1
10	7	3.5	7	4.5	1	1
11	7	3.5	7	4.5	1	1
12	7	3.5	6	9	4.5	20.95

$\sum d^2 = 161.50$

$$\sum x^2 = \frac{N^3 - N}{12} - \sum T_x = 143 - \left(\frac{4^3 - 4}{12} + \frac{7^3 - 7}{12}\right)$$

$$= 110.67$$

$$\sum y^2 = \frac{N^3 - N}{12} - \sum T_y = 143 - \left(\frac{3^3 - 3}{12} + \frac{6^3 - 6}{12} = \frac{2^3 - 2}{12}\right)$$

$$= 123$$

$$r_s = \frac{\sum x^2 + \sum y^2 - \sum d^2}{2\sqrt{\sum x^2 \sum y^2}}$$

$$= .31$$

Table A4.88: Spearman rank correlation coefficient for the two marks given over 12 trials, subject no. 28

Trial	Mark 1	R	Mark 2	R	d	d^2
1	1	12	1	11.5	-.5	.25
2	2	10.5	1	11.5	1	1
3	2	10.5	2	9.5	-.5	.25
4	3	9	2	9.5	.5	.25
5	4	7.5	3	7.5	0	0
6	4	7.5	3	7.5	0	0
7	5	4	5	3	-1	1
8	5	4	5	3	-1	1
9	5	4	5	3	-1	1
10	5	4	4	6	2	4
11	5	4	5	3	-1	1
12	6	1	5	3	2	4

$\Sigma d^2 = 13.75$

$$\Sigma x^2 = \frac{N^3 - N}{12} - \Sigma T_x = 143 - \left(\frac{5^3 - 5}{12} + \frac{2^3 - 2}{12} + \frac{2^3 - 2}{12}\right)$$

$$= 132$$

$$\Sigma y^2 = \frac{N^3 - N}{12} - \Sigma T_y = 143 - \left(\frac{5^3 - 5}{12} + \frac{2^3 - 2}{12} + \frac{2^3 - 2}{12} + \frac{2^3 - 2}{12}\right)$$

$$= 131.5$$

$$r_s = \frac{\Sigma x^2 + \Sigma y^2 - \Sigma d^2}{2\sqrt{\Sigma x^2 \, \Sigma y^2}}$$

$$= .95$$

Table A4.89: Spearman rank correlation coefficient for the two marks given over 12 trials, subject no. 34

Trial	Mark 1	R	Mark 2	R	d	d^2
1	6	12	5	12	0	0
2	7	10	6	11	1	1
3	7	10	7	8	-2	4
4	8	4.5	8	4	-.5	.25
5	8	4.5	7	8	3.5	12.25
6	8	4.5	7	8	3.5	12.25
7	8	4.5	7	8	3.5	12.25
8	8	4.5	8	4	-.5	.25
9	7	10	7	8	-2	4
10	8	4.5	8	4	-.5	.25
11	8	4.5	9	1.5	-3	9
12	8	4.5	9	1.5	-3	9

$\Sigma d^2 = 74.5$

$$\Sigma x^2 = \frac{N^3 - N}{12} - \Sigma T_x = 143 - \left(\frac{8^3 - 8}{12} + \frac{3^3 - 3}{12}\right)$$

$$= 99$$

$$\Sigma y^2 = \frac{N^3 - N}{12} - \Sigma T_y = 143 - \left(\frac{2^3 - 2}{12} + \frac{3^3 - 3}{12} + \frac{5^3 - 5}{12}\right)$$

$$= 130.5$$

$$r_s = \frac{\Sigma x^2 + \Sigma y^2 - \Sigma d^2}{2\sqrt{\Sigma x^2 \; \Sigma y^2}}$$

$$= .68$$

Table A4.90: Spearman rank correlation coefficient for the two marks given over 12 trials, subject no. 35

Trial	Mark 1	R	Mark 2	R	d	d^2
1	3	12	3	11.5	-.5	.25
2	4	11	3	11.5	.5	.25
3	5	9.5	4	10	.5	.25
4	5	9.5	5	9	-.5	.25
5	6	8	6	6.5	-1.5	2.25
6	7	4.5	7	2.5	-2	4
7	7	4.5	7	2.5	-2	4
8	7	4.5	7	2.5	-2	4
9	7	4.5	6	6.5	2	4
10	8	1	7	2.5	1.5	2.25
11	7	4.5	6	6.5	2	4
12	7	4.5	6	6.5	2	4

$\Sigma d^2 = 29.50$

$$\Sigma x^2 = \frac{N^3 - N}{12} - \Sigma T_x = 143 - \left(\frac{2^3 - 2}{12}\right) + \frac{6^3 - 6}{12})$$

$$= 125$$

$$\Sigma y^2 = \frac{N^3 - N}{12} - \Sigma T_y = 143 - \left(\frac{2^3 - 2}{12} + \frac{4^3 - 4}{12} + \frac{4^3 - 4}{12}\right)$$

$$= 133.84$$

$$r_s = \frac{\Sigma x^2 = \Sigma y^2 - \Sigma d^2}{2\sqrt{\Sigma x^2 \Sigma y^2}}$$

$$= .89$$

Table A4.91: Spearman rank correlation coefficient for the two marks given over 12 trials, subject no. 48

Trial	Mark 1	R	Mark 2	R	d	d^2
1	0	12	0	10.5	-1.5	2.25
2	2	6	1	7	1	1
3	1	10.5	0	10.5	0	0
4	1	10.5	0	10.5	0	0
5	2	6	0	10.5	4.5	20.25
6	2	6	1	7	1	1
7	2	6	1	7	1	1
8	4	1	2	3.5	2.5	6.25
9	2	6	2	3.5	-2.5	6.25
10	3	2	3	1	-1	1
11	2	6	2	3.5	-2.5	6.25
12	2	6	2	3.5	-2.5	6.25
						$\Sigma d^2 = 51.50$

$$\Sigma x^2 = \frac{N^3 - N}{12} - \Sigma T_x = 143 - \left(\frac{7^3 - 7}{12} + \frac{2^3 - 2}{12}\right)$$

$$= 114.5$$

$$\Sigma y^2 = \frac{N^3 - N}{12} - \Sigma T_y = 143 - \left(\frac{4^3 - 4}{12} + \frac{3^3 - 3}{12} + \frac{2^3 - 2}{12}\right)$$

$$= 136.17$$

$$r_s = \frac{\Sigma x^2 + \Sigma y^2 - \Sigma d^2}{2\sqrt{\Sigma x^2 \Sigma y^2}}$$

$$= .80$$

Table A4.92: Spearman Rank correlation coefficient for the two marks given over 12 trials, subject no. 52

Trial	Mark 1	R	Mark 2	R	d	d^2
1	6	11.5	6	11.5	0	0
2	6	11.5	7	7	-4.5	20.25
3	7	7.5	7	7	-.5	.25
4	7	7.5	7	7	-.5	.25
5	8	3	7	7	4	16
6	8	3	8	2.5	-.5	.25
7	7	7.5	7	7	-.5	.25
8	7	7.5	7	7	-.5	.25
9	7	7.5	6	11.5	4	16
10	7	7.5	7	7	-.5	.25
11	8	3	8	2.5	-.5	.25
12	9	1	9	1	0	0

$\sum d^2 = 54$

$$\sum x^2 = \frac{N^3 - N}{12} - \sum T_x = 143 - \left(\frac{3^3 - 3}{12} + \frac{6^3 - 6}{12} + \frac{2^3 - 2}{12}\right)$$

$$= 123$$

$$\sum y^2 = \frac{N^3 - N}{12} - \sum T_y = 143 - \left(\frac{2^3 - 2}{12} + \frac{7^3 - 7}{12} + \frac{2^3 - 2}{12}\right)$$

$$= 114$$

$$r_s = \frac{\sum x^2 + \sum y^2 - \sum d^2}{2\sqrt{\sum x^2 \sum y^2}}$$

$$= .77$$

Table A4.93: Spearman rank correlation coefficient for the two marks given over 12 trials, subject no. 53

Trial	Mark 1	R	Mark 2	R	d	d^2
1	1	11.5	1	11.5	0	0
2	1	11.5	1	11.5	0	0
3	3	10	2	10	0	0
4	4	9	4	9	0	0
5	6	7	6	7	0	0
6	6	7	6	7	0	0
7	6	7	6	7	0	0
8	7	4.5	7	4	-.5	.25
9	8	2	7	4	2	4
10	8	2	8	1.5	-.5	.25
11	7	4.5	7	4	-.5	.25
12	8	2	8	1.5	-.5	.25

$\Sigma d^2 = 5.0$

$$\Sigma x^2 = \frac{N^3 - N}{12} - \Sigma T_x = 143 - \left(\frac{3^3 - 3}{12} + \frac{2^3 - 2}{12} + \frac{3^3 - 3}{12} + \frac{2^3 - 2}{12}\right)$$

$$= 138$$

$$\Sigma y^2 = \frac{N^3 - N}{12} - \Sigma T_y = 143 \left(\frac{3^3 - 3}{12} + \frac{2^3 - 2}{12} + \frac{3^3 - 3}{12}\right)$$

$$= 138.5$$

$$r_s = \frac{\Sigma x^2 + \Sigma y^2 - \Sigma d^2}{2\sqrt{\Sigma x^2 \, \Sigma y^2}}$$

$$= .98$$

Table A4.94: Spearman rank correlation coefficient for the two marks given over 12 trials, subject no. 56

Trial	Mark 1	R	Mark 2	R	d	d^2
1	2	12	1	12	0	0
2	4	11	4	11	0	0
3	6	3	6	4	1	1
4	5	7.5	5	8.5	1	1
5	6	3	6	4	1	1
6	5	7.5	6	4	-3.5	12.25
7	5	7.5	6	4	-3.5	12.25
8	5	7.5	6	4	-3.5	12.25
9	5	7.5	5	8.5	1	1
10	5	7.5	5	8.5	1	1
11	7	1	7	1	0	0
12	6	3	5	8.5	5.5	30.25

$\sum d^2 = 72$

$$\sum x^2 = \frac{N^3 - N}{12} - \sum T_x = 143 - \left(\frac{3^3 - 3}{12} + \frac{6^3 - 6}{12}\right)$$

$$= 123.5$$

$$\sum y^2 = \frac{N^3 - N}{12} - \sum T_y = 143 - \left(\frac{5^3 - 5}{12} + \frac{4^3 - 4}{12}\right)$$

$$= 128.67$$

$$r_s - = \frac{\sum x^2 + \sum y^2 - \sum d^2}{2\sqrt{\sum x^2 \sum y^2}}$$

$$= .71$$

Table A4.95: Spearman rank correlation coefficient for the two marks given over 12 trials, subject no. 61

Trial	Mark 1	R	Mark 2	R	d	d^2
1	6	12	6	12	0	0
2	8	5.5	9	3.5	-2	4
3	7	11	8	8.5	-3.5	12.25
4	8	5.5	8	8.5	3	9
5	8	5.5	9	3.5	-2	4
6	8	5.5	9	3.5	-2	4
7	8	5.5	8	3.5	3	9
8	8	5.5	7	11	5.5	30.25
9	8	5.5	9	3.5	-2	4
10	8	5.5	8	8.5	3	9
11	8	5.5	9	3.5	-2	2
12	8	5.5	9	3.5	-2	2

$\sum d^2 = 89.50$

$$\sum x^2 = \frac{N^3 - N}{12} - \sum T_x = 143 - \left(\frac{10^3 - 10}{12}\right)$$

$$= 60.5$$

$$\sum y^2 = \frac{N^3 - N}{12} - \sum T_y = 143 - \left(\frac{6^3 - 6}{12} + \frac{4^3 - 4}{12}\right)$$

$$= 123.5$$

$$r_s = \frac{x^2 + y^2 - d^2}{2 \quad x^2 \quad y^2}$$

$$= .54$$

Table A4.96: Spearman rank correlation coefficient for the two marks given over 12 trials, subject no. 65

Trial	Mark 1	R	Mark 2	R	d	d^2
1	5	12	3	12	0	0
2	7	8	8	3.5	-4.5	20.25
3	8	3.5	7	8.5	5	25
4	7	8	7	8.5	.5	.25
5	7	8	8	3.5	-4.5	20.25
6	6	11	6	11	0	0
7	7	8	8	3.5	-4.5	20.25
8	7	8	8	3.5	-4.5	20.25
9	9	1	8	3.5	2.5	6.25
10	8	3.5	7	8.5	5	25
11	8	3.5	8	3.5	0	0
12	8	3.5	7	8.5	5	25

$\Sigma d^2 = 162.5$

$$\Sigma x^2 = \frac{N^3 - N}{12} - \Sigma T_x = 143 - \left(\frac{4^3 - 4}{12} + \frac{5^3 - 5}{12}\right)$$

$$= 128.7$$

$$\Sigma y^2 = \frac{N^3 - N}{12} - \Sigma T_y = 143 - \left(\frac{6^3 - 6}{12} + \frac{4^3 - 4}{12}\right)$$

$$= 121.17$$

$$r_s = \frac{\Sigma x^2 + \Sigma y^2 - \Sigma d^2}{2\sqrt{\Sigma x^2 \, \Sigma y^2}}$$

$$= .35$$

Table A4.97: Spearman rank correlation coefficient for the two marks given over 12 trials, subject no. 70

Trial	Mark 1	R	Mark 2	R	d	d^2
1	8	5	8	7	2	4
2	8	5	9	1.5	-3.4	12.25
3	7	11	7	12	1	1
4	8	5	8	7	2	4
5	7	11	8	7	-4	16
6	8	5	9	1.5	-3.5	12.25
7	8	5	8	7	2	4
8	8	5	8	7 7	2	4
9	7	11	8	7	-4	16 16
10	8	5	8	7	2	4
11	8	5	8	7	2	4
12	8	5	8	7	2	4

$\sum d^2 = 85.5$

$$\sum x^2 = \frac{N^3 - N}{12} - \sum T_x = 143 - \left(\frac{9^3 - 9}{12} + \frac{3^3 - 3}{12}\right)$$

$$= 81$$

$$\sum y^2 = \frac{N^3 - N}{12} - \sum T_y = 143 - \left(\frac{2^3 - 2}{12} + \frac{9^3 - 9}{12}\right)$$

$$= 82.5$$

$$r_s = \frac{\sum x^2 + \sum y^2 - \sum d^2}{2\sqrt{\sum x^2 \sum y^2}}$$

$$= .50$$

Table A4.98: Spearman rank order correlation coefficient for the two marks given over 12 trials, subject no. 86

Trial	Mark 1	R	Mark 2	R	d	d^2
1	5	12	5	10.5	2.5	6.25
2	7	2.5	5	10.5	8	64
3	7	2.5	6	5	2.5	6.25
4	6	8	6	5	-3	9
5	6	8	5	10.5	2.5	6.25
6	6	8	6	5	-3	9
7	7	2.5	6.5	5	2.5	6.25
8	6	8	6	5	-3	9
9	7	2.5	7	1	-1.5	2.25
10	6	8	6	5	-3	9
11	6	8	5	10.5	2.5	6.25
12	6	8	6	5	-3	9

$\Sigma d^2 = 141.50$

$$\Sigma x^2 = \frac{N^3 - N}{12} - \Sigma T_x = 143 - \left(\frac{4^3 - 4}{12} + \frac{7^2 - 7}{12}\right)$$

$$= 110.67$$

$$\Sigma y^2 = \frac{N^3 - N}{12} - \Sigma T_y = 143 - \left(\frac{4^3 - 4}{12} + \frac{7^3 - 7}{12}\right)$$

$$= 110.67$$

$$r_s = \frac{\Sigma x^2 + \Sigma y^2 - \Sigma d^2}{2\sqrt{\Sigma x^2 \Sigma y^2}}$$

$$= .37$$

Table A4.99: Spearman rank correlation coefficient for the two marks given over 12 trials, subject no. 90

Trial	Mark 1	R	Mark 2	R	d	d^2
1	5	11.5	4	11.5	0	0
2	5	11.5	4	11.5	0	0
3	6	8.5	6	6.5	-2	4
4	6	8.5	6	6.5	-2	4
5	6	8.5	6	6.5	-2	4
6	6	8.5	6	6.5	-2	4
7	7	4	6	6.5	2.5	6.25
8	7	4	6	6.5	2.5	6.25
9	7	4	7	1.5	-2.5	6.25
10	7	4	6	6.5	2.5	6.25
11	7	4	6	6.5	2.5	6.25
12	8	1	7	1.5	.5	.25

$\Sigma d^2 = 47.50$

$$\Sigma x^2 = \frac{N^3 - N}{12} - \Sigma T_x = 143 - \left(\frac{5^3 - 5}{12} = \frac{4^3 - 4}{12} + \frac{2^3 - 2}{12}\right)$$

$$= 128.17$$

$$\Sigma y^2 = \frac{N^3 - N}{12} - \Sigma T_y = 143 - \left(\frac{2^3 - 2}{12} + \frac{8^3 - 8}{12} + \frac{2^3 - 2}{12}\right)$$

$$= 101.5$$

$$r_s = \frac{\Sigma x^2 + \Sigma y^2 - \Sigma d^2}{2\sqrt{\Sigma x^2 \, \Sigma y^2}}$$

$$= .80$$

Table A4.100: Mean score for the 10 practice trials for each subject, marks out of 10

Subject	CLD		CA MATCH		MA MATCH	
No.	Regular	Irregular	Regular	Irregular	Regular	Irregular
1	4.85	5.55	6.45	6.75	6.55	6.20
2	4.40	1.90	8.20	7.00	4.25	7.05
3	4.45	4.90	6.90	6.95	7.55	6.40
4	4.00	5.45	6.40	7.10	5.35	6.55
5	5.80	3.55	6.90	6.80	6.65	5.55
6	5.65	4.44	8.00	7.35	4.50	5.70
7	1.70	1.45	6.40	6.25	5.05	4.45
8	4.40	6.50	7.70	5.95	7.00	4.90
9	3.35	5.10	6.90	7.25	5.90	5.70
10	6.10	6.95	7.30	6.90	4.90	6.05
11	3.90	3.90	7.90	8.35	7.00	6.20
12	5.80	4.60	7.50	6.95	4.70	5.15
13	4.90	6.40	7.15	5.55	6.30	5.55
14	7.05	4.65	7.34	6.15	6.45	6.05
15	6.00	5.95	7.20	7.90	4.40	4.00

Table A4.101: Kruskal-Wallis anova for differences between the groups. Mean of the practice trials, marks out of 10, regular track

CLD	R	CA	R	MA	R
4.85	12	6.45	26.5	6.55	28
4.40	7	8.20	45	4.25	5
4.45	9	6.90	30	7.55	41
4.00	4	6.40	24.5	5.35	16
5.80	18.5	6.90	31	6.65	29
5.65	17	8.00	44	4.50	10
1.70	1	6.40	24.5	5.05	15
4.40	7	7.70	42	7.00	33.5
3.35	2	6.90	32	5.90	20
6.10	22	7.30	38	4.90	13.5
3.90	3	7.90	43	7.00	33.5
5.80	18.5	7.50	40	4.70	11
4.90	13.5	7.15	36	6.30	23
7.05	35	7.34	39	6.45	26.5
6.00	21	7.20	37	4.40	7

$\Sigma R = 190.5$ $\Sigma R = 532.5$ $\Sigma R = 312$

t	3	2	2	2	3	2	2
T	24	6	6	6	24	6	6

$T = t^3 - t$
$T = 78$

$$H = \frac{\dfrac{12}{N(N+1)} \displaystyle\sum_{j=1}^{k} \frac{R_j^2}{n_j} - 3(N+1)}{1 - \dfrac{\Sigma T}{N^3 - N}}$$

$= 28.88$ $p < .001$

Table A4.102: Kruskal-Wallis anova for differences between groups mean of the practice trials marks out of 10, irregular track

CLD	R	CA	R	MA	R
5.55	16.5	6.75	33	6.20	26.5
1.90	2	7.00	39	7.05	40
4.90	10.5	6.95	37	6.40	29.5
5.45	14	7.10	41	6.55	32
3.55	3	6.80	34	5.55	16.5
4.44	6	7.35	43	5.70	19.5
1.45	1	6.25	28	4.45	7
6.50	31	5.95	21.5	4.90	10.5
5.10	12	7.25	42	5.70	19.5
6.95	37	6.90	35	6.05	23.5
3.90	4	8.35	45	6.20	26.5
4.60	8	6.95	37	5.15	13
6.40	29.5	5.55	16.5	5.55	16.5
4.65	9	6.15	25	6.05	23.5
5.95	21.5	7.90	44	4.00	5
$\Sigma R = 205$		$\Sigma R = 521$		$\Sigma R = 309$	

t	2	4	2	2	2	2	2	3	$T = t^3 - t$
T	6	60	6	6	6	6	6	24	$T = 120$

$$H = \frac{\frac{12}{N(N+1)} \sum_{j=1}^{k} \frac{R_j^2}{n_j} - 3(N-1)}{1 - \frac{\Sigma T}{N^3 - N}}$$

