

# Sheffield Hallam University

*Contrasting L1 profiles through early orthographic and phonological processing of written English*

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## Appendices

### Appendix A: Information sheet (informed consent document)

#### **Information sheet: EEG study of visual word recognition (reading)**

##### **What is the aim of the study?**

The general aim is to investigate the time-course of brain activity associated with orthography (spelling/form) and phonology (sound) during reading in both native and non-native speakers of English. While much research has been done on these processes and on native readers, the relative time-course brain activity and how people read a second language is still unclear.

##### **What will the EEG recording involve?**

EEG (electroencephalograph) involves measuring the natural electrical activity of the brain through the scalp using small electrodes that are integrated into a cap (see Figure 1). Each electrode will be gelled with a special hair gel that improves the conductance of the signal from the brain. The whole procedure is non-intrusive – it doesn't hurt at all and there is no chance of electrocution! However, your hair might need washing afterwards to remove the gel (facilities are provided). The technique is common worldwide for research and clinical purposes, even with babies. The EEG signal will be recorded while you sit looking at and responding to stimuli on a computer screen, while the experimenter monitors the progress of the task on a different computer in the adjacent room. You will always be able to communicate with the experimenter if you need to though.



*Figure 1: EEG cap by Advanced Neuro Technologies (ANT)*

##### **What will I have to do during EEG recording?**

Different strings of letters (the stimuli) will be presented in the centre of a computer screen one at a time. You will be asked to fixate on a little cross and pay attention to these words that will appear after the fixation cross. You will then press a button corresponding to the stimulus and the task (the buttons are for different things in each of the three tasks). Full instructions will be given before the start of the recording and each task and you will have a trial run to familiarise yourself with the task.

It is important that you refrain from blinking your eyes and movements of the head and body (especially when the words are displayed) as much as possible to prevent interference in the recording.

**How long will the EEG sessions last?**

The task and recording itself will last about 40 minutes with a break in between if needed. The whole experiment including the appliance of the cap and practice sessions will last ~2 hours.

**What if I change my mind during the study?**

Your participation in the research is entirely voluntary. You have the right to withdraw from the study at any point, without having to give a reason and without your future study being affected in any way.

**What will happen to the information from the study?**

The EEG recorded data and information for all the participants will be analysed to see whether there are any interesting differences between groups of native and non-native participants. The results may be published in the visual word recognition and/or second language acquisition research literature in order to be of maximum use worldwide. Any results about you personally will be held in the strictest confidence and not disclosed to anyone outside of the project. Participants will be kept anonymous in any reports and publications arising from the research.

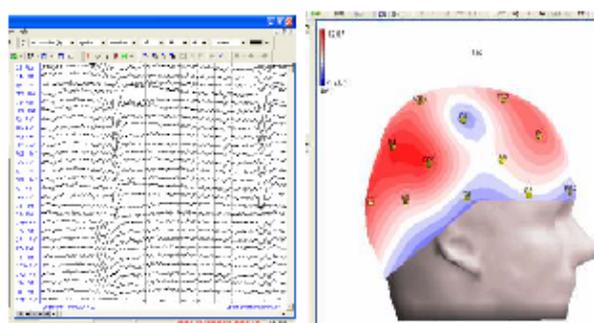


Fig. 2. EEG recording from 64 channel ANT cap (left) and a head model of EEG distribution over scalp (right).

**What if I have further questions?**

Please do not hesitate to contact Gary Dicks at: [g.dicks@shu.ac.uk](mailto:g.dicks@shu.ac.uk)

Or the primary supervisor of the project, Dr Naira Taroyan: [n.a.taroyan@shu.ac.uk](mailto:n.a.taroyan@shu.ac.uk)

## Appendix B: Participant consent form (informed consent document)

Participant ID:

### Lexical Task and EEG study Consent Form

**TITLE OF STUDY: The electrophysiological nature and time-course of reading processes in native and non-native readers of English**

*Please answer the following questions by circling "YES" or "NO".*

Do you have normal (or corrected-to-normal) eyesight?	YES	NO
Do you have any specific language impairments or specific learning difficulties (e.g., dyslexia)?	YES	NO
Have you read and understood the information sheet about this study?	YES	NO
Have you been given the opportunity to ask questions about this study?	YES	NO
Have you received enough information about this study?	YES	NO
Do you understand that you are free to withdraw from this study without giving a reason up to 7 days after the study session?	YES	NO
Do you give permission for your anonymised responses to be used as part of the data set in my PhD and any future research/publications?	YES	NO
Do you agree to take part in this study?	YES	NO

Your signature will certify that you have voluntarily decided to take part in this research study having read and understood the information in the sheet for participants. It will also certify that you have had adequate opportunity to discuss the study with a member of the research team and that all questions have been answered to your satisfaction.

Signature of participant: .....

Date: .....

Name (block capitals): .....

Signature of researcher: .....

Date: .....

Gary Dicks, Heart of the Campus, Collegiate Campus, Sheffield Hallam University, Sheffield S10 2BQ

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## Appendix C: Ethics confirmation letter



Our Ref AM/SW/12-2014  
30 June 2015

Gary Dicks



Dear Gary,

### **Request for Ethical Approval of Research Project**

Your research project entitled "The electrophysiological nature and time-course of reading processes in native and non-native readers of English" has been submitted for ethical review to the Faculty's rapporteurs and I am pleased to confirm that they have approved your project.

I wish you every success with your research project.

Yours sincerely



Professor A Macaskill  
Chair  
Faculty Research Ethics Committee

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## Appendix D: Debrief sheet (informed consent document)

### **Participant debriefing sheet: *The electrophysiological nature and time-course of reading processes in native and non-native readers of English***

Reading involves complex computations across neurophysiological time and space (Hauk et al., 2006). Brain activity within half a second after seeing a word involves recognition of its physical properties (i.e., its letters, form, and shape: its *orthography*) and retrieval from memory of its psycholinguistic properties, such as its sound (*phonology*) and meaning (*semantics*). However, as precise as previous findings in the literature may appear, the specific time-course and nature of the visual word recognition process is still unclear (Dennis & Key, 2006).

Two types of task were used that were designed to isolate these “visual” physical properties (orthography) and the “non-visual” psycholinguistic properties (phonology/semantics). The lexical decision task (LDT) involving real words and pseudohomophones (*Is it a real word?*) focused on orthography, as the task can theoretically be done with the visual information alone, while the LDT using pseudohomophones and pseudowords (*Does it sound like a real word?*) targets phonology by requiring the participant to retrieve the sound without being able to rely on the visual information. The rhyme recognition task took a slightly different perspective by involving orthography and phonology in the same activity and using comparisons between different stimuli for information about orthography and phonology.

One of the aims of this study is to provide further insight into the timings of orthographic and phonological processing during reading. Therefore, EEG (electroencephalography) using the event-related potential (ERP) technique is being used due to its superior temporal resolution over other measures of brain activation (e.g., fMRI).

Both behavioural measures (response times and errors) and ERPs will be recorded from native and non-native speakers of English in order to fulfil another aim of the study: to investigate any differences in reading between these groups of people. There is some agreement that processing a second language (L2) requires similar brain activation to the native tongue (L1), though debate continues about the extent of the similarity (Brysbaert & Dijkstra, 2006) and little is known about the early orthographic and phonological processes in non-native speakers, which this study aims to help rectify.

**Thank you for your participation! ☺**

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## Appendix E: Revised Language History Questionnaire

### *Language History Questionnaire*

Participant ID:

Age:

Sex:

Education:

- Have you studied or learned a second language?
- Country of residence:
- Country of origin:
- If country of residence and country of origin are different, then when did you first move to the country where you currently live?

Indicate the language used by your teachers for instruction at each educational level. If the instructional language switched during any educational level, then also indicate the "Switched to" language.

Elementary school	
Elementary school: Switched to	
Middle school	
Middle school: Switched to	
High school	
High school: Switched to	
College/university	
College/university: Switched to	

Rate your current ability in terms of listening, speaking, reading, and writing in each of the languages you have studied or learned.

*Very poor*      *Poor*      *Fair*      *Functional*      *Good*      *Very good*      *Native-like*  
 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_ 6 \_\_\_\_\_ 7 \_\_\_\_\_

Language	Reading	Writing	Speaking	Listening	

If you have taken any standardized language proficiency tests (e.g., TOEFL), then indicate the name of the test, the language assessed, and the score you received for each. If you do not remember the exact score, then indicate an approximate score instead.

Estimate how many hours per day you spend engaged in the following activities in each of the languages you have studied or learned.

	Watching television	Listening to radio	Reading for fun	Reading for school/work	Writing to friends	Writing for school/work
Language 1:						
Language 2:						
etc.						

Estimate how many hours per day you spend speaking with the following groups of people in each of the languages you have studied or learned.

	Family members	Friends	Classmates	Coworkers
Language 1:				
Language 2:				
etc.				

Use the space below to indicate any additional answers to any of the questions above that you feel better describe your language background or usage.

Use the space below to indicate anything that you feel is interesting or important about your language background or usage and was not covered by the questions above.

## Appendix F: Study 1 stimulus set with psycholinguistic values

### *Real words (RW)*

<i>Base</i>	<i>Stimulus</i>	<i>Letters</i>	<i>CELEX</i>	<i>SF</i>	<i>Bigram F</i>	<i>Biphone F</i>	<i>ON</i>	<i>PN</i>	<i>Imageability</i>
BANG	bang	4	13.41	387	2037.82	846.6	14	17	470
BELL	bell	4	39.33	427	4206.78	1280.86	13	24	566
BOARD	board	5	90.67	427	1070.84	442.63	3	35	442
BOSS	boss	4	27.43	457	1659.76	117.93	9	17	468
BUSH	bush	4	41.96	427	1148.82	218.32	9	6	549
CAGE	cage	4	13.07	350	847.77	656.68	13	14	585
CELL	cell	4	36.31	450	3165.54	2714.97	10	25	469
COUGH	cough	5	12.68	493	2854.03	43.15	5	14	497
DOLL	doll	4	17.43	370	3312.44	114.05	11	17	565
FARM	farm	4	66.15	390	1379.71	385.05	6	16	560
FIGHT	fight	5	94.86	463	2533.89	1867.67	8	26	543
FILE	file	4	28.32	497	1844.75	637.11	12	25	442
FINE	fine	4	143.18	617	1904.72	650.45	16	26	392
GANG	gang	4	19.27	477	1572.82	130.49	9	18	535
GUIDE	guide	5	36.82	430	472.52	439.21	3	23	450
HEART	heart	5	145.08	540	2084.25	742.63	2	25	617
HEDGE	hedge	5	11.28	283	486.22	298.55	3	11	583
HOUSE	house	5	558.72	560	3678.92	577.85	5	21	606
JUDGE	judge	5	55.2	427	302.68	62.13	3	5	558
KING	king	4	89.27	423	1521.11	518.07	9	16	585
LANE	lane	4	35.47	410	2025.69	455.86	16	29	543
LAUGH	laugh	5	56.93	613	425.37	416.07	0	14	528
LINE	line	4	219.05	523	2562.13	2135.98	22	28	491
LOAN	loan	4	18.99	443	1771.56	305.22	8	30	419
LOCK	lock	4	21.28	563	1540	732.74	14	31	532
LUNG	lung	4	9.44	413	557.53	491.28	7	17	560
MILE	mile	4	34.64	510	1637.4	813.32	18	24	511
PACK	pack	4	26.82	483	2228.08	778.47	15	29	404
PAGE	page	4	65.25	597	684.78	245.22	11	14	555
PARK	park	4	67.82	547	1605.05	551.95	13	27	607
PILE	pile	4	26.2	466	1425.13	395.44	12	28	500
POOL	pool	4	34.69	423	1770.68	123.91	9	21	577
PUSH	push	4	43.91	533	1136	443.41	8	9	395
RACE	race	4	77.21	477	1689.64	726.65	14	25	457
RACK	rack	4	8.32	430	1902.83	822.54	15	27	485
RING	ring	4	66.09	470	1429.62	506.1	11	16	601
ROAD	road	4	211.79	610	1036.85	500.96	8	34	609
ROUTE	route	5	39.66	-1	2919.96	415.77	2	27	447
SACK	sack	4	14.02	407	3141.32	879.77	14	29	555
SAFE	safe	4	79.66	527	1809.64	686.06	7	9	274
SHELL	shell	5	28.83	383	3251.22	1121.31	5	18	608

SHIP	ship	4	45.25	397	1904.97	102.35	8	17	612
SHOCK	shock	5	53.35	380	1317.71	229.87	4	16	471
SHOP	shop	4	85.08	543	528.68	295.58	9	16	561
SITE	site	4	52.29	417	3016.53	1984.29	10	24	406
SIZE	size	4	112.57	553	376.99	586.4	4	25	415
SOCK	sock	4	3.02	513	1697.98	130.74	12	20	553
SOIL	soil	4	44.08	-1	1150.03	62.35	6	14	566
SONG	song	4	32.79	577	2039.3	540.36	8	13	578
SOUL	soul	4	40.84	443	1781.54	460.45	4	24	280
TAIL	tail	4	31.79	447	1910.48	633.47	12	32	571
THING	thing	5	543.13	610	7079.52	732.1	5	10	358
TILL	till	4	76.65	453	3685.78	1333.07	15	31	520
TOOL	tool	4	16.09	428	2063.27	129.22	8	23	538
TOOTH	tooth	5	13.02	467	912.81	61.96	1	7	602
TOWN	town	4	185.92	497	1492.83	816.93	5	14	553
VERSE	verse	5	9.94	350	1573	90.25	3	12	489
VOICE	voice	5	232.35	513	2143.79	286.26	0	5	489
WALL	wall	4	138.16	567	3098.84	822.74	12	30	576
WAVE	wave	4	45.36	450	4509.26	469.33	14	21	594

*SF=Subjective frequency; Bigram F=Bigram frequency; Biphone F=Biphone frequency; ON=Orthographic neighbourhood; PN=Phonological neighbourhood*

### *Pseudohomophones (PH1)*

<i>Base</i>	<i>Stimulus</i>	<i>Letters</i>	<i>CELEX</i>	<i>SF</i>	<i>Bigram F</i>	<i>Biphone F</i>	<i>ON</i>	<i>PN</i>	<i>Imageability</i>
BASE	bace	4	70.56	430	1849.66	570.53	12	23	436
BEAK	beek	4	4.86	323	2583.57	1660.53	11	24	579
BIRD	burd	4	42.01	517	587.2	466.76	4	32	614
CASE	kase	4	383.58	513	1856.34	1089.97	14	22	517
CAVE	kave	4	27.43	310	4678.32	805.68	16	19	589
CHEF	shef	4	2.68	437	3978.43	34.1	1	8	-1
COAL	koal	4	42.51	307	940.54	514.91	6	29	581
COAT	koat	4	52.4	530	5908.93	297.17	9	28	572
CORD	kord	4	8.27	383	2428.11	913.87	10	36	455
COURT	kourt	5	126.98	480	2426.44	1574.22	1	30	552
CURL	kurl	4	4.13	457	382.42	171.17	2	21	-1
CURSE	kurse	5	10.73	427	1561.21	104.05	4	19	415
DATE	dait	4	59.72	533	822.52	634.39	13	20	501
DOME	doam	4	10.56	367	4294.42	521.43	12	22	529
FAIL	fale	4	36.26	503	1417.27	519.71	18	38	380
FAKE	faik	4	7.88	491	2407.3	1208.1	14	23	280
FAME	faim	4	9.78	380	1869.05	1229.58	4	24	386
FIRM	ferm	4	72.63	447	946.18	134.11	5	15	320
GIRL	gurl	4	276.2	637	583.8	286.03	3	16	634
GOAL	gole	4	29.66	493	921.9	511.84	4	26	556
HEAP	heep	4	10.45	353	2235.83	394.86	8	18	494

HERB	hurb	4	9.61	370	2863.49	2134.14	6	11	571
HOLE	hoal	4	56.7	513	1186.79	996.92	14	28	527
HOPE	hoap	4	190	530	681.55	738.13	13	23	421
HOSE	hoze	4	3.97	300	1480.45	1536.29	11	33	572
JAIL	jale	4	27.65	355	1506.71	230.43	10	25	620
JOKE	joak	4	34.13	550	1474.73	188.77	5	11	413
KERB	kurb	4	2.57	-1	2279.29	34.44	2	14	-1
KNIGHT	knite	5	428.55	613	2162.82	1934.18	8	22	607
LAKE	laik	4	40.11	433	2472.9	1080.22	15	27	616
LEAF	leef	4	15.53	450	1869.57	311.9	7	18	655
LOAF	lofe	4	5.31	383	1018.37	36.37	4	13	505
MATE	mait	4	15.59	397	1692.82	112.7	19	0	472
MEAL	meel	4	53.07	633	1889.63	693.18	12	23	573
MOAN	mone	4	3.91	340	2262.44	285.86	7	24	475
NAIL	nale	4	12.01	469	1570.88	347.86	10	29	588
NERVE	nurve	5	14.36	490	666.35	72.04	3	7	486
NOISE	noize	5	63.8	557	1727.24	148.64	3	7	325
NOON	nune	4	16.2	587	645.27	206.67	6	9	317
NOSE	noze	4	73.02	463	1182.97	1223.81	10	28	605
NURSE	nerse	5	33.02	420	1552.31	103.58	2	13	654
POSE	poze	4	11.51	324	1260.26	977.88	12	29	364
PURSE	perse	5	9.27	443	1564.16	276.92	5	20	640
REEF	reaf	4	6.87	250	2217.32	136.73	4	15	485
RULE	rool	4	68.88	507	568.46	438.46	5	20	415
SEAT	seet	4	77.99	540	6997.02	870.67	15	22	604
SHAME	shaim	5	23.91	423	740.89	990.11	6	16	356
SHARK	sharc	5	13.74	350	1302.83	219.05	6	15	645
SHEET	sheat	5	34.41	483	2997.59	445.34	5	13	594
SOUP	soop	4	20.22	463	1770.72	201.22	4	20	608
TAPE	taip	4	28.38	513	639.81	492.45	10	14	573
TERM	turm	4	82.68	-1	2571.03	246.49	3	16	387
THEME	theem	5	27.71	447	5287.47	190.16	3	7	154
THIEF	theef	5	6.7	393	4869.56	92.94	1	5	529
TOAD	tode	4	3.13	280	1109.57	251.49	5	29	591
WEED	wead	4	9.33	413	4422.5	552.54	10	28	575
WHEAT	wheet	5	29.44	410	4574.52	600.71	1	19	577
WORD	werd	4	220.67	652	2316.41	2782.27	10	25	-1
WORM	wurm	4	7.37	317	2233.65	2485.2	9	16	578
YAWN	yorn	4	2.79	420	570.76	973.26	7	22	545

*SF=Subjective frequency; Bigram F=Bigram frequency; Biphone F=Biphone frequency; ON=Orthographic neighbourhood; PN=Phonological neighbourhood*

*Pseudohomophones (PH2)*

<i>Base</i>	<i>Stimulus</i>	<i>Letters</i>	<i>CELEX</i>	<i>SF</i>	<i>Bigram F</i>	<i>Biphone F</i>	<i>ON</i>	<i>PN</i>	<i>Imageability</i>
BEAM	beem	4	9.94	367	2600.78	1616.64	8	17	539
BEEF	beaf	4	16.54	473	2562.86	1519.42	10	14	625
BIRTH	burth	5	58.77	437	1218.23	173.7	5	18	532
BOAT	bote	4	55.87	400	5962.28	569.88	9	26	631
BONE	boan	4	27.26	417	1753.86	646.39	15	27	625
CAKE	caik	4	21.4	440	2599.49	1481.09	18	24	624
CAPE	kape	4	15.53	310	873.87	651.68	14	21	520
CARD	kard	4	46.09	503	1654.66	438.97	12	33	576
CASH	kash	4	54.58	567	1661.41	1189.05	12	14	575
CODE	coad	4	24.97	433	1236.57	312.96	11	34	299
COIN	koin	4	7.82	473	843.37	42.49	5	13	626
CONE	coan	4	3.46	388	1700.51	373.68	18	28	559
CORK	kork	4	5.53	310	1997.62	904.92	5	21	619
CURVE	kurve	5	15.42	463	386.3	72.51	2	15	520
DIRT	dert	4	19.89	500	640.21	75.5	5	12	475
DOSE	doce	4	6.82	390	1947.66	264.22	12	11	302
FOAM	fome	4	6.82	360	604.1	312.89	4	17	583
GAME	gaim	4	147.99	530	3175.21	1200.68	13	18	521
GERM	jerm	4	2.74	-1	2325.81	87.79	1	9	442
GNOME	knome	5	0.78	243	198.43	532.33	0	18	-1
GOAT	gote	4	11.68	310	5890.29	294.11	7	19	636
HALF	harf	4	329.33	533	2886.84	602.73	5	13	458
HEAT	heet	4	119.16	567	7382.3	488.47	11	19	507
HOME	hoam	4	493.3	653	3827.21	844.81	10	21	599
KITE	kyte	4	3.02	333	2971.81	1589.77	6	22	624
LEAP	leep	4	12.91	333	1902.25	543.79	7	25	494
LOAD	lode	4	27.15	387	1468.8	244.5	9	35	330
MOUTH	mowth	5	134.69	577	871.07	138.77	2	3	613
MYTH	mith	4	19.89	397	2590.95	147.49	2	11	302
NAME	naim	4	264.58	634	3073.23	1057.73	9	17	475
NIECE	neece	5	4.8	393	805.45	394.18	1	10	-1
NOTE	noat	4	82.63	567	639.53	466.71	9	22	557
PHASE	phaze	5	32.29	417	1601.73	881.98	1	32	160
PIECE	peece	5	116.31	547	767.58	252.15	1	14	395
POLE	poal	4	14.92	393	966.61	438.52	15	28	482
RAID	rade	4	12.07	327	2571.75	853.22	7	36	476
RAIL	rale	4	23.07	390	1656.3	429.37	12	36	499
RAIN	rane	4	71.56	547	1796.22	493.41	10	34	618
RATE	rait	4	141.34	460	722	619.95	16	34	311
RISE	rize	4	85.03	437	843.12	752.32	9	32	451
ROLE	roal	4	117.37	447	1186.48	702.9	14	31	385
ROOF	rufe	4	46.42	370	1951.44	357.14	7	16	604
ROPE	roap	4	31.45	370	681.23	444.11	15	26	596
ROSE	roze	4	102.35	403	454.86	147.74	9	1	623
SAUCE	sawce	5	15.2	487	744.03	762.63	1	9	569

SEAL	seel	4	12.85	373	2028.63	818.07	13	23	607
SHADE	shaid	5	23.24	417	861.13	704.08	8	22	459
SHAPE	shaip	5	67.26	500	687.59	139.21	6	16	493
SHEEP	sheap	5	40.11	313	2981.34	351.73	6	11	641
SHIRT	shert	5	45.36	590	2539.93	86.34	4	11	612
SOAP	sope	4	20.45	530	1209.04	201.65	6	21	600
TEAM	teme	4	84.58	533	1743.56	286.67	9	15	517
TOMB	toom	4	13.85	330	1629.68	372.43	5	19	596
TONE	toan	4	43.91	393	1629.88	312.21	15	29	283
TYPE	tipe	4	95.59	541	228.44	1081.16	3	17	423
VOTE	voat	4	53.3	417	556.02	223.35	5	10	477
WEEK	weke	4	271.12	617	4068.24	416.32	7	15	481
WHALE	whail	5	6.31	-1	2497.16	456.35	3	37	-1
WHEEL	wheal	5	29.39	463	4260.26	548.1	0	24	622
WOOL	wull	4	21.45	390	2022.2	1718.96	6	13	586

*SF=Subjective frequency; Bigram F=Bigram frequency; Biphone F=Biphone frequency; ON=Orthographic neighbourhood; PN=Phonological neighbourhood*

### *Pseudowords (PW)*

<i>Base</i>	<i>Stimulus</i>	<i>Letters</i>	<i>CELEX</i>	<i>SF</i>	<i>Bigram F</i>	<i>Biphone F</i>	<i>ON</i>	<i>PN</i>	<i>Imageability</i>
	borse	5			2226.1		5		
	dack	4			2003.35		17		
	dight	5			2080.01		10		
	fode	4			1072.97		7		
	gack	4			1919.39		10		
	gart	4			1214.64		10		
	guck	4			1432.32		9		
	gurse	5			1601.04		5		
	heace	5			2114.42		3		
	heek	4			2787.51		8		
	hife	4			873.29		8		
	hoaf	4			586.74		3		
	holl	4			2845.23		15		
	kang	4			1370.73		10		
	kass	4			1165.49		5		
	kime	4			3163		5		
	lape	4			747.28		13		
	leck	4			1148.93		11		
	lipe	4			1384.53		12		
	lish	4			1672.92		7		
	liss	4			1850.78		12		
	looth	5			933.11		3		
	ludge	5			323.1		7		
	lurse	5			1585.74		3		
	mape	4			1356.45		14		

<b>mell</b>	4	3322.79	15
<b>merse</b>	5	1719.06	3
<b>mize</b>	4	400.75	9
<b>modge</b>	5	629.25	3
<b>moid</b>	4	2398.38	3
<b>narse</b>	5	1997.8	1
<b>narve</b>	5	822.89	3
<b>nedge</b>	5	561.48	5
<b>nirth</b>	5	1270.83	6
<b>nish</b>	4	576.01	4
<b>nool</b>	4	1693.39	7
<b>nush</b>	4	1066.59	7
<b>pake</b>	4	2436.49	19
<b>pash</b>	4	1498.41	15
<b>pight</b>	5	2124.96	9
<b>pove</b>	4	2623.35	13
<b>reen</b>	4	5285.45	9
<b>rell</b>	4	3375.03	13
<b>rike</b>	4	2145.38	12
<b>sheem</b>	5	2931.14	4
<b>shode</b>	5	1127.06	4
<b>shome</b>	5	1080.36	4
<b>tark</b>	4	1533.98	13
<b>tave</b>	4	4444.25	12
<b>tharn</b>	5	3780.79	1
<b>thung</b>	5	4399.02	2
<b>tife</b>	4	1393.12	9
<b>tove</b>	4	2915.94	12
<b>tuss</b>	4	1327.81	7
<b>vack</b>	4	1755.55	10
<b>voon</b>	4	1809.19	5
<b>wape</b>	4	704.81	12
<b>yick</b>	4	835.38	11
<b>yine</b>	4	1386.83	11
<b>zale</b>	4	935.18	10

*SF=Subjective frequency; Bigram F=Bigram frequency; Biphone F=Biphone frequency; ON=Orthographic neighbourhood; PN=Phonological neighbourhood*

## Appendix G: Revised Edinburgh handedness inventory

Edinburgh Handedness Inventory (revised)					
Please mark the box that best describes which hand you use for each item					
	Always Left	Usually Left	No Preference	Usually Right	Always Right
Writing					
Throwing					
Scissors					
Toothbrush					
Knife (without fork)					
Spoon					
Match (striking)					
Computer mouse					

## Appendix H: References for systematic review of VWR response methods

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## Appendix I: ERP cluster analysis

Clusters were defined based on inter-electrode correlations and Cronbach's Alpha of mean amplitude measures to \$Word (from Study 1) in the English group for the P1 timeframe (and then matched and confirmed with N170 timeframe measures).

