

2010

# The effect of handedness on interhemispheric interaction in a simple reaction time task

Nunan, C.

Nunan, C. (2010) "

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The Plymouth Student Scientist  
University of Plymouth

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**UNIVERSITY OF PLYMOUTH**

**School of Psychology**

**Information Sheet and Consent Form**

**CONSENT TO PARTICIPATE IN RESEARCH PROJECT**

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Name of Principal Investigator(s)

Claire Nunan

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Title of Research

Handedness and interhemispheric interaction in simple reaction time.

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Level of Work

Undergraduate Project

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**Brief statement of purpose of work**

The main purpose of the experiment will be to measure the level of handedness which you show and then measure your reaction times when responding to an on screen stimulus. The experiment should take no longer than 30 minutes to finish and will be happening in a computer room. I'm Claire Nunan, a third year student and I will be running the experiment under the supervision of Matt Roser. The experiment will consist of two main parts. The first is you filling out an Edinburgh Handedness Inventory, stating how often you use either hand for various tasks. The second part of the experiment will be a computer based task. You will be asked to focus on a central point on screen, then a stimulus will appear on either side of the screen and you need to react as soon as possible to that stimulus. The hand which you will be using will change throughout the experiment and the onscreen instructions will tell you which hand you are meant to be using for the current set of trials. Breaks will be given throughout the experiment so that you can have a break. We will be measuring your reaction times to the stimulus. There is no risk involved with this experiment. You have the right to withdraw at any time and at any point your data can be viewed by you or destroyed if you wish. All the data collected will remain anonymous, only identifiable by a participation number which you will be given. If you have any questions now then please ask me, or once the

experiment is finished then email me on [claire.nunan@students.plymouth.ac.uk](mailto:claire.nunan@students.plymouth.ac.uk) or my supervisor on [matt.roser@plymouth.ac.uk](mailto:matt.roser@plymouth.ac.uk) .

Appendix B

**PLEASE TICK AS APPROPRIATE, AND SIGN & DATE THE FORM**

- The objectives of this research have been explained to me.
  
- I understand that I am free to withdraw from the research at any stage, and ask for my data to be destroyed if I wish.
  
- I understand that my anonymity is guaranteed, unless I expressly state otherwise.
  
- I understand that the Principal Investigator of this work will have attempted, as far as possible, to avoid any risks, and that safety and health risks will have been separately assessed by appropriate authorities (e.g. under COSHH regulation)
  
- Under these circumstances, I agree to participate in the research.

Name: .....

Signature: .....  
.....

Date:

**School of Psychology Ethics Committee, 2007-2008**

**List of School Representatives**

Professor Simon Handley

Dr Paul Broks

Dr Matt Roser

*EDINBURGH HANDEDNESS INVENTORY*

Have you ever had any tendency to left-handedness?

YES

NO

Please indicate your preferences in the use of hands in the following activities *by putting + in the appropriate column*. Where the preference is so strong that you would never try to use the other hand unless absolutely forced to, *put ++*. If in any case you are really indifferent *put + in both columns*.

Some of the activities require both hands. In these cases the part of the task, or object, for which hand preference is wanted is indicated in brackets.

Please try to answer all the questions, and only leave a blank if you have no experience at all of the object or task.

		LEFT	RIGHT
1	Writing		
2	Drawing		
3	Throwing		
4	Scissors		
5	Toothbrush		
6	Knife (without fork)		
7	Spoon		
8	Broom (upper hand)		
9	Striking Match (match)		
10	Opening box (lid)		
i	Which foot do you prefer to kick with?		
ii	Which eye do you use when using only one?		

L.Q.

Leave these spaces blank

DECILE

## Debrief

Thank you for taking part in this experiment.

The purpose of the experiment was to measure handedness to find out your laterality index (using the Edinburgh Handedness Inventory) and to see if that affects reaction times (using the computer based task). The reaction times gathered can be used to investigate interhemispheric interaction and to see if there is a relationship with laterality index.