$= 25.58 \quad p < .001$

Table A4.103: Kruskal-Wallis anova for differences between groups, recall trial, regular track, marks out of 10

CLD	R	CA	R	MA	R
6	10	7	23.5	6	10
6	10	8	39	6	10
6.5	16.5	7	23.5	7	23.5
5.5	5	7.5	31	8	39
6.5	16.5	7	23.5	8	39
5	3.5	9	45	7	23.5
2.5	1	8	39	6	10
6.5	16.5	8	39	8	39
5	3.5	7.5	31	6	10
7	23.5	8	39	7	23.5
4	2	8	39	8	39
7	23.5	7	23.5	6	10
7	23.5	8	39	7.5	31
8	39	7.5	31	6.5	16.5
6	10	7.5	31	6	10
$\Sigma R = 204$		$\Sigma R = 497$		$\Sigma R = 334$	

t	2	9	4	10	5	11
T	6	720	60	990	120	1320

$T = t^3 - t$

$\Sigma T = 3216$

$$H = \frac{\dfrac{12}{N(N+1)} \displaystyle\sum_{j=1}^{k} \frac{R_j^2}{n_j} - 3(N+1)}{1 - \dfrac{\Sigma T}{N^3 - N}}$$

$= 22.99 \quad p < .001$

Table A4.104: Kruskal-Wallis anova for differences between groups, recall trial, marks out of 10, irregular track

CLD	R	CA	R	MA	R
6.5	18	6.5	18	7	27
2.5	2	7.5	34	7.5	34
4.5	3.5	7.5	34	8	39.5
7.5	34	7	27	7	27
4.5	3.5	8	39.5	5	5
6	10	7.5	34	6.5	18
2	1	6.5	18	6.5	18
6	12	7.5	34	6	10
5.5	6.5	8.5	43	6.5	18
7.5	34	8.5	43	7	27
6	10	9	45	8	39.5
6.5	18	8	39.5	6.5	18
7	27	7	27	5.5	18
6.5	18	7	27	5.5	6.5
6.5	18	8.5	43	6	10
$\Sigma R = 213.5$		$\Sigma R = 506$		$\Sigma R = 315.5$	

t	2	2	5	11	7	7	4	3	$T = t^3 - t$
T	6	6	120	1320	336	336	60	24	T = 2208

$$H = \frac{\dfrac{12}{N(N+1)} \displaystyle\sum_{j=1}^{k} \frac{R_j^2}{n_j} - 3(N+1)}{1 - \dfrac{\Sigma T}{N^3 - N}}$$

$= 22.92 \qquad p < .001$

Table A4.105: Kruskal-Wallis anova for differences between groups, transfer trial, irregular track (regular on recall) marks out of 10

CLD	R	CA	R	MA	R
5	3.5	6.5	23	8.5	44
5.5	8	8	40.5	6.5	23
5.5	8	6.5	23	7.5	35
5.5	8	6.5	23	6.5	23
4.5	2	8.5	44	7.5	35
5.5	8	6.5	23	5.0	3.5
5.5	8	8	40.5	6.5	23
5.5	8	7.5	35	6	14.5
6.5	23	7.5	35	8	40.5
3.5	1	8	40.5	7	30
7	30	6	14.5	6	14.5
5.5	8	6.5	23	7	30
7.5	35	7.5	35	6.5	23
6	14.5	8.5	44	6	14.5
$\Sigma R = 179.5$		$\Sigma R = 479$		$\Sigma R = 376.5$	

t	2	7	6	11	3	7	4	3	$T = t^3 - t$
T	6	336	210	1320	24	336	60	24	$T = 3216$

$$H = \frac{\dfrac{12}{N(N+1)} \sum_{j=1}^{k} \dfrac{R_j^2}{n_j} - 3(N+1)}{1 - \dfrac{\Sigma T}{N^3 - N}}$$

$= 18.52 \quad p < .001$

Table A4.106: Kruskal-Wallis anova for differences between groups, transfer trial, irregular track on recall, regular track on transfer, marks out of 10

CLD	R	CA	R	MA	R
7.5	30	7.5	30	8.5	42
2.5	2	8	37	8	37
6	9.5	7	22.5	7	22.5
6.5	15	7	22.5	8	37
5.5	6	8	37	4.5	3
5.5	6	8	37	6.5	15
2	1	7.5	30	7	22.5
7	22.5	8	37	7.5	30
5.5	6	8.5	42	7.5	30
6.5	15	8	37	6.5	15
5	4	9	44.5	7	22.5
6	9.5	9	44.5	6.5	15
7	22.5	7	22.5	6.5	15
6	9.5	7.5	30	6	9.5
7.5	30	8.5	42	6.5	15
$\Sigma R =$ 188.5		$\Sigma R =$ 515.5		$\Sigma R =$ 331	

t	6	4	7	8	7	7	3	2	$T = t^3 - t$
T	210	60	336	504	336	336	24	6	T = 1812

$$H = \frac{\dfrac{12}{N(N+1)} \sum_{j=1}^{k} \dfrac{R_j^2}{n_j} - 3(N+1)}{1 - \dfrac{\Sigma T}{N^3 - N}}$$

= 26.87 $\quad p < .001$

Table A4.107: Highest mark reached during the practice trials as judged by the two testers and the mean of the two marks given

CLD				MA				CA			
Subj No	Mark 1	Mark 2	Mean	Subj No	Mark 1	Mark 2	Mean	Subj No	Mark 1	Mark 2	Mean
1	4	2	3	1	4	4	4	1	5	4	4.5
2	5	7	6	2	4	3	3.5	2	5	4	4.5
3	5	5	5	3	4	6	5	3	5	5	5
4	2	3	2.5	4	5	5	5	4	4	3	3.5
5	5	4	4.5	5	4	3	3.5	5	2	4	3
6	4	4	4	6	6	5	5.5	6	3	4	3.5
7	4	3	3.5	7	3	4	3.5	7	4	4	4
8	6	7	6.5	8	4	3	3.5	8	3	3	3
9	6	4	5	9	4	4	4	9	5	5	5
10	4	4	4	10	6	6	6	10	4	5	4.5
11	3	2	2.5	11	5	5	5	11	2	2	2
12	2	3	2.5	12	4	5	4.5	12	3	4	3.5
13	4	3	3.5	13	4	4	4	13	4	4	4
14	3	4	3.5	14	4	5	4.5	14	5	6	5.5
15	2	3	2.5	15	3	2	2.5	15	4	4	4

cont'd

Table A4.107: cont'd

	CLD				MA				CA		
Subj No	Mark 1	Mark 2	Mean	Subj No	Mark 1	Mark 2	Mean	Subj No	Mark 1	Mark 2	Mean
16	3	2	2.5	16	5	4	4.5	16	3	4	3.5
17	4	3	3.5	17	3	2	2.5	17	3	3	3
18	3	2	2.5	18	3	4	3.5	18	4	5	4.5
19	6	4	5	19	3	4	3.5	19	3	3	3
20	4	3	3.5	20	6	4	5	20	3	4	3.5
21	4	4	4	21	6	4	5	21	3	2	2.5
22	3	4	3.5	22	5	7	6	22	4	2	3
23	2	3	2.5	23	3	5	4	23	3	3	3
24	3	4	3.5	24	6	4	5	24	4	4	4
25	2	3	2.5	25	3	3	3	25	4	4	4
26	4	3	3.5	26	5	4	4.5	26	2	4	3
27	4	4	4	27	4	6	5	27	4	4	4
28	5	3	4	28	5	4	4.5	28	5	4	4.5
29	5	4	4.5	29	4	3	3.5	29	2	4	3
30	3	2	2.5	30	3	3	3	30	3	4	3.5

Subject Nos. 1- 15 - Regular Track Subject Nos. 16 - 30 - Irregular Track

Table A4.108: Spearman Rank Correlated Coefficient for the two highest marks given by the tester during the practice trials

$$\Sigma x^2 = \frac{N^3 - N}{12} - \Sigma T_x$$

$$= \frac{90^3 - 90}{12} - \left(\frac{9^3 - 9}{12} + \frac{16^3 - 16}{12} + \frac{31^3 - 31}{12}\right.$$

$$\left. + \frac{25^3 - 25}{12} + \frac{9^3 - 9}{12}\right)$$

$$= 56502.5$$

$$\Sigma y^2 = \frac{N^3 - N}{12} - \Sigma T_y$$

$$= \frac{90^3 - 90}{12} - \left(\frac{3^3 - 3}{12} + \frac{4^3 - 4}{12} + \frac{11^3 - 11}{12} + \frac{39^3 - 39}{12}\right.$$

$$\left. + \frac{22^3 - 22}{12} + \frac{11^3 - 11}{12}\right)$$

$$= 54690$$

$$r_s = \frac{\Sigma x^2 + \Sigma y^2 - \Sigma d^2}{2\sqrt{\Sigma x^2 \quad \Sigma y^2}}$$

$$= \frac{56502.5 + 54690 - 57398.85}{2 \quad (56502.5^2) \quad (54090^2)}$$

$$\underline{\underline{r_s = .48}}$$

Table A4.109: Kruskal-Wallis anova for differences between groups, high score for the practice trials regular track

CLD	R	CA	R	MA	R
3	8	4.5	30.5	4	23.5
6	43.5	4.5	30.5	3.5	14.5
5	37	5	37	5	37
25	4	3.5	14.5	5	37
4.5	30.5	3	8	3.5	14.5
4	23.5	3.5	14.5	5.5	41.5
3.5	14.5	4	23.5	3.5	14.5
6.5	45	3	8	3.5	14.5
5	37	3	37	4	23.5
4	23.5	4.5	50.5	5	43.5
2.5	4	2	1	5	37
2.5	4	3.5	14.5	4.5	30.5
3.5	14.5	4	23.5	4	23.5
3.5	14.5	5.5	41.5	4.5	30.5
2.5	4	4	23.5	2.5	4
	$\Sigma R = 307.5$		$\Sigma R = 358$		$\Sigma R = 389.5$

t	5	3	10	8	6	7	2	2	$T = t^3 - t$
T	120	24	990	504	210	336	6	6	$T = 2196$

$$H = \frac{\dfrac{12}{N(N+1)} \displaystyle\sum_{j=1}^{k} \frac{R_j^2}{n_j} - 3(N+1)}{1 - \dfrac{\Sigma T}{N^3 - N}}$$

$= 12.01$; $p < .01$

Table A4.110: Kruskal-Wallis anova for differences between groups, highest mark of the practice trials, irregular tracks

CLD	R	CA	R	MA	R
2.5	4	3.5	21	4.5	36.5
3.5	21	3	11.5	2.5	4
2.5	4	4.5	36.5	3.5	21
5	42	3	11.5	3.5	21
3.5	21	3.5	21	5	42
4	30	2.5	4	5	42
3.5	21	3	11.5	6	45
2.5	4	3	11.5	4	30
3.5	21	4	30	5	42
2.5	4	4	30	3	11.5
3.5	21	3	11.5	4.5	36.5
4	30	4	30	5	42
4	30	4.5	36.5	4.5	36.5
4.5	36.5	3	11.5	3.5	21
2.5	4	3.5	21	3	11.5
$\Sigma R = 293.5$			$\Sigma R = 299$		$\Sigma R = 442.5$

t	7	8	11	7	6	5	$T = t^3 - t$
T	336	504	1320	336	210	120	$T = 2826$

$$H = \frac{\dfrac{12}{N(N+1)} \displaystyle\sum_{j=1}^{k} \frac{R_j^2}{n_j} - 3(N+1)}{1 - \dfrac{\Sigma T}{N^3 - N}}$$

$= 10.87$; $p < .01$

Table A4.111: Spearman rank correlation coefficient for the mean subjective mark and the mean RMS over time over the 12 trials, regular track

Subject	RMS	R	10	R	d	d^2
CLD 1	26.42	37	4.96	35	-2	4
2	28.83	40	4.62	40	0	0
3	27.00	38.5	4.71	37	-1.5	2.25
4	32.33	42	4.21	42	0	0
5	14.92	24	5.87	29	4	16
6	22.83	32.5	5.50	31	-1.5	2.25
7	43.83	45	2.08	45	0	0
8	20.50	31	4.67	38.5	7.5	56.25
9	38.58	44	3.67	44	0	0
10	11.67	16.5	6.21	23.5	7	49
11	34.00	43	3.87	43	0	0
12	12.92	20	6.00	25.5	5.5	30.25
13	24.58	35	5.12	33	-2	4
14	11.67	16.5	7.17	10.5	-6	36
15	17.17	29	6.00	25.5	-3.5	12.25
CA 16	11.33	15	6.50	20	5	25
17	12.08	18	8.17	1	17	289
18	9.67	10	6.87	16	6	36
19	10.33	12	5.92	27.5	15.5	240.25
20	20.42	30	6.96	15	-15	225
21	7.17	1	8.12	2	1	1
22	9.08	7	6.54	19	12	144
23	8.75	6	7.75	4	-2	4

Table A4.111: cont'd

Subject	RMS	R	10	R	d	d^2
24	9.17	8.5	7.00	14	5.5	30.25
25	9.17	8.5	7.37	6.5	-2	4
26	7.83	4.5	2.92	3	-1.5	2.25
27	7.67	3.0	7.33	8.5	5.5	30.25
28	7.83	4.5	7.17	10.5	5.0	36
29	10.50	13	7.37	6.5	-6.5	42.25
30	10.00	11	7.33	8.5	-2.5	6.25
MA 31	7.58	2	6.67	18	16	256
32	13.58	21	4.58	41	20	400
33	25.00	36	7.50	5	-31	961
34	10.92	14	5.67	30	16	256
35	23.17	34	6.75	17	-17	289
36	13.83	22.5	4.96	35	12.5	156.25
37	27.00	38.5	7.04	13	25.5	650.25
38	29.67	41	6.21	23.5	17.5	306.25
39	14.00	24	5.92	27.5	3.5	12.25
40	16.50	28	5.33	32	4	16
41	22.83	32.5	7.08	12	-20.5	420.25
42	15.00	26	4.96	35	9	81
43	12.67	19	6.45	22	3	9
44	16.17	27	6.46	21	-6	36
45	13.83	22.5	4.67	38.5	16	256

$\sum d^2 = 5433$

cont'd

Table A4.111: cont'd

$$\sum x^2 = N^2 - N - \sum T_x = 7590 - 6(\frac{2^3 - 2}{12}) = 7587$$

$$\sum y^2 = \frac{N^3 - N}{12} - \sum T_y = 7590 - (7(\frac{2^3 - 2}{12}) + \frac{3^3 - 3}{12}) = 7584$$

$$r_s = \frac{x^2 + y^2 - d^2}{2 \quad x^2 \quad y^2}$$

$$r_s = .64$$

Table A4.11[2]: Spearman Rank correlation coefficient for the mean subjective mark and the mean RMS over 12 trials, irregular track

Subject	RMS	R	10	R	d	d^2
CLD 1	13.33	24	5.79	29.5	4.5	20.25
2	30.00	45	2.00	44	-1	1
3	15.17	29.5	4.96	36	6.5	42.25
4	15.75	33	5.71	31.5	-1.5	2.25
5	24.17	43	3.79	43	0	0
6	18.67	40	4.62	40	0	0
7	24.92	44	1.54	45	1	1
8	9.08	12.5	6.50	16.5	3	9
9	16.08	34	5.17	35	1	1
10	16.25	36	6.96	11	-25	6.25
11	14.83	27.5	4.17	42	14.5	210.25
12	16.58	37	4.87	38	1	1
13	19.17	41	6.50	16.5	24.5	600.25
14	11.67	22	4.92	37	15	225
15	17.67	39	6.12	25	-14	196
CA 16	8.92	11	6.79	13	2	4
17	7.67	4	7.12	7.5	3.5	12.25
18	8.83	9.5	7.00	10	.5	.25
19	8.83	9.5	7.08	9	- .5	.25
20	7.08	2	6.92	12	10	100
21	7.42	3	7.42	4	1	1
22	10.17	16	6.46	18.5	2.5	6.25
23	13.67	25.5	6.25	23	-2.5	6.25

Table A4.112 : cont'd

Subject	RMS	R	10	R	d	d^2
24	9.08	13.5	7.45	3	-10.5	110.25
25	8.00	5	7.12	7.5	2.5	6.25
26	9.00	12	8.46	1	-11	132
27	6.08	1	7.21	5	4	16
28	10.67	17.5	5.79	29.5	12	144
29	11.83	27.5	6.33	22	-5.5	30.25
30	8.50	7	8.00	2	-5	25.00
31	20.50	42	6.46	18.5	-23.5	552.25
32	10.75	19	7.17	6	-13	169
33	8.75	8	6.58	15	7	49
34	8.17	6	6.71	14	8	64
35	10.67	17.5	6.42	20.5	3	9
36	15.33	31	5.83	28	-3	9
37	17.17	38	4.83	39	1	1
38	15.50	32	5.91	34	2	4
39	15.17	29.5	5.92	27	-2.5	6.25
40	11.33	21	6.17	24	3	9
41	11.75	23	6.42	20.5	-2.5	6.25
42	13.67	25.5	5.37	33	7.5	56.25
43	16.17	35	5.71	31.5	-3.5	12.25
44	10.83	20	6.00	26	6	36
45	9.58	15	4.37	41	26	676