- LeftO = O1,POO9h,OI1h,I1
- RightO = O2,POO10h,OI2h,I2
- LeftOT = PO7,PO9,P5,P7,PPO9h,TP7,TPP7h
- RightOT = PO8,PO10,P6,P8,PPO10h,TP8,TPP8h
- LeftFC = FC3,FFC3h,FCC3h,FC5,FFC5h,FCC5h
- RightFC = FC4,FFC4h,FCC4h,FC6,FFC6h,FCC6h

### *P1 timeframe*

Electrode clusters with Cronbach's Alpha:

- LeftO = O1,POO9h,OI1h,I1 (a=.89)
- RightO = O2,POO10h,OI2h,I2 (a=.92)
- LeftOT = PO7,PO9,P5,P7,PPO9h,TP7,TPP7h (a=.89)
- RightOT = PO8,PO10,P6,P8,PPO10h,TP8,TPP8h (a=.85)
- LeftFC = FC3,FFC3h,FCC3h,FC5,FFC5h,FCC5h (a=.93)
- RightFC = FC4,FFC4h,FCC4h,FC6,FFC6h,FCC6h (a=.82)

### *SPSS output*

**Scale:**  
**LeftO\$Word**

**Group =**  
**English**

#### **Case Processing Summary<sup>a</sup>**

		N	%
Cases	Valid	20	100.0
	Excluded <sup>b</sup>	0	0.0
	Total	20	100.0

- a. Group = English
- b. Listwise deletion based on all variables in the procedure.

**Reliability Statistics<sup>a</sup>**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.835	0.827	5

a. Group = English

**Inter-Item Correlation Matrix<sup>a</sup>**

	P1.O1\$Word	P1.O1h\$Word	P1.POO9h\$Word	P1.I1\$Word	P1.PO7\$Word
P1.O1\$Word	1.000	0.669	0.768	0.502	0.344
P1.O1h\$Word	0.669	1.000	0.628	0.768	0.160
P1.POO9h\$Word	0.768	0.628	1.000	0.767	0.264
P1.I1\$Word	0.502	0.768	0.767	1.000	0.022
P1.PO7\$Word	0.344	0.160	0.264	0.022	1.000

a. Group = English

**Summary Item Statistics<sup>a</sup>**

a. Group = English

**Item-Total Statistics<sup>a</sup>**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
P1.O1\$Word	5.1559	25.308	0.744	0.762	0.773
P1.O11h\$Word	5.7651	26.008	0.751	0.755	0.774
P1.POO9h\$Word	5.2813	21.744	0.831	0.831	0.739
P1.I1\$Word	5.2796	22.579	0.686	0.825	0.791
P1.PO7\$Word	4.6808	34.046	0.217	0.187	0.891

a. Group = English

#### ANOVA<sup>a</sup>

		Sum of Squares	df	Mean Square	F	Sig
Between People		147.901	19	7.784		
Within People	Between Items	11.971	4	2.993	2.330	0.063
	Residual	97.604	76	1.284		
	Total	109.575	80	1.370		
Total		257.476	99	2.601		

Grand Mean = 1.3081

a. Group = English

**Scale:**  
RightO\$Word

**Group** =  
English

#### Case Processing Summary<sup>a</sup>

		N	%
Cases	Valid	20	100.0
	Excluded <sup>b</sup>	0	0.0
	Total	20	100.0

a. Group = English

b. Listwise deletion based on all variables in the procedure.

**Reliability Statistics<sup>a</sup>**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.900	0.903	5

a. Group = English

**Inter-Item Correlation Matrix<sup>a</sup>**

	P1.O2\$Word	P1.OI2h\$Word	P1.POO10h\$Word	P1.I2\$Word	P1.PO8\$Word
P1.O2\$Word	1.000	0.724	0.764	0.717	0.446
P1.OI2h\$Word	0.724	1.000	0.712	0.663	0.269
P1.POO10h\$Word	0.764	0.712	1.000	0.945	0.601
P1.I2\$Word	0.717	0.663	0.945	1.000	0.661
P1.PO8\$Word	0.446	0.269	0.601	0.661	1.000

a. Group = English

**Summary Item Statistics<sup>a</sup>**

a. Group = English

**Item-Total Statistics<sup>a</sup>**

Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple	Cronbach's Alpha if Item Deleted
----------------------------	--------------------------------	----------------------------------	------------------	----------------------------------

				Correlation	
P1.O2\$Word	1.9188	36.529	0.771	0.653	0.874
P1.OI2h\$Word	2.1929	37.682	0.667	0.623	0.896
P1.POO10h\$Word	2.2625	34.118	0.912	0.912	0.843
P1.I2\$Word	2.1162	33.237	0.900	0.907	0.844
P1.PO8\$Word	1.6489	38.436	0.548	0.494	0.924

a. Group = English

#### ANOVA<sup>a</sup>

		Sum of Squares	df	Mean Square	F	Sig
Between People		208.533	19	10.975		
Within People	Between Items	4.912	4	1.228	1.118	0.354
	Residual	83.490	76	1.099		
	Total	88.402	80	1.105		
Total		296.935	99	2.999		

Grand Mean = .5070

a. Group = English

**Scale:**  
LeftOP\$Word

**Group =**  
English

#### Case Processing Summary<sup>a</sup>

		N	%
Cases	Valid	20	100.0
	Excluded <sup>b</sup>	0	0.0
	Total	20	100.0

a. Group = English

b. Listwise deletion based on all variables in the procedure.

**Reliability Statistics<sup>a</sup>**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.891	0.891	7

a. Group = English

**Inter-Item Correlation Matrix<sup>a</sup>**

	P1.PO7\$Word	P1.PO9\$Word	P1.P5\$Word	P1.P7\$Word	P1.PPO9h\$Word	P1.TP7\$Word	P1.TPP7h\$Word
P1.PO7\$Word	1.000	0.726	0.554	0.603	0.618	0.152	0.544
P1.PO9\$Word	0.726	1.000	0.306	0.604	0.864	0.424	0.458
P1.P5\$Word	0.554	0.306	1.000	0.596	0.339	0.208	0.662
P1.P7\$Word	0.603	0.604	0.596	1.000	0.566	0.715	0.819
P1.PPO9h\$Word	0.618	0.864	0.339	0.566	1.000	0.444	0.492
P1.TP7\$Word	0.152	0.424	0.208	0.715	0.444	1.000	0.617
P1.TPP7h\$Word	0.544	0.458	0.662	0.819	0.492	0.617	1.000

a. Group = English

**Summary Item Statistics<sup>a</sup>**

a. Group = English

**Item-Total Statistics<sup>a</sup>**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
P1.PO7\$Word	6.5217	58.990	0.685	0.754	0.877
P1.PO9\$Word	6.6114	55.460	0.703	0.840	0.873
P1.P5\$Word	7.2988	57.067	0.562	0.579	0.891
P1.P7\$Word	7.2810	48.476	0.858	0.832	0.852
P1.PPO9h\$Word	6.6357	56.330	0.696	0.767	0.874
P1.TP7\$Word	8.3312	60.519	0.550	0.731	0.890
P1.TPP7h\$Word	7.6098	51.127	0.785	0.754	0.863

a. Group = English

#### ANOVA<sup>a</sup>

	Sum of Squares	df	Mean Square	F	Sig.	
Between People	201.112	19	10.585			
Within People	Between Items	51.743	6	8.624	7.483	0.000
	Residual	131.378	114	1.152		
	Total	183.121	120	1.526		
Total	384.233	139	2.764			

Grand Mean = 1\$Word974

a. Group = English

**Scale:**  
RightOP\$Word

**Group** =  
English

#### Case Processing Summary<sup>a</sup>

	N	%
Cases	Valid 20	100.0

Excluded <sup>b</sup>	0	0.0
Total	20	100.0

a. Group = English

b. Listwise deletion based on all variables in the procedure.

**Reliability Statistics<sup>a</sup>**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.848	0.869	7

a. Group = English

**Inter-Item Correlation Matrix<sup>a</sup>**

	P1.PO8\$Word	P1.PO10\$Word	P1.P6\$Word	P1.P8\$Word	P1.PPO10h\$Word	P1.TP8\$Word	P1.TPP8h\$Word
P1.PO8\$Word	1.000	0.532	0.464	0.676	0.718	0.365	0.370
P1.PO10\$Word	0.532	1.000	0.115	0.622	0.722	0.241	0.643
P1.P6\$Word	0.464	0.115	1.000	0.335	0.215	0.116	0.184
P1.P8\$Word	0.676	0.622	0.335	1.000	0.881	0.501	0.786
P1.PPO10h\$Word	0.718	0.722	0.215	0.881	1.000	0.508	0.714
P1.TP8\$Word	0.365	0.241	0.116	0.501	0.508	1.000	0.502
P1.TPP8h\$Word	0.370	0.643	0.184	0.786	0.714	0.502	1.000

a. Group = English

**Summary Item Statistics<sup>a</sup>**

a. Group = English

**Item-Total Statistics<sup>a</sup>**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
P1.PO8\$Word	3.7384	46.488	0.717	0.699	0.809
P1.PO10\$Word	4.0030	56.371	0.606	0.633	0.832
P1.P6\$Word	3.5080	54.299	0.314	0.322	0.885
P1.P8\$Word	3.9798	46.041	0.857	0.860	0.787
P1.PPO10h\$Word	3.6664	48.280	0.838	0.861	0.794
P1.TP8\$Word	4.4992	54.627	0.464	0.373	0.848
P1.TPP8h\$Word	4.3509	55.407	0.685	0.755	0.824

a. Group = English

**ANOVA<sup>a</sup>**

	Sum of Squares	df	Mean Square	F	Sig	
Between People	186.093	19	9.794			
Within People	Between Items	15.706	6	2.618	1.762	0.113
	Residual	169.401	114	1.486		
	Total	185.106	120	1.543		
Total	371.199	139	2.670			

Grand Mean = .6606

a. Group = English

**Scale:**  
**LeftFC\$Word**

**Group = English**

**Case Processing Summary<sup>a</sup>**

		N	%
Cases	Valid	20	100.0
	Excluded <sup>b</sup>	0	0.0
	Total	20	100.0

a. Group = English

b. Listwise deletion based on all variables in the procedure.

**Reliability Statistics<sup>a</sup>**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.926	0.927	6

a. Group = English

**Inter-Item Correlation Matrix<sup>a</sup>**

	P1.FC3\$Word	P1.FFC3h\$Word	P1.FCC3h\$Word	P1.FC5\$Word	P1.FFC5h\$Word	P1.FCC5h\$Word
P1.FC3\$Word	1.000	0.841	0.756	0.820	0.659	0.747
P1.FFC3h\$Word	0.841	1.000	0.645	0.664	0.652	0.577
P1.FCC3h\$Word	0.756	0.645	1.000	0.552	0.529	0.645
P1.FC5\$Word	0.820	0.664	0.552	1.000	0.681	0.745
P1.FFC5h\$Word	0.659	0.652	0.529	0.681	1.000	0.676
P1.FCC5h\$Word	0.747	0.577	0.645	0.745	0.676	1.000

a. Group = English

**Summary  
Item  
Statistics<sup>a</sup>**

a. Group = English

**Item-Total Statistics<sup>a</sup>**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
P1.FC3\$Word	-3.0792	28.391	0.910	0.880	0.896
P1.FFC3h\$Word	-3.1588	27.947	0.782	0.745	0.914
P1.FCC3h\$Word	-2.9854	31.446	0.713	0.618	0.922
P1.FC5\$Word	-3.4974	28.168	0.807	0.751	0.910
P1.FFC5h\$Word	-3.3544	29.809	0.737	0.589	0.919
P1.FCC5h\$Word	-2.9809	29.630	0.783	0.680	0.913

a. Group = English

**ANOVA<sup>a</sup>**

		Sum of Squares	df	Mean Square	F	Sig
Between People		131.349	19	6.913		
Within People	Between Items	4.383	5	0.877	1.711	0.139
	Residual	48.673	95	0.512		
	Total	53.056	100	0.531		
Total		184.405	119	1.550		

Grand Mean = -.6352

a. Group = English

Scale:  
RightFC\$Word

Group =  
English

**Case Processing Summary<sup>a</sup>**

		N	%
Cases	Valid	20	100.0
	Excluded <sup>b</sup>	0	0.0
	Total	20	100.0

a. Group = English

b. Listwise deletion based on all variables in the procedure.

**Reliability Statistics<sup>a</sup>**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.816	0.817	6

a. Group = English

**Inter-Item Correlation Matrix<sup>a</sup>**

	P1.FC4\$Word	P1.FFC4h\$Word	P1.FCC4h\$Word	P1.FC6\$Word	P1.FFC6h\$Word	P1.FCC6h\$Word
P1.FC4\$Word	1.000	0.749	0.449	0.444	0.696	0.619
P1.FFC4h\$Word	0.749	1.000	0.372	0.123	0.512	0.510
P1.FCC4h\$Word	0.449	0.372	1.000	0.035	0.179	0.484
P1.FC6\$Word	0.444	0.123	0.035	1.000	0.565	0.327
P1.FFC6h\$Word	0.696	0.512	0.179	0.565	1.000	0.326
P1.FCC6h\$Word	0.619	0.510	0.484	0.327	0.326	1.000

a. Group = English

**Summary  
Item  
Statistics<sup>a</sup>**

a. Group =  
English

**Item-Total Statistics<sup>a</sup>**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlatio n	Square d Multipl e Correla tion	Cronbach 's Alpha if Item Deleted
P1.FC4\$Wo rd	-3.6053	10.498	0.852	0.778	0.714
P1.FFC4h\$ Word	-3.3968	13.547	0.629	0.634	0.778
P1.FCC4h\$ Word	-3.7265	14.222	0.395	0.317	0.827
P1.FC6\$Wo rd	-3.7530	14.383	0.388	0.467	0.827
P1.FFC6h\$ Word	-3.7762	13.407	0.634	0.604	0.776
P1.FCC6h\$ Word	-3.8669	13.380	0.629	0.486	0.777

a. Group = English

**ANOVA<sup>a</sup>**

		Sum of Squares	df	Mean Square	F	Sig
Between People		58.225	19	3.064		
Within People	Between Items	2.743	5	0.549	0.971	0.440
	Residu al	53.688	95	0.565		
	Total	56.432	100	0.564		
Total		114.656	119	0.963		

Grand Mean = -.7375

a. Group = English

## N170 timeframe

Electrode clusters with Cronbach's Alpha:

- LeftO = O1,POO9h,OI1h,I1 (a=.93)
- RightO = O2,POO10h,OI2h,I2 (a=.75)
- LeftOT = PO7,PO9,P5,P7,PPO9h,TP7,TPP7h (a=.88)
- RightOT = PO8,PO10,P6,P8,PPO10h,TP8,TPP8h (a=.87)
- LeftFC = FC3,FFC3h,FCC3h,FC5,FFC5h,FCC5h (a=.87)
- RightFC = FC4,FFC4h,FCC4h,FC6,FFC6h,FCC6h (a=.92)

## SPSS output

**Scale:**  
**LeftO\$W**  
**ord**

**Group =**  
**English**

### Case Processing Summary<sup>a</sup>

		N	%
Cases	Valid	20	100.0
	Exclude d <sup>b</sup>	0	0.0
	Total	20	100.0

a. Group = English

b. Listwise deletion based on all variables in the procedure.

### Reliability Statistics<sup>a</sup>

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.918	0.918	5

a. Group = English

**Inter-Item Correlation Matrix<sup>a</sup>**

	N170.O1\$ Word	N170.O11h\$ Word	N170.PO O9h\$ Word	N170.I1\$ Word	N170.PO 7\$ Word
N170.O1\$ Word	1.000	0.703	0.673	0.674	0.601
N170.O11h\$ Word	0.703	1.000	0.850	0.787	0.575
N170.PO O9h\$ Word	0.673	0.850	1.000	0.966	0.513
N170.I1\$ Word	0.674	0.787	0.966	1.000	0.568
N170.PO 7\$ Word	0.601	0.575	0.513	0.568	1.000

a. Group = English

**Summary  
Item  
Statistics<sup>a</sup>**

a. Group =  
English

**Item-Total Statistics<sup>a</sup>**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlatio n	Square d Multiple Correlat ion	Cronbach' s Alpha if Item Deleted
N170.O1\$ Word	- 14.1223	81.899	0.750	0.573	0.908
N170.O11h\$ Word	- 14.9864	72.811	0.842	0.801	0.889
N170.PO O9h\$ Word	- 14.0653	75.288	0.879	0.961	0.882
N170.I1\$ Word	- 14.2895	73.740	0.872	0.949	0.883
N170.PO 7\$ Word	- 13.8953	84.771	0.618	0.499	0.933

a. Group = English

**ANOVA<sup>a</sup>**

		Sum of Squares	df	Mean Square	F	Sig
Between People		452.113	19	23.795		
Within People	Between Items	14.354	4	3.589	1.845	0.129
	Residual	147.850	76	1.945		
	Total	162.204	80	2.028		
Total		614.317	99	6.205		

Grand Mean = -3.5679

a. Group = English

**Group = English**

**Case Processing Summary<sup>a</sup>**

		N	%
Cases	Valid	20	100.0
	Excluded <sup>b</sup>	0	0.0
	Total	20	100.0

a. Group = English

b. Listwise deletion based on all variables in the procedure.

**Reliability Statistics<sup>a</sup>**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.755	0.764	5

a. Group = English

**Inter-Item Correlation Matrix<sup>a</sup>**

	N170.O2\$Word	N170.O12h\$Word	N170.O10h\$Word	N170.I2\$Word	N170.O8\$Word
N170.O2\$Word	1.000	0.575	0.355	0.000	0.153

N170.OI2 h\$Word	0.575	1.000	0.526	0.604	0.302
N170.PO O10h\$Wo rd	0.355	0.526	1.000	0.564	0.484
N170.I2\$ Word	0.000	0.604	0.564	1.000	0.374
N170.PO 8\$Word	0.153	0.302	0.484	0.374	1.000

a. Group = English

**Summary  
Item  
Statistics<sup>a</sup>**

a. Group =  
English

**Item-Total Statistics<sup>a</sup>**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlatio n	Square d Multiple Correlat ion	Cronbach' s Alpha if Item Deleted
N170.O2\$ Word	- 13.7843	36.447	0.366	0.577	0.770
N170.OI2 h\$Word	- 13.2341	25.870	0.762	0.697	0.604
N170.PO O10h\$Wo rd	- 12.4150	33.786	0.662	0.502	0.666
N170.I2\$ Word	- 12.9165	32.880	0.505	0.654	0.719
N170.PO 8\$Word	- 13.1993	43.615	0.420	0.249	0.754

a. Group = English

**ANOVA<sup>a</sup>**

		Sum of Squares	df	Mean Square	F	Sig
Between People		193.123	19	10.164		
Within People	Between Items	19.970	4	4.992	2.003	0.102
	Residua l	189.387	76	2.492		

Total	209.357	80	2.617		
Total	402.480	99	4.065		

Grand Mean = -3.2775

a. Group = English

**Scale:**  
**LeftOP\$**  
**Word**

**Group =**  
**English**

**Case Processing Summary<sup>a</sup>**

		N	%
Cases	Valid	20	100.0
	Excluded <sup>b</sup>	0	0.0
	Total	20	100.0

a. Group = English

b. Listwise deletion based on all variables in the procedure.

**Reliability Statistics<sup>a</sup>**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.876	0.876	7

a. Group = English

**Inter-Item Correlation Matrix<sup>a</sup>**

	N170.P07\$Word	N170.P09\$Word	N170.P5\$Word	N170.P7\$Word	N170.PP09h\$Word	N170.TP7\$Word	N170.TP7h\$Word
N170.P07\$Word	1.000	0.567	0.677	0.384	0.504	0.103	0.205
N170.P09\$Word	0.567	1.000	0.375	0.499	0.804	0.331	0.583
N170.P5\$Word	0.677	0.375	1.000	0.238	0.356	0.372	0.132

N170.P7\$ Word	0.384	0.499	0.238	1.000	0.840	0.741	0.759
N170.PP O9h\$Wor d	0.504	0.804	0.356	0.840	1.000	0.595	0.739
N170.TP7 \$Word	0.103	0.331	0.372	0.741	0.595	1.000	0.761
N170.TPP 7h\$Word	0.205	0.583	0.132	0.759	0.739	0.761	1.000

a. Group = English

**Summary  
Item  
Statistics<sup>a</sup>**

a. Group =  
English

**Item-Total Statistics<sup>a</sup>**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlatio n	Square d Multiple Correlat ion	Cronbach' s Alpha if Item Deleted
N170.PO 7\$Word	- 20.6494	130.683	0.533	0.787	0.874
N170.PO 9\$Word	- 20.8935	126.000	0.705	0.807	0.853
N170.P5\$ Word	- 21.8750	135.498	0.447	0.778	0.885
N170.P7\$ Word	- 20.2873	113.896	0.763	0.896	0.843
N170.PP O9h\$Wor d	- 20.3451	106.857	0.872	0.909	0.826
N170.TP7 \$Word	- 22.0905	134.968	0.631	0.864	0.863
N170.TPP 7h\$Word	- 21.4219	128.168	0.693	0.799	0.855

a. Group = English

**ANOVA<sup>a</sup>**

	Sum of Squares	df	Mean Square	F	Sig
--	-------------------	----	----------------	---	-----

Between People		453.015	19	23.843		
Within People	Between Items	63.175	6	10.529	3.564	0.003
	Residual	336.771	114	2.954		
	Total	399.946	120	3.333		
Total		852.961	139	6.136		

Grand Mean = -3.5134

a. Group = English

**Scale:**  
**RightOP\$**  
**Word**

**Group =**  
**English**

**Case Processing Summary<sup>a</sup>**

		N	%
Cases	Valid	20	100.0
	Excluded <sup>b</sup>	0	0.0
	Total	20	100.0

a. Group = English

b. Listwise deletion based on all variables in the procedure.

**Reliability Statistics<sup>a</sup>**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.874	0.871	7

a. Group = English

**Inter-Item Correlation Matrix<sup>a</sup>**

N170.P08\$Word	N170.P010\$Word	N170.P6\$Word	N170.P8\$Word	N170.PP010h\$Word	N170.TP8\$Word	N170.TP8h\$Word

N170.PO 8\$Word	1.000	0.473	0.215	0.574	0.442	0.565	0.536
N170.PO 10\$Word	0.473	1.000	0.090	0.764	0.901	0.652	0.563
N170.P6\$ Word	0.215	0.090	1.000	0.231	0.071	0.032	0.474
N170.P8\$ Word	0.574	0.764	0.231	1.000	0.801	0.717	0.580
N170.PP O10h\$Wo rd	0.442	0.901	0.071	0.801	1.000	0.531	0.671
N170.TP8 \$Word	0.565	0.652	0.032	0.717	0.531	1.000	0.417
N170.TPP 8h\$Word	0.536	0.563	0.474	0.580	0.671	0.417	1.000

a. Group = English

**Summary  
Item  
Statistics**  
a

a. Group =  
English

**Item-Total Statistics<sup>a</sup>**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlatio n	Square d Multiple Correlat ion	Cronbach' s Alpha if Item Deleted
N170.PO 8\$Word	- 19.5596	93.160	0.612	0.464	0.869
N170.PO 10\$Word	- 18.7930	75.471	0.804	0.879	0.835
N170.P6\$ Word	- 20.8053	97.674	0.226	0.513	0.900
N170.P8\$ Word	- 18.8516	66.997	0.842	0.825	0.828
N170.PP O10h\$Wo rd	- 18.8496	72.249	0.803	0.927	0.834
N170.TP8 \$Word	- 20.4944	81.495	0.643	0.703	0.857
N170.TPP 8h\$Word	- 19.1320	75.720	0.707	0.732	0.849

a. Group = English

**ANOVA<sup>a</sup>**

		Sum of Squares	df	Mean Square	F	Sig
Between People		290.900	19	15.311		
Within People	Between Items	83.499	6	13.917	7.206	0.000
	Residual	220.171	114	1.931		
	Total	303.670	120	2.531		
Total		594.570	139	4.277		

Grand Mean = -3.2497

a. Group = English

**Scale:**  
**LeftFC\$**  
**Word**

**Group =**  
**English**

**Case Processing Summary<sup>a</sup>**

		N	%
Cases	Valid	20	100.0
	Excluded <sup>b</sup>	0	0.0
	Total	20	100.0

a. Group = English

b. Listwise deletion based on all variables in the procedure.