The reaction times gathered will be used to create a crossed-uncrossed difference. Crossed is when the hand used to respond to the stimulus and the stimulus itself are on opposite sides of space (for instance left hand used to respond to stimulus on the right), uncrossed is when the hand and stimulus are on the same side of space (left hand used to respond to stimulus on the left of the screen). If hands and stimuli are crossed then the pathway which the response takes will be longer as visual information will have to pass across to the other hemisphere from the receiving hemisphere in order to elicit a response. This should therefore create longer reaction times.

The laterality index and the crossed-uncrossed difference will be looked at to see if there is an association between them.

If you have experienced any problems or have any further questions about the experiment feel free to email me on [claire.nunan@students.plymouth.ac.uk](mailto:claire.nunan@students.plymouth.ac.uk) or my supervisor on [matt.roser@plymouth.ac.uk](mailto:matt.roser@plymouth.ac.uk)

## **Participant's Edinburgh Handedness Inventory Results**

	Participant 1		Participant 2		Participant 3		Participant 4		Participant 5	
Writing		++		++		++		++		++
Drawing		++		++		++		++		++
Throwing		++		+		++		++		+
Scissors		++		++		++		+		++
Toothbrush		++		++		+		+		+
Knife		++	+			++		+		++
Spoon		++		+		++		++		++
Broom		++		+		+		+		+
Striking Match		++		+		++		++		+
Opening Box		+	+			+		+		+

Kick (foot)		++		++		++		+		++
Eye		++		+		+		++		+
Tendency	No		Yes		No		No		No	
LQ	100		76		100		100		100	

	Participant 6		Participant 7		Participant 8		Participant 9		Participant 10	
Writing		++		++		++		++		++
Drawing		++		++		++		++		++
Throwing		+		++		+		++		+
Scissors		++		++		+		++		+
Toothbrush		++		++		+		++		+
Knife		+	+			+		++		+
Spoon		++		++		+		++		+
Broom		+		++		+		++		+
Striking Match		+		++		+		++		+
Opening Box	+	+		+		+		++		+
Kick (foot)	++			+	+			++		++
Eye	++					++		++		+
Tendency	Yes		Yes		No		No		No	
LQ	50		90		86		100		100	

	Participant 11		Participant 12		Participant 13		Participant 14		Participant 15	
Writing		++		++		++		++		++
Drawing		++		+		++		++		++
Throwing		++		+		+		++		+
Scissors		++		+		++		++		+
Toothbrush		++		+		++		++		++
Knife		+		+		+		++		+
Spoon		++		+		++		++		+
Broom		++		+		++		++	+	
Striking Match		++		+		++		++		+
Opening Box		++		+		++		++		+
Kick (foot)		++		+		++		++	+	
Eye		++	++			++		++	+	
Tendency	No		No		No		No		Yes	
LQ	100		71		100		100		60	

	Participant 16		Participant 17		Participant 18		Participant 19		Participant 20	
Writing		++		++		++		++		++
Drawing		++		++		++		++		++
Throwing		+		+		+		+		++
Scissors		++		+		++		++		++

Toothbrush		+		++		+		+		++
Knife		+		++		++		++		+
Spoon		+		+		+		+		++
Broom		+		+		+		+		++
Striking Match		++		++		+		+		++
Opening Box	+			++		+		+		+
Kick (foot)		+		++		+		++		++
Eye		+		+		+		+	++	
Tendency	Yes		No		No		No		Yes	
LQ	87		100		100		100		81	

	Participant 21		Participant 22		Participant 23		Participant 24		Participant 25	
Writing		++		++		++	++			++
Drawing		++		++		++	++			++
Throwing		+		+		++	++			++
Scissors		+		++		++	++			++
Toothbrush		+		+		++	++			++
Knife		++		+		++		+		+
Spoon		+		+		++	++		+	
Broom	+	+		+		++	++			+
Striking Match		++		++		++		++		+
Opening Box	+	+		+		++	++		+	
Kick (foot)		++		++		++	++		+	
Eye	+	+		+	+		++			+
Tendency	No		No		No		Yes		Yes	
LQ	70		100		91		-73		64	