$\sum d^2 = 4187.5$

Table A4.112: cont'd

$$\sum x^2 = \frac{N^3 - N}{12} - \sum T_x = 7590 - \left(6\left(\frac{2^3 - 2}{12}\right)\right) = 7587$$

$$\sum y^2 = \frac{N^3 - N}{12} - \sum T_y = 7590 - \left(6\left(\frac{2^3 - 2}{12}\right)\right) = 7587$$

$$r_s = \frac{\sum x^2 + \sum y^2 - \sum d^2}{2\sqrt{\sum x^2 \sum y^2}}$$

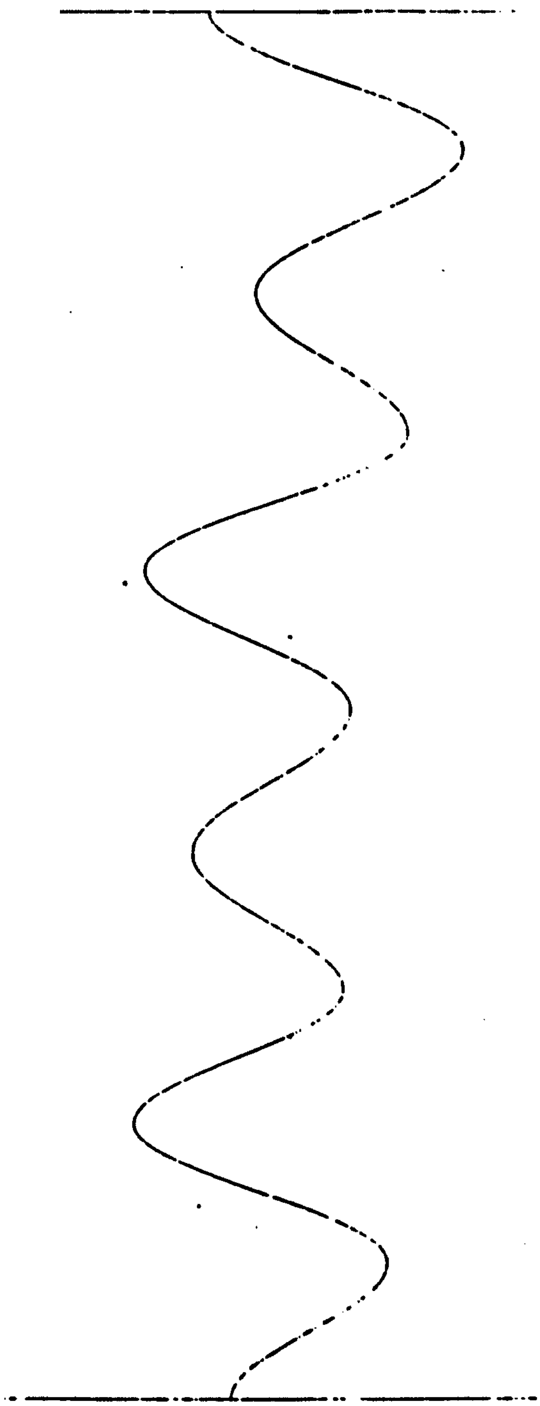
$$= .72$$

APPENDIX 5

(i) 12 tracks

(ii) Subject 1: 12 trials on the regular track

(iii) Subject 2: 12 trials on the irregular track



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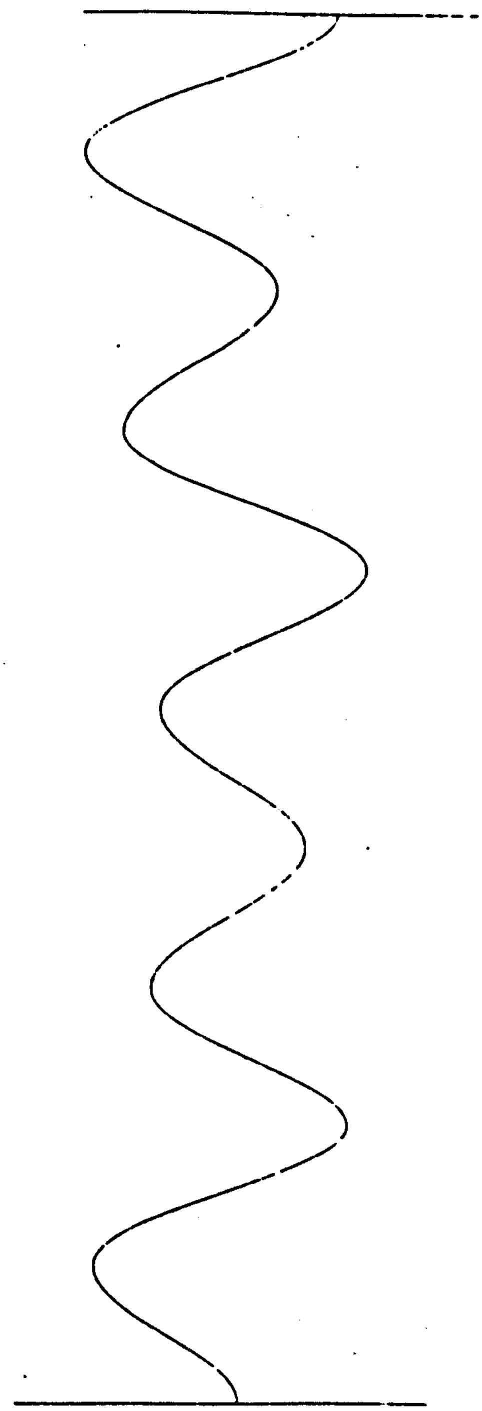
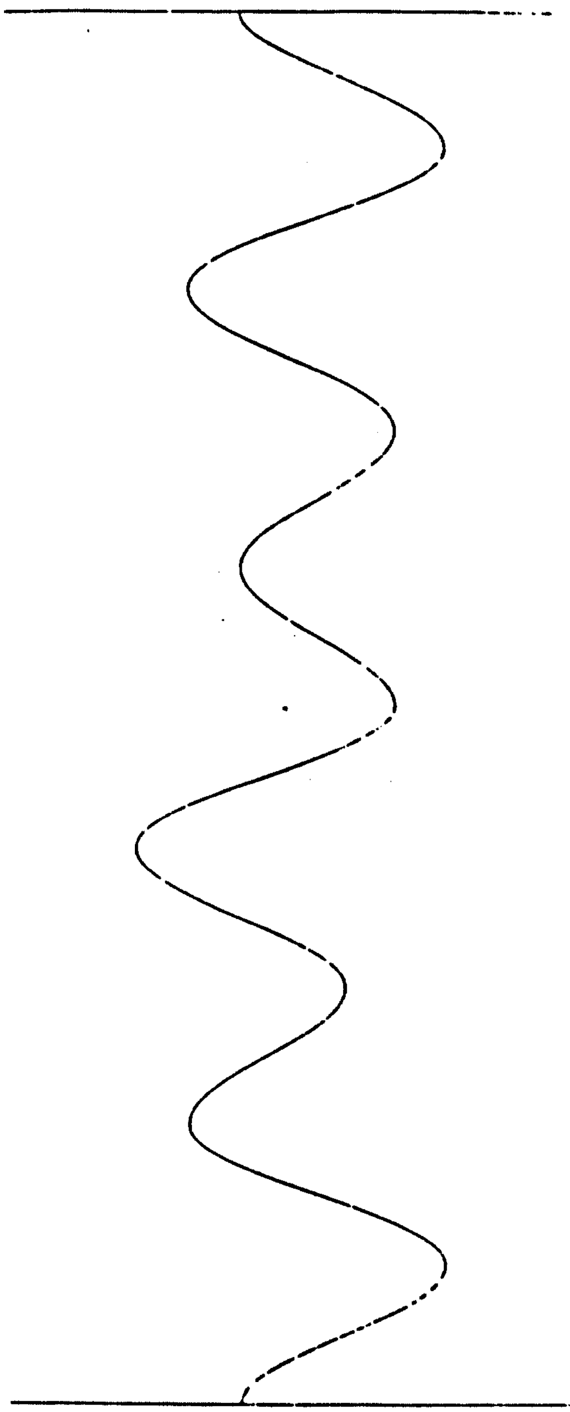


2



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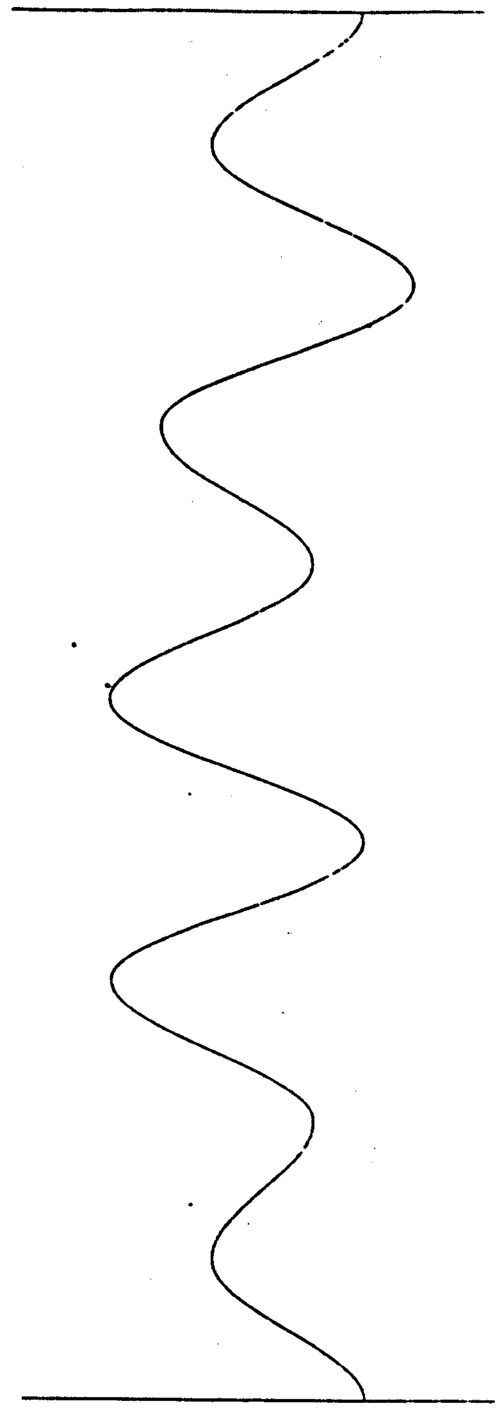

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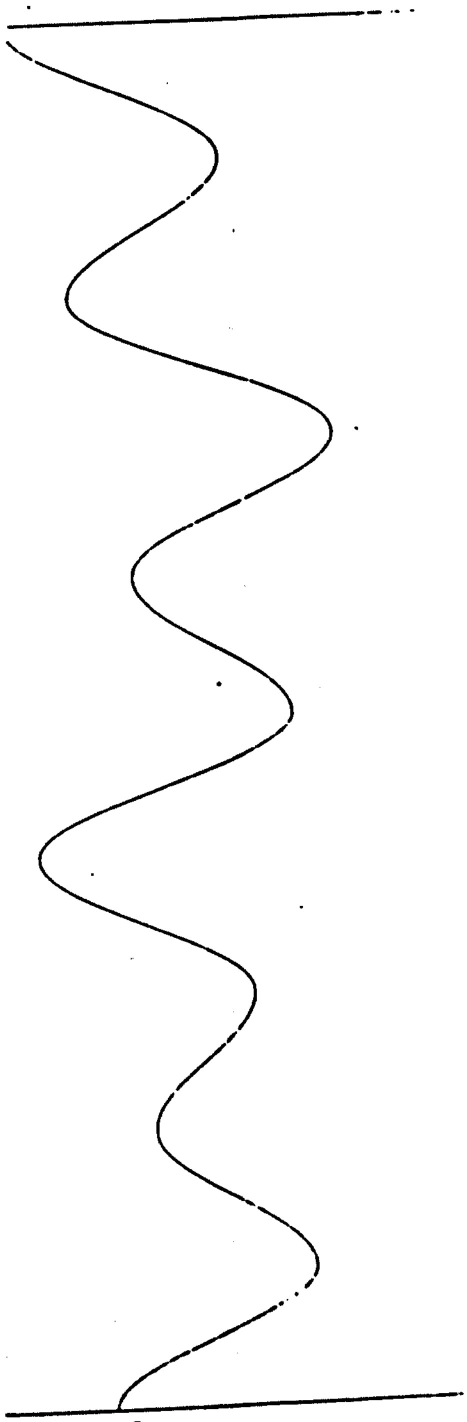

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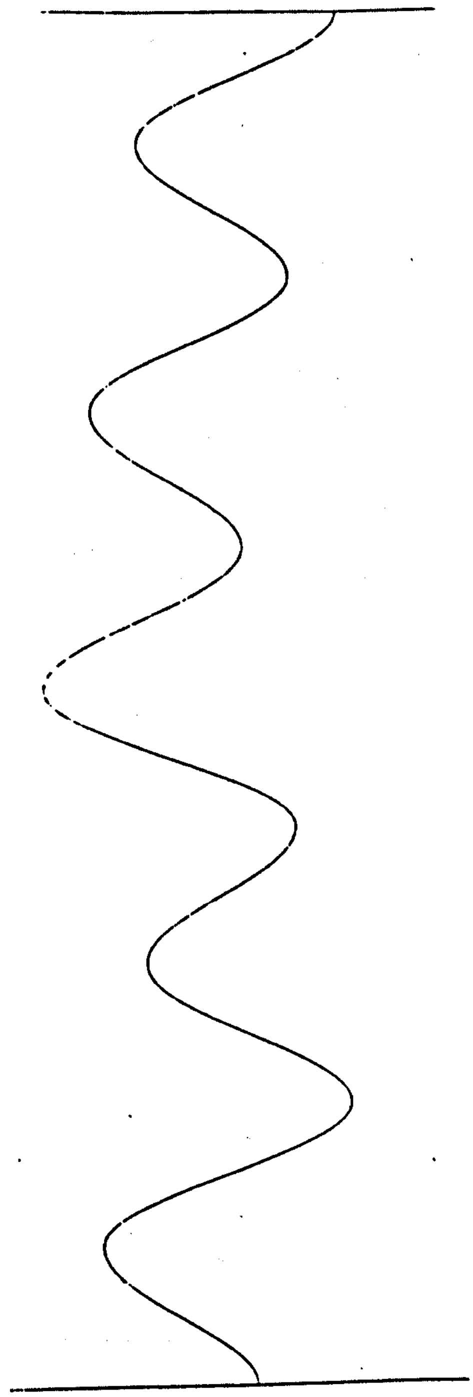

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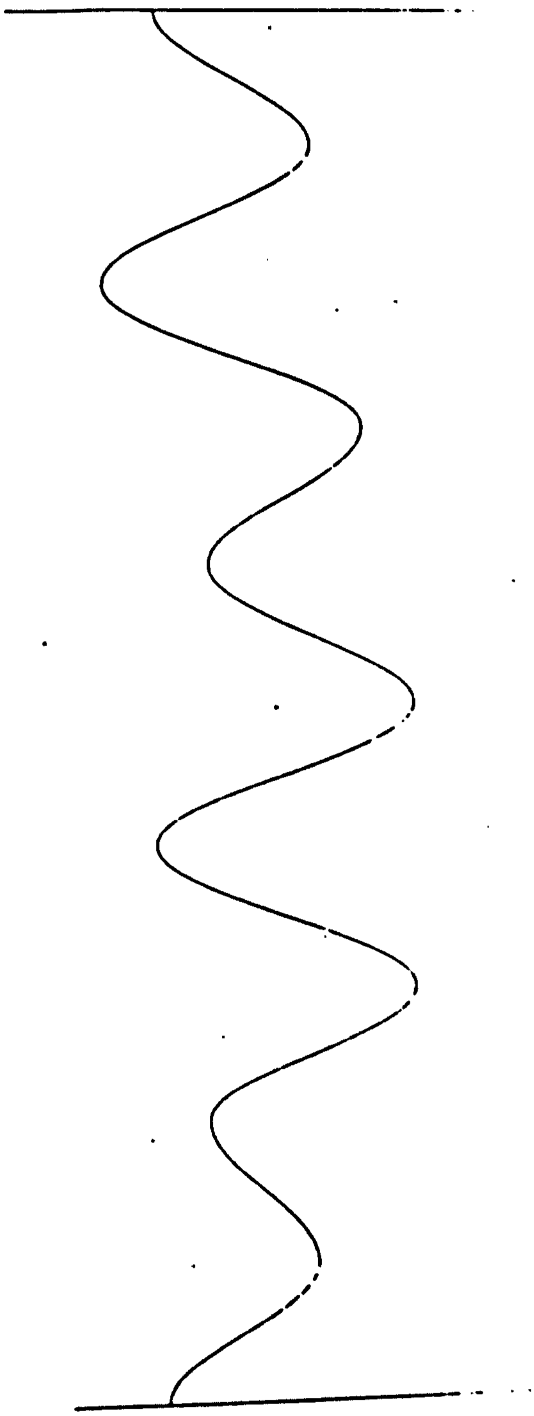

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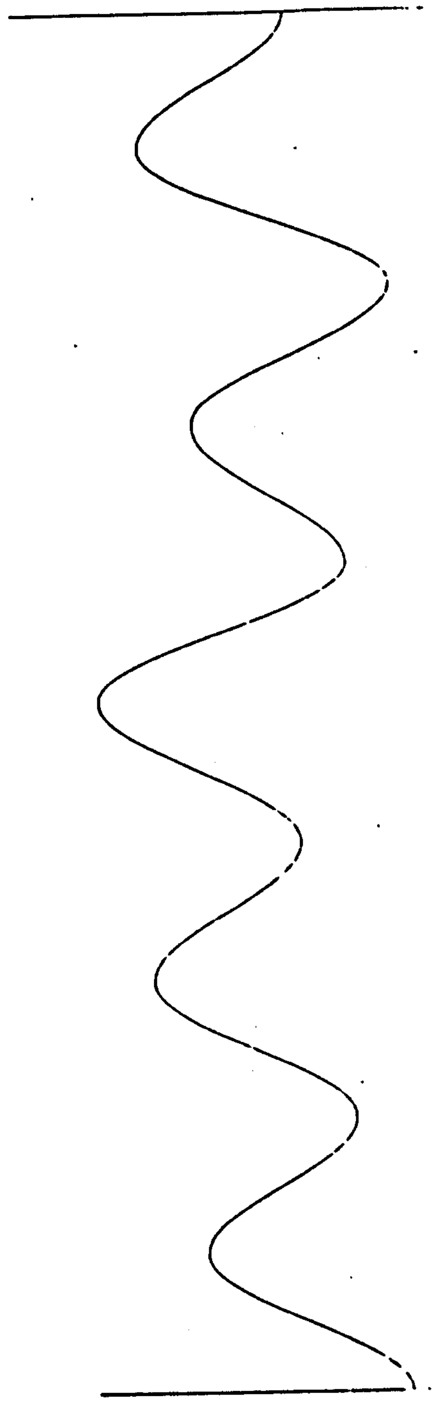

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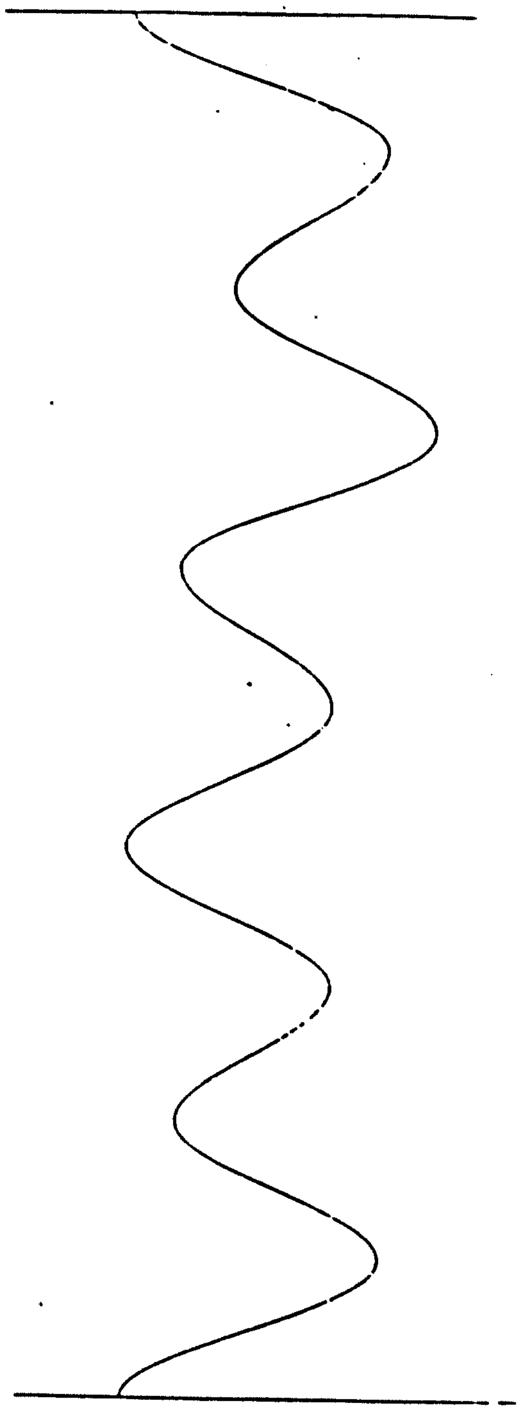

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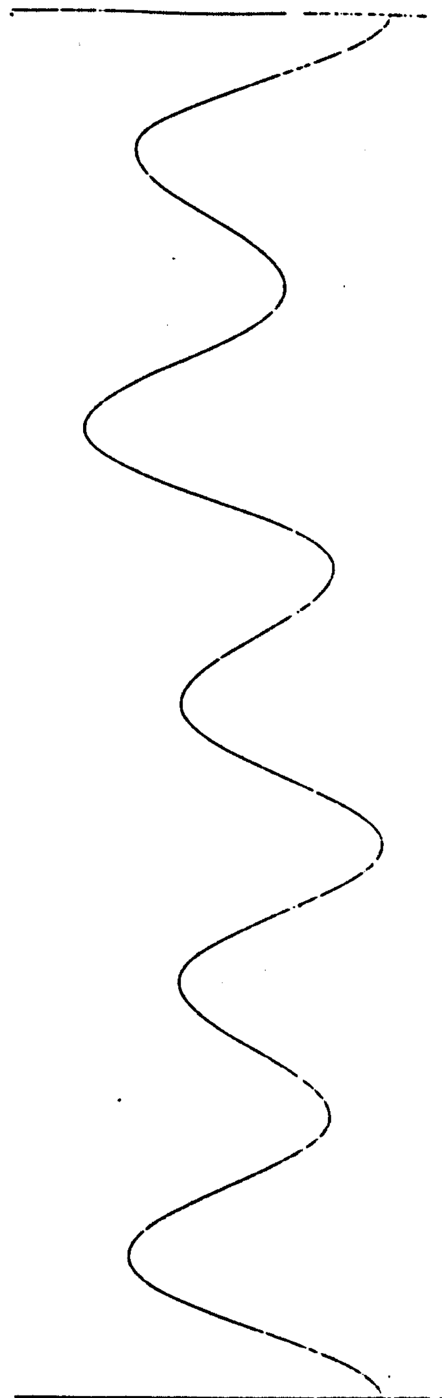