**Reliability Statistics<sup>a</sup>**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.872	0.877	6

a. Group = English

**Inter-Item Correlation Matrix<sup>a</sup>**

	N170.F C3\$Word	N170.FF C3h\$Word	N170.FC C3h\$Word	N170.F C5\$Word	N170.FF C5h\$Word	N170.FC C5h\$Word
N170.FC3 \$Word	1.000	0.460	0.486	0.784	0.793	0.368
N170.FFC 3h\$Word	0.460	1.000	0.787	0.315	0.664	0.568
N170.FC C3h\$Word	0.486	0.787	1.000	0.432	0.557	0.544
N170.FC5 \$Word	0.784	0.315	0.432	1.000	0.476	0.562
N170.FFC 5h\$Word	0.793	0.664	0.557	0.476	1.000	0.352
N170.FC C5h\$Word	0.368	0.568	0.544	0.562	0.352	1.000

a. Group = English

**Summary  
Item  
Statistics**  
a

a. Group =  
English

**Item-Total Statistics<sup>a</sup>**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Square d Multiple Correlation	Cronbach' s Alpha if Item Deleted
N170.FC3 \$Word	13.3382	35.274	0.732	0.864	0.839
N170.FFC 3h\$Word	13.7979	36.876	0.692	0.757	0.847
N170.FC C3h\$Word	13.6342	37.003	0.702	0.659	0.846
N170.FC5 \$Word	14.0095	35.017	0.652	0.786	0.854
N170.FFC 5h\$Word	13.3960	37.199	0.707	0.787	0.845

N170.FC C5h\$Wor d	14.4340	35.152	0.593	0.568	0.868
--------------------------	---------	--------	-------	-------	-------

a. Group = English

#### ANOVA<sup>a</sup>

		Sum of Squares	df	Mean Square	F	Sig
Between People		160.434	19	8.444		
Within People	Between Items	16.877	5	3.375	3.112	0.012
	Residual	103.029	95	1.085		
	Total	119.906	100	1.199		
Total		280.341	119	2.356		

Grand Mean = 2.7537

a. Group = English

**Scale:**  
**RightFC\$**  
**Word**

**Group =**  
**English**

#### Case Processing Summary<sup>a</sup>

		N	%
Cases	Valid	20	100.0
	Excluded <sup>b</sup>	0	0.0
	Total	20	100.0

a. Group = English

b. Listwise deletion based on all variables in the procedure.

#### Reliability Statistics<sup>a</sup>

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.918	0.921	6

a. Group = English

**Inter-Item Correlation Matrix<sup>a</sup>**

	N170.F C4\$Word	N170.FF C4h\$Word	N170.FC C4h\$Word	N170.F C6\$Word	N170.FF C6h\$Word	N170.FC C6h\$Word
N170.FC4 \$Word	1.000	0.737	0.781	0.622	0.796	0.697
N170.FFC 4h\$Word	0.737	1.000	0.605	0.479	0.614	0.505
N170.FC C4h\$Word	0.781	0.605	1.000	0.554	0.680	0.778
N170.FC6 \$Word	0.622	0.479	0.554	1.000	0.672	0.704
N170.FFC 6h\$Word	0.796	0.614	0.680	0.672	1.000	0.655
N170.FC C6h\$Word	0.697	0.505	0.778	0.704	0.655	1.000

a. Group = English

**Summary  
Item  
Statistics<sup>a</sup>**

a. Group =  
English

**Item-Total Statistics<sup>a</sup>**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Square d Multiple Correlation	Cronbach' s Alpha if Item Deleted
N170.FC4 \$Word	9.4204	47.108	0.869	0.793	0.889
N170.FFC 4h\$Word	9.3088	49.117	0.676	0.551	0.916
N170.FC C4h\$Word	9.1528	44.450	0.799	0.728	0.899
N170.FC6 \$Word	10.2013	48.876	0.694	0.587	0.913

N170.FFC 6h\$Word	9.9412	49.686	0.806	0.690	0.899
N170.FC C6h\$Word	10.0419	48.741	0.790	0.716	0.900

a. Group = English

**ANOVA<sup>a</sup>**

		Sum of Squares	df	Mean Square	F	Sig
Between People		215.314	19	11.332		
Within People	Between Items	19.083	5	3.817	4.087	0.002
	Residual	88.709	95	0.934		
	Total	107.792	100	1.078		
Total		323.106	119	2.715		

Grand Mean = 1.9355

a. Group = English

## Appendix J: Study 1 statistical outputs – accuracy and response times

### Repeated Measures ANOVA

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
oLDT Condition	1951	1	1951.3	33.37	< .001	0.369
oLDT Condition * Group	341	2	170.7	2.92	0.062	0.093
Residual	3334	57	58.5			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Group	1575	2	787.4	13.9	< .001	0.328
Residual	3233	57	56.7			

Note. Type 3 Sums of Squares

### Assumptions

Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
Word_accuracy	2.61	2	57	0.082
Pseudohomophone1_accuracy	9.71	2	57	< .001

### Post Hoc Tests

Post Hoc Comparisons - oLDT Condition \* Group

Comparison										
oLDT Condition	Group	oLDT Condition	Group	Mean Difference	SE	df	t	p	P <sub>tuk</sub> <sub>ey</sub>	P <sub>hol</sub> <sub>m</sub>
Word	English	Word	Spanish - English	2.458	2.40	11	1.024	0.308	0.909	1.000
			Chinese-English	4.746	2.40	11	1.977	0.050	0.362	0.302
		Pseudohomophone 1	English	4.049	2.42	57	1.674	0.100	0.554	0.498
			Spanish - English	10.299	2.40	11	4.291	<.001	<.001	<.001
				Chinese-English	17.049	2.40	11	7.104	<.001	<.001
	Spanish - English	Word	Chinese-English	2.288	2.40	11	0.953	0.342	0.931	1.000
			Pseudohomophone 1	1.592	2.40	11	0.663	0.509	0.986	1.000
		Pseudohomophone 1	Spanish - English	7.842	2.42	57	3.243	0.002	0.023	0.020

Post Hoc Comparisons - oLDT Condition \* Group

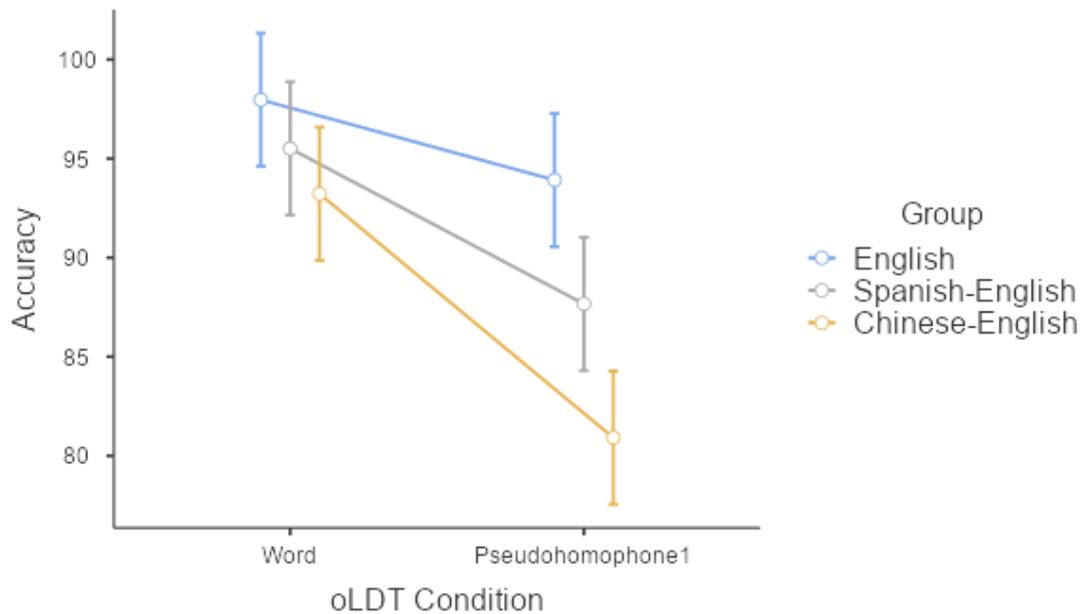
Comparison											
oLDT Condition	Group	oLDT Condition	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> ey	P <sub>holm</sub> m	
Pseudohomophone 1	Chinese-English	Pseudohomophone 1	Chinese-English	14.592	2.40	114.0	6.080	<.001	<.001	<.001	
			English	-0.696	2.40	114.0	-0.290	0.772	1.000	1.000	
		Spanish-English	Pseudohomophone 1	Spanish-English	5.554	2.40	114.0	2.314	0.022	0.197	0.157
				Chinese-English	12.304	2.42	57.0	5.088	<.001	<.001	<.001
	English	Pseudohomophone 1	Spanish-English	6.250	2.40	114.0	2.604	0.010	0.105	0.083	
			Chinese-English	13.000	2.40	114.0	5.417	<.001	<.001	<.001	
	Spanish-English	Pseudohomophone 1	Chinese-English	Chinese-English	6.750	2.40	114.0	2.812	0.006	0.063	0.052

Post Hoc Comparisons - Group

Comparison									
Group	Group	Mean Difference	SE	df	t	p	p <sub>Tukey</sub>	p <sub>Holm</sub>	
English	- Spanish-English	4.35	1.68	57.0	2.59	0.012	0.032	0.019	
	- Chinese-English	8.87	1.68	57.0	5.27	< .001	< .001	< .001	
Spanish-English	- Chinese-English	4.52	1.68	57.0	2.68	0.010	0.025	0.019	

### Estimated Marginal Means

#### oLDT Condition \* Group



### Repeated Measures ANOVA

#### Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
oLDT Condition	157642	1	157642	54.30	< .001	0.488
oLDT Condition * Group	39483	2	19741	6.80	0.002	0.193

#### Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Residual	165466	57	2903			

Note. Type 3 Sums of Squares

#### Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Group	276254	2	138127	4.34	0.018	0.132
Residual	1.81e+6	57	31814			

Note. Type 3 Sums of Squares

## Assumptions

#### Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
Word_RT	1.28	2	57	0.287
Pseudohomophone1_RT	3.23	2	57	0.047

## Post Hoc Tests

Post Hoc Comparisons - oLDT Condition \* Group

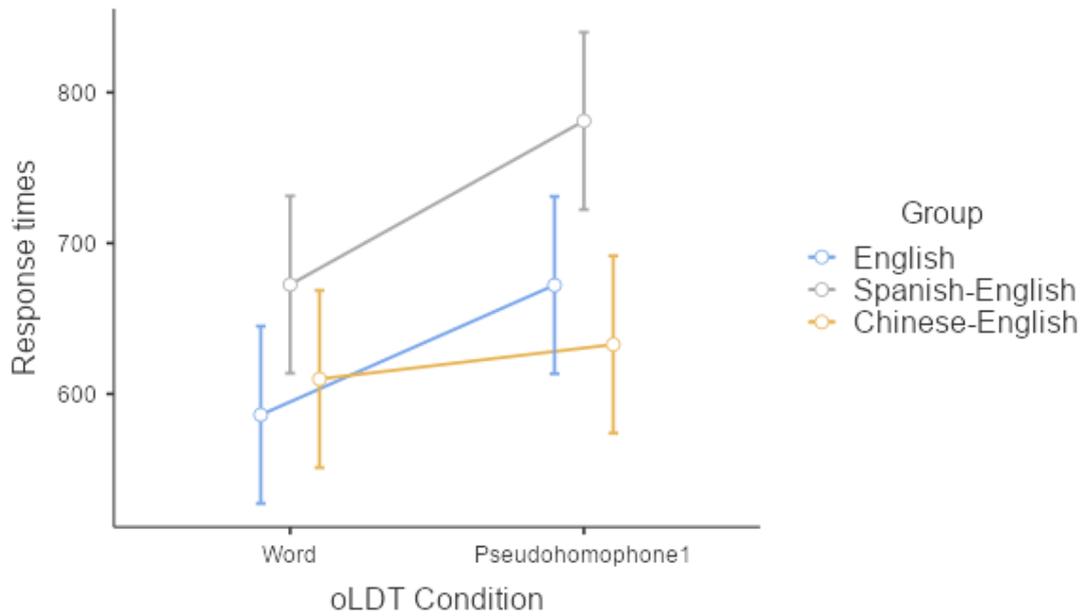
Comparison										
oLDT Condition	Group	oLDT Condition	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub>	P <sub>holm</sub>
Word	English	Word	Spanish	-	41	67	-	0.0	0.3	0.3
			- English	86.379	.7	.3	2.07324	42	14	78
		Word	Chinese-English	-	41	67	-	0.5	0.9	1.0
			- English	23.759	.7	.3	0.57025	70	93	00
		Pseudohomophone 1	English	-	17	57	-	<.001	<.001	<.001
			- English	86.046	.0	.0	5.05026	1	1	1
	Pseudohomophone 1	Spanish	-	41	67	-	<.001	<.001	<.001	
		- English	194.943	.7	.3	4.67896	1	1	1	
	Pseudohomophone 1	Chinese-English	-	41	67	-	0.2	0.8	1.0	
		- English	46.618	.7	.3	1.11891	67	72	00	
	Spanish - English	Word	Chinese-English	-	41	67	-	0.1	0.6	1.0
			- English	62.620	.7	.3	1.50299	38	64	00
Pseudohomophone 1		English	0.333	41	67	0.003	0.9	1.0	1.0	
		- English	108.564	.0	.0	6.37189	00	00	00	

Post Hoc Comparisons - oLDT Condition \* Group

Comparison										
oLDT Condition	Group	oLDT Condition	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub>	P <sub>holm</sub>
		Pseudohomophone 1	Chinese-English	39.761	.73	67	0.95433	0.343	0.930	1.000
	Chinese-English	Pseudohomophone 1	English	-62.287	.73	67	-1.49500	0.140	0.669	1.000
		Pseudohomophone 1	Spanish-English	-171.184	.73	67	-4.10871	<.001	0.001	0.001
		Pseudohomophone 1	Chinese-English	-22.859	.70	57	-1.34167	0.185	0.761	1.000
Pseudohomophone 1	English	Pseudohomophone 1	Spanish-English	-108.897	.73	67	-2.61371	0.011	0.108	0.110
		Pseudohomophone 1	Chinese-English	39.428	.73	67	0.94634	0.347	0.933	1.000
	Spanish-English	Pseudohomophone 1	Chinese-English	148.325	.73	67	3.56005	<.001	0.009	0.008

**Estimated Marginal Means**

**oLDT Condition \* Group**



## Repeated Measures ANOVA

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
pLDT Condition	47.6	1	47.6	0.351	0.556	0.006
pLDT Condition * Group	1284.8	2	642.4	4.727	0.013	0.142
Residual	7747.0	57	135.9			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Group	13286	2	6643	42.3	< .001	0.597
Residual	8951	57	157			

Note. Type 3 Sums of Squares

## Assumptions

Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
Pseudoword_accuracy	5.74	2	57	0.005
Pseudohomophone2_accuracy	3.99	2	57	0.024

## Post Hoc Tests

Post Hoc Comparisons - pLDT Condition \* Group

Comparison										
pLDT Condition	Group	pLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub>	p <sub>holm</sub>
Pseudoword	English	Pseudoword	Spanish - English	28.08	3.83	11	7.338	<.001	<.001	<.001
			Chinese-English	29.92	3.83	11	7.817	<.001	<.001	<.001
	Pseudohomophone 2	English	English	7.87	3.69	57	2.134	0.037	0.285	0.223
			Spanish - English	20.94	3.83	11	5.471	<.001	<.001	<.001
			Chinese-English	25.41	3.83	11	6.640	<.001	<.001	<.001

Post Hoc Comparisons - pLDT Condition \* Group

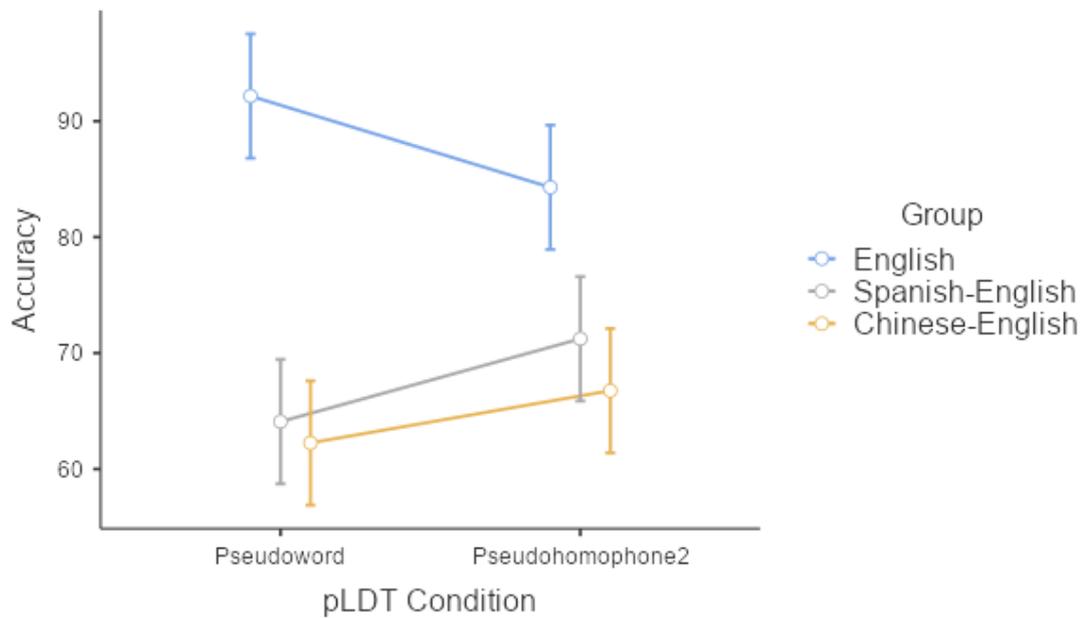
Comparison											
pLDT Condition	Group	pLDT Condition	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> ey	P <sub>holm</sub> m	
Spanish - English	-	Pseudoword	Chinese-English	1.83	3.83	11.34	0.479	0.633	0.997	0.973	
		Pseudohomophone 2	English	-20.21	3.83	11.34	-5.282	<.001	<.001	<.001	
		Pseudohomophone 2	Spanish - English	-7.14	3.69	57.0	-1.938	0.058	0.390	0.288	
		Pseudohomophone 2	Chinese-English	-2.67	3.83	11.34	-0.698	0.487	0.982	0.973	
Chinese-English	-	Pseudohomophone 2	English	-22.05	3.83	11.34	-5.761	<.001	<.001	<.001	
		Pseudohomophone 2	Spanish - English	-8.98	3.83	11.34	-2.346	0.021	0.185	0.145	
		Pseudohomophone 2	Chinese-English	-4.50	3.69	57.0	-1.222	0.227	0.824	0.907	
Pseudohomophone 2	English	-	Pseudohomophone 2	Spanish - English	13.07	3.83	11.34	3.415	<.001	0.011	0.007

Post Hoc Comparisons - pLDT Condition \* Group

Comparison										
pLDT Condition	Group	pLDT Condition	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub>	P <sub>holm</sub>
		Pseudohomophone2	Chinese-English	17.54	3.83	11	4.584	<.001	<.001	<.001
Spanish-English		Pseudohomophone2	Chinese-English	4.47	3.83	11	1.169	0.245	0.851	0.907

### Estimated Marginal Means

pLDT Condition \* Group



### Repeated Measures ANOVA

#### Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
pLDT Condition	127108	1	127108	5.68	0.021	0.091
pLDT Condition * Group	222146	2	111073	4.96	0.010	0.148
Residual	1.28e+6	57	22395			

Note. Type 3 Sums of Squares

#### Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Group	277529	2	138765	2.82	0.068	0.090
Residual	2.81e+6	57	49283			

Note. Type 3 Sums of Squares

## Assumptions

#### Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
Pseudoword_RT	3.38	2	57	0.041
Pseudohomophone2_RT	3.90	2	57	0.026

## Post Hoc Tests

Post Hoc Comparisons - pLDT Condition \* Group

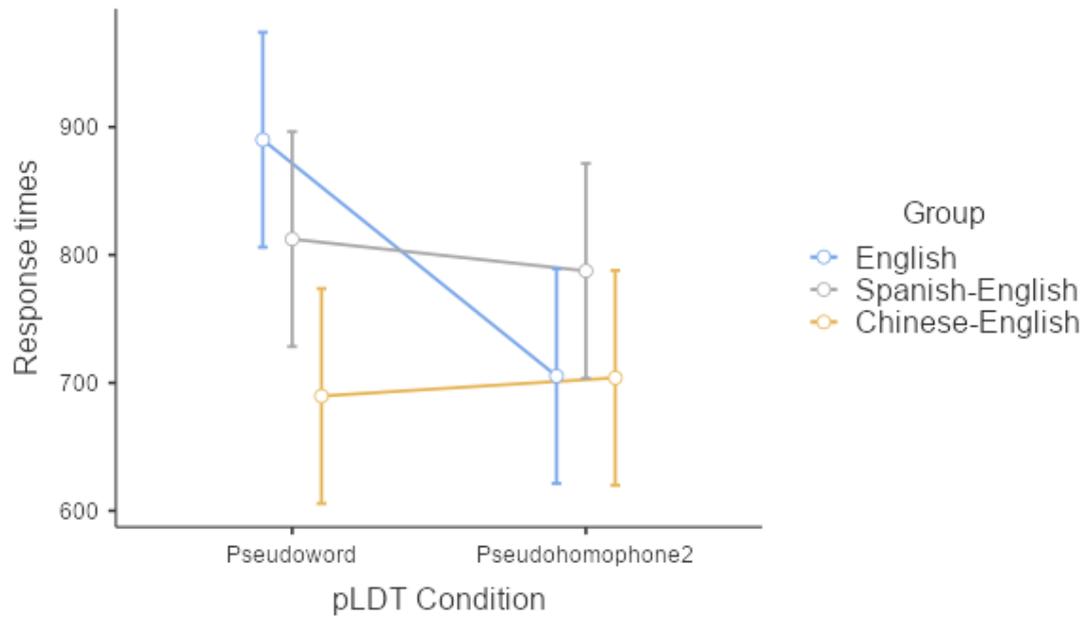
Comparison										
pLDT Condition	Group	pLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub>	p <sub>holm</sub>
Pseudoword	English	Pseudoword	Spanish - English	77.66	.59	99	1.2973	0.198	0.786	1.000
			Chinese-English	200.34	.59	99	3.3464	0.001	0.014	0.016
		Pseudohomophone 2	English	184.67	.47	57	3.9024	<.001	0.003	0.004
			Spanish - English	102.52	.59	99	1.7124	0.090	0.527	0.809
			Chinese-English	186.09	.59	99	3.1084	0.002	0.029	0.032
	Spanish - English	Pseudoword	Chinese-English	122.67	.59	99	2.0491	0.043	0.323	0.517
			Pseudohomophone 2	107.01	.59	99	1.7875	0.077	0.478	0.804
		Pseudohomophone 2	Spanish - English	24.85	.47	57	0.5251	0.602	0.995	1.000

Post Hoc Comparisons - pLDT Condition \* Group

Comparison											
pLDT Condition	Group	pLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub>	p <sub>holm</sub>	
Pseudohomophone 2	-	Pseudohomophone 2	Chinese-English	108.42	.59	99	1.8111	0.073	0.463	0.804	
			English	-15.66	.59	99	-0.2616	0.794	1.000	1.000	
	Chinese-English	-	Pseudohomophone 2	Spanish-English	-97.82	.59	99	-1.6340	0.105	0.578	0.843
				Chinese-English	-14.25	.47	57	-0.3011	0.764	1.000	1.000
	English	-	Pseudohomophone 2	Spanish-English	-82.16	.59	99	-1.3724	0.173	0.743	1.000
				Chinese-English	1.41	.59	99	0.0236	0.981	1.000	1.000
Spanish-English	-	Pseudohomophone 2	Chinese-English	83.57	.59	99	1.3960	0.166	0.729	1.000	

**Estimated Marginal Means**

pLDT Condition \* Group



## Repeated Measures ANOVA

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Pseudohomophone Condition	5392	1	5392.0	74.57	< .001	0.567
Pseudohomophone Condition * Group	241	2	120.6	1.67	0.198	0.055
Residual	4122	57	72.3			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Group	4774	2	2387	15.6	< .001	0.354
Residual	8712	57	153			

Note. Type 3 Sums of Squares

## Assumptions

Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
Pseudohomophone1_accuracy	9.71	2	57	< .001
Pseudohomophone2_accuracy	3.99	2	57	0.024