	Participant 26		Participant 27		Participant 28		Participant 29		Participant 30	
Writing		++	++		++			++		++
Drawing		++	++		++			++		++
Throwing		+		+		+		++		++
Scissors		++		++		++		+		++
Toothbrush		+	++		+			+		++
Knife		++	+			+		+		+
Spoon		+	++		+			++		+
Broom		+		++		+	+			+
Striking Match		++		+	++			++		++
Opening Box		+		++	+			+		+
Kick (foot)	+			++	++			++		+
Eye	+		+		++		++			+
Tendency	No		Yes		Yes		No		No	
LQ	76		0		-44		68		100	

	Participant 31		Participant 32		Participant 33		Participant 34		Participant 35	
Writing		++		++		++		++	++	
Drawing		++		++		++		++	++	
Throwing		+		+		++	+	+	++	
Scissors		++		++		++		+	++	
Toothbrush		+		++		++	+	+	+	
Knife		+		+		++		+	+	
Spoon		+		+		++	+	+	+	
Broom	+			++		++		+	+	
Striking Match		++		++		++	+	+	+	
Opening Box		+		+		++	+	+	+	
Kick (foot)		+		+		++		+	+	
Eye	+			+	++		+	+		+
Tendency	No		No		No		No		Yes	
LQ	75		100		83		40		-54	

	Participant 36		Participant 37		Participant 38		Participant 39		Participant 40	
Writing		++		++	++			++		++
Drawing		++		++	++			++		++
Throwing		+		++	++			+		++
Scissors		++		++	++			++		++
Toothbrush		+		++	+			++		++
Knife		+		++		+		++	+	+
Spoon		+		++	+			+		++
Broom	+	+	+		++			+		++
Striking Match		++		++	++			+		++
Opening Box	+	+	+	+	+		+	+	+	+
Kick (foot)		+		++	++			+		++
Eye		++		++		+	+	+		++
Tendency	No		No		Yes		No		No	
LQ	78		82		-78		78		83	