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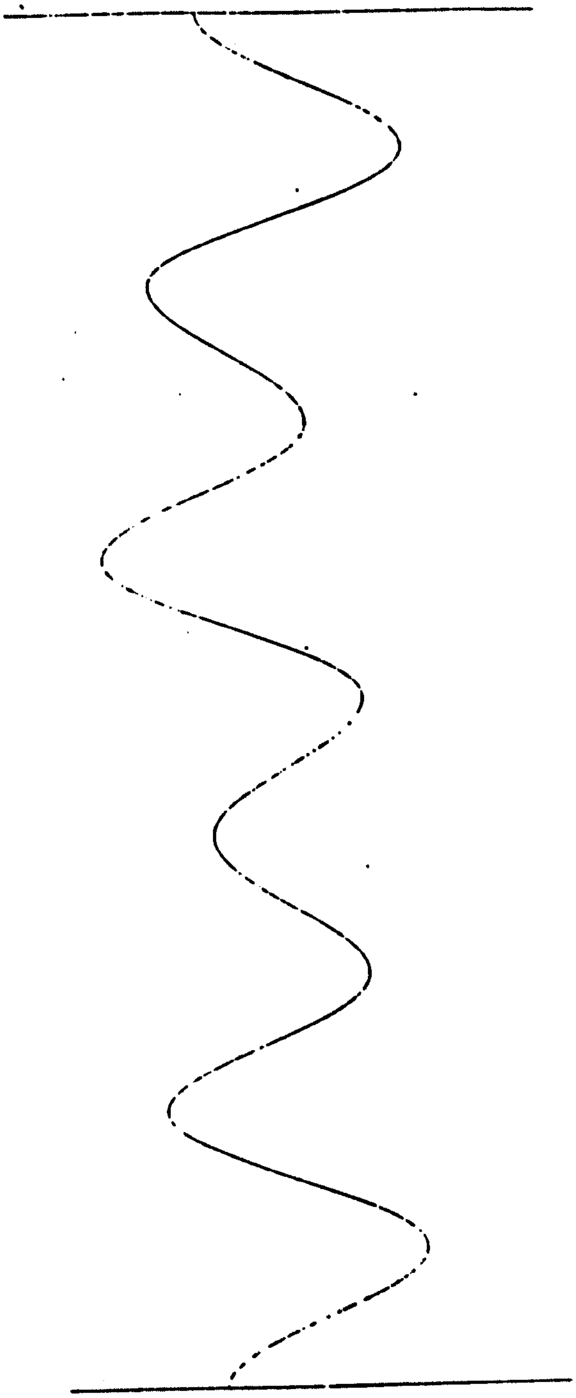
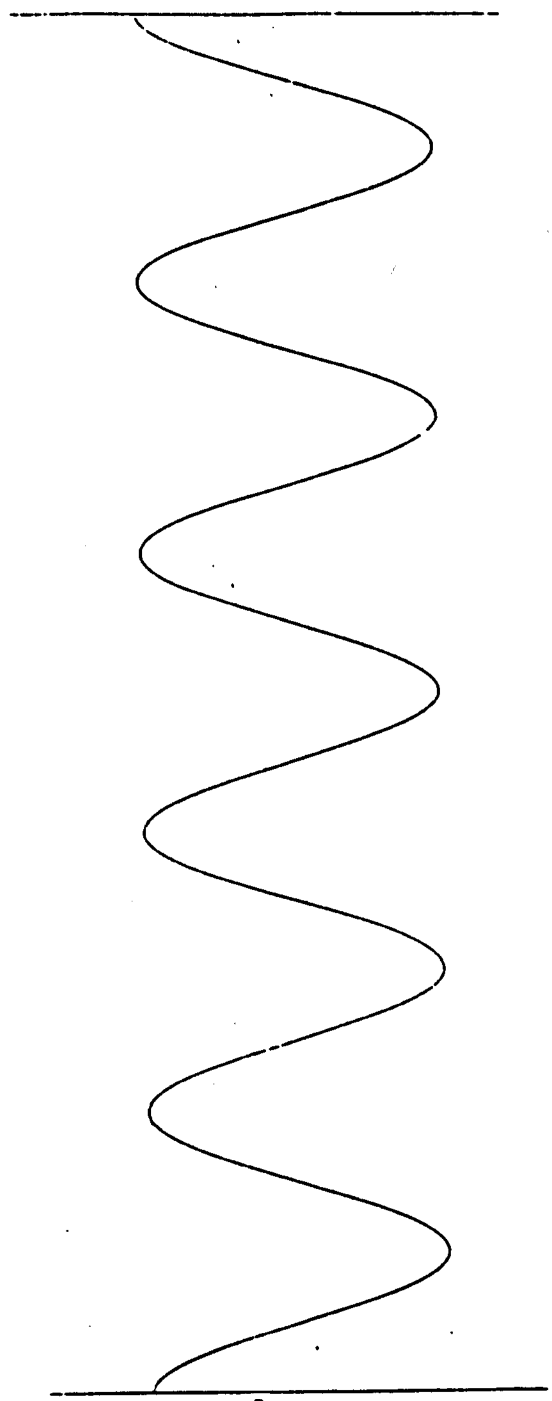
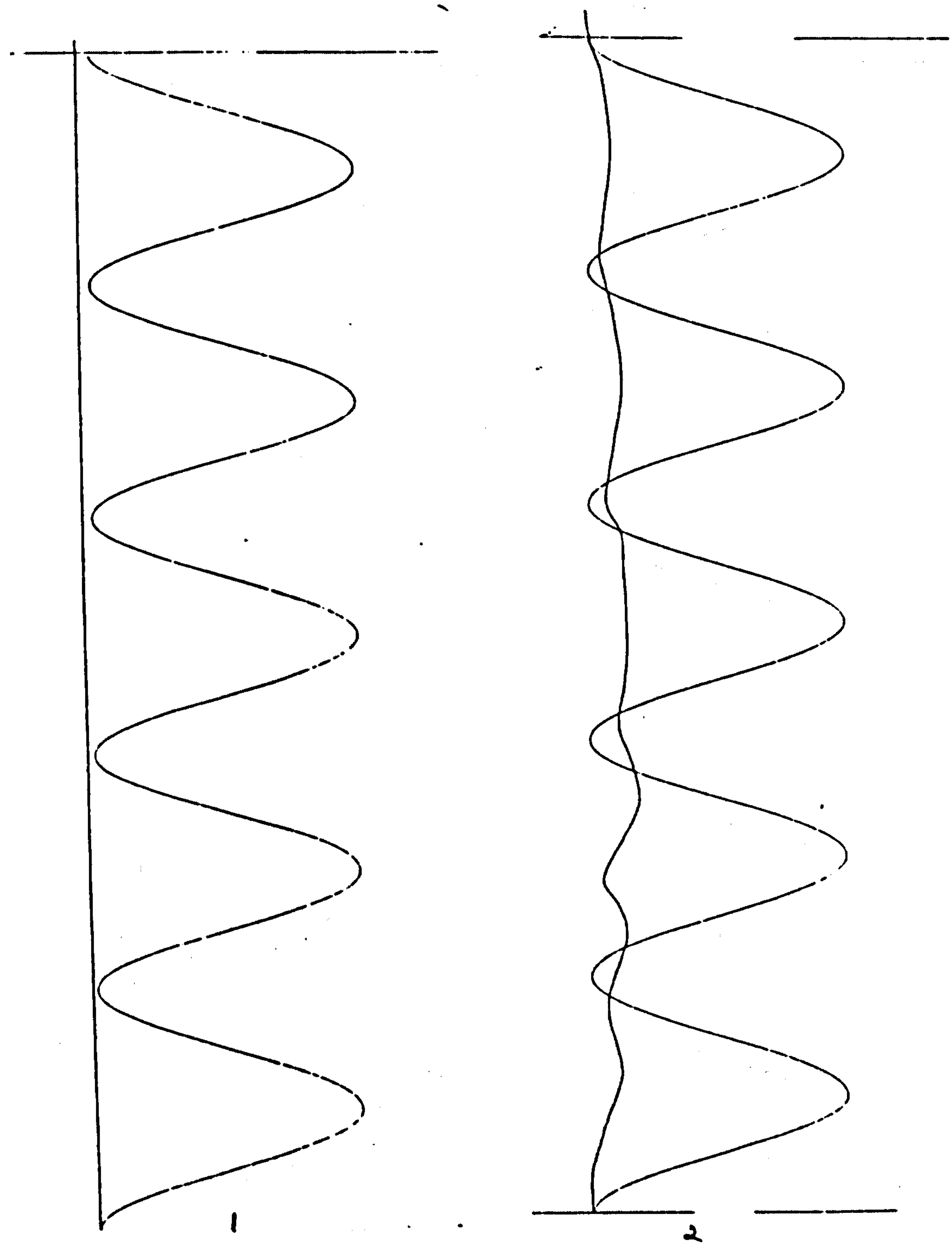


IRREGULAR



REGULAR

Subject 1

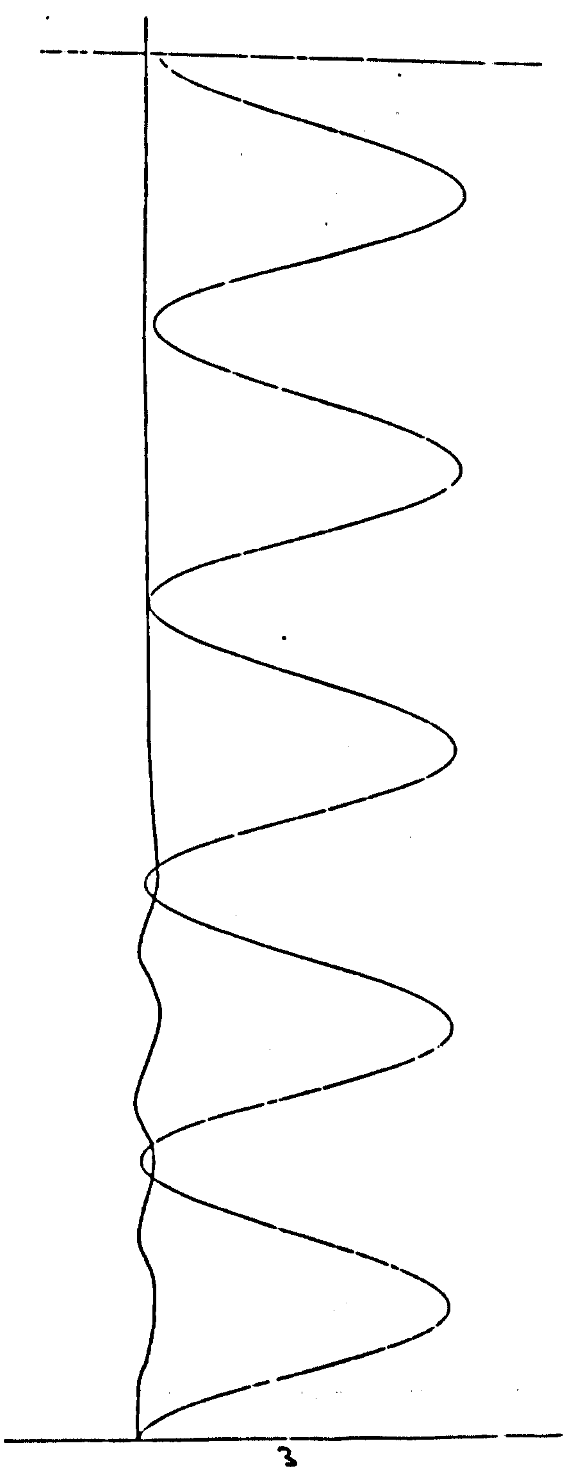


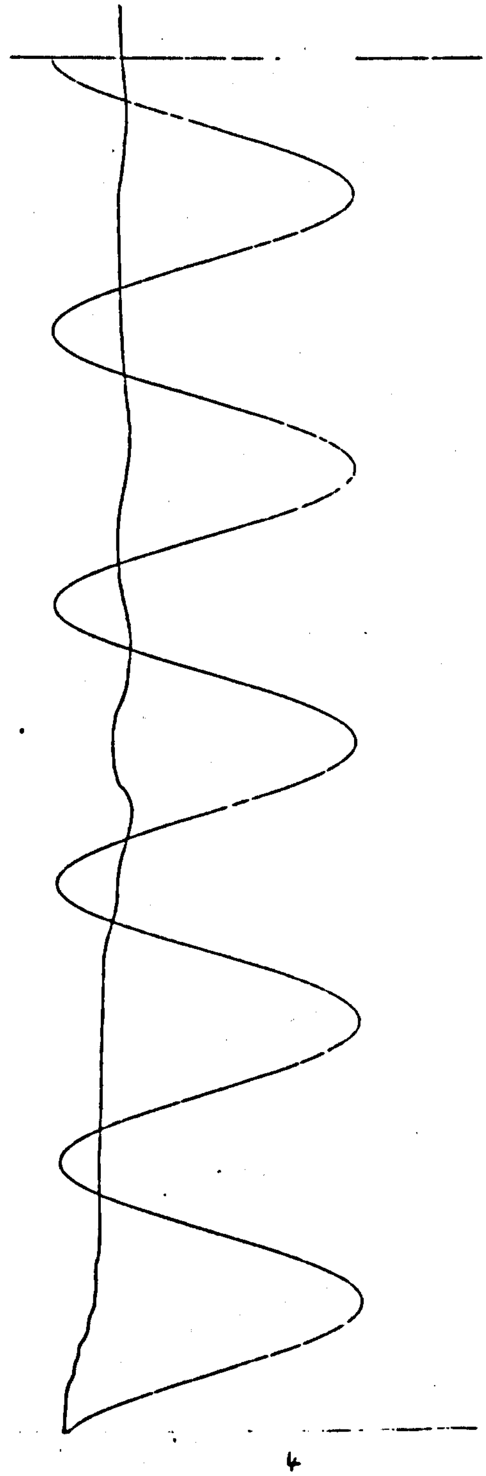
Trial 1

% = 100
MM = 47
RMS (5) = 93
10 = 1
Learning (i) = 1
Learning (ii) = 1

Trial 2

% = 100
MM = 39
RMS(5) = 83
10 = 1
Learning (i) = 2
Learning (ii) = 2



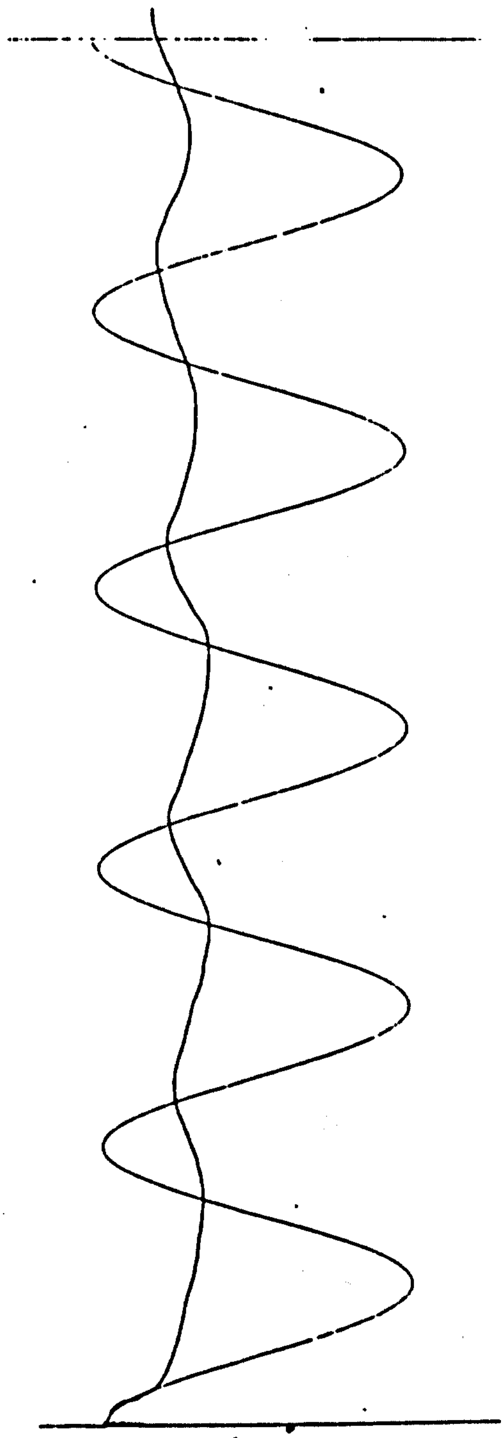


Trial 3

% = 100
MM = 46
RMS = 56
RMS (5) = 93
10 = 1
Learning (i) = 2
Learning (ii) = 2

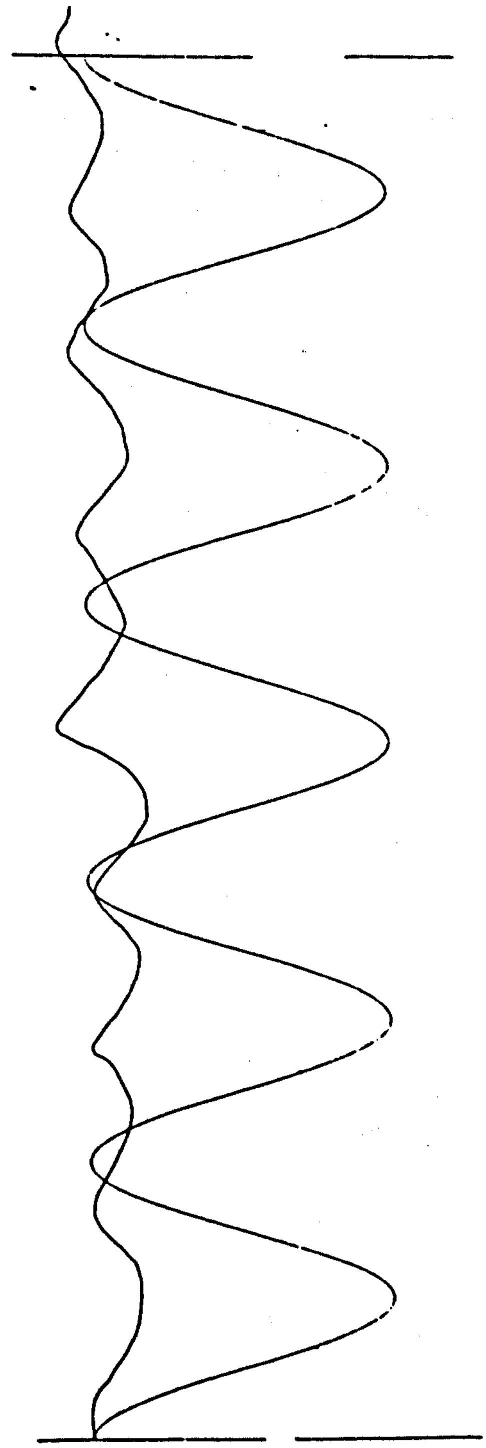
Trial 4

% = 100
MM = 36
RMS = 44
RMS (5) = 81
10 = 1.5
Learning (i) = 1
Learning (ii) = 2