## Post Hoc Tests

Post Hoc Comparisons - Pseudohomophone Condition \* Group

Comparison										
Pseudohomophone Condition	Group	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub>	p <sub>holm</sub>
Pseudohomophone 1	English	Pseudohomophone 1	Spanish	6.25	3.36	10	1.86	0.065	0.431	0.262
			- English							
		Pseudohomophone 2	Chinese-English	13.00	3.36	10	3.87	< .001	0.003	0.002
			English	9.62	2.69	57	3.58	< .001	0.009	0.005
			Pseudohomophone 2	Spanish	22.69	3.36	10	6.76	< .001	< .001
Pseudohomophone 2	Chinese-English	27.16	3.36	10	8.10	< .001	< .001	< .001		

Post Hoc Comparisons - Pseudohomophone Condition \* Group

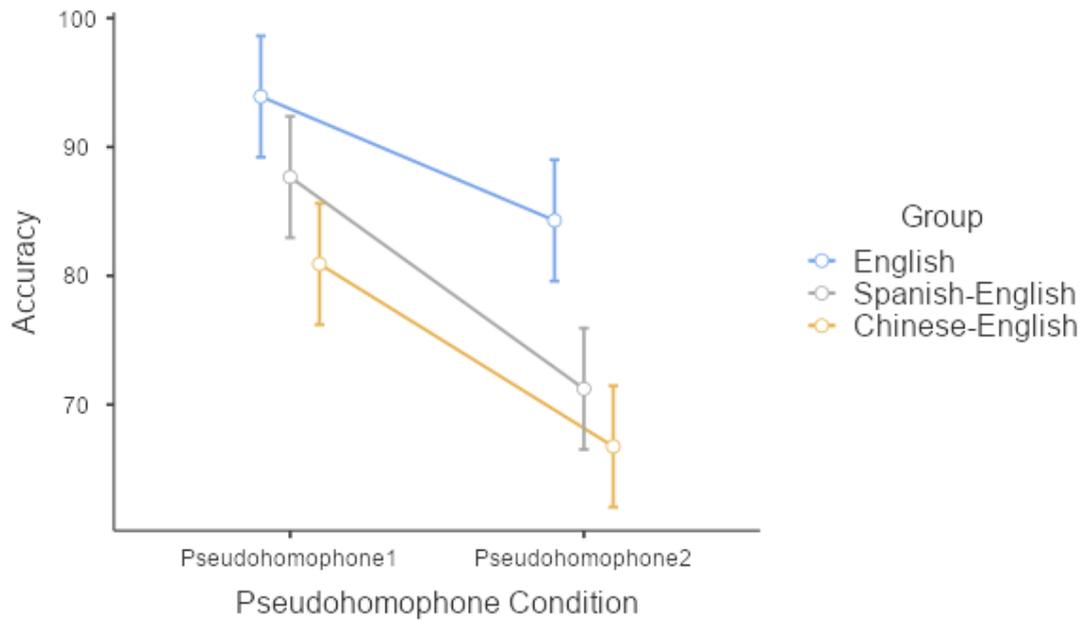
Comparison										
Pseudohomophone Condition	Group	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> ey	P <sub>holm</sub> m
Spanish - English	-	Pseudohomophone 1	Chinese-English	6.75	3.36	10	2.01	0.047	0.343	0.235
		Pseudohomophone 2	English	3.37	3.36	10	1.00	0.318	0.916	0.632
		Pseudohomophone 2	Spanish - English	16.44	2.69	57	6.11	<.001	<.001	<.001
		Pseudohomophone 2	Chinese-English	20.91	3.36	10	6.23	<.001	<.001	<.001
Chinese-English	-	Pseudohomophone 2	English	-3.38	3.36	10	-1.01	0.316	0.914	0.632
		Pseudohomophone 2	Spanish - English	9.69	3.36	10	2.89	0.005	0.052	0.028
		Pseudohomophone 2	Chinese-English	14.16	2.69	57	5.27	<.001	<.001	<.001
Pseudohomophone 2	English	Pseudohomophone 2	Spanish - English	13.07	3.36	10	3.90	<.001	0.002	0.002

Post Hoc Comparisons - Pseudohomophone Condition \* Group

Comparison										
Pseudohomophone Condition	Group	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	$p_{tuke}$	$p_{holm}$
-	-	Pseudohomophone 2	Chinese-English	17.54	3.36	104	5.23	<.001	<.001	<.001
Spanish-English	-	Pseudohomophone 2	Chinese-English	4.47	3.36	104	1.33	0.185	0.766	0.556

### Estimated Marginal Means

#### Pseudohomophone Condition \* Group



### Repeated Measures ANOVA

#### Within Subjects Effects

	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
Pseudohomophone Condition	40906	1	40906	3.98	0.051	0.065
Pseudohomophone Condition * Group	21178	2	10589	1.03	0.364	0.035
Residual	586404	57	10288			

Note. Type 3 Sums of Squares

#### Between Subjects Effects

	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
Group	306486	2	153243	3.83	0.027	0.119
Residual	2.28e+6	57	39959			

Note. Type 3 Sums of Squares

## Assumptions

#### Homogeneity of Variances Test (Levene's)

	<b>F</b>	<b>df1</b>	<b>df2</b>	<b>p</b>
Pseudohomophone1_RT	3.23	2	57	0.047
Pseudohomophone2_RT	3.90	2	57	0.026

## Post Hoc Tests

Post Hoc Comparisons - Pseudohomophone Condition \* Group

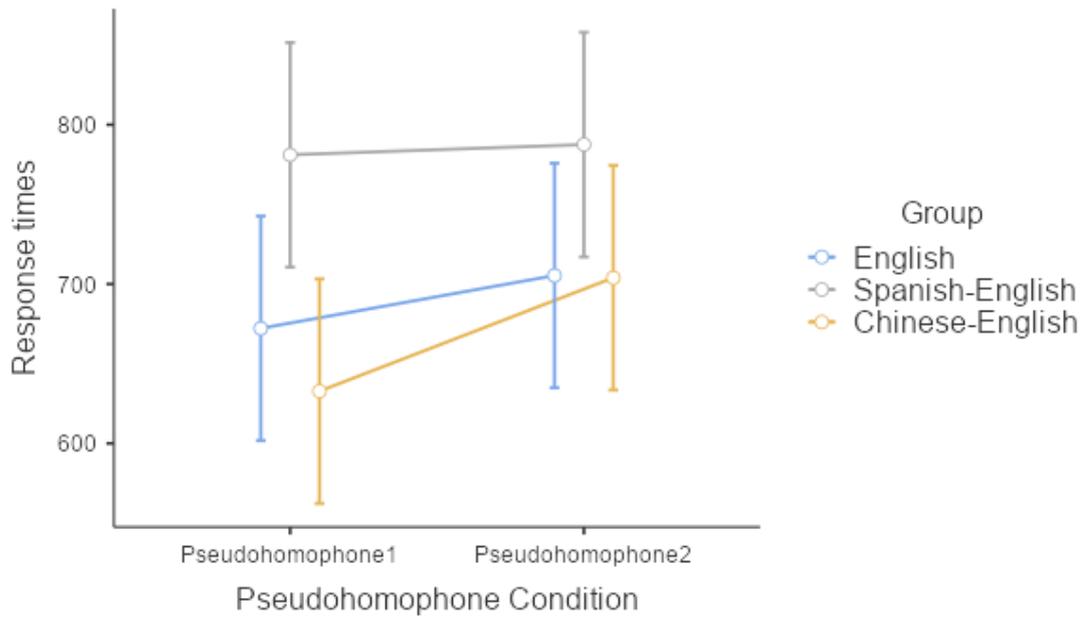
Comparison											
Pseudohomophone Condition	Group		Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub>	p <sub>holm</sub>
Pseudohomophone 1	English	-	Pseudohomophone 1	Spanish - English	-108.90	.150	84.5	-2.1726	0.033	0.261	0.366
		-	Pseudohomophone 1	Chinese-English	39.43	.150	84.5	0.7866	0.434	0.969	1.000
		-	Pseudohomophone 2	English	-33.17	.150	57.0	-1.0340	0.305	0.904	1.000
		-	Pseudohomophone 2	Spanish - English	-115.33	.150	84.5	-2.3008	0.024	0.205	0.310
		-	Pseudohomophone 2	Chinese-English	-31.76	.150	84.5	-0.6335	0.528	0.988	1.000
	Spanish - English	-	Pseudohomophone 1	Chinese-English	148.32	.150	84.5	2.9592	0.004	0.045	0.056
		-	Pseudohomophone 2	English	75.73	.150	84.5	1.5109	0.135	0.658	1.000
		-	Pseudohomophone 2	Spanish - English	-6.43	.150	57.0	-0.2004	0.842	1.000	1.000

Post Hoc Comparisons - Pseudohomophone Condition \* Group

Comparison										
Pseudohomophone Condition	Group	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub>	p <sub>holm</sub>
		Pseudohomophone 2	Chinese-English	77.14	.50	84.5	1.5390	0.128	0.640	1.000
	Chinese-English	Pseudohomophone 2	English	-72.59	.50	84.5	-1.4483	0.151	0.698	1.000
		Pseudohomophone 2	Spanish-English	-154.75	.50	84.5	-3.0875	0.003	0.032	0.041
		Pseudohomophone 2	Chinese-English	-71.18	.32	57.0	-2.2193	0.030	0.245	0.366
Pseudohomophone 2	English	Pseudohomophone 2	Spanish-English	-82.16	.50	84.5	-1.6391	0.105	0.575	0.992
		Pseudohomophone 2	Chinese-English	1.41	.50	84.5	0.0282	0.978	1.000	1.000
	Spanish-English	Pseudohomophone 2	Chinese-English	83.57	.50	84.5	1.6673	0.099	0.557	0.992

**Estimated Marginal Means**

**Pseudohomophone Condition \* Group**



## Repeated Measures ANOVA

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Task	9795	1	9794.7	575.6	< .001	0.910
Task * Group	1619	2	809.7	47.6	< .001	0.625
Residual	970	57	17.0			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Group	5811	2	2905.6	32.3	< .001	0.532
Residual	5122	57	89.9			

Note. Type 3 Sums of Squares

## Assumptions

Homogeneity of Variances Test (Levene's)

	<b>F</b>	<b>df1</b>	<b>df2</b>	<b>p</b>
oLDT_accuracy	6.80	2	57	0.002
pLDT_accuracy	4.38	2	57	0.017

## Post Hoc Tests

Post Hoc Comparisons - Task \* Group

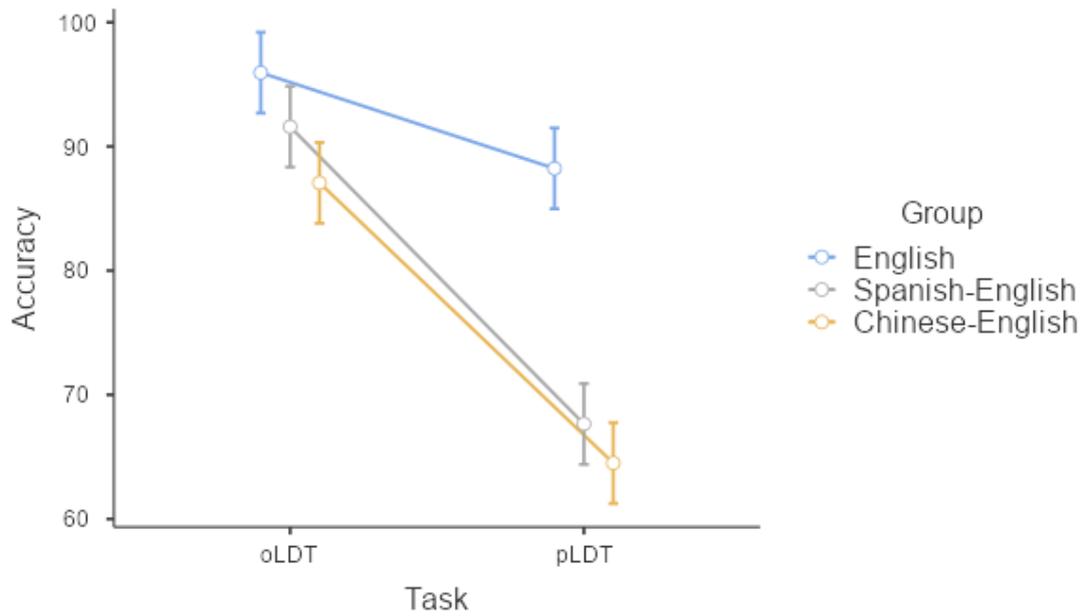
<b>Comparison</b>											
<b>Task</b>	<b>Group</b>		<b>Tas k</b>	<b>Group</b>	<b>Mean Differe nce</b>	<b>SE</b>	<b>df</b>	<b>t</b>	<b>p</b>	<b>P<sub>tukey</sub></b>	<b>P<sub>holm</sub></b>
oLDT	Englis h	-	oL DT	Spanis h- Englis h	4.35	2.3 1	77. 8	1.88 3	0.06 3	0.42 0	0.27 1
				Chines e- Englis h	8.87	2.3 1	77. 8	3.83 8	<.0 01	0.00 3	0.00 2
		-	pL DT	Englis h	7.71	1.3 0	57. 0	5.91 0	<.0 01	<.0 01	<.0 01
				Spanis h- Englis h	28.29	2.3 1	77. 8	12.2 36	<.0 01	<.0 01	<.0 01
	Spanis h- Englis h	-	pL DT	Chines e- Englis h	31.44	2.3 1	77. 8	13.6 00	<.0 01	<.0 01	<.0 01
				Chines e- Englis h	4.52	2.3 1	77. 8	1.95 5	0.05 4	0.37 8	0.27 1
		-	pL DT	Englis h	3.36	2.3 1	77. 8	1.45 1	0.15 1	0.69 6	0.45 2

Post Hoc Comparisons - Task \* Group

Comparison											
Task	Group	Task	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>	
		-	pL DT	Spanish-English	23.93	1.30	57.46	18.3	<.01	<.01	<.01
		-	pL DT	Chinese-English	27.09	2.31	77.8	11.7	<.01	<.01	<.01
	Chinese-English	-	pL DT	English	-1.16	2.31	77.8	0.504	0.616	0.996	0.616
		-	pL DT	Spanish-English	19.41	2.31	77.8	8.39	<.01	<.01	<.01
		-	pL DT	Chinese-English	22.57	1.30	57.99	17.2	<.01	<.01	<.01
pLD T	English	-	pL DT	Spanish-English	20.58	2.31	77.8	8.90	<.01	<.01	<.01
		-	pL DT	Chinese-English	23.73	2.31	77.8	10.2	<.01	<.01	<.01
	Spanish-English	-	pL DT	Chinese-English	3.15	2.31	77.8	1.36	0.176	0.748	0.452

**Estimated Marginal Means**

Task \* Group



## Repeated Measures ANOVA

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Task	335281	1	335281	37.24	< .001	0.395
Task * Group	59204	2	29602	3.29	0.045	0.103
Residual	513172	57	9003			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Group	217687	2	108844	3.45	0.039	0.108
Residual	1.80e+6	57	31546			

Note. Type 3 Sums of Squares

## Assumptions

Homogeneity of Variances Test (Levene's)

	<b>F</b>	<b>df1</b>	<b>df2</b>	<b>p</b>
oLDT_RT	2.30	2	57	0.109
pLDT_RT	1.57	2	57	0.218

## Post Hoc Tests

Post Hoc Comparisons - Task \* Group

<b>Comparison</b>											
<b>Task</b>	<b>Group</b>	<b>Task</b>	<b>Group</b>	<b>Mean Difference</b>	<b>SE</b>	<b>df</b>	<b>t</b>	<b>p</b>	<b>P<sub>tukey</sub></b>	<b>P<sub>holm</sub></b>	
oLDT	English	-	oLDT	Spanish-English	-97.64	45.0	87.1	-2.1684	0.033	0.263	0.197
			-	oLDT	Chinese-English	7.83	45.0	87.1	0.1740	0.862	1.000
		-	pLDT	English	-168.53	30.0	57.0	-5.6166	<.001	<.001	<.001
	Spanish-English	-	pLDT	Spanish-English	-170.77	45.0	87.1	-3.7927	<.001	0.004	0.003
			-	pLDT	Chinese-English	-67.65	45.0	87.1	-1.5025	0.137	0.664
		-	oLDT	Chinese-English	105.47	45.0	87.1	2.3424	0.021	0.189	0.193

Post Hoc Comparisons - Task \* Group

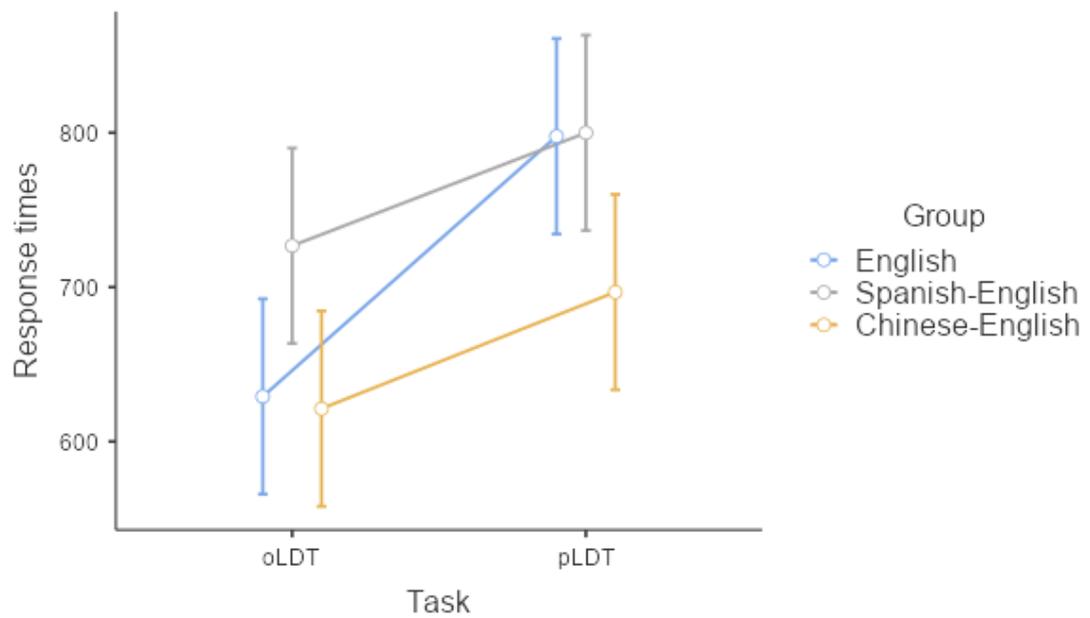
Comparison										
Task	Group	Task	Group	Mean Difference	SE	df	t	p	p <sub>Tukey</sub>	p <sub>Holm</sub>
		pL DT	English	-70.89	45.0	87.1	-1.5744	0.119	0.617	0.595
		pL DT	Spanish-English	-73.14	30.0	57.0	-2.4375	0.018	0.161	0.179
		pL DT	Chinese-English	29.99	45.0	87.1	0.6659	0.507	0.985	1.000
	Chinese-English	pL DT	English	-176.36	45.0	87.1	-3.9168	<.001	0.002	0.002
		pL DT	Spanish-English	-178.61	45.0	87.1	-3.9667	<.001	0.002	0.002
		pL DT	Chinese-English	-75.49	30.0	57.0	-2.5158	0.015	0.137	0.162
pLDT	English	pL DT	Spanish-English	-2.25	45.0	87.1	-0.0499	0.960	1.000	1.000
		pL DT	Chinese-English	100.87	45.0	87.1	2.2403	0.028	0.230	0.195
	Spanish-English	pL DT	Chinese-English	103.12	45.0	87.1	2.2902	0.024	0.209	0.195

Post Hoc Comparisons - Group

Comparison									
Group	Group	Mean Difference	SE	df	t	p	p <sub>Tukey</sub>	p <sub>Holm</sub>	
English	- Spanish-English	-49.9	39.7	57.0	-1.26	0.214	0.425	0.353	
	- Chinese-English	54.4	39.7	57.0	1.37	0.176	0.364	0.353	
Spanish-English	- Chinese-English	104.3	39.7	57.0	2.63	0.011	0.029	0.033	

### Estimated Marginal Means

Task \* Group



## Appendix K: Study 1 statistical outputs – P1 and N170 amplitudes

### Repeated Measures ANOVA

Within Subjects Effects

	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
Hemisphere	3.24067	1	3.24067	19.1427	< .001	0.251
Hemisphere * Group	0.25955	2	0.12978	0.7666	0.469	0.026
Residual	9.64954	57	0.16929			
oLDT Condition	0.07849	1	0.07849	0.1928	0.662	0.003
oLDT Condition * Group	3.04810	2	1.52405	3.7437	0.030	0.116
Residual	23.20478	57	0.40710			
Hemisphere * oLDT Condition	0.00630	1	0.00630	0.0519	0.821	0.001
Hemisphere * oLDT Condition * Group	0.17257	2	0.08628	0.7111	0.495	0.024
Residual	6.91650	57	0.12134			

Note. Type 3 Sums of Squares

Between Subjects Effects

	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
Group	0.600	2	0.300	0.565	0.572	0.019
Residual	30.269	57	0.531			

Note. Type 3 Sums of Squares

### Assumptions

Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
PAA_P1.LeftO\$Word	0.119	2	57	0.888
PAA_P1.RightO\$Word	0.280	2	57	0.756
PAA_P1.LeftO\$Pseudohomophone1	4.004	2	57	0.024
PAA_P1.RightO\$Pseudohomophone1	3.096	2	57	0.053

Post Hoc Tests

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison													
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm	
Left	Word	English	-	Left	Word	Spanish-English	0.10212	0.175	17.52	0.5826	0.561	1.000	1.000
						Chinese-English	-0.10102	0.175	-17.52	0.5826	0.561	1.000	1.000
						Pseudohomophone1	0.17208	0.163	105.8	1.0586	0.293	0.999	1.000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
-		Left		Pseudohomophone1	Spanish-English	-0.31716	0.1756	175	-1.8095	0.072	0.811	1.000
-		Left		Pseudohomophone1	Chinese-English	0.0693	0.1753	175	0.3959	0.969	1.000	1.000
-		Right		Word	English	0.20213	0.1213	110	1.6768	0.096	0.875	1.000
-		Right		Word	Spanish-English	0.31912	0.1752	175	1.8207	0.070	0.804	1.000
-		Right		Word	Chinese-English	0.14631	0.1751	175	0.8348	0.405	1.000	1.000
-		Right		Pseudohomophone1	English	0.24884	0.1740	97	1.4658	0.146	0.946	1.000
-		Right		Pseudohomophone1	Spanish-English	0.02933	0.1753	175	0.1673	0.867	1.000	1.000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison													
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>	
			-	Right	Pseudohomophone1	Chinese-English	0.31163	0.175	175	1.7780	0.077	0.828	1.00
		Spanish-English	-	Left	Word	Chinese-English	-0.20314	0.175	-1590	1.1590	0.248	0.991	1.00
			-	Left	Pseudohomophone1	English	0.06996	0.175	175	0.3992	0.690	1.000	1.00
			-	Left	Pseudohomophone1	Spanish-English	-0.41927	0.163	882	-2.5794	0.012	0.307	0.682
			-	Left	Pseudohomophone1	Chinese-English	-0.09519	0.175	175	-0.5431	0.588	1.000	1.00
			-	Right	Word	English	0.10001	0.175	175	0.5706	0.569	1.000	1.00
			-	Right	Word	Spanish-English	0.21700	0.121	110	1.8001	0.075	0.814	1.00

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
					Chinese-English	0.0441	0.175	175	0.2521	0.801	1.000	1.000
				Pseudohomophone1	English	0.1467	0.175	175	0.8371	0.404	1.000	1.000
				Pseudohomophone1	Spanish-English	-0.0727	0.170	97.4	-0.4288	0.669	1.000	1.000
				Pseudohomophone1	Chinese-English	0.2095	0.175	175	1.1953	0.234	0.989	1.000
		Chinese-English		Pseudohomophone1	English	0.2731	0.175	175	1.5582	0.121	0.921	1.000
				Pseudohomophone1	Spanish-English	0.2161	0.175	175	1.2331	0.219	0.986	1.000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
-		Left		Pseudohomophone1	Chinese-English	0.10795	0.163	88	0.6641	0.508	1.000	1.000
-		Right		Word	English	0.30316	0.175	175	1.7297	0.085	0.852	1.000
-		Right		Word	Spanish-English	0.42015	0.175	175	2.3971	0.018	0.414	0.984
-		Right		Word	Chinese-English	0.24734	0.121	110	2.0518	0.043	0.657	1.000
-		Right		Pseudohomophone1	English	0.34987	0.175	175	1.9962	0.047	0.695	1.000
-		Right		Pseudohomophone1	Spanish-English	0.13035	0.175	175	0.7437	0.458	1.000	1.000
-		Right		Pseudohomophone1	Chinese-English	0.41265	0.170	97	2.4307	0.017	0.396	0.963