**Participants average reaction times, crossed-uncrossed differences and group allocations.**

Participant	RR	RL	LL	LR	Group	RightCUD	LeftCUD	OverallCUD
1	279.66	299.24	282.46	278.78	1	19.58	-3.68	15.9
2	359.48	354.03	360.27	371.78	2	-5.45	11.51	6.06
3	264.79	262.5	283.75	283.93	1	-2.29	0.18	-2.11
4	281.34	278.4	288.73	286.74	1	-2.94	-1.99	-4.93
5	290.6	302.03	342.01	306.09	1	11.43	-35.92	-24.49
6	321.76	308.05	312.64	286.27	2	-13.71	-26.37	-40.08
7	275.97	289.28	281.89	276.47	1	13.31	-5.42	7.89
8	289.98	300.08	286.31	290.15	1	10.1	3.84	13.94
9	336.67	337.44	342.69	322.35	1	0.77	-20.34	-19.57
10	301.44	312.57	323.72	284.29	1	11.13	-39.43	-28.3
11	330.71	337.41	312.62	309.2	1	6.7	-3.42	3.28
12	277.66	272.07	280.65	283.19	2	-5.59	2.54	-3.05
13	289.64	267.97	305.85	282.97	1	-21.67	-22.88	-44.55
14	287.39	282.48	293.01	315.4	1	-4.91	22.39	17.48
15	310.93	308.56	320.42	304.94	2	-2.37	-15.48	-17.85
16	336.09	360.8	349.73	364	1	24.71	14.27	38.98
17	310.09	328.77	348.39	361.46	1	18.68	13.07	31.75
18	398.2	376.62	372.76	360.81	1	-21.58	-11.95	-33.53
19	306.93	286.74	336.75	350.83	1	-20.19	14.08	-6.11
20	288.48	263.16	269.34	263.22	2	-25.32	-6.12	-31.44
21	365.32	355.14	353.13	320.96	2	-10.18	-32.17	-42.35
22	331.29	319.25	304.08	312.67	1	-12.04	8.59	-3.45
23	418.94	404.08	405.61	410.32	1	-14.86	4.71	-10.15
24	328.41	317.02	315.32	302.5	2	-11.39	-12.82	-24.21
25	410.26	405.69	416.38	436.19	2	-4.57	19.81	15.24
26	296.63	304.07	283.18	279.86	2	7.44	-3.32	4.12
27	338.6	348.75	332.22	325.1	2	10.15	-7.12	3.03
28	258.92	262.46	262.33	253.14	2	3.54	-9.19	-5.65
29	320.76	324.66	335.19	333.07	2	3.9	-2.12	1.78
30	308.96	308.3	301.56	286.28	1	-0.66	-15.28	-15.94
31	306.74	304.16	341.29	340.63	2	-2.58	-0.66	-3.24
32	283.75	300.1	306.95	290.51	1	16.35	-16.44	-0.09
33	280.72	281.28	284.8	294.21	1	0.56	9.41	9.97
34	359.22	354.82	372.85	366.39	2	-4.4	-6.46	-10.86
35	328.22	314.86	309.04	314.04	2	-13.36	5	-8.36
36	313.57	304.57	358.55	377.19	2	-9	18.64	9.64
37	333.84	352.97	404.25	409.79	2	19.13	5.54	24.67
38	314.17	306.83	295.72	305.29	2	-7.34	9.57	2.23
39	283.69	276.31	291.33	289.11	2	-7.38	-2.22	-9.6
40	389.39	423.18	399.83	396.9	2	33.79	-2.93	30.86
Mean	317.7303	317.4175	324.19	320.6755		-0.3128	-3.5145	-3.8273

**ANOVA Output****Tests of Normality**

Group		Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
OverallCU D	RightHand ed	.086	20	.200*	.991	20	.999
	LeftHande d	.130	20	.200*	.968	20	.716

a. Lilliefors Significance  
Correction

\*. This is a lower bound of the true  
significance.

**General Linear Model****Within-Subjects Factors**

Measure: MEASURE\_1

Hand	Field	Dependent Variable
1	1	RightRight
	2	RightLeft
2	1	LeftRight
	2	LeftLeft

**Between-Subjects Factors**

	Value Label	N
Group 1	RightHande d	20
	2	LeftHanded

### Descriptive Statistics

Group		Mean	Std. Deviation	N
RightRight	RightHanded	310.1580	39.86674	20
	LeftHanded	325.3025	37.65824	20
	Total	317.7303	39.03846	40
RightLeft	RightHanded	311.7670	36.78435	20
	LeftHanded	323.0680	43.11194	20
	Total	317.4175	39.96792	40
LeftRight	RightHanded	313.3730	37.09963	20
	LeftHanded	327.9780	50.50666	20
	Total	320.6755	44.36211	40
LeftLeft	RightHanded	317.6835	34.23094	20
	LeftHanded	330.6965	45.13592	20
	Total	324.1900	40.08470	40

### Box's Test of Equality of Covariance Matrices<sup>a</sup>

Box's M	12.500
F	1.107
df1	10.000
df2	6903.586
Sig.	.352

Tests the null hypothesis that the observed covariance matrices of the dependent variables are equal across groups.

a. Design:  
 Intercept + Group  
 Within Subjects  
 Design: Hand +  
 Field + Hand \*  
 Field