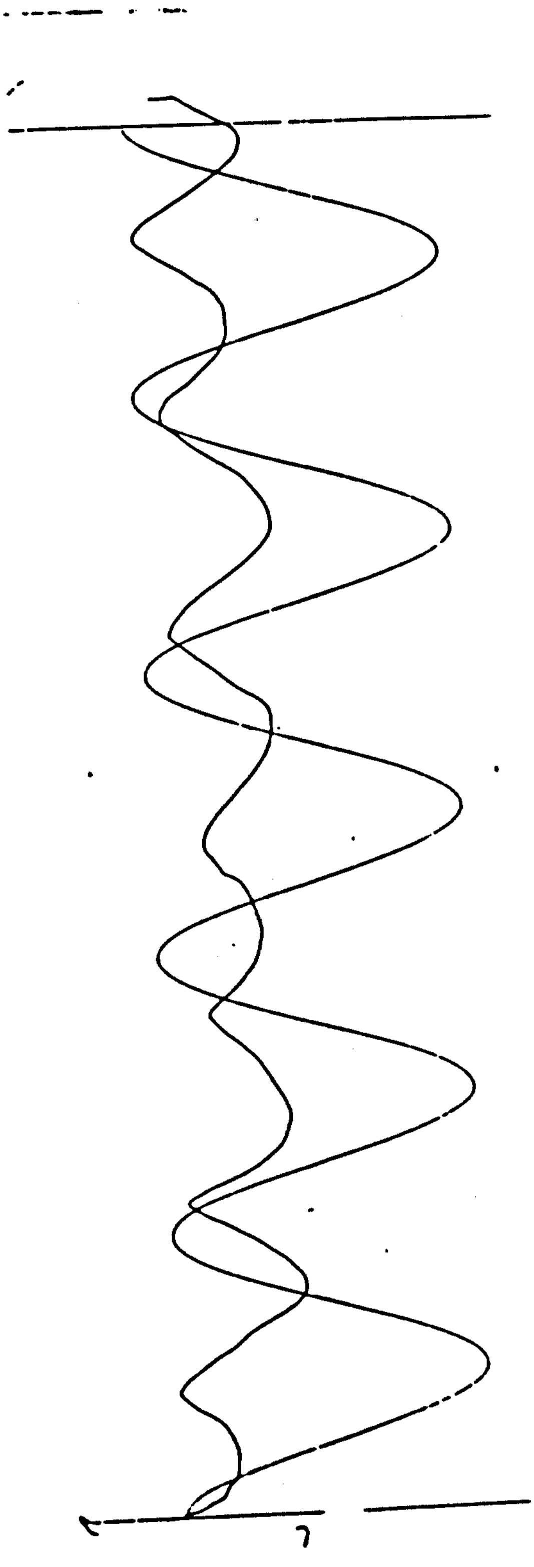
Trial 5

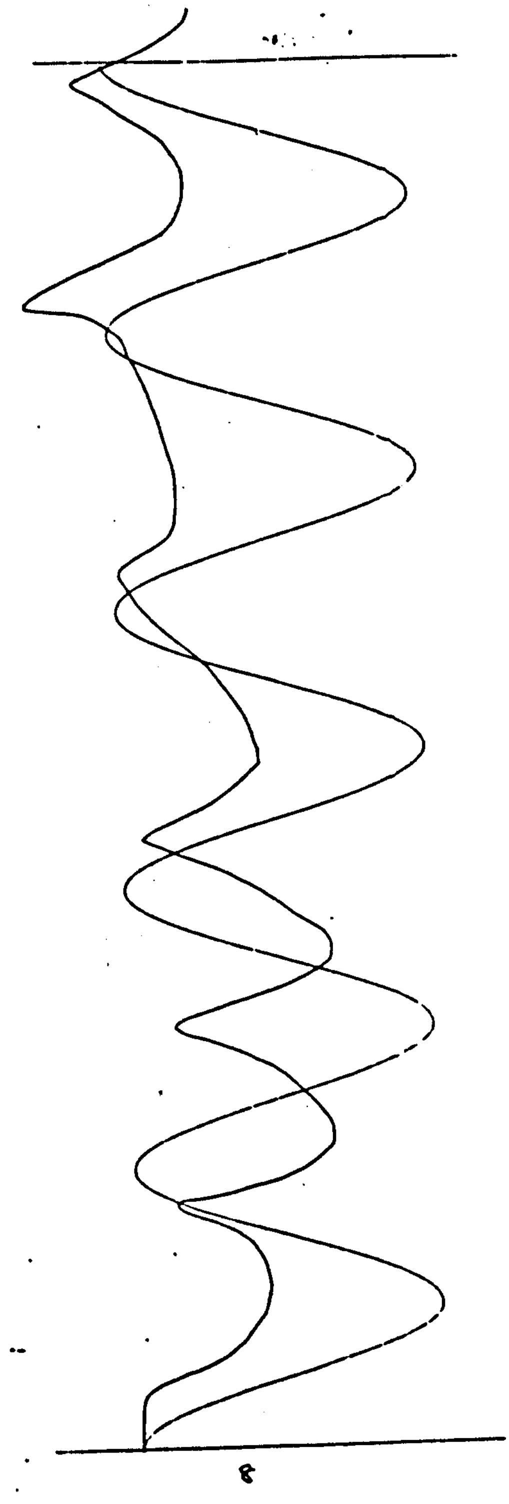
% = 100
MM = 32
RMS = 38
RMS (5) = 65
10 = 1.5
Learning (i) = 2
Learning (ii) = 3



Trial 6

% = 100
MM = 41
RMS = 51
RMS (5) = 95
10 = 2
Learning (i) = 3
Learning (ii) = 4



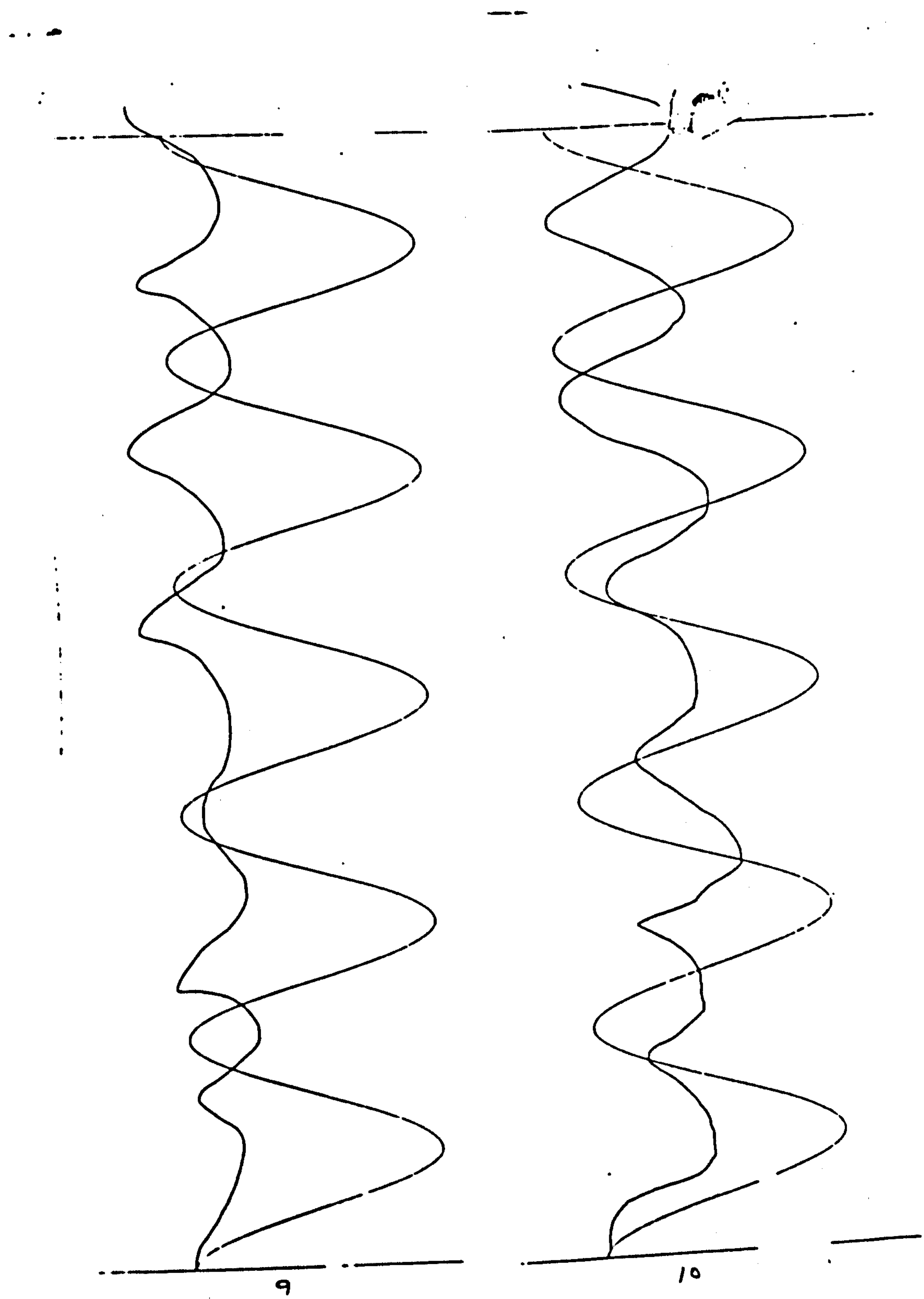


Trial 7

% = 100
MM = 34
RMS = 41
RMS (5) = 86
10 (mean) = 2
Learning (i) = 3
Learning (ii) = 4

Trial 8

% = 100
MM = 34
RMS = 40
RMS (5) = 72
10 (mean) = 2
Learning (i) = 2
Learning (ii) = 4

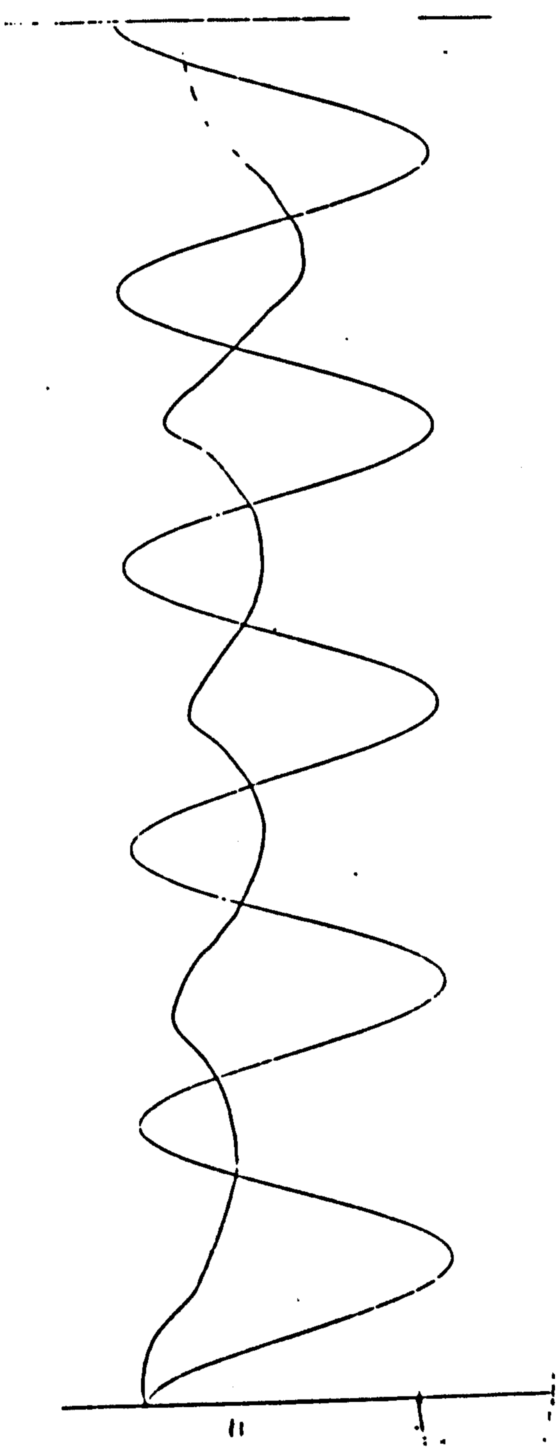


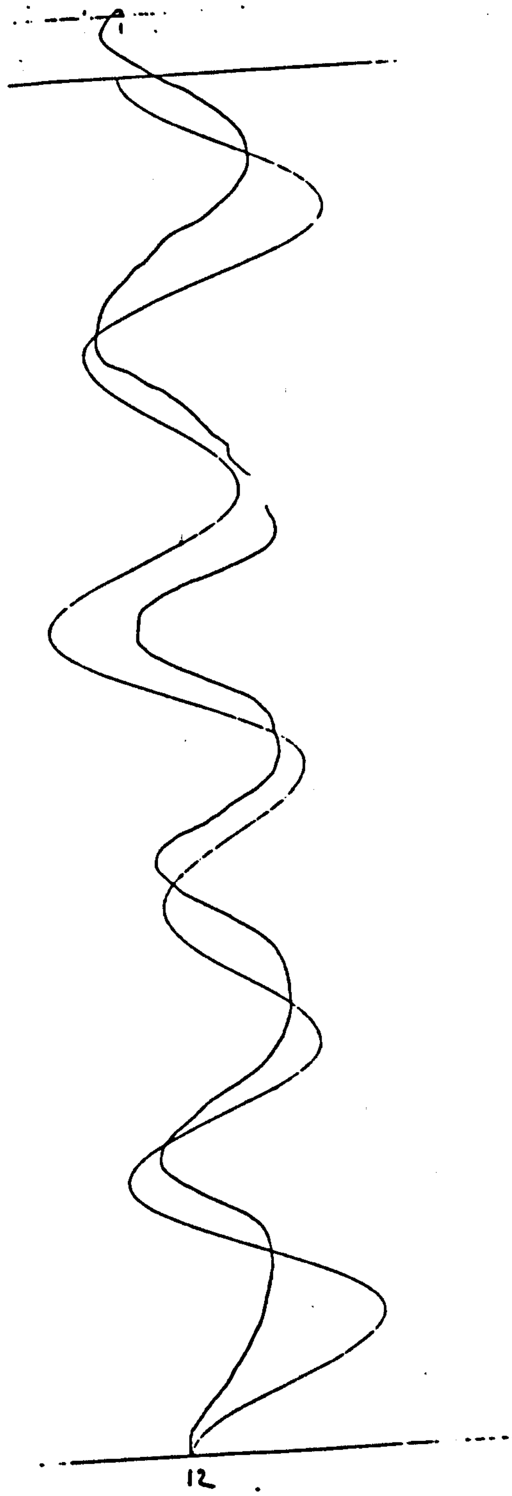
Trial 9

% = 100
MM = 39
RMS = 49
RMS (5) = 93
10 (mean) = 2
Learning (i) = 1
Learning (ii) = 3

Trial 10

% = 100
MM = 31
RMS = 37
RMS (5) = 82
10 (mean) = 3
Learning (i) = 2
Learning (ii) = 4





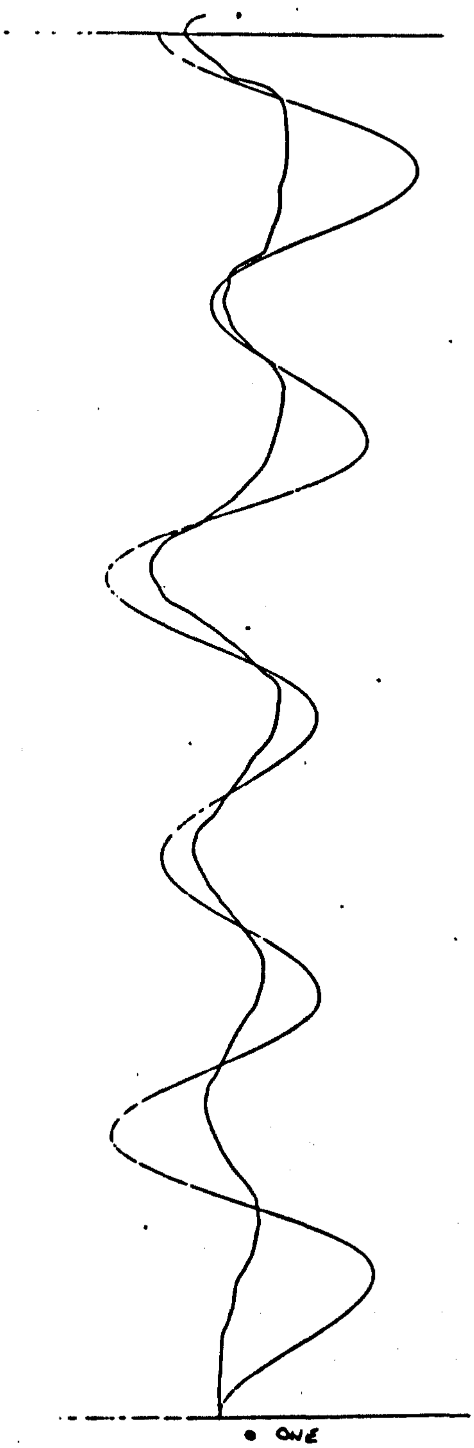
Trial 11

% = 100
MM = 37
RMS = 43
RMS (5) = 78
10 (mean) = 2.5

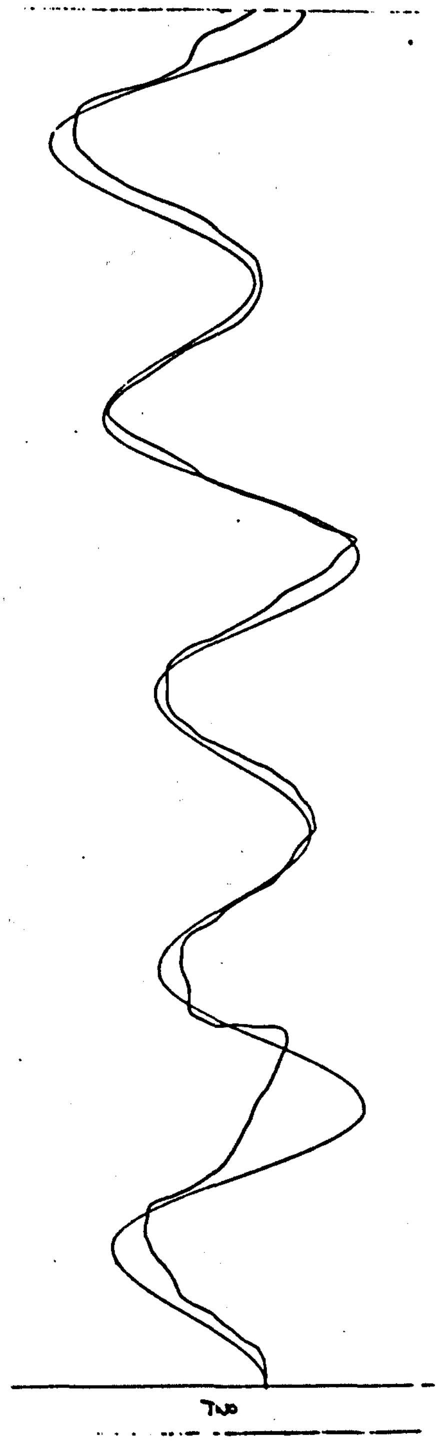
Trial 12

% = 98
MM = 17
RMS = 20
RMS(5) = 41
10 (mean) = 5.5

Subject 2



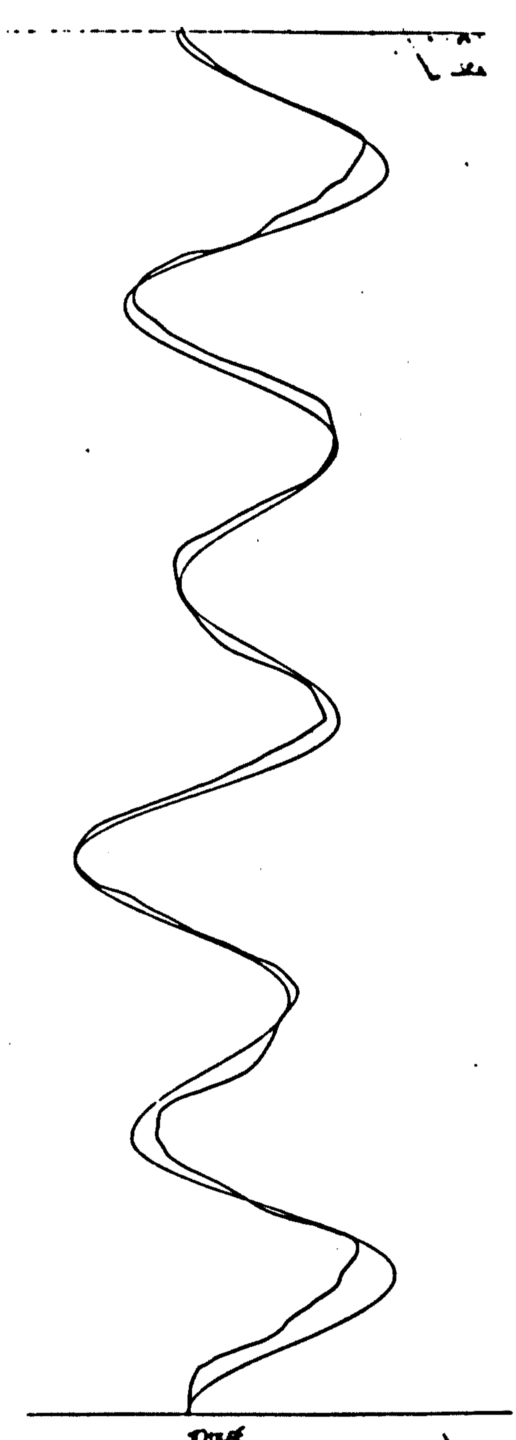
Trial 1

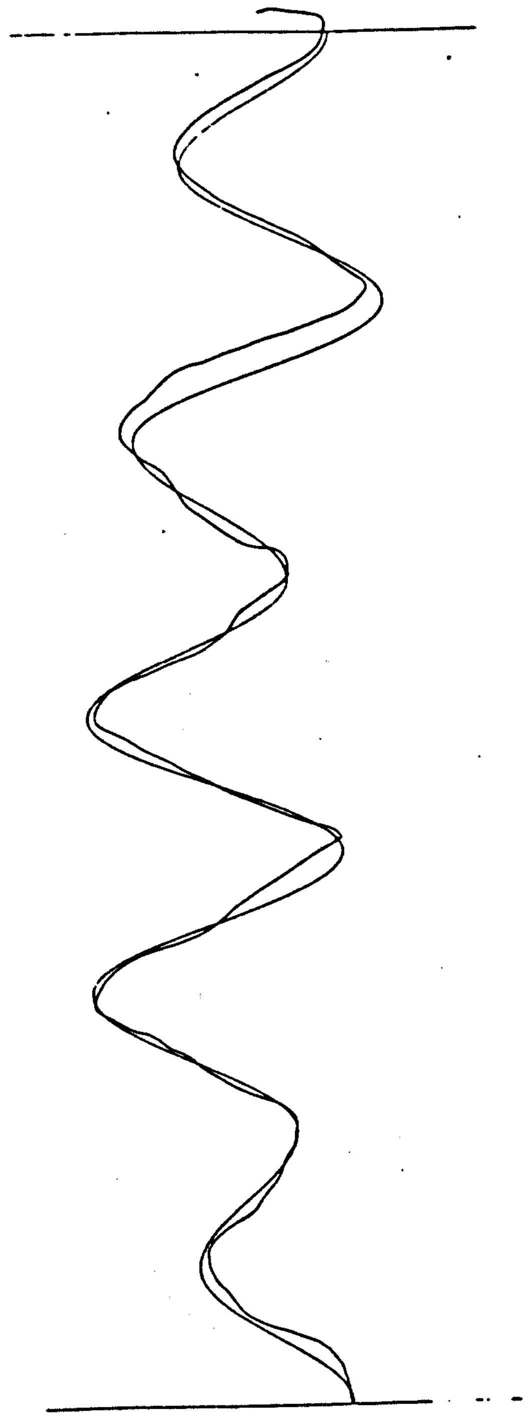


Trial 2

% = 100
MM = 15
RMS = 19
RMS(5) = 39
ιO (mean) = 4.5
Learning (i) = 1
Learning (ii) = 1