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison													
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	phi	
	Pseudohomophone1	English	-	Left	Pseudohomophone1	Spanish-English	-0.48924	0.175	175	-2.7914	0.006	0.193	0.356
			-	Left	Pseudohomophone1	Chinese-English	-0.16516	0.175	175	-0.9423	0.347	0.999	1.000
			-	Right	Word	English	0.03005	0.170	97.4	0.1770	0.860	1.000	1.000
			-	Right	Word	Spanish-English	0.14704	0.175	175	0.8389	0.403	1.000	1.000
			-	Right	Word	Chinese-English	0.02577	0.175	175	0.1470	0.883	1.000	1.000
			-	Right	Pseudohomophone1	English	0.07676	0.121	110	0.6368	0.526	1.000	1.000
			-	Right	Pseudohomophone1	Spanish-English	0.14275	0.175	175	0.8145	0.416	1.000	1.000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
			-	Right	Pseudohomophone1	Chinese-English	0.13954	0.175	175.2	0.7962	0.427	1.000
		Spanish-English	-	Left	Pseudohomophone1	Chinese-English	0.32408	0.175	175.2	1.8491	0.066	0.008
			-	Right	Word	English	0.51929	0.175	175.2	2.9628	0.003	0.012
			-	Right	Word	Spanish-English	0.63628	0.170	97.4	3.7480	<.001	0.015
			-	Right	Word	Chinese-English	0.46347	0.175	175.2	2.6443	0.009	0.026
			-	Right	Pseudohomophone1	English	0.56600	0.175	175.2	3.2293	0.001	0.004
			-	Right	Pseudohomophone1	Spanish-English	0.34649	0.121	110.4	2.8743	0.005	0.016

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
					Chinese-English	0.62878	0.175	175	3.5875	<.001	0.021	0.028
					Chinese-English	0.19521	0.175	175	1.1138	0.267	0.994	1.000
					Spanish-English	0.31220	0.175	175	1.7812	0.077	0.826	1.000
					Chinese-English	0.13939	0.175	174	0.8211	0.414	1.000	1.000
					English-Pseudohomophones	0.24192	0.175	175	1.3803	0.169	0.966	1.000
					Spanish-Pseudohomophones	0.02240	0.175	175	0.1278	0.898	1.000	1.000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
				Pseudohomophone1	Chinese-English	0.30470	0.121	110	2.5276	0.013	0.334	0.008
Right	Word	English	Right	Word	Spanish-English	0.1699	0.175	172	0.6675	0.505	1.000	1.000
				Word	Chinese-English	0.05582	0.175	172	-0.3185	0.751	1.000	1.000
				Pseudohomophone1	English	0.04671	0.163	88	0.2874	0.774	1.000	1.000
				Pseudohomophone1	Spanish-English	0.17280	0.175	172	0.9859	0.326	0.998	1.000
				Pseudohomophone1	Chinese-English	0.0949	0.175	172	0.5347	0.593	1.000	1.000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
		Spanish-English	-	Right	Word	Chinese-English	-0.17281	0.175	17.52	-0.9860	0.326	0.998
			-	Right	Pseudohomophone1	English	-0.07028	0.175	17.52	-0.4010	0.689	1.000
			-	Right	Pseudohomophone1	Spanish-English	-0.28979	0.163	88.2	-1.7828	0.078	0.823
			-	Right	Pseudohomophone1	Chinese-English	-0.0750	0.175	17.52	-0.428	0.966	1.000
		Chinese-English	-	Right	Pseudohomophone1	English	0.10253	0.175	17.52	0.5850	0.559	1.000
			-	Right	Pseudohomophone1	Spanish-English	-0.1698	0.175	17.52	-0.9675	0.505	1.000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
		-	Right	Pseudohomophone1	Chinese-English	0.16531	0.163	88	1.0170	0.312	0.997	1.000
	Pseudohomophone1	English	Right	Pseudohomophone1	Spanish-English	-0.1951	0.175	175	-1.2524	0.212	0.984	1.000
		-	Right	Pseudohomophone1	Chinese-English	0.06278	0.175	175	0.3582	0.721	1.000	1.000
		Spanish-English	Right	Pseudohomophone1	Chinese-English	0.28230	0.175	175	1.6106	0.109	0.903	1.000

Post Hoc Comparisons - oLDT Condition \* Group

Comparison											
oLDT Condition	Group	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub>	p <sub>holm</sub>	
Word	English	-	Word	Spanish - English	0.1096	0.153	11.20	0.71536	0.476	0.980	1.000
				Chinese-English	-0.0784	0.153	11.20	-0.51208	0.610	0.996	1.000
		-	Pseudohomophone 1	English	0.1094	0.143	57.0	0.76678	0.446	0.972	1.000
				Spanish - English	-0.2450	0.153	11.20	-1.59966	0.112	0.601	1.000
		-	Pseudohomophone 1	Chinese-English	0.0582	0.153	11.20	0.38009	0.705	0.999	1.000
				Spanish - English	-0.1880	0.153	11.20	-1.22744	0.222	0.823	1.000
	Spanish - English	-	Word	Chinese-English	-0.1880	0.153	11.20	-1.22744	0.222	0.823	1.000
				English	-1.57e-4	0.153	11.20	-0.00103	0.999	1.000	1.000
		-	Pseudohomophone 1	English	-1.57e-4	0.153	11.20	-0.00103	0.999	1.000	1.000
				Spanish - English	-0.3545	0.143	57.0	-2.48497	0.016	0.146	0.239

Post Hoc Comparisons - oLDT Condition \* Group

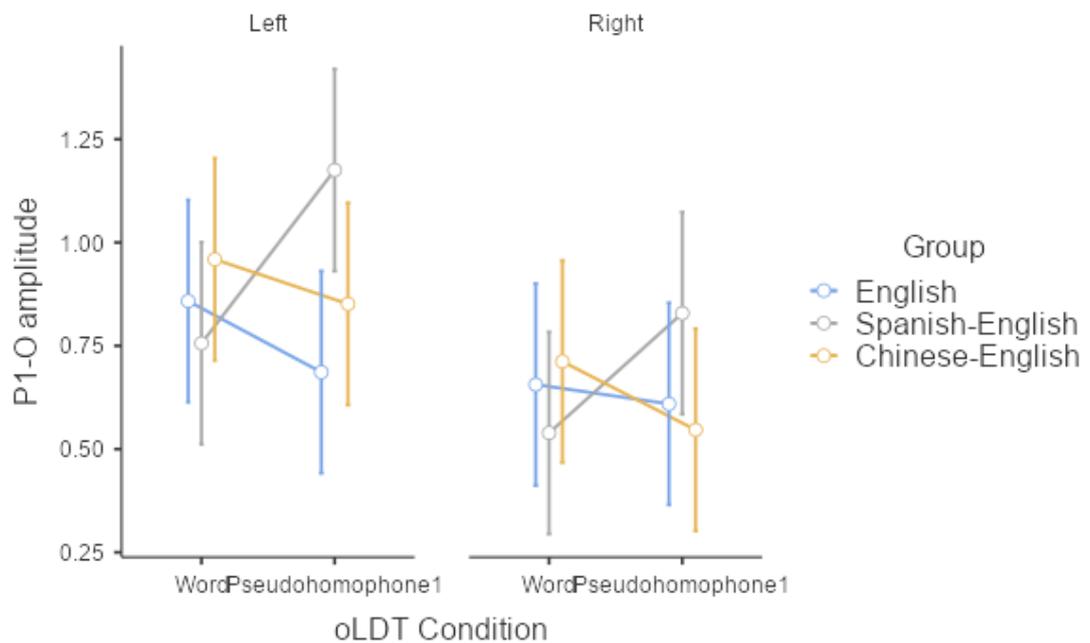
Comparison											
oLDT Condition	Group	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub> y	p <sub>hol</sub> m	
Pseudohomophone 1	Chinese-English	Pseudohomophone 1	Chinese-English	-0.0513	0.153	112.0	-0.33527	0.738	0.999	1.000	
			English	0.1878	0.153	112.0	1.22641	0.223	0.823	1.000	
		Spanish-English	Pseudohomophone 1	Spanish-English	-0.1666	0.153	112.0	-1.08758	0.279	0.885	1.000
				Chinese-English	0.1366	0.143	57.0	0.95767	0.342	0.929	1.000
	English	Pseudohomophone 1	Spanish-English	-0.3544	0.153	112.0	-2.31399	0.022	0.197	0.315	
			Chinese-English	-0.0512	0.153	112.0	-0.33424	0.739	0.999	1.000	
		Spanish-English	Pseudohomophone 1	Chinese-English	0.3032	0.153	112.0	1.97975	0.050	0.360	0.652

Post Hoc Comparisons - Hemisphere

Comparison		Mean Difference	SE	df	t	p	p <sub>Tukey</sub>	p <sub>Holm</sub>
Left	- Right	0.232	0.053	57	4.3	< .00	< .00	< .00
			1	0	8	1	1	1

Estimated Marginal Means

oLDT Condition \* Group \* Hemisphere



Repeated Measures ANOVA

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Hemisphere	0.00511	1	0.00511	0.0170	0.897	0.000
Hemisphere * Group	0.12086	2	0.06043	0.2009	0.819	0.007
Residual	17.14217	57	0.30074			

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
oLDT Condition	0.01382	1	0.01382	0.0590	0.809	0.001
oLDT Condition * Group	0.85473	2	0.42737	1.8238	0.171	0.060
Residual	13.35646	57	0.23432			
Hemisphere * oLDT Condition	0.02851	1	0.02851	0.1938	0.661	0.003
Hemisphere * oLDT Condition * Group	0.46195	2	0.23097	1.5697	0.217	0.052
Residual	8.38756	57	0.14715			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Group	2.54	2	1.268	1.99	0.146	0.065
Residual	36.33	57	0.637			

Note. Type 3 Sums of Squares

## Assumptions

Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
PAA_P1.LeftOP\$Word	0.951	2	57	0.392
PAA_P1.RightOP\$Word	1.425	2	57	0.249
PAA_P1.LeftOP\$Pseudohomophone1	2.331	2	57	0.106
PAA_P1.RightOP\$Pseudohomophone1	1.900	2	57	0.159

## Post Hoc Tests

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison															
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>			
Left	Word	English	-	Left	Word	Spanish-English	0.0598	0.182	17	0.323	0.742	1.000	1.000		
						Chinese-English	-0.1484	0.182	17	-0.8169	0.415	1.000	1.000		
		-	Left	Pseudohomophone1	English	Spanish-English	0.2001	0.138	10	1.4415	0.150	0.951	1.000		
						Chinese-English	-0.2207	0.182	17	-1.2149	0.226	0.987	1.000		
		-	Left	Pseudohomophone1	-	Right	Word	English	0.1249	0.150	15	0.8346	0.406	1.000	1.000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
					Spanish-English	-0.0130	0.182	17	-0.0716	0.943	1.000	1.000
					Chinese-English	-0.0628	0.182	17	-0.3461	0.371	0.999	1.000
				Pseudohomophones	English	0.1122	0.164	16	0.6859	0.504	1.000	1.000
				Pseudohomophones	Spanish-English	-0.0952	0.182	17	-0.5241	0.601	1.000	1.000
				Pseudohomophones	Chinese-English	-0.0788	0.182	17	-0.4343	0.326	0.998	1.000
		Spanish-English			Chinese-English	-0.0812	0.182	17	-0.4460	0.253	0.992	1.000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
-			Left	Pseudohomophone1	English	0.1403	0.182	17	0.77	0.44	1.00	1.00
-			Left	Pseudohomophone1	Spanish-English	-0.2804	0.138	18	-2.03	0.045	0.67	1.00
-			Left	Pseudohomophone1	Chinese-English	-0.1079	0.182	17	-0.59	0.55	1.00	1.00
-			Right	Word	English	0.0651	0.182	17	0.35	0.72	1.00	1.00
-			Right	Word	Spanish-English	-0.0728	0.150	15	-0.48	0.62	1.00	1.00
-			Right	Word	Chinese-English	-0.2225	0.182	17	-1.22	0.22	0.98	1.00
-			Right	Pseudohomophone1	English	0.0524	0.182	17	0.28	0.77	1.00	1.00

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
					Spanish-English	-0.1550	0.164	12	-0.9475	0.345	0.398	1.000
					Chinese-English	-0.2386	0.182	7	-1.3135	0.191	0.216	1.000
		Chinese-English			English	0.3484	0.182	7	1.9183	0.057	0.074	1.000
					Spanish-English	0.0723	0.182	7	0.3981	0.691	1.000	1.000
					Chinese-English	0.1003	0.138	8	0.7260	0.469	1.000	1.000
					English	0.2733	0.182	7	1.5045	0.134	0.093	1.000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
			-	Right	Word	Spanish-English	0.1354	0.182	17	0.7453	0.457	1.000
			-	Right	Word	Chinese-English	-0.0144	0.150	15	-0.0962	0.924	1.000
			-	Right	Pseudohomophone1	English	0.2606	0.182	17	1.4346	0.153	0.095
			-	Right	Pseudohomophone1	Spanish-English	0.0532	0.182	17	0.2927	0.770	1.000
			-	Right	Pseudohomophone1	Chinese-English	-0.0304	0.164	16	-0.1859	0.853	1.000
	Pseudohomophone1	English	-	Left	Pseudohomophone1	Spanish-English	-0.4207	0.182	17	-2.3164	0.022	0.0469

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
-			Left	Pseudohomophone1	Chinese-English	-0.2482	0.182	173	-1.3663	0.174	0.168	1.000
-			Right	Word	English	0.0752	0.164	172	0.4595	0.647	1.000	1.000
-			Right	Word	Spanish-English	0.2130	0.182	173	1.1730	0.242	0.099	1.000
-			Right	Word	Chinese-English	0.3628	0.182	173	1.9976	0.047	0.069	1.000
-			Right	Pseudohomophone1	English	0.0879	0.150	152	0.5871	0.558	1.000	1.000
-			Right	Pseudohomophone1	Spanish-English	0.2952	0.182	173	1.6256	0.106	0.089	1.000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
-			Right	Pseudohomophone1	Chinese-English	-0.3788	0.182	17	-2.0858	0.038	0.634	1.000
-		Spanish-English	Left	Pseudohomophone1	Chinese-English	0.1726	0.182	17	0.9501	0.343	0.998	1.000
-			Right	Word	English	0.3456	0.182	17	1.9026	0.059	0.756	1.000
-			Right	Word	Spanish-English	0.2077	0.164	16	1.2697	0.207	0.981	1.000
-			Right	Word	Chinese-English	0.0579	0.182	17	0.3188	0.750	1.000	1.000
-			Right	Pseudohomophone1	English	0.3329	0.182	17	1.8326	0.069	0.798	1.000
-			Right	Pseudohomophone1	Spanish-English	0.1255	0.150	15	0.8384	0.404	0.999	1.000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
					Chinese-English	0.0419	0.182	17	0.2306	0.818	1.000	1.000
		Chinese-English			English	0.1730	0.182	17	0.9525	0.342	0.998	1.000
					Spanish-English	0.0351	0.182	17	0.1933	0.847	1.000	1.000
					Chinese-English	0.1147	0.164	16	0.7010	0.485	1.000	1.000
					English	0.1603	0.182	17	0.8825	0.379	0.999	1.000
					Spanish-English	0.0471	0.182	17	0.2593	0.796	1.000	1.000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
					Chinese	-	0.	1	-	0.	0.	1.
					e-English	0.1307	0.150	15	0.8732	0.385	0.999	1.000
			Right	Pseudohomophone1	English							
					Spanish-English	-	0.	1	-	0.	1.	1.
					English	0.1379	0.182	18	0.7592	0.449	1.000	1.000
Right	Word	English	Right	Word	English							
					Chinese	-	0.	1	-	0.	0.	1.
					e-English	0.2877	0.182	18	1.5838	0.115	0.913	1.000
			Right	Word	English							
					English	-	0.	1	-	0.	1.	1.
					English	0.0127	0.138	13	0.0920	0.927	1.000	1.000
			Right	Pseudohomophone1	English							
					Spanish-English	-	0.	1	-	0.	0.	1.
					English	0.2201	0.182	18	1.2118	0.227	0.987	1.000
			Right	Pseudohomophone1	English							
					Chinese	-	0.	1	-	0.	0.	1.
					e-English	0.3037	0.182	18	1.6720	0.096	0.878	1.000
			Right	Pseudohomophone1	English							

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

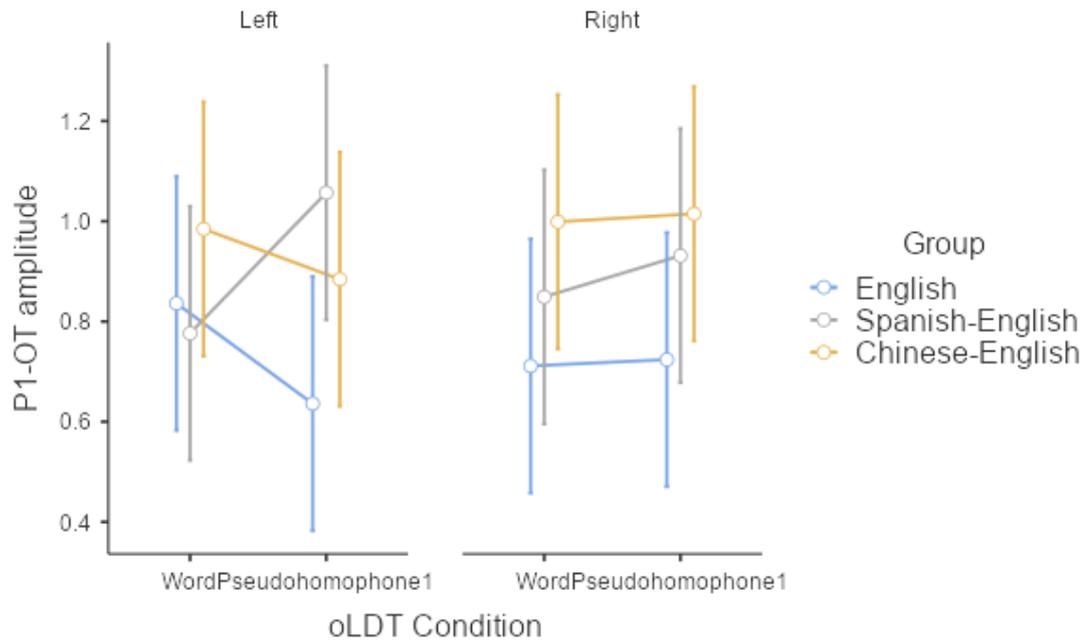
Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
		Spanish-English	Right	Word	Chinese-English	-0.1498	0.182	17	-0.8246	0.411	1.000	1.000
			Right	Pseudohomophone1	English	0.1252	0.182	17	0.6892	0.492	1.000	1.000
			Right	Pseudohomophone1	Spanish-English	-0.0822	0.138	18	-0.5952	0.553	1.000	1.000
			Right	Pseudohomophone1	Chinese-English	-0.1658	0.182	17	-0.9128	0.363	0.999	1.000
		Chinese-English	Right	Pseudohomophone1	English	0.2750	0.182	17	1.5138	0.132	0.935	1.000
			Right	Pseudohomophone1	Spanish-English	0.0676	0.182	17	0.3720	0.710	1.000	1.000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
					Chinese-English	-0.0160	0.138	108	-0.1160	0.908	1.000	1.000
	Pseudohomophone1	English			Spanish-English	0.2074	0.182	73	1.1418	0.255	0.992	1.000
					Chinese-English	0.2910	0.182	73	1.6020	0.111	0.906	1.000
		Spanish-English			Chinese-English	0.0836	0.182	73	0.4602	0.646	1.000	1.000

**Estimated Marginal Means**

**oLDT Condition \* Group \* Hemisphere**



## Repeated Measures ANOVA

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Hemisphere	0.1049	1	0.10494	1.125	0.293	0.019
Hemisphere * Group	0.0775	2	0.03877	0.416	0.662	0.014
Residual	5.3169	57	0.09328			
oLDT Condition	0.1647	1	0.16474	1.476	0.229	0.025
oLDT Condition * Group	0.2333	2	0.11664	1.045	0.358	0.035
Residual	6.3634	57	0.11164			
Hemisphere * oLDT Condition	0.1096	1	0.10964	1.564	0.216	0.027
Hemisphere * oLDT Condition * Group	0.0161	2	0.00806	0.115	0.892	0.004
Residual	3.9947	57	0.07008			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Group	0.925	2	0.462	1.89	0.161	0.062
Residual	13.974	57	0.245			

Note. Type 3 Sums of Squares

## Assumptions

Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
NAA_P1.LeftFC\$Word	1.65	2	57	0.201
NAA_P1.RightFC\$Word	1.49	2	57	0.235
NAA_P1.LeftFC\$Pseudohomophone1	1.54	2	57	0.223
NAA_P1.RightFC\$Pseudohomophone1	1.88	2	57	0.163

## Post Hoc Tests

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison													
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	P <sub>tukey</sub>	P <sub>holm</sub>	
Left	Word	English	-	Left	Word	Spanish	0.0	0.	1	0.	0.	1.	1.
						English	205	11	7	17	85	00	00
						English	0	40	9	98	8	0	0

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
-			Left	Word	Chinese-English	0.0760	0.1140	17	0.665	0.506	1.000	1.000
-			Left	Pseudohomophone1	English	-0.0824	0.0953	18	-0.865	0.389	0.999	1.000
-			Left	Pseudohomophone1	Spanish-English	0.0717	0.1140	17	0.629	0.530	1.000	1.000
-			Left	Pseudohomophone1	Chinese-English	0.1361	0.1140	17	1.194	0.234	0.989	1.000
-			Right	Word	English	0.0167	0.0934	18	0.185	0.853	1.000	1.000
-			Right	Word	Spanish-English	0.0478	0.1140	17	0.419	0.675	1.000	1.000
-			Right	Word	Chinese-English	0.1248	0.1140	17	1.095	0.275	0.995	1.000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
-			Right	Pseudohomophone1	English	0.03107	0.1012	13	0.3069	0.759	1.000	1.000
-			Right	Pseudohomophone1	Spanish-English	0.12217	0.1140	17	1.0713	0.285	0.996	1.000
-			Right	Pseudohomophone1	Chinese-English	0.22593	0.1140	17	1.9812	0.049	0.705	1.000
-		Spanish-English	Left	Word	Chinese-English	0.05550	0.1140	17	0.4867	0.627	1.000	1.000
-			Left	Pseudohomophone1	English	0.10297	0.1140	17	0.9030	0.368	0.999	1.000
-			Left	Pseudohomophone1	Spanish-English	0.05125	0.0953	08	0.5376	0.592	1.000	1.000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
-			Left	Pseudohomophone1	Chinese-English	0.1568	0.1140	17	1.0144	0.312	0.997	1.000
-			Right	Word	English	-0.0377	0.1140	17	-0.331	0.974	1.000	1.000
-			Right	Word	Spanish-English	-0.06834	0.0904	12	-0.7562	0.451	1.000	1.000
-			Right	Word	Chinese-English	0.0433	0.1140	17	0.379	0.7136	0.999	1.000
-			Right	Pseudohomophone1	English	0.1056	0.1140	17	0.926	0.366	1.000	1.000
-			Right	Pseudohomophone1	Spanish-English	0.0167	0.1237	13	0.1344	0.897	0.997	1.000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
					Chinese-English	0.20542	0.1140	17	1.8014	0.073	0.815	1.000
		Chinese-English	Right	Pseudohomophone1	Chinese-English	-0.15847	0.1140	17	-1.3897	0.166	0.964	1.000
					Spanish-English	-0.00425	0.1140	17	-0.373	0.970	1.000	1.000
			Left	Pseudohomophone1	Spanish-English	0.06018	0.0953	18	0.6314	0.529	1.000	1.000
					English	-0.05927	0.1140	17	-0.5198	0.604	1.000	1.000
			Right	Word	English	-0.12384	0.1140	17	-1.0860	0.279	0.995	1.000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
			-	Right	Word	Chinese-English	0.04883	0.0904	112	0.5403	0.590	1.000
			-	Right	Pseudohomophone1	English	-0.04493	0.1140	117	-0.3940	0.694	1.000
			-	Right	Pseudohomophone1	Spanish-English	0.04617	0.1140	117	0.4049	0.686	1.000
			-	Right	Pseudohomophone1	Chinese-English	0.14992	0.1012	113	1.4812	0.141	0.943
	Pseudohomophone1	English	-	Left	Pseudohomophone1	Spanish-English	0.15422	0.1140	117	1.3524	0.178	0.971
			-	Left	Pseudohomophone1	Chinese-English	0.21865	0.1140	117	1.9174	0.057	0.747
			-	Right	Word	English	0.09920	0.1012	113	0.9800	0.329	0.998