**Multivariate Tests<sup>b</sup>**

Effect		Value	F	Hypothesis df	Error df	Sig.
Hand	Pillai's Trace	.051	2.022 <sup>a</sup>	1.000	38.000	.163
	Wilks' Lambda	.949	2.022 <sup>a</sup>	1.000	38.000	.163
	Hotelling's Trace	.053	2.022 <sup>a</sup>	1.000	38.000	.163
	Roy's Largest Root	.053	2.022 <sup>a</sup>	1.000	38.000	.163
Hand * Group	Pillai's Trace	.000	.007 <sup>a</sup>	1.000	38.000	.932
	Wilks' Lambda	1.000	.007 <sup>a</sup>	1.000	38.000	.932
	Hotelling's Trace	.000	.007 <sup>a</sup>	1.000	38.000	.932
	Roy's Largest Root	.000	.007 <sup>a</sup>	1.000	38.000	.932
Field	Pillai's Trace	.026	.998 <sup>a</sup>	1.000	38.000	.324
	Wilks' Lambda	.974	.998 <sup>a</sup>	1.000	38.000	.324
	Hotelling's Trace	.026	.998 <sup>a</sup>	1.000	38.000	.324
	Roy's Largest Root	.026	.998 <sup>a</sup>	1.000	38.000	.324
Field * Group	Pillai's Trace	.019	.719 <sup>a</sup>	1.000	38.000	.402
	Wilks' Lambda	.981	.719 <sup>a</sup>	1.000	38.000	.402
	Hotelling's Trace	.019	.719 <sup>a</sup>	1.000	38.000	.402
	Roy's Largest Root	.019	.719 <sup>a</sup>	1.000	38.000	.402
Hand * Field	Pillai's Trace	.036	1.416 <sup>a</sup>	1.000	38.000	.241
	Wilks' Lambda	.964	1.416 <sup>a</sup>	1.000	38.000	.241
	Hotelling's Trace	.037	1.416 <sup>a</sup>	1.000	38.000	.241
	Roy's Largest Root	.037	1.416 <sup>a</sup>	1.000	38.000	.241
Hand * Field * Group	Pillai's Trace	.003	.122 <sup>a</sup>	1.000	38.000	.728
	Wilks' Lambda	.997	.122 <sup>a</sup>	1.000	38.000	.728
	Hotelling's Trace	.003	.122 <sup>a</sup>	1.000	38.000	.728
	Roy's Largest Root	.003	.122 <sup>a</sup>	1.000	38.000	.728

a. Exact statistic

**Multivariate Tests<sup>b</sup>**

Effect		Value	F	Hypothesis df	Error df	Sig.
Hand	Pillai's Trace	.051	2.022 <sup>a</sup>	1.000	38.000	.163
	Wilks' Lambda	.949	2.022 <sup>a</sup>	1.000	38.000	.163
	Hotelling's Trace	.053	2.022 <sup>a</sup>	1.000	38.000	.163
	Roy's Largest Root	.053	2.022 <sup>a</sup>	1.000	38.000	.163
Hand * Group	Pillai's Trace	.000	.007 <sup>a</sup>	1.000	38.000	.932
	Wilks' Lambda	1.000	.007 <sup>a</sup>	1.000	38.000	.932
	Hotelling's Trace	.000	.007 <sup>a</sup>	1.000	38.000	.932
	Roy's Largest Root	.000	.007 <sup>a</sup>	1.000	38.000	.932
Field	Pillai's Trace	.026	.998 <sup>a</sup>	1.000	38.000	.324
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	Hotelling's Trace	.026	.998 <sup>a</sup>	1.000	38.000	.324
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Field * Group	Pillai's Trace	.019	.719 <sup>a</sup>	1.000	38.000	.402
	Wilks' Lambda	.981	.719 <sup>a</sup>	1.000	38.000	.402
	Hotelling's Trace	.019	.719 <sup>a</sup>	1.000	38.000	.402
	Roy's Largest Root	.019	.719 <sup>a</sup>	1.000	38.000	.402
Hand * Field	Pillai's Trace	.036	1.416 <sup>a</sup>	1.000	38.000	.241
	Wilks' Lambda	.964	1.416 <sup>a</sup>	1.000	38.000	.241
	Hotelling's Trace	.037	1.416 <sup>a</sup>	1.000	38.000	.241
	Roy's Largest Root	.037	1.416 <sup>a</sup>	1.000	38.000	.241
Hand * Field * Group	Pillai's Trace	.003	.122 <sup>a</sup>	1.000	38.000	.728
	Wilks' Lambda	.997	.122 <sup>a</sup>	1.000	38.000	.728
	Hotelling's Trace	.003	.122 <sup>a</sup>	1.000	38.000	.728
	Roy's Largest Root	.003	.122 <sup>a</sup>	1.000	38.000	.728