% = 100
MM = 5
RMS = 7
RMS(5) = 19
ιO (mean) = 6
Learning (i) = 2
Learning (ii) = 2





<u>Trial 3</u>

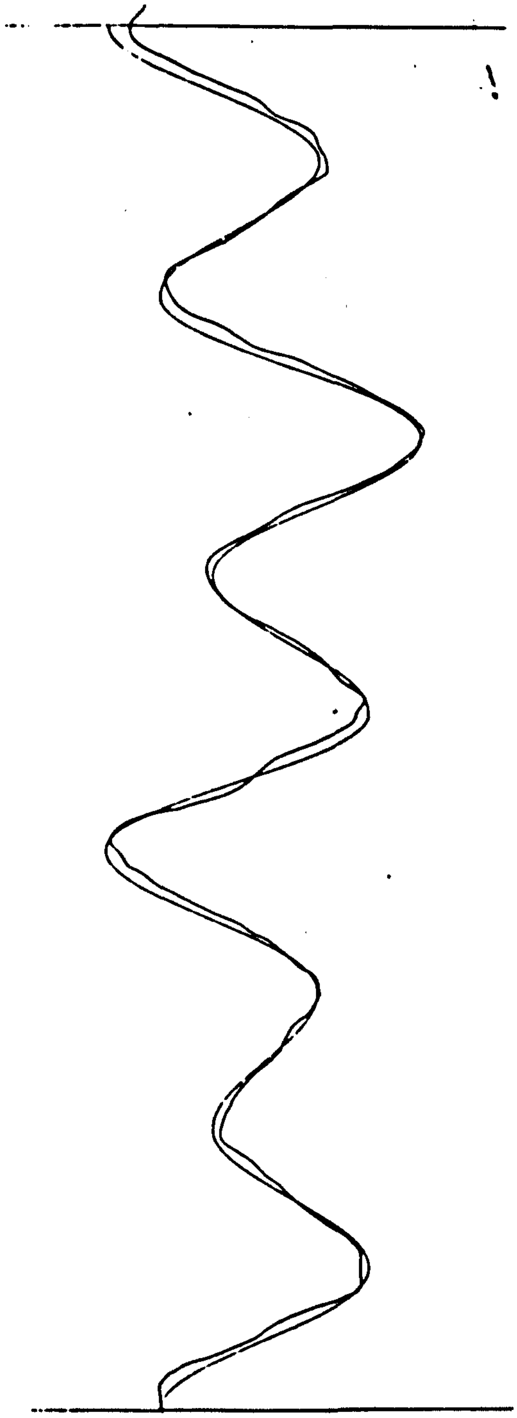
% = 100
MM = 6
RMS = 8
RMS (5) = 19

IO (Mean) = 7
Learning (i) = 3
Learning (ii) = 3

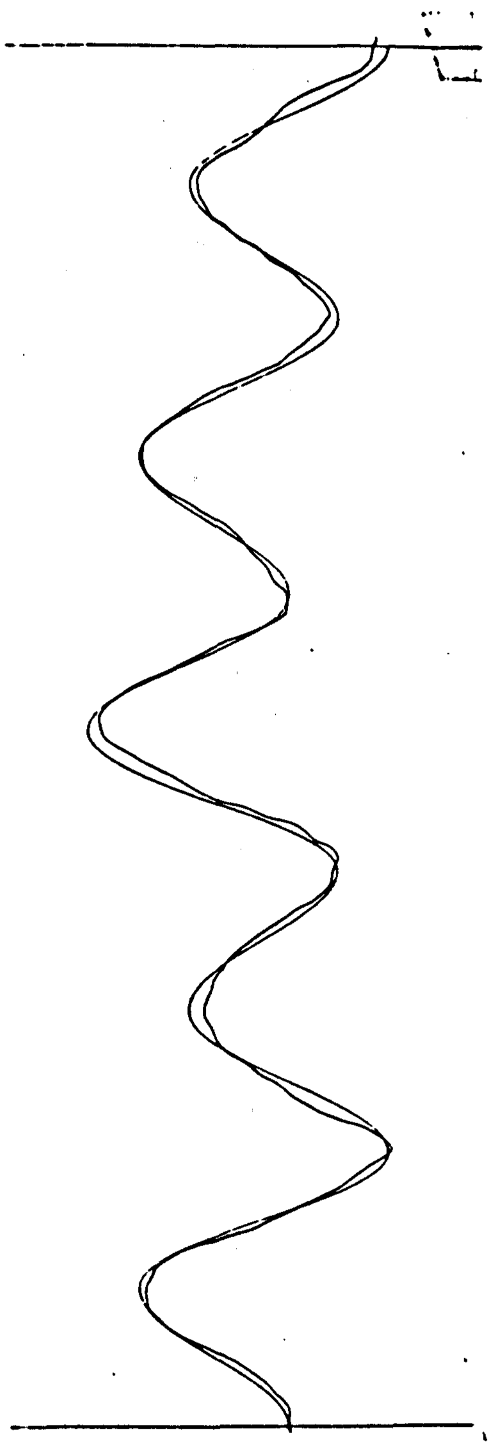
<u>Trial 4</u>

% = 100
MM = 8
RMS = 10
RMS (5) = 27

IO (Mean) = 6.5
Learning (i) = 3
Learning (ii) = 3



FIVE



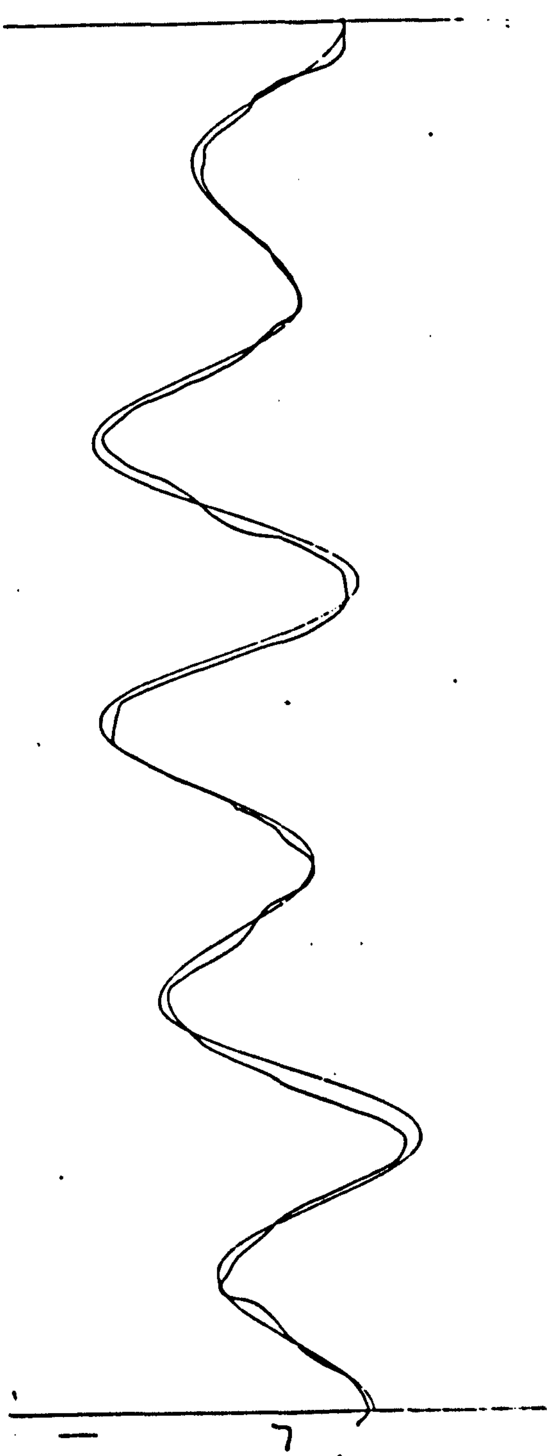
SIX

Trial 5

% = 100
MM = 5
RMS = 6
RMS (5) = 12
ιO (mean) = 7.5
Learning (i) = 4
Learning (ii) = 4

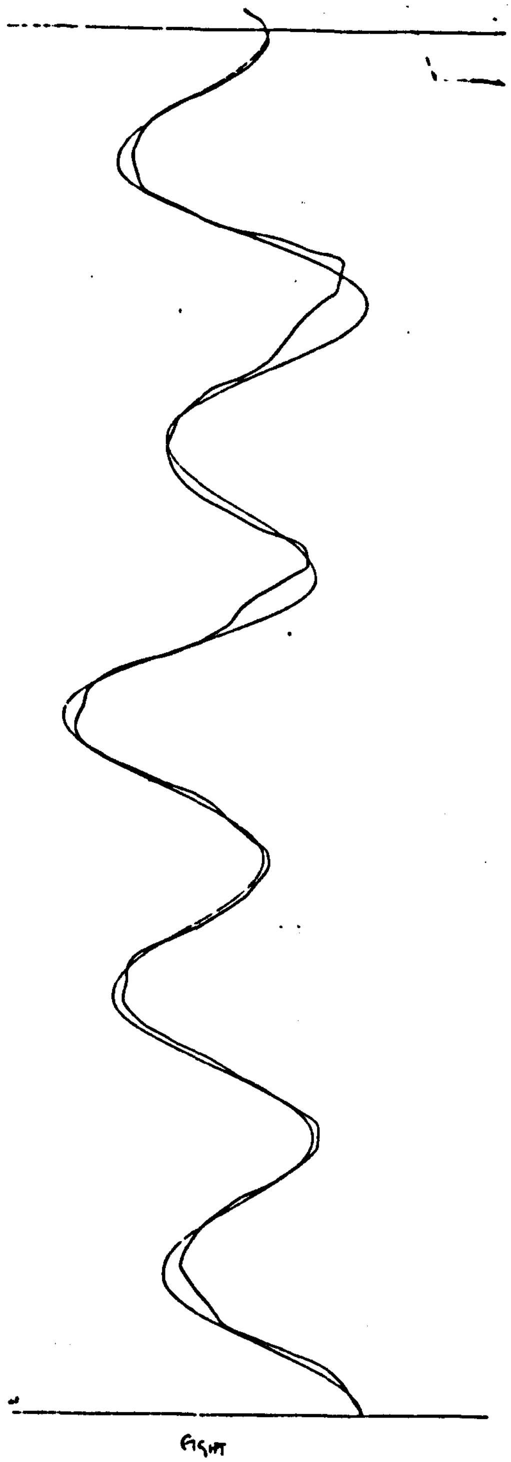
Trial 6

% = 100
MM = 6
RMS = 8
RMS (5) = 16
ιO (mean) = 8
Learning (i) = 4
Learning (ii) = 5



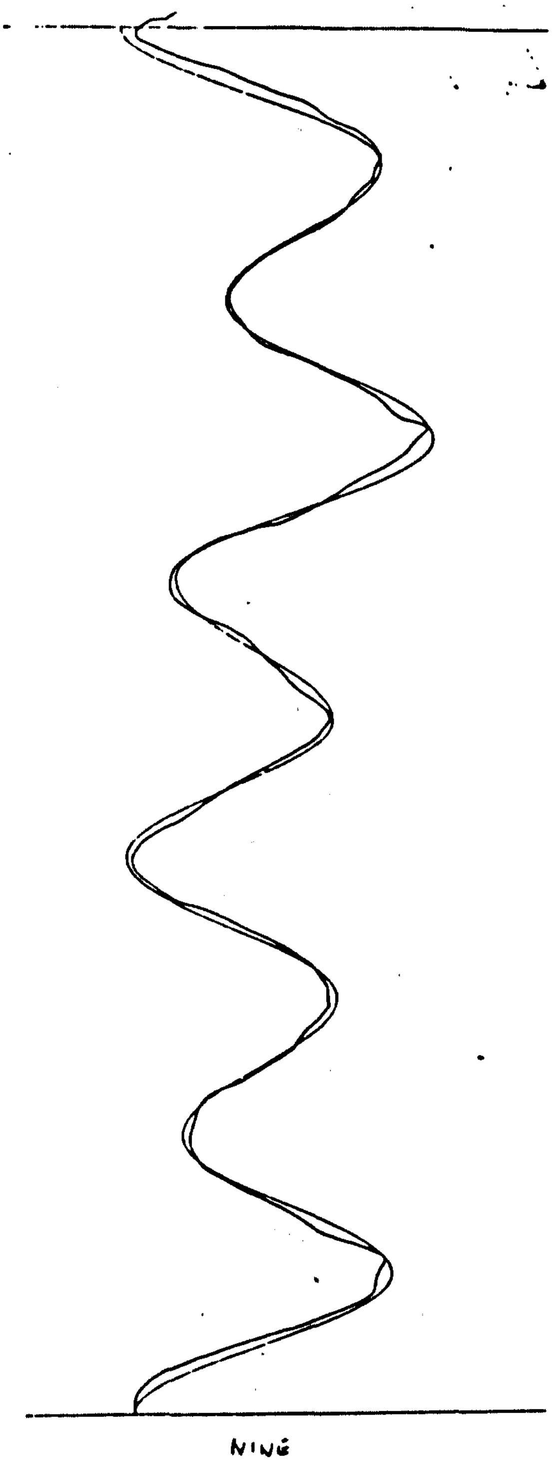
Trial 7

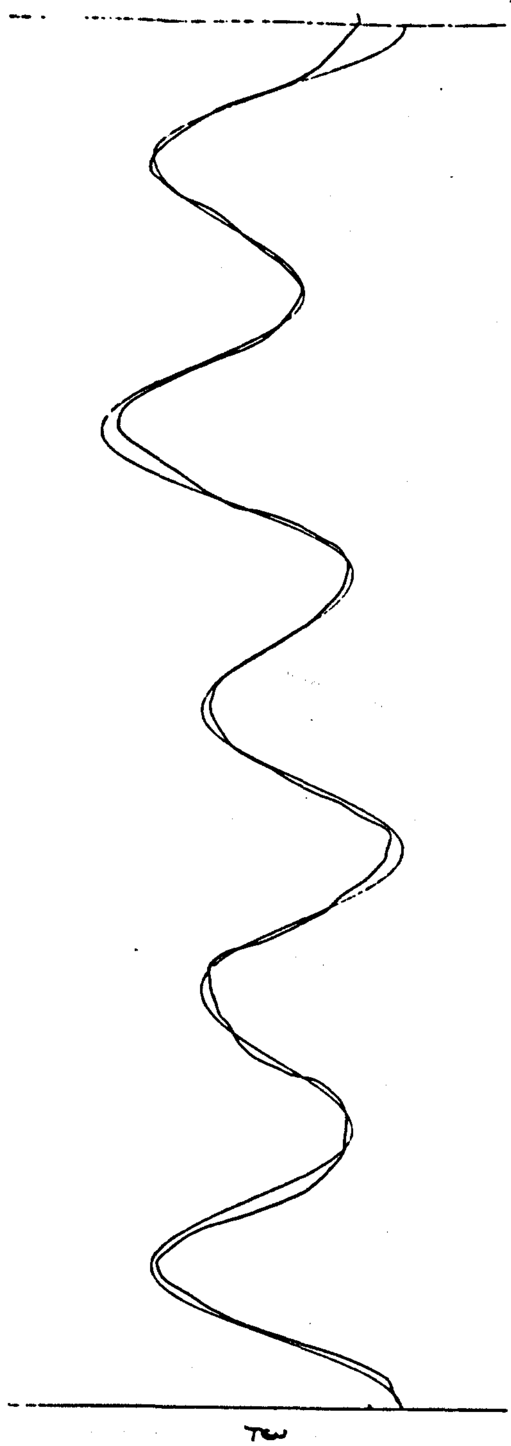
% = 100
MM = 7
RMS = 9
RMS (5) = 23
10 (meen) = 7
Learning (i) = 4
Learning (ii) = 4



Trial 8

% = 100
MM = 4
RMS = 6
RMS (5) = 15
10 (mean) = 7
Learning (i) = 3
Learning (ii) = 3



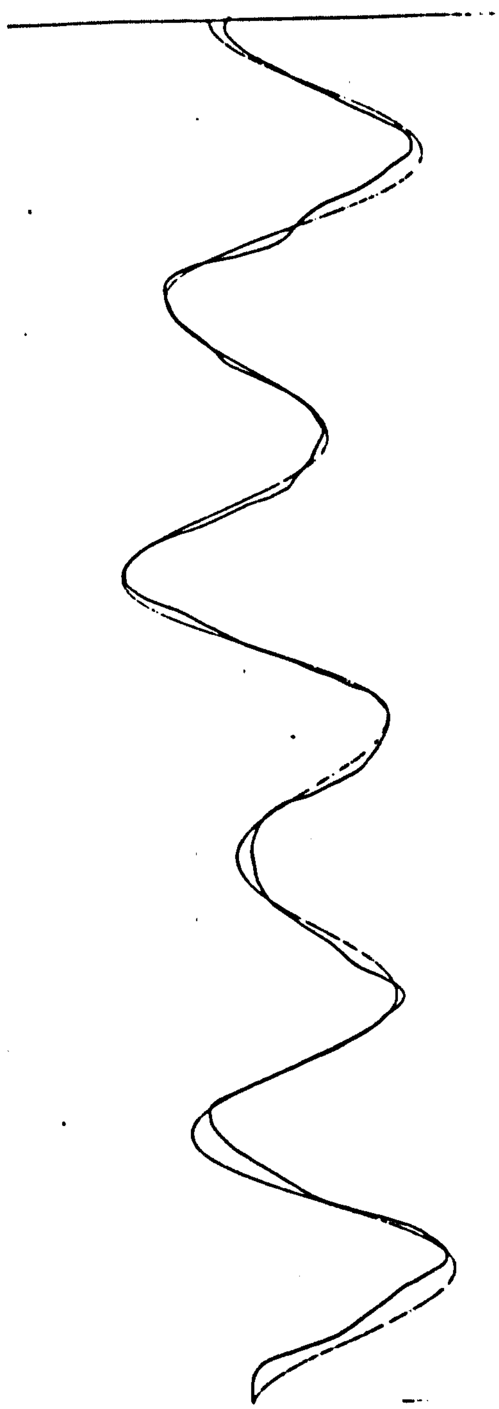


Trial 9

% = 100
MM = 8
RMS = 11
RMS (5) = 28
10 (mean) = 8.5
Learning (i) = 4
Learning (ii) = 4