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
			-	Right	Word	Spanish-English	0.0346	0.1140	17	0.3027	0.7620	1.0000
			-	Right	Word	Chinese-English	0.0730	0.1140	17	0.6379	0.5271	0.8000
			-	Right	Pseudohomophone1	English	0.1135	0.0904	12	1.2563	0.2122	0.9800
			-	Right	Pseudohomophone1	Spanish-English	0.0464	0.1140	17	0.4045	0.6904	0.8100
			-	Right	Pseudohomophone1	Chinese-English	0.0840	0.1140	17	0.7344	0.4708	0.2300
		Spanish-English	-	Left	Pseudohomophone1	Chinese-English	0.0644	0.1140	17	0.5650	0.5703	1.0000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
-			Right	Word	English	-0.05502	0.1140	17	-0.4825	0.630	1.000	1.000
-			Right	Word	Spanish-English	-0.11959	0.1212	13	-1.1814	0.240	0.989	1.000
-			Right	Word	Chinese-English	0.05308	0.1140	17	0.4655	0.642	1.000	1.000
-			Right	Pseudohomophone1	English	-0.04068	0.1140	17	-0.3568	0.722	1.000	1.000
-			Right	Pseudohomophone1	Spanish-English	0.05042	0.0924	12	0.5579	0.578	1.000	1.000
-			Right	Pseudohomophone1	Chinese-English	0.15418	0.1140	17	1.3520	0.178	0.971	1.000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
		Chinese-English	Right	Word	English	-0.1945	0.1140	17	-1.0475	0.296	0.996	1.000
			Right	Word	Spanish-English	-0.1842	0.1140	17	-1.6137	0.108	0.902	1.000
			Right	Word	Chinese-English	0.01135	0.1012	13	0.1121	0.911	1.000	1.000
			Right	Pseudohomophone1	English	-0.0512	0.1140	17	-0.4518	0.358	0.999	1.000
			Right	Pseudohomophone1	Spanish-English	-0.1401	0.1140	17	-1.229	0.292	0.900	1.000
			Right	Pseudohomophone1	Chinese-English	0.08974	0.0904	14	0.9930	0.323	0.998	1.000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison															
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>			
Right	Word	English	-	Right	Word	Spanish-English	-0.06457	0.1140	17	-0.5662	0.572	1.000	1.000		
						Chinese-English	0.0810	0.1140	17	0.9480	0.344	0.998	1.000		
			-	Right	Pseudohomophone1	English	0.01434	0.0953	10	0.1504	0.881	1.000	1.000		
						Spanish-English	0.0544	0.1140	17	0.9246	0.359	0.999	1.000		
		-	Right	Spanish-English	-	Right	Pseudohomophone1	Chinese-English	0.0920	0.1140	17	1.8345	0.068	0.079	1.000
								Chinese-English	0.17267	0.1140	17	1.5142	0.132	0.093	1.000
					-	Right	Word	Chinese-English	0.17267	0.1140	17	1.5142	0.132	0.093	1.000
								Chinese-English	0.17267	0.1140	17	1.5142	0.132	0.093	1.000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

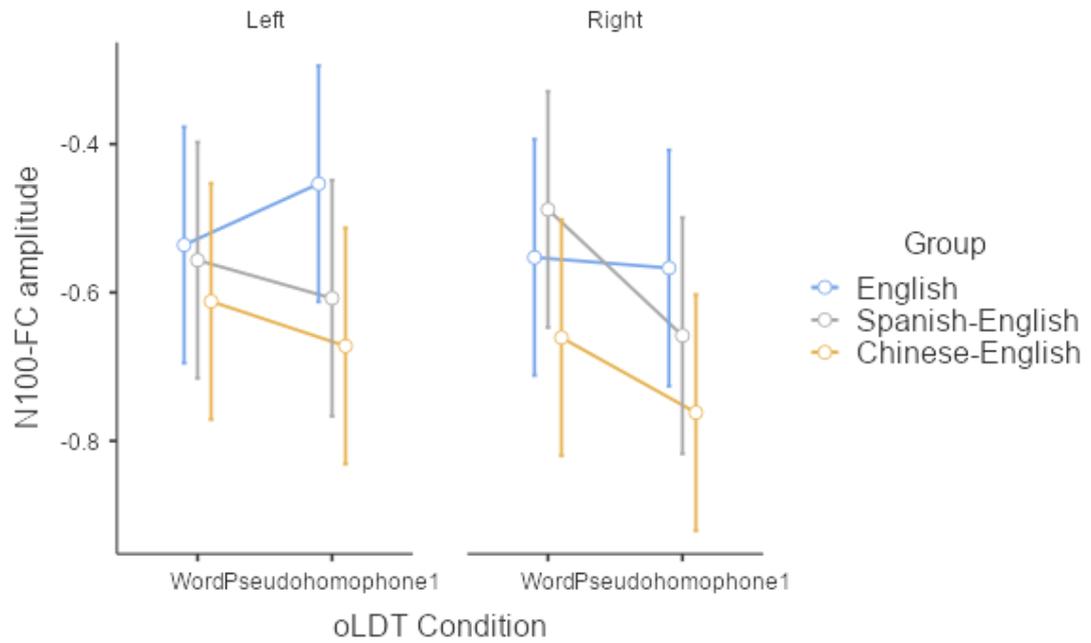
Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
		-	Right	Pseudohomophone1	English	0.07890	0.1140	17	0.6919	0.490	1.000	1.000
		-	Right	Pseudohomophone1	Spanish-English	0.17001	0.0953	18	1.7835	0.077	0.823	1.000
		-	Right	Pseudohomophone1	Chinese-English	0.27376	0.1140	19	2.4007	0.017	0.411	1.000
		Chinese-English	Right	Pseudohomophone1	English	-0.09377	0.1140	19	-0.8223	0.412	1.000	1.000
		-	Right	Pseudohomophone1	Spanish-English	-0.00266	0.1140	19	-0.0233	0.981	1.000	1.000
		-	Right	Pseudohomophone1	Chinese-English	0.10109	0.0953	18	1.0605	0.291	0.996	1.000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tu</sub> key	p <sub>ho</sub> lm
	Pseudohomophone1	English	-	Right	Pseudohomophone1	Spanish-English	0.09110	0.1140	179	0.79	0.425	1.000
			-	Right	Pseudohomophone1	Chinese-English	0.19486	0.1140	170	1.70	0.089	0.862
		Spanish-English	-	Right	Pseudohomophone1	Chinese-English	0.10375	0.1140	90	0.90	0.364	0.999

### Estimated Marginal Means

oLDT Condition \* Group \* Hemisphere



## Repeated Measures ANOVA

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Hemisphere	1.91353	1	1.91353	1.1839	0.281	0.020
Hemisphere * Group	6.69624	2	3.34812	2.0715	0.135	0.068
Residual	92.12634	57	1.61625			
oLDT Condition	5.49813	1	5.49813	9.1922	0.004	0.139
oLDT Condition * Group	0.02134	2	0.01067	0.0178	0.982	0.001
Residual	34.09327	57	0.59813			
Hemisphere * oLDT Condition	3.06251	1	3.06251	9.7566	0.003	0.146
Hemisphere * oLDT Condition * Group	0.00852	2	0.00426	0.0136	0.987	0.000
Residual	17.89175	57	0.31389			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Group	4.01	2	2.01	0.642	0.530	0.022
Residual	178.05	57	3.12			

Note. Type 3 Sums of Squares

## Assumptions

Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
NAA_N170.LeftOP\$Word	4.88	2	57	0.011
NAA_N170.RightOP\$Word	3.22	2	57	0.047
NAA_N170.LeftOP\$Pseudohomophone1	1.27	2	57	0.290
NAA_N170.RightOP\$Pseudohomophone1	1.83	2	57	0.170

## Post Hoc Tests

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	P <sub>tukey</sub>	P <sub>holm</sub>
Left	Word	English	-	Left	Word	Spanish-English	0.3697	0.3760	14.24	0.0007	0.998	1.000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
-			Left	Word	Chinese-English	-0.211	0.376	140	-0.562	0.575	1.000	1.000
-			Left	Pseudohomophone1	English	0.5284	0.214	109	2.475	0.015	0.367	0.927
-			Left	Pseudohomophone1	Spanish-English	0.8865	0.376	140	2.358	0.020	0.441	1.000
-			Left	Pseudohomophone1	Chinese-English	0.3296	0.376	140	0.877	0.382	0.999	1.000
-			Right	Word	English	-0.1226	0.311	783	-0.395	0.694	1.000	1.000
-			Right	Word	Spanish-English	0.1326	0.376	140	0.353	0.725	1.000	1.000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
					Chinese-English	0.2906	0.376	1420	0.773	0.441	1.000	1.000
					English	-0.0753	0.333	941	-0.226	0.821	1.000	1.000
					Spanish-English	0.1978	0.376	1406	0.526	0.600	1.000	1.000
					Chinese-English	0.4085	0.376	1407	1.087	0.279	0.005	1.000
		Spanish-English			Chinese-English	-0.5809	0.376	1405	-1.545	0.124	0.092	1.000
					English	0.1587	0.376	1406	0.422	0.674	1.000	1.000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
-			Left	Pseudohomophone1	Spanish-English	0.5167	0.214	1039	2.420	0.017	0.403	1.000
-			Left	Pseudohomophone1	Chinese-English	-0.0402	0.0376	1420	-0.107	0.915	1.000	1.000
-			Right	Word	English	-0.4923	0.0376	1420	-1.310	0.192	0.977	1.000
-			Right	Word	Spanish-English	-0.2371	0.0311	783	-0.763	0.448	1.000	1.000
-			Right	Word	Chinese-English	-0.0791	0.0376	1420	-0.211	0.834	1.000	1.000
-			Right	Pseudohomophone1	English	-0.4451	0.0376	1420	-1.184	0.238	0.989	1.000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
-			Right	Pseudohomophone1	Spanish-English	-0.1719	0.333	94	-0.517	0.607	1.000	1.000
-			Right	Pseudohomophone1	Chinese-English	0.0388	0.376	14	0.103	0.918	1.000	1.000
-		Chinese-English	Left	Pseudohomophone1	English	0.7396	0.376	14	1.968	0.051	0.074	1.000
-			Left	Pseudohomophone1	Spanish-English	1.0976	0.376	14	2.920	0.004	0.0145	0.0269
-			Left	Pseudohomophone1	Chinese-English	0.5407	0.214	10	2.532	0.013	0.032	0.088
-			Right	Word	English	0.0886	0.376	14	0.236	0.814	1.000	1.000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
			-	Right	Word	Spanish-English	0.3437	0.376	142.914	0.002	0.999	1.000
			-	Right	Word	Chinese-English	0.5017	0.311	78.3615	0.011	0.898	1.000
			-	Right	Pseudohomophone1	English	0.1358	0.376	142.361	0.008	1.000	1.000
			-	Right	Pseudohomophone1	Spanish-English	0.4089	0.376	142.088	0.008	0.995	1.000
			-	Right	Pseudohomophone1	Chinese-English	0.6197	0.333	94.1862	0.006	0.779	1.000
	Pseudohomophone1	English	-	Left	Pseudohomophone1	Spanish-English	0.3580	0.376	142.952	0.002	0.998	1.000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
-			Left	Pseudohomophone1	Chinese-English	-0.1989	0.376	140	-0.529	0.598	1.000	1.000
-			Right	Word	English	0.6510	0.333	94	1.957	0.053	0.721	1.000
-			Right	Word	Spanish-English	0.3959	0.376	140	1.053	0.294	0.996	1.000
-			Right	Word	Chinese-English	0.2378	0.376	140	0.633	0.528	1.000	1.000
-			Right	Pseudohomophone1	English	0.6038	0.311	78	1.944	0.056	0.728	1.000
-			Right	Pseudohomophone1	Spanish-English	0.3307	0.376	140	0.880	0.381	0.999	1.000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
-			Right	Pseudohomophone1	Chinese-English	-0.199	0.376	140	-0.319	0.750	1.000	1.000
-		Spanish-English	Left	Pseudohomophone1	Chinese-English	-0.5569	0.376	140	-1.482	0.141	0.943	1.000
-			Right	Word	English	-1.0091	0.376	140	-2.684	0.008	0.025	0.058
-			Right	Word	Spanish-English	-0.7539	0.333	94.1	-2.266	0.026	0.0508	1.000
-			Right	Word	Chinese-English	-0.959	0.376	140	-1.585	0.115	0.912	1.000
-			Right	Pseudohomophone1	English	-0.9618	0.376	140	-2.559	0.012	0.033	0.0739

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
-			Right	Pseudohomophone1	Spanish-English	-0.6887	0.311	78	-2.217	0.030	0.543	1.000
-			Right	Pseudohomophone1	Chinese-English	-0.4780	0.376	14	-1.272	0.206	0.981	1.000
-		Chinese-English	Right	Word	English	-0.4522	0.376	14	-1.203	0.231	0.988	1.000
-			Right	Word	Spanish-English	-0.1970	0.376	14	-0.524	0.601	1.000	1.000
-			Right	Word	Chinese-English	-0.0390	0.333	94	-0.117	0.907	1.000	1.000
-			Right	Pseudohomophone1	English	-0.049	0.376	14	-1.077	0.283	0.995	1.000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
			-	Right	Pseudohomophone1	Spanish-English	-0.1318	0.376	142.0	-0.351	0.726	1.000
			-	Right	Pseudohomophone1	Chinese-English	0.0789	0.311	78.3	0.254	0.800	1.000
Right	Word	English	-	Right	Word	Spanish-English	0.2552	0.376	142.0	0.679	0.498	1.000
			-	Right	Word	Chinese-English	0.4132	0.376	142.0	1.099	0.274	0.994
			-	Right	Pseudohomophone1	English	0.0472	0.214	103.9	0.221	0.825	1.000
			-	Right	Pseudohomophone1	Spanish-English	0.3204	0.376	142.0	0.852	0.395	0.999

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

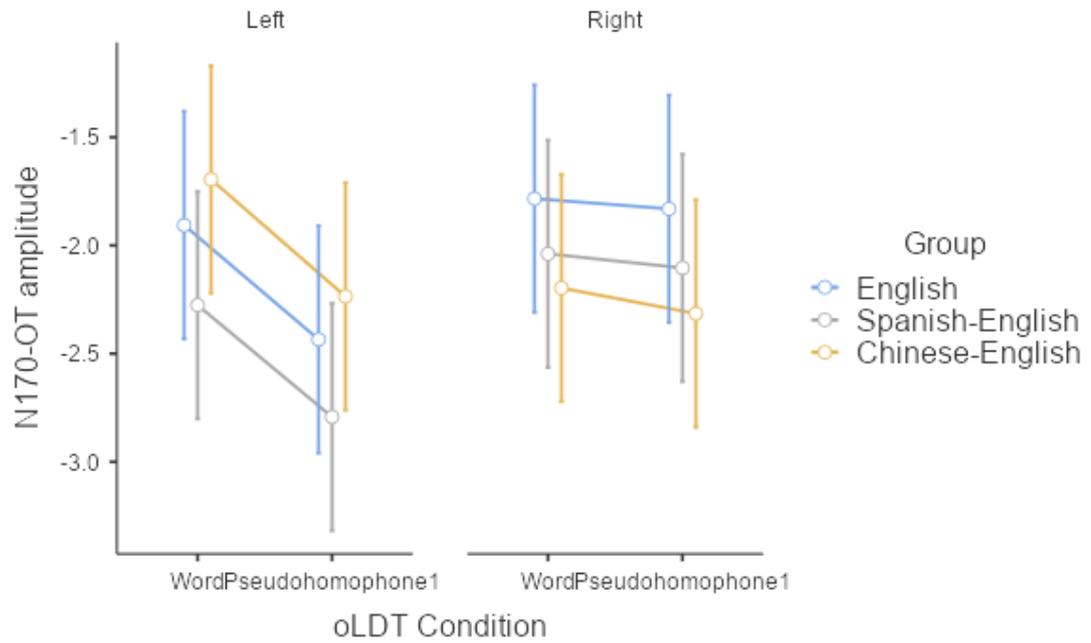
Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
					Chinese-English							
		-	Right	Pseudohomophone1	Chinese-English	0.5311	0.376	1420	1.413	0.160	0.99	1.00
					Chinese-English							
					Spanish-English							
		-	Right	Word	Chinese-English	0.1580	0.376	1420	0.420	0.675	1.000	1.000
					Chinese-English							
					Spanish-English							
		-	Right	Pseudohomophone1	English	-0.2079	0.376	1420	-0.553	0.581	1.000	1.000
					Spanish-English							
					Spanish-English							
		-	Right	Pseudohomophone1	Spanish-English	0.0652	0.214	1039	0.305	0.761	1.000	1.000
					Chinese-English							
					Chinese-English							
		-	Right	Pseudohomophone1	Chinese-English	0.2759	0.376	1420	0.734	0.464	1.000	1.000
					Chinese-English							
					Chinese-English							
		-	Right	Pseudohomophone1	English	-0.3659	0.376	1420	-0.973	0.332	0.998	1.000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
			-	Right	Pseudohomophone1	Spanish-English	-0.0928	0.376	142.0	-0.247	0.805	1.000
			-	Right	Pseudohomophone1	Chinese-English	0.1179	0.214	103.552	0.552	0.582	1.000
	Pseudohomophone1	English	-	Right	Pseudohomophone1	Spanish-English	0.2731	0.376	142.7	0.729	0.469	1.000
	Pseudohomophone1		-	Right	Pseudohomophone1	Chinese-English	0.4838	0.376	142.287	1.287	0.200	0.980
	Pseudohomophone1	Spanish-English	-	Right	Pseudohomophone1	Chinese-English	0.2107	0.376	142.561	0.561	0.576	1.000

**Estimated Marginal Means**

**oLDT Condition \* Group \* Hemisphere**



## Repeated Measures ANOVA

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Hemisphere	0.4602	1	0.4602	3.553	0.065	0.059
Hemisphere * Group	0.3802	2	0.1901	1.468	0.239	0.049
Residual	7.3825	57	0.1295			
pLDT Condition	0.0541	1	0.0541	0.342	0.561	0.006
pLDT Condition * Group	0.3976	2	0.1988	1.258	0.292	0.042
Residual	9.0103	57	0.1581			
Hemisphere * pLDT Condition	0.2450	1	0.2450	3.783	0.057	0.062
Hemisphere * pLDT Condition * Group	0.0543	2	0.0271	0.419	0.660	0.014
Residual	3.6920	57	0.0648			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Group	0.306	2	0.153	0.325	0.724	0.011
Residual	26.861	57	0.471			

Note. Type 3 Sums of Squares

## Assumptions

Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
PAA_P1.LeftO\$Pseudoword	0.138	2	57	0.871
PAA_P1.RightO\$Pseudoword	2.024	2	57	0.142
PAA_P1.LeftO\$Pseudohomophone2	1.703	2	57	0.191
PAA_P1.RightO\$Pseudohomophone2	0.229	2	57	0.796

## Post Hoc Tests

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison													
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	P <sub>tukey</sub>	P <sub>holm</sub>	
Left	Pseudoword	English	-	Left	Pseudoword	Spanish	-	0.	14	-	0.	1.	1.
						English	0.0	14	4.	36	71	00	00
						English	6	35	3	42	6	0	0

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	phoim
-	Left	Pseudoword	Chinese-English	English	Chinese-English	-0.2759	0.1435	1443	-0.1923	0.848	1.000	1.000
-	Left	Pseudohomophone2	English	English	English	0.4821	0.1056	970	0.4567	0.649	1.000	1.000
-	Left	Pseudohomophone2	Spanish-English	English	Spanish-English	0.12772	0.1435	1443	0.8901	0.375	0.999	1.000
-	Left	Pseudohomophone2	Chinese-English	English	Chinese-English	0.2598	0.1435	1443	0.1811	0.857	1.000	1.000
-	Right	Pseudoword	English	English	English	0.8524	0.0986	1026	2.8941	0.005	0.0159	0.307
-	Right	Pseudoword	Spanish-English	English	Spanish-English	0.2561	0.1435	1443	0.1785	0.859	1.000	1.000
-	Right	Pseudoword	Chinese-English	English	Chinese-English	0.1497	0.1435	1443	0.8012	0.424	1.000	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
-			Right	Pseudohomophone2	English	0.12061	0.1199	112	1.0058	0.317	0.997	1.000
-			Right	Pseudohomophone2	Spanish-English	0.07077	0.1435	144	0.4932	0.623	1.000	1.000
-			Right	Pseudohomophone2	Chinese-English	0.08154	0.1435	144	0.5683	0.571	1.000	1.000
-		Spanish-English	Left	Pseudoword	Chinese-English	0.02466	0.1435	144	0.1719	0.864	1.000	1.000
-			Left	Pseudohomophone2	English	0.10046	0.1435	144	0.7001	0.485	1.000	1.000
-			Left	Pseudohomophone2	Spanish-English	0.17997	0.1056	97	1.7050	0.091	0.862	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-	Left			Pseudohomophone2	Chinese-English	0.07824	0.1435	144	0.5452	0.586	1.000	1.000
-	Right			Pseudoword	English	0.33750	0.1435	144	2.3520	0.020	0.445	1.000
-	Right			Pseudoword	Spanish-English	0.02664	0.0986	106	0.2703	0.787	1.000	1.000
-	Right			Pseudoword	Chinese-English	0.16723	0.1435	144	1.1654	0.246	0.991	1.000
-	Right			Pseudohomophone2	English	0.17287	0.1435	144	1.2047	0.230	0.988	1.000
-	Right			Pseudohomophone2	Spanish-English	0.12303	0.1199	119	1.0260	0.307	0.997	1.000
-	Right			Pseudohomophone2	Chinese-English	0.13380	0.1435	144	0.9325	0.353	0.999	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
		Chinese-English	-	Left	Pseudohomophone2	English	0.07580	0.1435	14.43	0.0008	1.0000	1.0000
			-	Left	Pseudohomophone2	Spanish-English	0.15531	0.1435	14.43	1.0824	0.2815	1.0000
			-	Left	Pseudohomophone2	Chinese-English	0.05357	0.1056	97.0	0.5075	0.613	1.0000
			-	Right	Pseudoword	English	0.31284	0.1435	14.43	2.1802	0.0317	1.0000
			-	Right	Pseudoword	Spanish-English	0.00198	0.1435	14.43	0.0138	0.989	1.0000
			-	Right	Pseudoword	Chinese-English	0.14256	0.0986	10.26	1.4464	0.151	0.951
			-	Right	Pseudohomophone2	English	0.14821	0.1435	14.43	1.0329	0.303	1.0000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	phoIm
			-	Right	Pseudohomophone2	Spanish-English	0.09837	0.1435	14.43	0.06855	0.494	1.000
			-	Right	Pseudohomophone2	Chinese-English	0.10914	0.1199	11.29	0.09101	0.365	0.999
	Pseudohomophone2	English	-	Left	Pseudohomophone2	Spanish-English	0.07951	0.1435	14.41	0.05541	0.580	1.000
			-	Left	Pseudohomophone2	Chinese-English	0.02223	0.1435	14.43	0.01549	0.877	1.000
			-	Right	Pseudoword	English	0.23704	0.1199	11.29	1.9767	0.051	0.708
			-	Right	Pseudoword	Spanish-English	0.07382	0.1435	14.43	0.05144	0.608	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	phoIm
					Chinese-English	0.06676	0.1435	144	0.4653	0.642	1.000	1.000
					English2	0.07241	0.0986	102	0.7346	0.464	1.000	1.000
					Spanish-English	0.02257	0.1435	144	0.1573	0.875	1.000	1.000
					Chinese-English	0.03334	0.1435	144	0.2323	0.817	1.000	1.000
		Spanish-English			Chinese-English	-0.10174	0.1435	144	-0.7090	0.479	1.000	1.000
					English	0.15753	0.1435	144	1.0978	0.274	0.994	1.000
					Spanish	0.15333	0.1199	112	1.2787	0.204	0.980	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	phi
					Chinese	-0.01275	0.1435	144	-0.0889	0.929	1.000	1.000
					English	-0.0711	0.1435	144	-0.0495	0.961	1.000	1.000
					Spanish	-0.05694	0.0986	106	-0.5777	0.565	1.000	1.000
					Chinese	-0.04617	0.1435	144	-0.3218	0.748	1.000	1.000
		Chinese			English	0.25926	0.1435	144	1.8068	0.073	0.812	1.000
					Spanish	0.05159	0.1435	144	0.3596	0.720	1.000	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	phoIm
					Chinese-English	0.0889	0.1199	112.9	0.7421	0.460	1.000	1.000
					English	0.0946	0.1435	144.3	0.6595	0.511	1.000	1.000
					Spanish-English	0.0447	0.1435	144.3	0.3122	0.755	1.000	1.000
					Chinese-English	0.0555	0.0986	106.6	0.5637	0.574	1.000	1.000
Right	Pseudoword	English			Spanish-English	-0.3108	0.1435	144.3	-2.1664	0.032	0.057	1.000
					Chinese-English	-0.1702	0.1435	144.3	-1.1866	0.237	0.099	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
-			Right	Pseudohomophone2	English	-0.16463	0.1056	97.0	-1.5596	0.122	0.919	1.000
-			Right	Pseudohomophone2	Spanish-English	-0.21447	0.1435	144.3	-1.4946	0.137	0.940	1.000
-			Right	Pseudohomophone2	Chinese-English	-0.20370	0.1435	144.3	-1.4196	0.158	0.958	1.000
-		Spanish-English	Right	Pseudoword	Chinese-English	0.14058	0.1435	144.3	0.9797	0.329	0.998	1.000
-			Right	Pseudohomophone2	English	0.14623	0.1435	144.3	1.0190	0.310	0.997	1.000
-			Right	Pseudohomophone2	Spanish-English	0.09639	0.1056	97.0	0.9131	0.363	0.999	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