b. Design: Intercept + Group

Within Subjects Design: Hand + Field + Hand \* Field

### Mauchly's Test of Sphericity<sup>b</sup>

Measure: MEASURE\_1

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon <sup>a</sup>		
					Greenhouse-Geisser	Huynh-Feldt	Lower-bound
Hand	1.000	.000	0	.	1.000	1.000	1.000
Field	1.000	.000	0	.	1.000	1.000	1.000
Hand * Field	1.000	.000	0	.	1.000	1.000	1.000

Tests the null hypothesis that the error covariance matrix of the orthonormalized transformed dependent variables is proportional to an identity matrix.

a. May be used to adjust the degrees of freedom for the averaged tests of significance. Corrected tests are displayed in the Tests of Within-Subjects Effects table.

b. Design: Intercept + Group

Within Subjects Design: Hand + Field + Hand \* Field

### Tests of Within-Subjects Effects

Measure: MEASURE\_1

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	
Hand	Sphericity Assumed	944.347	1	944.347	2.022	.163
	Greenhouse-Geisser	944.347	1.000	944.347	2.022	.163
	Huynh-Feldt	944.347	1.000	944.347	2.022	.163
	Lower-bound	944.347	1.000	944.347	2.022	.163
Hand * Group	Sphericity Assumed	3.437	1	3.437	.007	.932
	Greenhouse-Geisser	3.437	1.000	3.437	.007	.932
	Huynh-Feldt	3.437	1.000	3.437	.007	.932
	Lower-bound	3.437	1.000	3.437	.007	.932
Error(Hand)	Sphericity Assumed	17749.230	38	467.085		
	Greenhouse-Geisser	17749.230	38.000	467.085		
	Huynh-Feldt	17749.230	38.000	467.085		
	Lower-bound	17749.230	38.000	467.085		

Field	Sphericity Assumed	102.512	1	102.512	.998	.324
	Greenhouse-Geisser	102.512	1.000	102.512	.998	.324
	Huynh-Feldt	102.512	1.000	102.512	.998	.324
	Lower-bound	102.512	1.000	102.512	.998	.324
Field * Group	Sphericity Assumed	73.862	1	73.862	.719	.402
	Greenhouse-Geisser	73.862	1.000	73.862	.719	.402
	Huynh-Feldt	73.862	1.000	73.862	.719	.402
	Lower-bound	73.862	1.000	73.862	.719	.402
Error(Field)	Sphericity Assumed	3902.648	38	102.701		
	Greenhouse-Geisser	3902.648	38.000	102.701		
	Huynh-Feldt	3902.648	38.000	102.701		
	Lower-bound	3902.648	38.000	102.701		
Hand * Field	Sphericity Assumed	146.478	1	146.478	1.416	.241
	Greenhouse-Geisser	146.478	1.000	146.478	1.416	.241
	Huynh-Feldt	146.478	1.000	146.478	1.416	.241
	Lower-bound	146.478	1.000	146.478	1.416	.241
Hand * Field * Group	Sphericity Assumed	12.673	1	12.673	.122	.728
	Greenhouse-Geisser	12.673	1.000	12.673	.122	.728
	Huynh-Feldt	12.673	1.000	12.673	.122	.728
	Lower-bound	12.673	1.000	12.673	.122	.728
Error(Hand*Field)	Sphericity Assumed	3931.428	38	103.459		
	Greenhouse-Geisser	3931.428	38.000	103.459		
	Huynh-Feldt	3931.428	38.000	103.459		
	Lower-bound	3931.428	38.000	103.459		