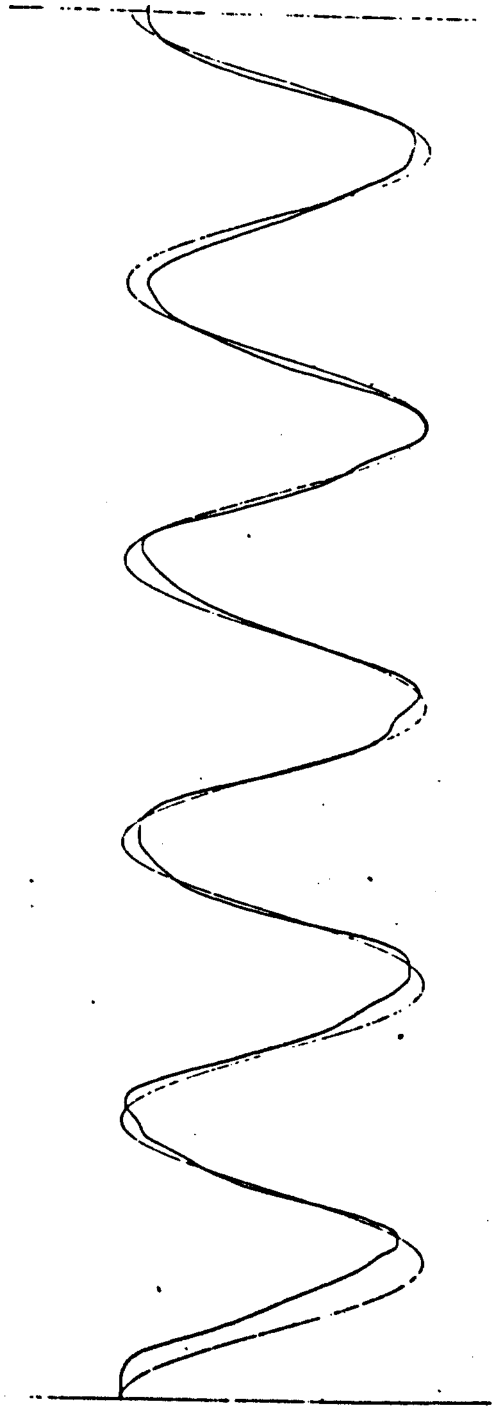
Trial 10

% = 100
MM = 6
RMS = 7
RMS (5) = 20
10 (mean) = 7.5
Learning (i) = 4
Learning (ii) = 5



<u>Trial 11</u>

% = 100
MM = 4
RMS = 5
RMS (5) = 12
10 (mean) = 7.5



<u>Trial 12</u>

% = 100
MM = 7
RMS = 9
RMS (5) = 24
10 (mean) = 7

APPENDIX 6

Table A6.1: Table for 3 (group) x 2 (response pattern) x 6 (blocks) anova for AE

Source	Sum of Squares	d.f.	Mean Square	F	Tail Probability
Mean	169062.74122	1	169062.74122	215.48	0.0000
Group	17414.60415	2	8087.30208	11.10	0.0001
Response	1283.93737	1	1283.93737	1.64	0.2047
GR	1844.03595	2	922.01798	1.17	0.3143
Error	60427.16869	77	784.76842		
Blocks	6359.03548	5	1271.80710	19.39	0.0000
BG	1107.13852	10	110.71385	1.69	0.0815
BR	515.84019	5	103.16804	1.57	0.1667
BGR	839.73110	10	83.97311	1.28	0.2394
Error	25250.54830	385	65.58584		

Table A6.2: Tukey HSD Test for differences between groups during practice blocks (AE)

	26.47	17.10	11.87
(CLD) 26.47	-	9.37**	14.60**
(MA) 17.10		-	5.23
(CA) 11.87			-

$$HSD = q_{.01;\ 3,\ 77} \sqrt{\frac{784.77}{163}} = 4.27 \times 2.19 = 9.35$$

$$HSD = q_{.05;\ 3,\ 77} \sqrt{\frac{784.77}{163}} = 3.40 \times 2.19 = 7.45$$

$^{**}p < .01$

Table A6.3: Tukey HSD Test for differences between trial blocks, groups and response patterns combined (AE)

	25.17	19.68	17.06	16.64	15.41	14.97
1. 25.17	-	5.49**	8.11**	8.53**	9.76**	10.20**
2. 19.68		-	2.62	3.04	4.27**	4.71**
4. 17.06			-	0.42	1.65	2.09
3. 16.64				-	1.23	1.67
5. 15.41					-	0.44
6. 14.97						-

$$HSD = q_{.01;\ 6,\ 385} \sqrt{\frac{65.59}{83}} = 4.76 \times 0.89 = 4.24$$

$$HSD = q_{.05;\ 6,\ 385} \sqrt{\frac{65.59}{83}} = 4.03 \times 0.89 = 3.59$$

**$p < .01$

Table A6.4: Table for 3 (group)x 2 (response pattern) x 6 (blocks) anova forCE

Source	Sum of Square	d.f.	Mean Square	F	Tail Probability
Mean	1623.49077	1	1623.49077	1.67	0.1996
Group	4514.95081	2	2257.47540	2.33	0.1043
Response	8737.88119	1	8737.88119	9.01	0.0036
GR	8392.72190	2	4196.36095	4.33	0.0166
Error	74676.48910	77	969.82453		
Blocks	1887.08469	5	377.41694	2.28	0.0462
BG	1026.39606	10	102.63961	0.62	0.7971
BR	837.77463	5	167.55493	1.01	0.4103
BGR	2442.83905	10	244.28391	1.48	0.1463
Error	63750.96477	385	165.58692		

Table A6.5: Tukey HSD Test for differences between trial blocks (CE)

	0.60	0.25	-1.60	-1.80	-3.12	-4.89
2. 0.60	-	0.35	2.20	2.40	3.72	5.49
1. 0.25		-	1.85	2.05	3.37	5.14
3.-1.60			-	0.20	1.52	3.29
4.-1.80				-	1.32	3.09
5.-3.12					-	1.77
6.-4.89						-

$$HSD = q_{.01;\ 6,\ 385} \sqrt{\frac{165.59}{83}} = 4.76 \times 1.41 = 6.71$$

$$HSD = q_{.05;\ 6,\ 385} \sqrt{\frac{165.59}{83}} = 4.03 \times 1.41 = 5.68$$

Table A6.6: LSD test for differences between trial blocks (CE)

	0.60	0.25	-1.60	-1.80	-3.12	-4.89
2. 0.60	-	0.35	2.20	2.40	3.72	5.49**
1. 0.25		-	1.85	2.05	3.37	5.14*
3.-1.60			-	0.20	1.52	3.29
4.-1.80				-	1.32	3.09
5.-3.12					-	1.77
6.-4.89						-

$$LSD = t_{.01/2,\ 385} \sqrt{\frac{2 \times 165.59}{83}} = 2.58 \times 2.00 = 5.16$$

$$LSD = t_{.05/2,\ 385} \sqrt{\frac{2 \times 165.59}{83}} = 1.96 \times 2.00 = 3.92$$

** $p < .01$

* $p < .05$

Table A6.7: Anova Table for tests for simple main effects, group x response pattern interaction, during 6 trial blocks (CE)

Source	Sum of Squares	d.f.	Mean Square	F
A at C_2	106.24	2	53.12	0.14
A at C_2	2084.14	2	1042.07	2.75
Error		77	378.47	
C at A1	2523.41	1	2523.41	15.24**
C at A_2	307.07	1	307.07	1.85
C at A_3	4.52	1	4.52	0.03
Error		385	165.60	

Table A6.8: Table for 3 (group) x 2 (response pattern) x 6 (trial blocks) anova (VE)

Source	Sum of Squares	d.f.	Mean Square	F	Tail Probability
Mean	179973.11521	1	179973.11521	486.51	0.0000
Group	9491.43537	2	4745.71768	12.83	0.0000
Response	1427.82558	1	1427.82558	3.86	0.0531
GR	1798.18860	2	899.09430	2.43	0.0947
Error	28484.26835	77	369.92556		
Blocks	6552.19529	5	1310.43906	17.13	0.0000
BG	1213.45957	10	121.34596	1.59	0.1085
BR	506.28849	5	101.25770	1.32	0.2533
BGR	885.04197	10	88.50420	1.16	0.3189
Error	29458.93344	385	76.51671		

Table A6.9: Tukey HSD test for differences between groups during trial blocks (VE)

	24.07	19.79	13.35
CLD 24.07	-	4.28	10.72**
MA 19.79		-	6.44**
CA 13.35			-

$$HSD = q_{.01;\ 3,\ 77} \sqrt{\frac{369.93}{163}} = 4.26 \times 1.51 = 6.42$$

$$HSD = q_{.05;\ 3,\ 77} \sqrt{\frac{369.93}{163}} = 3.39 \times 1.51 = 5.12$$

$^{**}p < .01$

Table A6.10: Tukey HSD Test for differences between trial blocks (VE)

	26.22	19.95	18.58	17.05	16.06	15.54
1. 26.22	-	6.27**	7.64**	9.17**	10.16**	10.68**
2. 19.95		-	1.37	2.90	3.89*	4.41*
4. 18.58			-	1.53	2.52	3.04
3. 17.05				-	0.99	1.51
5. 16.06					-	0.52
6. 15.54						-

$$HSD = q_{.01;\ 6,\ 385} \sqrt{\frac{76.52}{83}} = 4.76 \times 0.96 = 4.57$$

$$HSD = q_{.05;\ 6,\ 385} \sqrt{\frac{76.52}{83}} = 4.03 \times 0.96 = 3.87$$

$^{**}p < .01$

$^{*}p < .05$

Table A6.11: Table for 3 (group) x 2 (response patterns) x 2 (practice sessions) anova (AE)

Source	Sum of Squares	d.f.	Mean Square	F	Tail Probability
Mean	54971.89635	1	54971.89635	205.28	0.0000
Group	6099.40290	2	3049.70145	11.39	0.0000
Response	362.65879	1	362.65879	1.35	0.2481
GR	624.85054	2	312.42527	1.17	0.3168
Error	20619.91269	77	267.79107		
Practice	838.36184	1	838.36184	24.19	0.0000
PG	265.78912	2	132.89456	3.83	0.0259
PR	21.84936	1	21.84936	0.63	0.4297
PGR	74.06779	2	37.03389	1.07	0.3486
Error	2669.12107	77	34.66391		

Table A6.12: Anova table for tests of simple main effects, group x practice session interaction (AE)

Source	Sum of Squares	d.f.	Mean Square	F	Tail Probability
A at B_1	4378.30	2	2189.15	14.48	$<$ .01
A at B_2	1995.46	2	887.83	5.87	$<$ .01
Error		77	151.22		
B at A_1	637.24	1	637.24	18.39	$<$ .01
B at A_2	410.38	1	410.38	11.84	$<$ .01
B at A_3	16.60	1	16.60	0.48	
Error		77	34.66		

Table A6.13: Tukey HSD test for differences between groups, morning practice session (AE)

	29.91	19.75	11.86
CLD 29.91	-	10.16	18.05**
MA 19.75		-	7.89
CA 11.86			-

$$HSD = q_{.01;\ 3,\ 77} \sqrt{\frac{267.79}{27.27}} = 4.26 \times 3.13 = 13.33$$

$$HSD = q_{.05;\ 3,\ 77} \sqrt{\frac{267.79}{27.27}} = 3.39 \times 3.13 = 10.61$$

**p <.01

Table A6.14: Tukey HSD Test for differences between groups during the afternoon practice session (AE)

	22.77	14.43	10.79
CLD 22.77	-	8.34	11.98*
MA 14.43		-	3.64
CA 10.79			-

$$HSD = q_{.01;\ 3,\ 77} \sqrt{\frac{267.79}{27.27}} = 4.26 \times 3.13 = 13.33$$

$$HSD = q_{.05;\ 3,\ 77} \sqrt{\frac{267.79}{27.27}} = 3.39 \times 3.13 = 10.61$$

**p <.01

* p<.05

Table A6.15: Table for 3 (group) x 2 (response pattern) x 2 (practice session) anova (CE)

Source	Sum of Squares	d.f.	Mean Square	F	Tail Probability
Mean	320.85398	1	320.85398	1.01	0.3184
Group	977.81723	2	488.90862	1.54	0.2216
Response	2278.16915	1	2278.16915	7.16	0.0091
GR	2127.56242	2	1063.78121	3.34	0.0405
Error	24493.58675	77	318.09853		
Practice	252.90768	1	252.90768	4.48	0.0375
PG	50.62957	2	25.31478	0.45	0.6401
PR	0.05423	1	0.05423	0.00	0.9753
PGR	286.13074	2	143.06537	2.54	0.0858
Error	4343.68356	77	56.41147		

Table A6.16: Anova table for tests of simple main effects on the group x response pattern interaction (CE)

Source	Sum of Squares	d.f.	Mean Square	F	
A at C_1	1478.90	2	739.45	2.33	
A at C_2	77.11	2	38.55	0.12	
Error		77	318.10		
C at A_1	1794.88	1	1794.88	5.64	$p<.05$
C at A_2	155.90	1	155.90	0.49	
C at A_3	4.51	1	4.51	0.01	
Error		77	318.10		

Table A6.17: Table for 3 (group) x 2 (response pattern) x 2 (practice session) anova (VE)

Source	Sum of Squares	d.f.	Mean Square	F	Tail Probability
Mean	74372.65907	1	74372.65907	318.89	0.0000
Group	4908.67022	2	2454.33511	10.52	0.0001
Response	449.95312	1	440.95312	1.93	0.1688
GR	615.27235	2	307.63617	1.32	0.2734
Error	17958.10589	77	233.22215		
Practice	1564.26056	1	1564.26056	22.05	0.0000
PG	315.19013	2	157.59507	2.22	0.1153
PR	8.47824	1	8.47824	0.12	0.7305
PGR	194.67415	2	97.33708	1.37	0.2597
Error	5461.74265	77	70.93172		

Table A6.18 Tukey HSD Test for differences between groups, during the practice session (VE)

	28.10	21.02	14.57
CLD 28.10	-	7.08*	13.53**
MA 21.02		-	6.45
CA 14.57			-

$$HSD = q_{.01;\ 3,\ 77}\sqrt{\frac{233.22}{54.54}} = 4.26 \times 2.07 = 8.81$$

$$HSD = q_{.05;\ 3,\ 77}\sqrt{\frac{233.22}{54.54}} = 3.39 \times 2.07 = 7.02$$

$^{**}p < .01$

Table A6.19: Table for 3 (group) x 2 (response pattern) anova for the recall trials (AE)

Source	Sum of Squares	d.f.	Mean Square	F	Tail Probability
Mean	22379.21254	1	22379.21254	188.92	0.0000
Group	1994.44412	2	997.22206	8.42	0.0005
Response	735.01931	1	735.01931	6.20	0.0149
GR	797.07710	2	398.53855	3.36	0.0397
Error	9121.12950	77	118.45623		

Table A6.20: Anova table for test of simple main effects, group x response pattern interaction on recall (AE)

Source	Sum of Squares	d.f.	Mean Square	F	
A at C_1	738.10	2	469.05	3.96	$p < .05$
A at C_2	79.89	2	39.945	0.34	
Error		77	118.50		
C at A_1	1390.95	1	1390.95	11.74	$p < .01$
C at A_2	36.98	1	36.98	0.06	
C at A_3	3.50	1	3.50	0.03	
Error		77	118.50		

Table A6.21: Tukey HSD Test for differences between groups on the short response pattern on recall (AE)

		30.58	16.40	11.39
CLD	30.58	-	14.18**	19.19**
MA	16.40		-	5.01
CA	11.39			-

$$HSD = q_{.01;\ 3,\ 77}\sqrt{\frac{118.50}{13.64}} = 4.26 \times 2.95 = 12.56$$

$$HSD = q_{.05;\ 3,\ 77}\sqrt{\frac{118.50}{13.64}} = 3.39 \times 2.95 = 10.00$$

** $p < .01$

Table A6.22: Table for 3 (group) x 2 (response pattern) anova for the recall trials (CE)

Source	Sum of Squares	d.f.	Mean Square	F	Tail Probability
Mean	5161.04137	1	5161.04137	23.14	0.0000
Group	1489.24268	2	744.62134	3.34	0.0407
Response	2500.59122	1	2500.59122	11.21	0.0013
GR	1409.13119	2	704.56559	3.16	0.0480
Error	17176.71330	77	223.07420		

Table A6.23: Anova table for test of simple main effects group x response pattern interaction on recall trials (CE)

Source	Sum of Squares	d.f.	Mean Square	F	
A at B_1	2948.72	2	1474.36	6.61	$p < .01$
A at B_2	7.92	2	3.96	0.02	
Error		77	223.07		
B at A_1	3181.48	1	3181.48	14.26	$p < .01$
B at A_2	441.70	1	441.70	1.98	
B at A_3	50.57	1	50.47	0.23	
Error		77	223.07		

Table A6.24: Tukey HSD test for differences between groups on the shorter response pattern, recall trials (CE)

	-25.28	-9.60	-2.72
CLD -25.28	-	15.68*	22.56**
MA -9.60		-	6.88
CA -2.72			-

$$HSD = q_{.01;\ 3,77} \sqrt{\frac{223.07}{13.64}} = 4.26 \times 4.04 = 17.21$$

$$HSD = q_{.05;\ 3,\ 77} \sqrt{\frac{223.07}{13.64}} = 3.39 \times 4.04 = 13.70$$

** $p < .01$

* $p < .05$

Table A6.25: Table for 3 (group) x 2 (response pattern) anova for the recall trials (VE)

Source	Sum of Squares	d.f.	Mean Square	F	Tail Probability
Mean	17073.67420	1	17073.67420	350.24	0.0000
Group	769.18947	2	384.59473	7.89	0.0008
Response	442.73183	1	442.73183	9.08	0.0035
GR	314.51678	2	157.25839	3.23	0.0451
Error	3753.59739	77	48.74802		

Table A6.26: Anova Table for test of simple main effects, group x response pattern interaction, recall trials (VE)

Source	Sum of Squares	d.f.	Mean Square	F	
A at B_1	1037.01	2	515.505	10.53	$p < .01$
A at B_2	49.62	2	24.81	0.51	
Error		77	48.75		
B at A_1	561.49	1	561.49	11.52	$p < .01$
B at A_2	154.71	1	154.71	3.17	
B at A_3	0.29	1	0.29	0.006	
Error		77	48.75		

Table A6.27: Tukey HSD Test for differences between groups on the short response pattern recall trials (VE)

		22.90	16.71	10.50
CLD	22.90	-	6.19	12.40**
MA	16.71		-	6.21
CA	10.50			-

$$\text{HSD} = q_{.01;\ 3,\ 77} \sqrt{\frac{48.75}{13.64}} = 4.26 \times 1.89 = 8.05$$

$$\text{HSD} = q_{.05;\ 3,\ 77} \sqrt{\frac{48.75}{13.64}} = 3.39 \times 1.89 = 6.41$$

**$p < .01$

Table A6.28: Table for 3(group) x 2 (response pattern) anova for 1st recall trial (AE)

Source	Sum of Squares	d.f.	Mean Square	F	Tail Probability
Mean	21380.74595	1	21380.74595	123.48	0.0000
Group	2483.01217	2	1241.50609	7.17	0.0014
Response	904.31266	1	904.31266	5.22	0.0250
GR	708.34457	2	354.17228	2.05	0.1363
Error	13333.16667	77	173.15801		

Table A6.29: Tukey HSD Test for differences between groups, 1st recall trial (AE)

	22.75	16.36	9.18
CLD 22.75	-	6.39	13.57**
MA 16.36		-	7.18
CA 9.18			-

$$HSD = q_{.01;\ 3,\ 77} \sqrt{\frac{173.16}{27.27}} = 4.26 \times 2.52 = 10.74$$

$$HSD = q_{.05;\ 3,\ 77} \sqrt{\frac{173.16}{27.27}} = 3.39 \times 2.52 = 8.54$$

**p < .01

Table A6.30: Table for 3 (group) x 2 (response pattern) anova, 1st recall trial (CE)

Source	Sum of Squares	d.f.	Mean Square	F	Tail Probability
Mean	8428.67024	1	8428.67024	29.88	0.0000
Group	2866.53584	2	1433.26792	5.08	0.0085
Response	4297.62059	1	4297.62059	15.24	0.0002
GR	1807.36605	2	903.68302	3.20	0.0461
Error	21718.54982	77	282.05909		

Table A.6.31: Anova Table for tests of simple main effects, group x response pattern interaction, 1st recall trial (CE)

Source	Sum of Squares	d.f.	Mean Square	F	
A at B_1	1292.90	2	646.45	2.29	
A at B_2	4072.94	2	2036.97	7.22	$p < .01$
Error		77	282.06		
B at A_1	2404.50	1	2404.50	8.52	$p < .01$
B at A_2	3560.00	1	3560.00	12.02	$p < .01$
B at A_3	16.73	1	16.73	0.06	
Error		77	282.06		

Table A6.32: Tukey HSD Test for differences between groups on the short response pattern, 1st recall trial (CE)