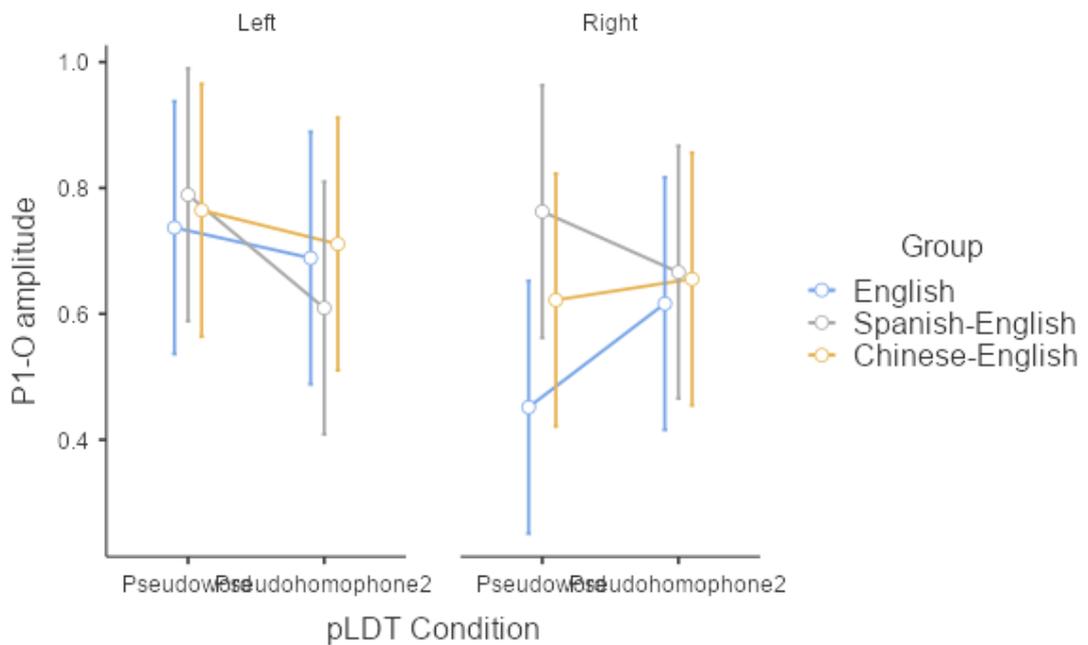
Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
					Chinese-English	0.10716	0.1435	144	0.7468	0.456	1.000	1.000
		Chinese-English			English	0.00564	0.1435	144	0.0393	0.969	1.000	1.000
					Spanish-English	-0.04419	0.1435	144	-0.3080	0.759	1.000	1.000
					Chinese-English	-0.03343	0.1056	97	-0.3167	0.752	1.000	1.000
	Pseudohomophones2	English			Spanish-English	-0.04984	0.1435	144	-0.3473	0.729	1.000	1.000
					Chinese-English	-0.03907	0.1435	144	-0.2723	0.786	1.000	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
		Spanish-English	Right	Pseudohomophone2	Chinese-English	0.077	0.1435	143	0.53	0.594	1.000	1.000

Estimated Marginal Means

pLDT Condition \* Group \* Hemisphere



Repeated Measures ANOVA

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Hemisphere	0.119	1	0.119	0.501	0.482	0.009
Hemisphere * Group	3.755	2	1.878	7.903	< .001	0.217
Residual	13.541	57	0.238			
pLDT Condition	0.821	1	0.821	6.078	0.017	0.096
pLDT Condition * Group	1.515	2	0.758	5.609	0.006	0.164
Residual	7.699	57	0.135			
Hemisphere * pLDT Condition	1.060	1	1.060	8.630	0.005	0.131
Hemisphere * pLDT Condition * Group	0.305	2	0.152	1.241	0.297	0.042
Residual	7.000	57	0.123			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Group	4.25	2	2.125	4.34	0.018	0.132
Residual	27.93	57	0.490			

Note. Type 3 Sums of Squares

## Assumptions

Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
PAA_P1.LeftOP\$Pseudoword	0.739	2	57	0.482

Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
PAA_P1.RightOP\$Pseudoword	21.204	2	57	< .001
PAA_P1.LeftOP\$Pseudohomophone2	0.331	2	57	0.720
PAA_P1.RightOP\$Pseudohomophone2	1.973	2	57	0.148

## Post Hoc Tests

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
Left	Pseudoword	English	-	Left	Pseudoword	Spanish-English	0.6138	0.157	168	-0.3914	0.696	1.000
						Chinese-English	0.8741	0.157	168	0.55691	0.578	1.000
			-	Left	Pseudohomophone2	English	0.2641	0.114	114	0.23262	0.816	1.000
						Spanish-English	0.5237	0.157	168	0.33365	0.739	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-	Left			Pseudohomophone2	Chinese-English	-0.10058	0.157	16	-0.64078	0.523	1.000	1.000
-	Right			Pseudoword	English	0.24218	0.134	13	1.80413	0.074	0.812	1.000
-	Right			Pseudoword	Spanish-English	-0.59922	0.157	16	-3.81758	<.001	0.010	0.011
-	Right			Pseudoword	Chinese-English	-0.14926	0.157	16	-0.95090	0.343	0.998	1.000
-	Right			Pseudohomophone2	English	0.35447	0.136	13	2.59685	0.011	0.029	0.053
-	Right			Pseudohomophone2	Spanish-English	0.05099	0.157	16	0.32485	0.746	1.000	1.000
-	Right			Pseudohomophone2	Chinese-English	-0.06014	0.157	16	-0.38312	0.702	1.000	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	pholm
		Spanish-English	-	Left	Pseudoword	Chinese-English	0.14879	0.157	168	0.947	0.345	0.358
			-	Left	Pseudohomophone2	English	0.08779	0.157	168	0.559	0.577	1.000
			-	Left	Pseudohomophone2	Spanish-English	0.11375	0.114	144	1.001	0.319	0.697
			-	Left	Pseudohomophone2	Chinese-English	-0.03920	0.157	168	-0.249	0.803	1.000
			-	Right	Pseudoword	English	0.30356	0.157	168	1.933	0.055	0.736
			-	Right	Pseudoword	Spanish-English	-0.53784	0.134	144	-4.006	<.001	0.006
			-	Right	Pseudoword	Chinese-English	-0.08788	0.157	168	-0.559	0.576	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
		-	Right	Pseudohomophone2	English	0.4155	0.1577	16	2.649	0.009	0.261	0.008
		-	Right	Pseudohomophone2	Spanish-English	0.0109	0.1366	16	0.076	0.939	1.000	1.000
		-	Right	Pseudohomophone2	Chinese-English	0.0124	0.1578	16	0.079	0.994	1.000	1.000
		Chinese-English	Left	Pseudohomophone2	English	-0.0610	0.1577	16	-0.388	0.698	1.000	1.000
		-	Left	Pseudohomophone2	Spanish-English	-0.0350	0.1577	16	-0.223	0.824	1.000	1.000
		-	Left	Pseudohomophone2	Chinese-English	-0.0879	0.1144	14	-1.555	0.101	0.884	1.000
		-	Right	Pseudoword	English	0.1547	0.1577	16	0.985	0.326	0.999	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub>	p <sub>holm</sub>
					Spanish-English	-0.68664	0.1574	158	-4.3749	<.001	0.001	0.001
					Chinese-English	-0.23667	0.1344	134	-1.7631	0.081	0.084	1.000
					English	0.26705	0.1577	158	1.70137	0.091	0.086	1.000
					Spanish-English	-0.13840	0.1577	158	-0.88176	0.379	0.999	1.000
					Chinese-English	-0.14755	0.1346	136	-1.08096	0.282	0.995	1.000
	Pseudohomophone2	English			Spanish-English	0.02596	0.1577	158	0.16537	0.869	1.000	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
-	Left	Pseudohomophone2	Chinese-English	-0.12699	0.1579	1568	0.80906	0.420	1.542	0.010	1.000	1.000
-	Right	Pseudoword	English	0.21576	0.1306	1306	1.58070	0.117	0.807	0.011	0.912	1.000
-	Right	Pseudoword	Spanish-English	-0.62564	0.1574	1564	-3.98586	<.001	0.006	0.000	0.006	0.000
-	Right	Pseudoword	Chinese-English	-0.17567	0.1507	1507	-1.11919	0.265	0.265	0.095	0.993	1.000
-	Right	Pseudohomophone2	English	0.32805	0.1345	1345	2.44387	0.016	0.016	0.038	0.387	0.009
-	Right	Pseudohomophone2	Spanish-English	0.07740	0.1507	1507	0.49313	0.623	0.623	0.530	1.000	1.000
-	Right	Pseudohomophone2	Chinese-English	0.08655	0.1507	1507	0.57540	0.582	0.582	0.558	1.000	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
		Spanish-English	Left	Pseudohomophone2	Chinese-English	-0.15295	0.157	168	-0.9743	0.331	0.998	1.000
			Right	Pseudoword	English	0.18981	0.157	168	1.20924	0.228	0.988	1.000
			Right	Pseudoword	Spanish-English	-0.65159	0.136	136	-4.77360	<.001	<.001	<.001
			Right	Pseudoword	Chinese-English	-0.20163	0.157	168	-1.28456	0.201	0.980	1.000
			Right	Pseudohomophone2	English	0.30210	0.157	168	1.92463	0.056	0.742	1.000
			Right	Pseudohomophone2	Spanish-English	-0.10336	0.134	134	-0.77000	0.443	1.000	1.000
			Right	Pseudohomophone2	Chinese-English	-0.11251	0.157	168	-0.71677	0.475	1.000	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
		Chinese-English	Right	Pseudoword	English	0.34276	0.157	168	2.183	0.030	0.0564	1.000
			Right	Pseudoword	Spanish-English	-0.49864	0.157	168	-3.17680	0.002	0.0074	0.009
			Right	Pseudoword	Chinese-English	0.04868	0.136	106	0.35662	0.722	1.000	1.000
			Right	Pseudohomophone2	English	0.45505	0.157	168	2.89906	0.004	0.0151	0.0233
			Right	Pseudohomophone2	Spanish-English	0.04959	0.157	168	0.31593	0.752	1.000	1.000
			Right	Pseudohomophone2	Chinese-English	0.04044	0.136	106	0.30128	0.764	1.000	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison															
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>			
Right	Pseudoword	English	-	Right	Pseudoword	Spanish-English	-0.84140	0.157	158	-5.36047	<.001	<.001	<.001		
						Chinese-English	-0.39144	0.157	158	-2.49380	0.014	0.0351	0.0667		
			-	Right	Pseudohomophone2	English	0.11229	0.114	114	0.98875	0.325	0.998	1.000		
						Spanish-English	-0.29317	0.157	158	-1.86774	0.064	0.0777	1.000		
		-	-	-	Right	Pseudohomophone2	Chinese-English	-0.30231	0.157	158	-1.92601	0.056	0.0741	1.000	
							Spanish-English	0.44996	0.157	158	2.86668	0.005	0.0163	0.0253	
					-	Right	Pseudoword	Chinese-English	0.44996	0.157	158	2.86668	0.005	0.0163	0.0253
								Spanish-English	-0.84140	0.157	158	-5.36047	<.001	<.001	<.001

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
		-	Right	Pseudohomophone2	English	0.95369	0.157	168	6.07586	<.001	<.001	<.001
		-	Right	Pseudohomophone2	Spanish-English	0.54823	0.114	113	4.82798	<.001	<.001	<.001
		-	Right	Pseudohomophone2	Chinese-English	0.53909	0.157	168	3.43446	<.001	0.035	0.043
		Chinese-English	Right	Pseudohomophone2	English	0.50372	0.157	168	3.20918	0.002	0.068	0.091
		-	Right	Pseudohomophone2	Spanish-English	0.09827	0.157	168	0.62605	0.532	1.000	1.000
		-	Right	Pseudohomophone2	Chinese-English	0.08912	0.114	113	0.78484	0.434	1.000	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub>	p <sub>holm</sub>
	Pseudohomophone2	English	-	Right	Pseudohomophone2	Spanish-English	-0.40546	0.157	168	-2.583	0.011	0.0298
			-	Right	Pseudohomophone2	Chinese-English	-0.41460	0.157	168	-2.64140	0.009	0.0266
		Spanish-English	-	Right	Pseudohomophone2	Chinese-English	-0.00915	0.157	168	0.05827	0.954	1.0000

Post Hoc Comparisons - Hemisphere \* Group

Comparison											
Hemisphere	Group	Hemisphere	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub>	p <sub>holm</sub>	
Left	English	-	Left	Spanish-English	0.01771	101.35	-0.1313	0.896	1.000	1.000	
		-	Left	Chinese-English	0.01979	101.35	-0.1467	0.884	1.000	1.000	

Post Hoc Comparisons - Hemisphere \* Group

Comparison											
Hemisphere	Group	Hemisphere	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub> <sub>y</sub>	p <sub>holm</sub>	
		-	Right	English	0.28512	0.109	57.0	2.6160	0.011	0.110	0.136
		-	Right	Spanish-English	-0.33831	0.135	101.7	-2.5084	0.014	0.131	0.151
		-	Right	Chinese-English	-0.11790	0.135	101.7	-0.8742	0.384	0.952	1.000
	Spanish-English	-	Left	Chinese-English	-0.00208	0.135	101.7	-0.0154	0.988	1.000	1.000
		-	Right	English	0.30283	0.135	101.7	2.2453	0.027	0.227	0.233
		-	Right	Spanish-English	-0.32060	0.109	57.0	-2.9416	0.005	0.051	0.061
		-	Right	Chinese-English	-0.10019	0.135	101.7	-0.7429	0.459	0.976	1.000
	Chinese-English	-	Right	English	0.30491	0.135	101.7	2.2607	0.026	0.220	0.233
		-	Right	Spanish-English	-0.31852	0.135	101.7	-2.3617	0.020	0.180	0.201
		-	Right	Chinese-English	-0.09811	0.109	57.0	-0.9002	0.372	0.945	1.000

Post Hoc Comparisons - Hemisphere \* Group

Comparison											
Hemisphere	Group		Hemisphere	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub> <sub>y</sub>	p <sub>hol</sub> <sub>m</sub>
Right	English	-	Right	Spanish-English	-0.62343	0.135	101.7	-4.6224	<.001	<.001	<.001
		-		Chinese-English	-0.40302	0.135	101.7	-2.9882	0.004	0.040	0.049
	Spanish-English	-	Right	Chinese-English	0.22041	0.135	101.7	1.6342	0.105	0.578	0.737

Post Hoc Comparisons - pLDT Condition \* Group

Comparison												
pLDT Condition	Group		pLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub> <sub>ey</sub>	p <sub>hol</sub> <sub>m</sub>	
Pseudoword	English	-	Pseudoword	Spanish-English	-0.4514	0.1250	86.2	-3.611	<.001	0.007	0.007	
		-		Pseudoword	Chinese-English	-0.1520	0.1250	86.2	-1.216	0.227	0.828	1.000
		-		Pseudohomophone 2	English	0.0694	0.0822	57.0	0.844	0.402	0.958	1.000

Post Hoc Comparisons - pLDT Condition \* Group

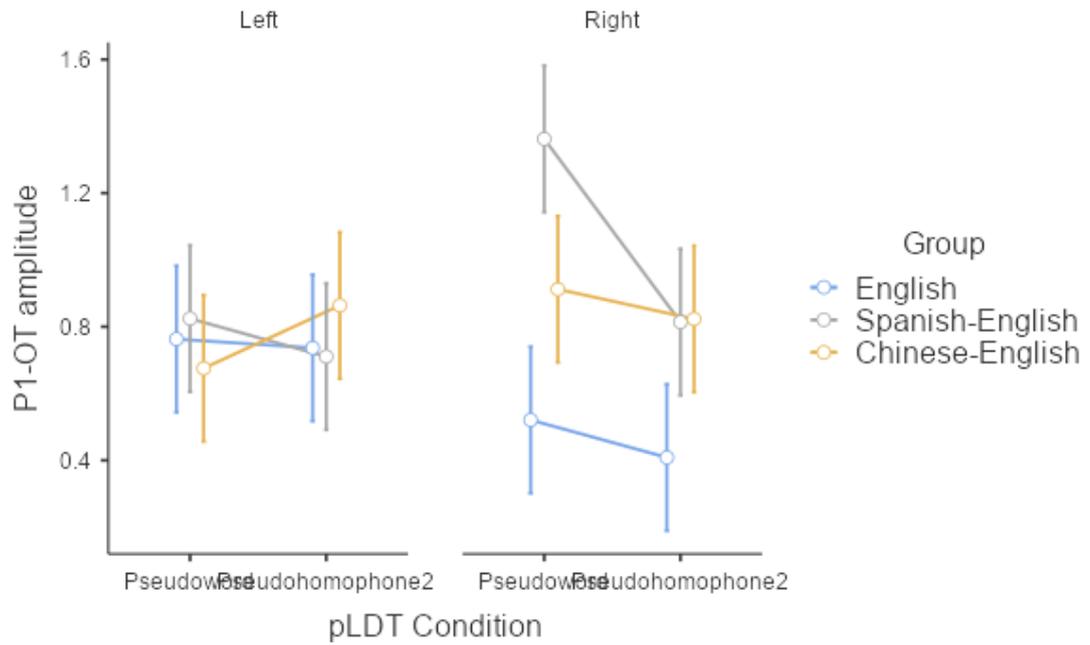
Comparison										
pLDT Condition	Group	pLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub>	p <sub>holm</sub>
		Pseudohomophone 2	Spanish - English	-0.1204	0.1250	86.2	-0.963	0.338	0.928	1.000
		Pseudohomophone 2	Chinese-English	-0.2014	0.1250	86.2	-1.611	0.111	0.593	0.886
	Spanish - English	Pseudoword	Chinese-English	0.2994	0.1250	86.2	2.395	0.019	0.170	0.226
		Pseudohomophone 2	English	0.5207	0.1250	86.2	4.166	<.001	0.001	0.001
		Pseudohomophone 2	Spanish - English	0.3310	0.0822	57.0	4.028	<.001	0.002	0.002
		Pseudohomophone 2	Chinese-English	0.2499	0.1250	86.2	1.999	0.049	0.351	0.487
	Chinese-English	Pseudohomophone 2	English	0.2214	0.1250	86.2	1.771	0.080	0.490	0.721
		Pseudohomophone 2	Spanish - English	0.0316	0.1250	86.2	0.253	0.801	1.000	1.000

Post Hoc Comparisons - pLDT Condition \* Group

Comparison										
pLDT Condition	Group	pLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub>	p <sub>holm</sub>
		Pseudohomophone 2	Chinese-English	-0.0494	0.0822	57.0	-0.602	0.550	0.991	1.000
Pseudohomophone 2	English	Pseudohomophone 2	Spanish-English	-0.1898	0.1250	86.2	-1.518	0.133	0.654	0.929
		Pseudohomophone 2	Chinese-English	-0.2708	0.1250	86.2	-2.166	0.033	0.264	0.364
	Spanish-English	Pseudohomophone 2	Chinese-English	-0.0810	0.1250	86.2	-0.648	0.518	0.987	1.000

### Estimated Marginal Means

pLDT Condition \* Group \* Hemisphere



## Repeated Measures ANOVA

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Hemisphere	0.00951	1	0.00951	0.1032	0.749	0.002
Hemisphere * Group	0.00944	2	0.00472	0.0512	0.950	0.002
Residual	5.25385	57	0.09217			
pLDT Condition	0.15758	1	0.15758	1.8716	0.177	0.032
pLDT Condition * Group	0.91317	2	0.45658	5.4229	0.007	0.160
Residual	4.79910	57	0.08419			
Hemisphere * pLDT Condition	1.00413	1	1.00413	12.2111	< .001	0.176
Hemisphere * pLDT Condition * Group	0.01570	2	0.00785	0.0955	0.909	0.003
Residual	4.68718	57	0.08223			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Group	4.71	2	2.357	6.86	0.002	0.194
Residual	19.60	57	0.344			

Note. Type 3 Sums of Squares

## Assumptions

Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
NAA_P1.LeftFC\$Pseudoword	9.29	2	57	< .001
NAA_P1.RightFC\$Pseudoword	9.53	2	57	< .001
NAA_P1.LeftFC\$Pseudohomophone2	4.26	2	57	0.019
NAA_P1.RightFC\$Pseudohomophone2	1.02	2	57	0.367

## Post Hoc Tests

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
Left	Pseudoword	English	-	Left	Pseudoword	0.48527	0.127	14	3.82	< .001	0.006	0.008
					Spanish-English	0.48527	0.127	14	3.82	< .001	0.006	0.008

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-		Left		Pseudoword	Chinese-English	0.1789	0.1227	147	1.4584	0.147	0.949	1.000
-		Left		Pseudophone2	English	-0.10863	0.0912	144	-1.1909	0.236	0.989	1.000
-		Left		Pseudophone2	Spanish-English	0.2198	0.1227	147	1.7939	0.082	0.998	1.000
-		Left		Pseudophone2	Chinese-English	0.0906	0.1227	147	0.7487	0.456	0.999	1.000
-		Right		Pseudoword	English	0.1498	0.0934	144	1.613	0.111	0.985	1.000
-		Right		Pseudoword	Spanish-English	0.34589	0.1227	147	2.8185	0.005	0.183	0.302

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
					Chinese-English	0.08301	0.127	147	0.6764	0.500	1.000	1.000
					English-English2	0.06389	0.0939	144	0.6803	0.498	1.000	1.000
					Spanish-English	0.25776	0.127	147	2.1003	0.037	0.623	1.000
					Chinese-English	0.22663	0.127	147	1.8467	0.067	0.789	1.000
		Spanish-English			Chinese-English	-0.30629	0.127	147	-2.4958	0.014	0.351	0.711
		Spanish-English			English-English	-0.59390	0.127	147	-4.8394	<.001	<.001	<.001

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub>	p <sub>holm</sub>
-	Left	Pseudohomophone2	Spanish	English	-	0.36329	0.0912	114	-3.9825	<.001	0.006	0.008
-	Left	Pseudohomophone2	Chinese	English	-	0.37621	0.1227	147	-3.0655	0.003	0.011	0.015
-	Right	Pseudoword	English	English	-	0.60025	0.1227	147	4.8912	<.001	<.001	<.001
-	Right	Pseudoword	Spanish	English	-	0.13938	0.0934	114	1.4926	0.138	0.094	1.000
-	Right	Pseudoword	Chinese	English	-	0.40226	0.1227	147	3.2778	0.001	0.005	0.007
-	Right	Pseudohomophone2	English	English	-	0.42138	0.1227	147	3.4336	<.001	0.003	0.004

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	pholm
			Right	Pseudohomophone2	Spanish-English	-0.2751	0.0939	114	-2.428	0.017	0.40	0.86
			Right	Pseudohomophone2	Chinese-English	-0.5864	0.1227	147	-2.1075	0.037	0.61	1.00
		Chinese-English	Left	Pseudohomophone2	English	-0.28761	0.1227	147	-2.3436	0.020	0.45	0.98
			Left	Pseudohomophone2	Spanish-English	0.05700	0.1227	147	0.4645	0.643	1.00	1.00
			Left	Pseudohomophone2	Chinese-English	0.06992	0.0912	114	0.7665	0.445	1.00	1.00
			Right	Pseudoword	English	0.29396	0.1227	147	2.3954	0.018	0.41	0.89

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub>	p <sub>holm</sub>
			-	Right	Pseudoword	Spanish-English	0.16691	0.1227	147	1.3601	0.176	1.000
			-	Right	Pseudoword	Chinese-English	-0.09597	0.0934	147	-1.0277	0.306	0.997
			-	Right	Pseudohomophone2	English	-0.1509	0.1227	147	-0.9378	0.350	0.999
			-	Right	Pseudohomophone2	Spanish-English	0.07878	0.1227	147	0.6419	0.522	1.000
			-	Right	Pseudohomophone2	Chinese-English	0.04765	0.0939	147	0.5074	0.613	1.000
	Pseudohomophone2	English	-	Left	Pseudohomophone2	Spanish-English	0.23061	0.1227	147	1.8791	0.062	0.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-		Left		Pseudohomophone2	Chinese-English	0.21770	0.1227	147	1.77	0.078	0.829	1.000
-		Right		Pseudoword	English	0.00635	0.0939	141	0.0676	0.946	1.000	1.000
-		Right		Pseudoword	Spanish-English	0.45453	0.1227	147	3.7037	<.001	0.015	0.018
-		Right		Pseudoword	Chinese-English	0.19165	0.1227	147	1.5616	0.121	0.920	1.000
-		Right		Pseudohomophone2	English	0.17252	0.0934	141	1.8475	0.067	0.788	1.000
-		Right		Pseudohomophone2	Spanish-English	0.36639	0.1227	147	2.9855	0.003	0.013	0.016

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
					Chi							
		-	Right	Pseudohomophone2	English	0.3526	0.1227	147	2.7319	0.007	0.022	0.035
					Chi							
			Spanish-English	Pseudohomophone2	English	-0.01292	0.1227	127	-0.1053	0.916	1.000	1.000
		-	Right	Pseudoword	English	0.23696	0.1227	147	1.9309	0.055	0.073	0.100
					Spanish-English	0.22391	0.0939	144	2.3844	0.019	0.042	0.091
		-	Right	Pseudoword	English	0.03897	0.1227	147	0.3175	0.751	1.000	1.000
					Chi							
		-	Right	Pseudohomophone2	English	0.05809	0.1227	147	0.4734	0.637	1.000	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-			Right	Pseudohomophone2	Spanish-English	0.13578	0.0934	1144	1.4540	0.149	0.950	1.000
-			Right	Pseudohomophone2	Chinese-English	0.0465	0.1227	1477	0.38527	0.395	0.999	1.000
		Chinese-English	Right	Pseudoword	English	0.22405	0.1227	1477	1.8256	0.070	0.801	1.000
-			Right	Pseudoword	Spanish-English	0.23683	0.1227	1477	1.9298	0.056	0.739	1.000
-			Right	Pseudoword	Chinese-English	0.02605	0.0939	1144	0.2774	0.782	1.000	1.000
-			Right	Pseudohomophone2	English	0.04517	0.1227	1477	0.3681	0.713	1.000	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
			-	Right	Pseudohomophone2	Spanish-English	0.14870	0.1227	14	1.21	0.228	1.000
			-	Right	Pseudohomophone2	Chinese-English	0.1757	0.0934	14	1.2590	0.211	1.000
Right	Pseudoword	English	-	Right	Pseudoword	Spanish-English	0.46088	0.1227	14	3.7554	<.001	0.0135
			-	Right	Pseudoword	Chinese-English	0.19800	0.1227	14	1.6134	0.109	0.902
			-	Right	Pseudohomophone2	English	0.17887	0.0912	14	1.9608	0.052	0.0718
			-	Right	Pseudohomophone2	Spanish-English	0.37274	0.1227	14	3.0373	0.003	0.0108