### Tests of Within-Subjects Contrasts

Measure: MEASURE\_1

Source	Hand	Field	Type III Sum of Squares	df	Mean Square	F	Sig.
Hand	Linear	Field	944.347	1	944.347	2.022	.163
Hand * Group	Linear	Field	3.437	1	3.437	.007	.932
Error(Hand)	Linear	Field	17749.230	38	467.085		
Field	Hand * Field	Linear	102.512	1	102.512	.998	.324
Field * Group	Hand * Field	Linear	73.862	1	73.862	.719	.402
Error(Field)	Hand * Field	Linear	3902.648	38	102.701		
Hand * Field	Linear	Linear	146.478	1	146.478	1.416	.241
Hand * Field * Group	Linear	Linear	12.673	1	12.673	.122	.728
Error(Hand*Field)	Linear	Linear	3931.428	38	103.459		

### Levene's Test of Equality of Error Variances<sup>a</sup>

	F	df1	df2	Sig.
RightRight	.006	1	38	.941
RightLeft	.452	1	38	.505
LeftRight	2.124	1	38	.153
LeftLeft	1.562	1	38	.219

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Group

Within Subjects Design: Hand + Field + Hand \* Field

### Tests of Between-Subjects Effects

Measure:MEASURE\_1

Transformed Variable:Average

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Intercept	1.638E7	1	1.638E7	2728.665	.000
Group	7307.155	1	7307.155	1.217	.277
Error	228171.988	38	6004.526		

### Estimated Marginal Means

#### 1. Group

Measure:MEASURE\_1

Group	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
RightHanded	313.245	8.664	295.707	330.784
LeftHanded	326.761	8.664	309.223	344.300

#### 2. Hand

Measure:MEASURE\_1

Hand	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
1	317.574	6.141	305.142	330.006
2	322.433	6.571	309.130	335.735

#### 3. Field

Measure:MEASURE\_1

Field	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
1	319.203	6.231	306.588	331.818
2	320.804	6.125	308.405	333.202

#### 4. Group \* Hand

Measure:MEASURE\_1

Group	Hand	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
RightHanded	1	310.962	8.685	293.381	328.544
	2	315.528	9.293	296.716	334.341
LeftHanded	1	324.185	8.685	306.603	341.767
	2	329.337	9.293	310.525	348.150

#### 5. Group \* Field

Measure:MEASURE\_1

Group	Field	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
RightHanded	1	311.766	8.812	293.926	329.605
	2	314.725	8.662	297.191	332.260
LeftHanded	1	326.640	8.812	308.800	344.480
	2	326.882	8.662	309.348	344.417

#### 6. Hand \* Field

Measure:MEASURE\_1

1

Hand	Field	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
1	1	317.730	6.131	305.318	330.143
	2	317.417	6.336	304.591	330.244
2	1	320.676	7.007	306.492	334.859
	2	324.190	6.333	311.369	337.011

### 7. Group \* Hand \* Field

Measure:MEASURE\_1

Group	Hand	Field	Mean	Std. Error	95% Confidence Interval	
					Lower Bound	Upper Bound
RightHanded	1	1	310.158	8.671	292.604	327.712
		2	311.767	8.961	293.627	329.907
	2	1	313.373	9.909	293.314	333.432
		2	317.684	8.957	299.551	335.816
LeftHanded	1	1	325.302	8.671	307.749	342.856
		2	323.068	8.961	304.928	341.208
	2	1	327.978	9.909	307.919	348.037
		2	330.696	8.957	312.564	348.829