	-27.46	-20.73	-3.79
CLD -27.46	-	6.73	23.67**
MA -20.73		-	16.94*
CA -3.79			-

$$HSD = q_{.01;\ 3,\ 77} \sqrt{\frac{282.06}{13.64}} = 4.26 \times 4.55 = 19.37$$

$$HSD = q_{.05;\ 3,\ 77} \sqrt{\frac{282.06}{13.64}} = 3.39 \times 4.55 = 15.42$$

**p <.01 *p <.05

Table A6.33: Table for 3 (group) x 2 (response pattern) anova, transfer trials (AE)

Source	Sum of Squares	d.f.	Mean Square	F	Tail Probability
Mean	67354.67264	1	69354.67264	219.65	0.0000
Group	9534.56040	2	4767.28020	15.10	0.0000
Response	154.59256	1	154.59256	0.49	0.4862
GR	457.46012	2	228.73006	0.72	0.4879
Error	24313.27784	77	315.75086		

Table A6.34: Tukey HSD Test for differences between groups, transfer trials (AE)

	39.69	32.99	14.32
CLD 39.69	-	6.70	25.37**
MA 32.99		-	18.67**
CA 14.62			-

$$HSD = q_{.01;\ 3,\ 77}\sqrt{\frac{315.76}{27.27}} = 4.26 \times 3.40 = 14.48$$

$$HSD = q_{.05;\ 3,\ 77}\sqrt{\frac{315.76}{27.27}} = 3.39 \times 3.40 = 11.53$$

$^{**}p < .01$

Table A6.35: Table for 3 (group) x 2 (response pattern) anova, transfer trials (CE)

Source	Sum of Squares	d.f.	Mean Square	F	Trial Probability
Mean	356.94751	1	356.94751	0.85	0.3596
Group	788.38558	2	394.19279	0.94	0.3957
Response	43969.43247	1	43969.43247	104.65	0.0000
GR	11029.67543	2	5514.83772	13.13	0.0000
Error	32351.26216	77	420.14626		

Table A6.36: Anova Table for tests of simple main effects, group x response pattern interaction, transfer trials (CE)

Source	Sum of Squares	d.f.	Mean Square	F	
A at B_1	6475.32	2	3237.66	7.71	$p < .01$
A at B_2	5246.19	2	2623.095	6.24	$p < .01$
B at A_1	32150.79	1	32150.79	76.52	$p < .01$
B at A_2	18982.84	1	18982.84	45.18	$p < .01$
B at A_3	1757.08	1	1757.08	4.18	$p < .05$
Error			420.15		

Table A6.37: Tukey HSD Test for differences between groups on the long response pattern (S-L), transfertrials (CE)

		35.86	31.99	7.66
CLD	35.86	-	3.87	28.20**
MA	31.99		-	24.33**
CA	7.66			-

$$HSD = q_{.01;\ 3,\ 77} \sqrt{\frac{420.15}{13.64}} = 4.26 \times 5.55 = 23.64$$

$$HSD = q_{.05;\ 3,77} \sqrt{\frac{420.15}{13.64}} = 3.39 \times 5.55 = 18.81$$

$^{**}p < .01$

Table A6.38: Tukey HSD Test for differences between groups on the short response pattern (L-S) transfer trials (CE)

	-35.92	-19.21	-7.90
CLD -35.92	-	16.71*	28.02**
MA -19.21		-	11.31
CA -7.90			-

$$HSD = q_{.01;\ 3,\ 77}\sqrt{\frac{420.15}{13.64}} = 4.26 \times 5.55 = 23.64$$

$$HSD = q_{.05;\ 3,\ 77}\sqrt{\frac{420.15}{13.64}} = 3.39 \times 5.55 = 18.81$$

$^{**}p < .01$ $^{*}p < .05$

Table A6.39: Table for 3 (group) x 2 (response pattern) anova, transfer trials (VE)

Source	Sum of Squares	d.f.	Mean Square	F	Tail Probability
Mean	47484.26020	1	47484.26020	509.66	0.0000
Group	2720.52292	2	1360.26146	14.60	0.0000
Response	35.05808	1	35.05808	0.38	0.5414
GR	24.17295	2	12.08648	0.13	0.8785
Error	71713.97850	77	93.16855		

Table A6.40: Tukey HSD Test for differences between groups, transfer trials (VE)

	56.30	55.67	31.98
MA 56.30	-	0.63	24.32**
CLD 55.67		-	23.69**
CA 31.98			

$$HSD = q_{.01;\ 3,\ 77} \sqrt{\frac{93.17}{13.64}} = 4.26 \times 2.61 = 11.12$$

$$HSD = q_{.05;\ 3,\ 77} \sqrt{\frac{93.17}{13.64}} = 3.39 \times 2.61 = 8.85$$

$^{**}p < .01$

Table A6.41: Table for 3 (group) x 2 (response pattern) anova, 1st transfer trial (AE)

Source	Sum of Squares	d.f.	Mean Square	F	Tail Probability
Mean	125506.29241	1	125506.29241	80.06	0.0000
Group	19329.02046	2	9664.51023	6.16	0.0033
Response	1719.17480	1	1719.17480	1.10	0.2983
GR	741.80617	2	370.90308	0.24	0.7899
Error	120709.31593	77	1567.65345		

Table A6.42: Tukey HSD Test for differences between groups, transfer trial 1 (AE)

	56.00	42.25	18.76
CLD 56.00	-	13.75	37.24**
MA 42.25		-	23.49
CA 18.76			-

$$HSD = q_{.01;\ 3,\ 77} \sqrt{\frac{1567.70}{27.27}} = 4.26 \times 7.58 = 32.29$$

$$HSD = q_{.05;\ 3,\ 77} \sqrt{\frac{1567.70}{27.27}} = 3.39 \times 7.58 = 25.70$$

**p < .01

Table A6.43: Table for 3 (group) x 2 (response pattern) anova, transfer trial 1 (CE)

Source	Sum of Squares	d.f.	Mean Square	F	Tail Probability
Mean	1660.32800	1	1660.32800	0.88	0.3500
Group	3741.46319	2	1870.73160	1.00	0.3740
Response	88293.97723	1	88293.97723	47.02	0.0000
GR	30568.90122	2	15284.45061	8.14	0.0006
Error	144593.78626	77	1877.84138		

Table A6.44: Anova Table for test of simple main effects, group x response pattern interaction, 1st transfer trial (CE)

Source	Sum of Squares	d.f.	Mean Square	F	
A at B_1	21120.88	2	10560.44	5.62	$p < .01$
A at B_2	13558.59	2	6779.29	3.61	$p < .05$
B at A_1	72810.32	1	72810.32	38.77	$p < .01$
B at A_2	39482.50	1	39482.50	21.03	$p < .01$
B at A_3	1509.92	1	1509.92	0.08	
Error			1877.84		

Table A6.45: Tukey HSD Test for differences between groups on the long response pattern (S-L), 1st transfer trial, CE

	61.77	32.20	17.64
CLD 61.77	-	29.57	44.13*
MA 32.20		-	14.56
CA 17.64			-

$$HSD = q_{.01;\ 3,\ 77} \sqrt{\frac{1877.84}{13.64}} = 4.26 \times 11.73 = 50.00$$

$$HSD = q_{.05;\ 3,\ 77} \sqrt{\frac{1877.84}{13.64}} = 3.39 \times 11.73 = 39.76$$

*$p < .05$

Table A6.46: Tukey HSD Test for differences between groups on the short response pattern (L-S), 1st transfer trial (CE)

	-46.25	-41.64	3.20
CLD -46.25	-	4.61	49.45*
MA -41.64		-	44.84
CA 3.20			-

$$HSD = q_{.01};\ 3,\ 77\ \sqrt{\frac{1877.84}{13.64}} = 4.26 \times 11.73 = 50.00$$

$$HSD = q_{.05};\ 3,\ 77\ \sqrt{\frac{1877.84}{13.64}} = 3.39 \times 11.73 = 39.76$$

*$p < .05$

Table A6.47: Table for 3 (group) x 2 (response pattern) x 2 (blocks) anova test and transfer blocks (AE)

Source	Sum of Squares	d.f.	Mean Square	F	Tail Probability
Mean	85263.68053	1	85263.68053	330.42	0.0000
Group	9701.42271	2	4850.71185	18.80	0.0000
Response	781.89423	1	781.89423	3.03	0.0857
GR	204.77783	2	102.38891	0.40	0.6738
Error	19869.49842	77	258.04543		
Blocks	6470.20466	1	6470.20466	36.73	0.0000
BG	1827.58181	2	913.79091	5.19	0.0077
BR	107.71764	1	107.71764	0.61	0.4366
BGR	1049.75939	2	524.87970	2.98	0.0567
Error	13564.90892	77	176.16765		

Table A6.48: Anova table for tests of simple main effects group x block interaction, recall and transfer trial blocks (AE)

Source	Sum of Squares	d.f.	Mean Square	F	
A at B_1	2109.20	2	1054.60	4.09	$p < .01$
A at B_2	9582.70	2	4791.35	18.57	$p < .01$
B at A_1	3290.975	1	3290.975	12.75	$p < .01$
B at A_2	4609.90	1	4609.90	17.86	$p < .01$
B at A_3	161.70	1	161.70	0.63	
Error		77	258.05		

Table A .49: Tukey HSD Test for differences between groups, recall trials (AE)

	23.11	15.22	11.02
CLD 23.11	-	7.89*	12.09**
MA 15.22		-	4.20
CA 11.02			-

$$HSD = q_{.01;\ 3,\ 77} \sqrt{\frac{258.05}{54.54}} = 4.26 \times 2.18 = 9.29$$

$$HSD = q_{.05;\ 3,\ 77} \sqrt{\frac{258.05}{54.54}} = 3.39 \times 2.18 = 7.39$$

** $p < .01$

* $p < .05$

Table A6.50: Table for 3 (group) x 2 (response pattern) x 2 (blocks) anova, recall and transfer blocks (CE)

Source	Sum of Squares	d.f.	Mean Square	F	Tail Probability
Mean	1401.71007	1	1401.71007	3.78	0.0554
Group	1486.66555	2	743.33278	2.01	0.1414
Response	12749.32747	1	12749.32747	34.42	0.0000
GR	2647.12538	2	1323.56269	3.57	0.0328
Error	28517.42708	77	370.35620		
Blocks	4116.27880	1	4116.27880	15.09	0.0002
BG	790.96271	2	395.48135	1.45	0.2410
BR	33720.69622	1	33720.69622	123.58	0.0000
BGR	9791.68124	2	4895.84062	17.94	0.0000
Error	21010.54838	77	272.86426		

Table A6.51: Anova Table for tests of simple main effects, group x response pattern x blocks interaction, day 2 (CE)

Source	Sum of Squares	d.f.	Mean Square	F
A at B_1 C_1	7.92	2	3.96	0.01
A at B_1 C_2	2948.74	2	1474.37	4.58*
A at B_2 C_1	4427.71	2	2213.805	6.88**
A at B_2 C_2	6475.30	2	3237.65	10.07**
Error		77	321.61	
B at A_1 C_1	6621.41	1	6621.41	24.27**
B at A_1 C_2	24297.65	1	24297.65	89.05**
B at A_2 C_1	2091.20	1	2091.20	7.66**
B at A_2 C_2	12972.96	1	12972.96	47.54**
B at A_3 C_1	200.46	1	200.46	0.73
B at A_3 C_2	1188.47	1	1188.47	4.36
Error		77	272.86	
C at A_1 B_1	3181.50	1	3181.50	9.89**
C at A_1 B_2	32030.45	1	32030.45	99.59**
C at A_2 B_1	441.70	1	441.70	1.37
C at A_2 B_2	18982.84	1	18982.84	59.02**
C at A_3 B_1	50.47	1	50.47	0.16
C at A_3 B_2	1753.24	1	1753.24	5.45*
Error		77	321.61	
AB at C_1	9952.12	2	4976.06	18.24**
AB at C_2	42480.72	2	21240.36	77.84**
Error			272.86	

cont'd

Table A6.51: cont'd

Source	Sum of Squares	d.f.	Mean Square	F
AC at B_1	5306.79	2	2653.395	8.25**
AC at B_2	53810.36	2	26905.18	83.66**
Error		77	821.61	
BC at A_1	38471.46	1	38471.46	140.99**
BC at A_2	21939.14	1	21939.14	80.40**
BC at A_3	1993.32	1	1993.32	7.31*
Error		77	272.86	

** $p < .01$

* $p < .05$

Table A6.52: Table for 3 (group) x 2 (response pattern) x 2 (blocks) anova, day 2, (VE)

Source	Sum of Squares	d.f.	Mean Square	F	Tail probability
Mean	60752.30189	1	60752.30189	755.11	0.0000
Group	2984.23566	2	1492.11783	18.55	0.0000
Response	363.47958	1	363.47958	4.52	0.0567
GR	82.82361	2	41.41180	0.51	0.5997
Error	6194.99426	77	80.45447		
Blocks	3805.63251	1	3805.63251	61.92	0.0000
BG	505.47672	2	252.73836	4.11	0.0201
BR	114.31033	1	114.31033	1.86	0.1766
BGR	255.86612	2	127.93306	2.08	0.1317
Error	4732.58163	77	61.46210		

Table A6.53: Anova Table for tests of simple main effects, group x block interaction, Day 2, (VE)

Source	Sum of Squares	d.f.	Mean Square	F	
A at B_1	807.18	2	403.59	5.69	$p < .01$
A at B_2	2751.15	2	1375.575	19.39	$p < .01$
Error		77	70.95		
B at A_1	1125.00	1	1125.00	13.98	$p < .01$
B at A_2	2717.39	1	2717.39	33.78	$p < .01$
B at A_3	413.43	1	413.43	5.14	$p < .05$
Error		77	80.45		

Table A6.54: Tukey HSD Test for differences between groups, recall trials (VE)

	18.06	14.40	10.59
CLD 18.06	-	3.66	7.47*
MA 14.40		-	3.81
CA 10.59			-

$$HSD = q_{.01;\ 3,\ 77} \sqrt{\frac{80.45}{54.54}} = 4.26 \times 1.21 = 5.15$$

$$HSD = q_{.05;\ 3,\ 77} \sqrt{\frac{80.45}{54.54}} = 3.39 \times 1.21 = 4.10$$

$^*p < .05$

Table A6.55: Table for 3 (group) x 2 (response pattern) x 2 (trials) anova, 1st recall and transfer trials (AE)

Source	Sum of Squares	d.f.	Mean Square	F	Tail Probability
Mean	125245.23878	1	125245.23878	153.59	0.0000
Group	17785.85858	2	8892.92929	10.91	0.0001
Response	2558.60841	1	2558.60841	3.14	0.0805
GR	779.06405	2	389.53202	0.48	0.6220
Error	62789.90790	77	815.45335		
Trials	21641.79958	1	21641.79958	23.39	0.0000
TG	4026.17405	2	2013.08703	2.18	0.1205
TR	64.87905	1	64.87905	0.07	0.7919
TGR	671.08669	2	335.54334	0.36	0.6970
Error	71252.57463	77	925.35811		

Table A6.56: Tukey HSD Test for differences between groups, 1st recall and transfer trials (AE)

	39.37	29.31	13.97
CLD 39.37	-	10.06	25.40**
MA 29.31		-	15.34
CA 13.97			-

$$HSD = q_{.01;}\ 3,\ 77 \sqrt{\frac{815.45}{27.27}} = 4.26 \times 5.47 = 23.30$$

$$HSD = q_{.05;}\ 3,\ 77 \sqrt{\frac{815.45}{27.27}} = 3.39 \times 5.47 = 18.54$$

**$p < .01$

Table A6.57: Table for 3 (group) x 2 (response pattern) x 2 (Trials) anova 1st recall and transfer trials (CE)

Source	Sum of Squares	d.f.	Mean Square	F	Tail Probability
Mean	1303.59586	1	1303.59586	1.07	0.3052
Group	3788.71902	2	1894.35951	1.55	0.2192
Response	26816.21949	1	26816.21949	21.92	0.0000
GR	9579.09692	2	4789.54846	3.91	0.0250
Error	94209.21200	77	1223.49626		
Trials	8785.40237	1	8785.40237	9.38	0.0030
TG	2819.28001	2	1409.640000	1.51	0.2284
TR	65775.37832	1	65775.37832	70.24	0.0000
TGR	22797.17035	2	11398.58518	12.17	0.0000
Error	72103.12408	77	936.40421		

Table A6.58: Anova Table for tests of simple main effects, group x response pattern x trial interaction, day 2 (CE)

Source	Sum of Squares	d.f.	Mean Square	F	
A at B_1 C_1	4110.58	2	2055.29	1.90	
A at B_1 C_2	553.45	2	276.725	0.26	
A at B_2 C_1	13552.02	2	6776.01	6.27	$p < .01$
A at B_2 C_2	21171.90	2	10585.95	9.80	$p < .01$
Error		77	1079.95		
B at A_1 C_1	51903.86	1	51903.86	55.43	$p < .01$
B at A_1 C_2	8870.42	1	8870.42	9.47	$p < .01$
B at A_2 C_1	21011.88	1	21011.88	22.44	$p < .01$
B at A_2 C_2	12983.16	1	12983.16	13.86	$p < .01$
B at A_3 C_1	3214.71	1	3214.71	3.43	
B at A_3 C_2	224.40	1	224.40	0.24	
Error		77	936.40		
C at A_1 B_1	2446.33	1	2446.33	2.27	
C at A_1 B_2	72796.84	1	72796.84	67.41	$p < .01$
C at A_2 B_1	3555.98	1	3555.98	3.29	
C at A_2 B_2	39482.50	1	39482.50	36.56	$p < .01$
C at A_3 B_1	16.73	1	16.73	0.02	
C at A_3 B_2	1509.92	1	1509.92	1.40	
Error		77	1079.95		
AB at C_1	88136.40	2	44068.20	47.06	$p < .01$
AB at C_2	33459.51	2	16729.755	17.87	$p < .01$
Error		77	936.40		

cont'd

Table A6.58: cont'd

Source	Sum of Squares	d.f.	Mean Square	F	
AC at B_1	9077.16	2	4538.58	4.20	$p < .05$
AC at B_2	117228.48	2	58614.24	54.27	$p < .01$
Error		77	1079.95		
BC at A_1	85051.01	1	85051.01	90.83	$p < .01$
BC at A_2	43667.26	1	43667.26	46.63	$p < .01$
BC at A_3	4043.35	1	4043.35	4.32	p .05
Error		77	936.40		

APPENDIX 7

LINEAR SLIDE TASK

NAME: ....

LEARNING TRIALS
a) 30 cm - 120 cm
b) 45 cm - 105 cm
c) 60 cm - 90 cm
d) 75 cm

Block 1

1	6
2	7
3	8
4	9
5	10

Block 2

1	6
2	7
3	8
4	9
5	10

Block 3

1	6
2	7
3	8
4	9
5	10

Block 4

1	6
2	7
3	8
4	9
5	10

TRANSFER TRIALS

75 cm	150 cm
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10

BALL THROWING TASK

Name ....

Practice Trials (a) 9/15 ft

(b) 10/14 ft

(c) 11/13 ft

(d) 12 ft

Block 1

1	6
2	7
3	8
4	9
5	10

Block 2

1	6
2	7
3	8
4	9
5	10

Block 3

1	6
2	7
3	8
4	9
5	10

Block 4

1	6
2	7
3	8
4	9
5	10

	12 ft	16 ft
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

SUBJECTIVE ASSESSMENT SCORE SHEET

Child's Name .... Marker ....

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

SUBJECTIVE ASSESSMENT SCORE SHEET

Child's Name .... Marker ....

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

11.

12.

COINCIDENCE TIMING TASK

Name .... Group ....

SESSION 1

TRIAL	BALL T1	BALL T2	SUBJECT TIME	BALL MEAN	SUBJECT ERROR
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

AE
CE
VE

11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

AE
CE
VE

21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

AE
CE
VE

SMG/DJR/18.1.83

AE	CE	VE

COINCIDENCE TIMING TASK

Name .... Group ....

SESSION 2

TRIAL	BALL T1	BALL T2	SUBJECT TIME	BALL MEAN	SUBJECT ERROR
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

AE
CE
VE

11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

AE
CE
VE

21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

AE
CE
VE

SMJ/DJR/18.1.83

AE	CE	VE

COINCIDENCE TIMING TASK

Name .... Group ....

TEST 1 (PRACTISED)

TRIAL	BALL T1	BALL T2	SUBJECT TIME	BALL MEAN	SUBJECT ERROR
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

AE
CE
VE

TEST 2 (TRANSFER)

TRIAL	BALL T1	BALL T2	SUBJECT TIME	BALL MEAN	SUBJECT ERROR
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

AE
CE
VE