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
					Chinese-English	0.34161	0.1227	147	2.736	0.006	0.198	0.008
					Spanish-English	-0.26288	0.1227	147	-2.141	0.034	0.059	1.000
					English-English	-0.28200	0.1227	147	-2.297	0.023	0.048	1.000
					Spanish-English	-0.08813	0.0912	147	-0.966	0.336	0.998	1.000
					Chinese-English	-0.11926	0.1227	147	-0.971	0.333	0.998	1.000
					Spanish-English	-0.01912	0.1227	147	-0.155	0.876	1.000	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
			-	Right	Pseudohomophone2	Spanish-English	0.17475	0.1227	14	1.42	0.157	1.957
			-	Right	Pseudohomophone2	Chinese-English	0.14362	0.0912	14	1.5744	0.118	1.915
	Pseudohomophone2	English	-	Right	Pseudohomophone2	Spanish-English	0.19387	0.1227	14	1.5798	0.116	1.914
	Pseudohomophone2		-	Right	Pseudohomophone2	Chinese-English	0.16274	0.1227	14	1.3261	0.187	1.974
		Spanish-English	-	Right	Pseudohomophone2	Chinese-English	-0.03113	0.1227	14	-0.2537	0.800	1.000

Post Hoc Comparisons - pLDT Condition \* Group

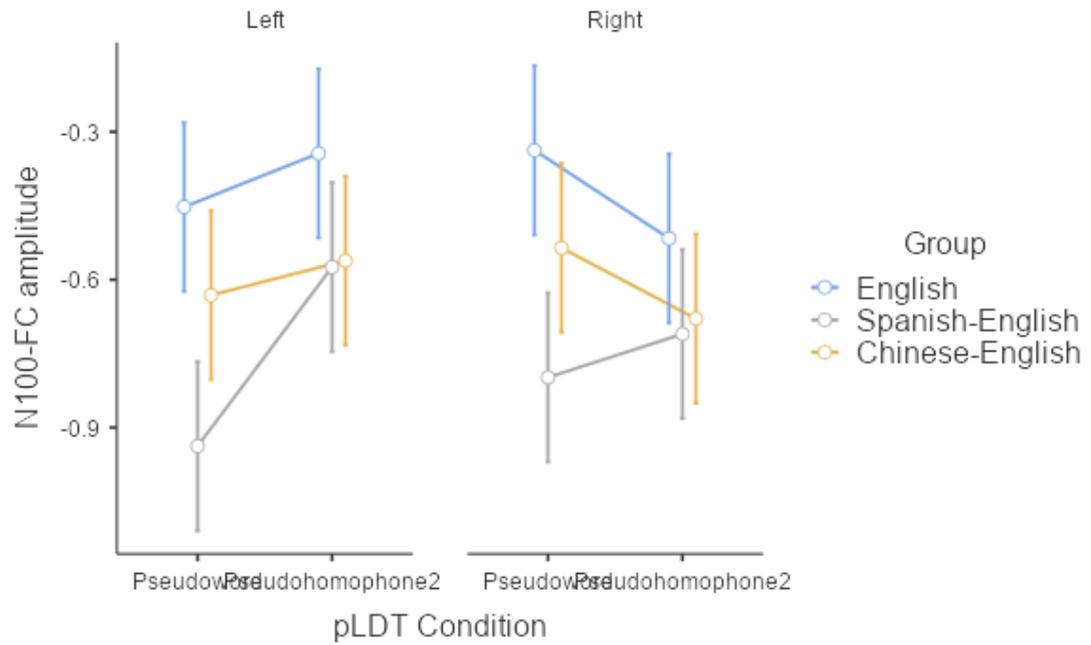
Comparison										
pLDT Condition	Group	pLDT Condition	Group	Mean Difference	SE	df	t	p	P <sub>tuk</sub> <sub>ey</sub>	P <sub>hol</sub> <sub>m</sub>
Pseudoword	English	Pseudoword	Spanish - English	0.4731	0.1034	83.3	4.573	<.001	<.001	<.001
			Chinese-English	0.1885	0.1034	83.3	1.822	0.072	0.457	0.486
		Pseudohomophone 2	English	0.0351	0.0649	57.0	0.541	0.590	0.994	1.000
			Spanish - English	0.2474	0.1034	83.3	2.391	0.019	0.171	0.208
				Chinese-English	0.2253	0.1034	83.3	2.178	0.032	0.259
	Spanish - English	Pseudoword	Chinese-English	-0.2846	0.1034	83.3	-2.751	0.007	0.076	0.087
			English	-0.4380	0.1034	83.3	-4.234	<.001	<.001	<.001
		Pseudohomophone 2	Spanish - English	-0.2257	0.0649	57.0	-3.479	<.001	0.012	0.013

Post Hoc Comparisons - pLDT Condition \* Group

Comparison										
pLDT Condition	Group	pLDT Condition	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub>	P <sub>holm</sub>
		Pseudohomophone 2	Chinese-English	-0.2477	0.1034	83.3	-2.395	0.019	0.170	0.208
	Chinese-English	Pseudohomophone 2	English	-0.1534	0.1034	83.3	-1.483	0.142	0.676	0.710
		Pseudohomophone 2	Spanish-English	0.0589	0.1034	83.3	0.569	0.571	0.993	1.000
		Pseudohomophone 2	Chinese-English	0.0369	0.0649	57.0	0.568	0.572	0.993	1.000
Pseudohomophone 2	English	Pseudohomophone 2	Spanish-English	0.2122	0.1034	83.3	2.052	0.043	0.323	0.347
		Pseudohomophone 2	Chinese-English	0.1902	0.1034	83.3	1.839	0.069	0.447	0.486
	Spanish-English	Pseudohomophone 2	Chinese-English	-0.0220	0.1034	83.3	-0.213	0.832	1.000	1.000

**Estimated Marginal Means**

pLDT Condition \* Group \* Hemisphere



## Repeated Measures ANOVA

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Hemisphere	0.85830	1	0.85830	0.7021	0.406	0.012
Hemisphere * Group	1.72806	2	0.86403	0.7068	0.498	0.024
Residual	69.68183	57	1.22249			
pLDT Condition	0.04509	1	0.04509	0.1177	0.733	0.002
pLDT Condition * Group	0.37019	2	0.18510	0.4833	0.619	0.017
Residual	21.82938	57	0.38297			
Hemisphere * pLDT Condition	0.00625	1	0.00625	0.0348	0.853	0.001
Hemisphere * pLDT Condition * Group	0.31114	2	0.15557	0.8662	0.426	0.029
Residual	10.23703	57	0.17960			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Group	0.281	2	0.141	0.0594	0.942	0.002
Residual	134.949	57	2.368			

Note. Type 3 Sums of Squares

## Assumptions

Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
NAA_N170.LeftOP\$Pseudoword	7.87	2	57	< .001
NAA_N170.RightOP\$Pseudoword	3.05	2	57	0.055
NAA_N170.LeftOP\$Pseudohomophone2	8.20	2	57	< .001
NAA_N170.RightOP\$Pseudohomophone2	1.25	2	57	0.295

## Post Hoc Tests

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	P <sub>tukey</sub>	P <sub>holm</sub>
Left	Pseudoword	English	-	Left	Pseudoword	Spanish-English	0.1831	0.32	13.58	0.568	0.571	1.000
						Spanish-English	0.1831	0.32	13.58	0.568	0.571	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	phoIm
-	Left	Pseudoword	Chinese	English	English	-0.19487	0.322	1350	-0.60481	0.546	1.000	1.000
-	Left	Pseudohomophone2	English	English	English	0.10354	0.168	1008	0.61735	0.538	1.000	1.000
-	Left	Pseudohomophone2	Spanish	English	English	-0.01647	0.322	1350	-0.05112	0.959	1.000	1.000
-	Left	Pseudohomophone2	Chinese	English	English	-0.15039	0.322	1350	-0.46674	0.641	1.000	1.000
-	Right	Pseudoword	English	English	English	0.17243	0.265	735	0.65125	0.517	1.000	1.000
-	Right	Pseudoword	Spanish	English	English	0.06094	0.322	1350	0.18914	0.850	1.000	1.000
-	Right	Pseudoword	Chinese	English	English	0.14436	0.322	1350	0.44803	0.655	1.000	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
-			Right	Pseudohomophone2	English	0.06257	0.283	89.5	0.22083	0.826	1.000	1.000
-			Right	Pseudohomophone2	Spanish-English	0.0624	0.322	135.0	-0.01938	0.985	1.000	1.000
-			Right	Pseudohomophone2	Chinese-English	0.0856	0.322	135.0	0.64729	0.519	1.000	1.000
-		Spanish-English	Left	Pseudoword	Chinese-English	0.37805	0.322	135.0	1.17334	0.243	0.990	1.000
-			Left	Pseudohomophone2	English	0.07964	0.322	135.0	0.24718	0.805	1.000	1.000
-			Left	Pseudohomophone2	Spanish-English	0.19965	0.168	108.8	1.19043	0.237	0.989	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
-	Left		Left	Pseudohomophone2	Chinese-English	-0.3357	0.322	1350	-1.03527	0.302	0.997	1.000
-	Right		Right	Pseudoword	English	-0.01075	0.322	1350	-0.03336	0.973	1.000	1.000
-	Right		Right	Pseudoword	Spanish-English	-0.12224	0.265	734	-0.46168	0.646	1.000	1.000
-	Right		Right	Pseudoword	Chinese-English	-0.03883	0.322	1350	-0.12050	0.904	1.000	1.000
-	Right		Right	Pseudohomophone2	English	-0.12061	0.322	1350	-0.37434	0.709	1.000	1.000
-	Right		Right	Pseudohomophone2	Spanish-English	-0.18942	0.283	895	-0.66858	0.505	1.000	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	phoIm
					Chi							
		-	Right	Pseudohomophone2	English	0.02538	0.322	130	0.07875	0.937	1.000	1.000
		Chi										
		-	Left	Pseudohomophone2	English	0.29841	0.322	130	0.92616	0.356	0.999	1.000
		-	Left	Pseudohomophone2	Spanish	0.17840	0.322	130	0.55369	0.581	1.000	1.000
		-	Left	Pseudohomophone2	English	0.04449	0.168	108	0.26525	0.791	1.000	1.000
		-	Right	Pseudoword	English	0.36730	0.322	130	1.13998	0.256	0.992	1.000
		-	Right	Pseudoword	Spanish	0.25581	0.322	130	0.79395	0.429	1.000	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	phi
					Chinese-English	0.33923	0.265	73.4	1.281	0.204	0.99	1.00
					English	0.25744	0.322	13.5	0.799	0.426	1.00	1.00
					Spanish-English	0.18863	0.322	13.5	0.585	0.559	1.00	1.00
					Chinese-English	0.40343	0.283	89.5	1.423	0.158	0.956	1.00
	Pseudohomophone2	English			Spanish-English	-0.12001	0.322	13.5	-0.372	0.710	1.00	1.00
	Pseudohomophone2				Chinese-English	-0.25392	0.322	13.5	-0.788	0.432	1.00	1.00
	Pseudohomophone2				English	0.06889	0.283	89.5	0.243	0.808	1.00	1.00

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
-			Right	Pseudoword	Spanish-English	-0.04260	0.322	130	-0.1320	0.895	1.000	1.000
-			Right	Pseudoword	Chinese-English	0.04082	0.322	130	0.12668	0.899	1.000	1.000
-			Right	Pseudohomophone2	English	-0.04097	0.265	734	-0.15474	0.877	1.000	1.000
-			Right	Pseudohomophone2	Spanish-English	0.0978	0.322	130	0.304072	0.734	1.000	1.000
-			Right	Pseudohomophone2	Chinese-English	0.0502	0.322	130	0.15694	0.745	1.000	1.000
-		Spanish-English	Left	Pseudohomophone2	Chinese-English	-0.13391	0.322	130	-0.41562	0.678	1.000	1.000
-			Right	Pseudoword	English	0.18890	0.322	130	0.58629	0.559	1.000	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
		-	Right	Pseudoword	Spanish-English	0.07741	0.283	89.5	0.27324	0.785	1.000	1.000
		-	Right	Pseudoword	Chinese-English	0.16083	0.322	135.0	0.49915	0.618	1.000	1.000
		-	Right	Pseudohomophone2	English	0.07904	0.322	135.0	0.24531	0.807	1.000	1.000
		-	Right	Pseudohomophone2	Spanish-English	0.10233	0.265	73.4	0.3863	0.969	1.000	1.000
		-	Right	Pseudohomophone2	Chinese-English	0.22503	0.322	135.0	0.69841	0.486	1.000	1.000
		-	Chinese-English	Pseudoword	English	0.32282	0.322	135.0	1.00191	0.318	0.997	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
			-	Right	Pseudoword	Spanish-English	0.21133	0.322	135.5	0.655	0.513	1.000
			-	Right	Pseudoword	Chinese-English	0.29474	0.283	89.5	1.040	0.301	1.000
			-	Right	Pseudohomophone2	English	0.21295	0.322	135.0	0.660	0.510	1.000
			-	Right	Pseudohomophone2	Spanish-English	0.14414	0.322	135.4	0.447	0.655	1.000
			-	Right	Pseudohomophone2	Chinese-English	0.35894	0.265	73.4	1.355	0.179	1.000
Right	Pseudoword	English	-	Right	Pseudoword	Spanish-English	0.11149	0.322	135.0	0.346	0.730	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
					Chinese	-0.2808	0.322	135	-0.8713	0.931	1.000	1.000
					English	-0.0986	0.168	108	-0.5855	0.514	1.000	1.000
					Spanish	-0.07867	0.322	135	-0.2454	0.580	1.000	1.000
					English	0.03613	0.322	135	0.1121	0.911	1.000	1.000
		Spanish			Chinese	0.08341	0.322	135	0.2589	0.796	1.000	1.000
					English	0.0162	0.322	135	0.0504	0.996	1.000	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

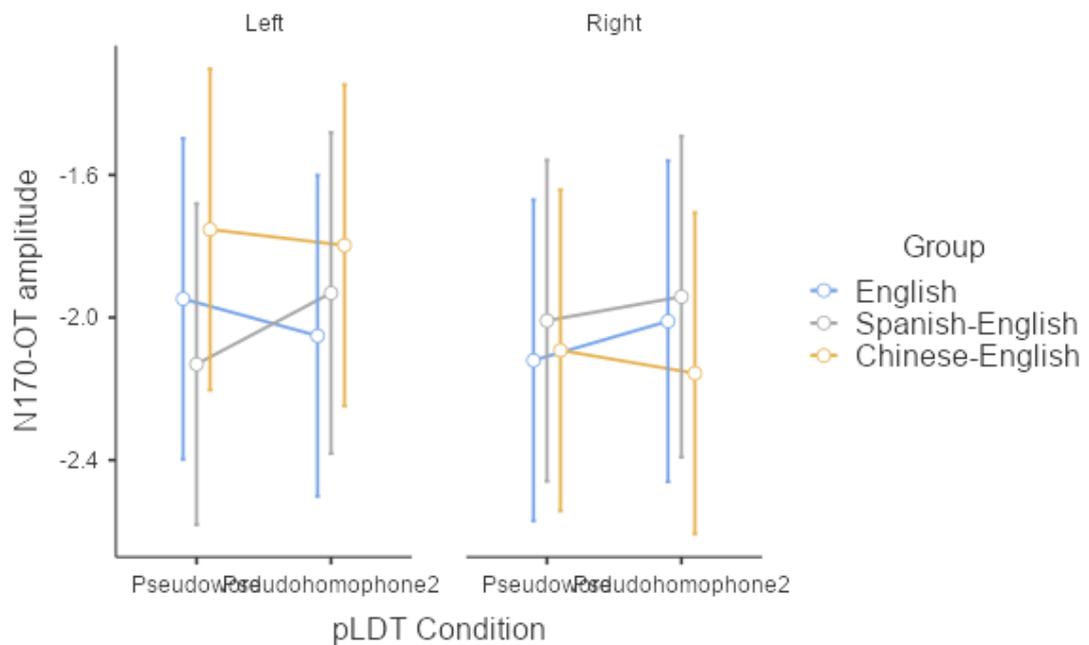
Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
					Spanish-English	-0.06719	0.168	108	-0.40059	0.690	1.000	1.000
					Chinese-English	0.14761	0.322	135	0.45814	0.648	1.000	1.000
		Chinese-English			English	-0.08179	0.322	135	-0.25384	0.800	1.000	1.000
					Spanish-English	-0.15060	0.322	135	-0.46741	0.641	1.000	1.000
					Chinese-English	0.06420	0.168	108	0.38279	0.703	1.000	1.000
	Pseudohomophone2	English			Spanish-English	-0.06881	0.322	135	-0.21356	0.831	1.000	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
			Right	Pseudohomophone2	Chinese-English	0.1459	0.322	130	0.453	0.651	1.000	1.000
		Spanish-English	Right	Pseudohomophone2	Chinese-English	0.2148	0.320	130	0.666	0.506	1.000	1.000

### Estimated Marginal Means

pLDT Condition \* Group \* Hemisphere



### Repeated Measures ANOVA

Within Subjects Effects

	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
Hemisphere	1.064	1	1.0639	6.664	0.012	0.105
Hemisphere * Group	0.115	2	0.0577	0.362	0.698	0.013
Residual	9.100	57	0.1596			
Pseudohomophone Condition	0.939	1	0.9388	3.762	0.057	0.062
Pseudohomophone Condition * Group	1.722	2	0.8610	3.451	0.038	0.108
Residual	14.222	57	0.2495			
Hemisphere * Pseudohomophone Condition	0.719	1	0.7192	10.082	0.002	0.150
Hemisphere * Pseudohomophone Condition * Group	0.405	2	0.2025	2.838	0.067	0.091
Residual	4.066	57	0.0713			

Note. Type 3 Sums of Squares

Between Subjects Effects

	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
Group	1.26	2	0.628	1.27	0.288	0.043
Residual	28.11	57	0.493			

Note. Type 3 Sums of Squares

## Assumptions

Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
PAA_P1.LeftO\$Pseudohomophone1	4.004	2	57	0.024
PAA_P1.RightO\$Pseudohomophone1	3.096	2	57	0.053
PAA_P1.LeftO\$Pseudohomophone2	1.703	2	57	0.191
PAA_P1.RightO\$Pseudohomophone2	0.229	2	57	0.796

## Post Hoc Tests

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	phoim
Left	Pseudohomophone1	English	-	Left	Spanish	-0.48924	0.156	168	-3.137	0.002	0.0083	0.120
					Chinese	-0.16516	0.156	168	-1.0585	0.2916	0.996	1.000
					English	-0.00266	0.127	87	-0.0210	0.983	1.000	1.000

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	phoIm
-		Left		Pseudohomophone2	Spanish-English	0.07686	0.156	168	0.4926	0.623	1.000	1.000
-		Left		Pseudohomophone2	Chinese-English	0.02488	0.156	168	0.1595	0.873	1.000	1.000
-		Right		Pseudohomophone1	English	0.07676	0.107	99.5	0.7143	0.477	1.000	1.000
-		Right		Pseudohomophone1	Spanish-English	0.14275	0.156	168	0.9149	0.362	0.999	1.000
-		Right		Pseudohomophone1	Chinese-English	0.13954	0.156	168	0.8944	0.372	0.999	1.000
-		Right		Pseudohomophone2	English	0.06975	0.143	108	0.4877	0.627	1.000	1.000

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-			Right	Pseudohomophone2	Spanish-English	0.0199	0.156	168	0.127	0.899	1.000	1.000
-			Right	Pseudohomophone2	Chinese-English	0.0306	0.158	168	0.196	0.844	1.000	1.000
-		Spanish-English	Left	Pseudohomophone1	Chinese-English	0.3240	0.158	168	2.077	0.039	0.640	1.000
-			Left	Pseudohomophone2	English	0.4865	0.156	168	3.118	0.002	0.008	0.012
-			Left	Pseudohomophone2	Spanish-English	0.5660	0.127	87	4.469	<.001	0.001	0.002
-			Left	Pseudohomophone2	Chinese-English	0.4643	0.156	168	2.976	0.003	0.012	0.019

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-			Right	Pseudohomophone1	English	0.5660	0.156	168	3.6027	<.001	0.019	0.025
-			Right	Pseudohomophone1	Spanish-English	0.3464	0.107	99.5	3.2241	0.002	0.070	0.103
-			Right	Pseudohomophone1	Chinese-English	0.6287	0.156	168	4.0301	<.001	0.005	0.006
-			Right	Pseudohomophone2	English	0.5589	0.156	168	3.5827	<.001	0.022	0.028
-			Right	Pseudohomophone2	Spanish-English	0.5091	0.143	108	3.5597	<.001	0.026	0.034
-			Right	Pseudohomophone2	Chinese-English	0.5199	0.156	168	3.323	0.001	0.048	0.065

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	phoIm
		Chinese-English		Pseudohomophone2	English	0.16250	0.066	168	1.0415	0.2996	0.06	1.000
				Pseudohomophone2	Spanish-English	0.24201	0.066	168	1.5051	0.1233	0.06	1.000
				Pseudohomophone2	Chinese-English	0.14027	0.067	187	1.1075	0.2714	0.06	1.000
				Pseudohomophone1	English	0.24192	0.066	168	1.5050	0.1233	0.06	1.000
				Pseudohomophone1	Spanish-English	0.02240	0.066	168	0.1436	0.8866	1.000	1.000
				Pseudohomophone1	Chinese-English	0.30470	0.067	199	2.8353	0.0036	0.06	0.311

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-			Right	Pseudohomophone2	English	0.23491	0.156	168	1.5056	0.134	0.097	1.000
-			Right	Pseudohomophone2	Spanish-English	0.18507	0.156	168	1.1862	0.237	0.099	1.000
-			Right	Pseudohomophone2	Chinese-English	0.19584	0.143	108	1.3692	0.174	0.096	1.000
	Pseudohomophone2	English	-	Left	Pseudohomophone2	0.07951	0.156	168	0.5096	0.611	1.000	1.000
			-	Left	Pseudohomophone2	0.02223	0.156	168	0.1424	0.887	1.000	1.000
			-	Right	Pseudohomophone1	0.07942	0.143	108	0.5553	0.580	1.000	1.000

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	phoIm
-			Right	Pseudohomophone1	Spanish-English	-0.14010	0.156	168	-0.897	0.371	0.999	1.000
-			Right	Pseudohomophone1	Chinese-English	0.14220	0.156	168	0.911	0.363	0.999	1.000
-			Right	Pseudohomophone2	English	0.07241	0.107	99.5	0.673	0.502	1.000	1.000
-			Right	Pseudohomophone2	Spanish-English	0.02257	0.156	168	0.144	0.885	1.000	1.000
-			Right	Pseudohomophone2	Chinese-English	0.03334	0.156	168	0.213	0.831	1.000	1.000
-		Spanish-English	Left	Pseudohomophone2	Chinese-English	-0.0174	0.156	168	-0.652	0.515	1.000	1.000

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	phoIm
-	Right			Pseudohomophone1	English	-9.38e-5	0.156	168	-6.01e-4	1.000	1.000	1.000
-	Right			Pseudohomophone1	Spanish-English	-0.21961	0.143	108	-1.5354	0.128	0.927	1.000
-	Right			Pseudohomophone1	Chinese-English	0.06269	0.156	168	0.40188	0.688	1.000	1.000
-	Right			Pseudohomophone2	English	-0.0711	0.156	168	-0.455	0.964	1.000	1.000
-	Right			Pseudohomophone2	Spanish-English	-0.05694	0.107	99.5	-0.5299	0.597	1.000	1.000
-	Right			Pseudohomophone2	Chinese-English	-0.04617	0.156	168	-0.2960	0.768	1.000	1.000

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	phoIm
		Chinese-English		Pseudohomophone1	English	0.10164	0.066	168	0.6515	0.516	1.000	1.000
				Pseudohomophone1	Spanish-English	-0.11787	0.056	168	-0.7555	0.451	1.000	1.000
				Pseudohomophone1	Chinese-English	0.16443	0.033	108	1.1496	0.253	0.991	1.000
				Pseudohomophone2	English	0.09463	0.066	168	0.6065	0.545	1.000	1.000
				Pseudohomophone2	Spanish-English	0.04479	0.066	168	0.2871	0.774	1.000	1.000
				Pseudohomophone2	Chinese-English	0.05556	0.077	99	0.5170	0.606	1.000	1.000

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison													
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	phoIm	
Right	Pseudohomophone1	English	-	Right	Spanish-English	-0.21951	0.156	168	-1.4069	0.161	0.1961	0.001	1.000
					Chinese-English	0.06278	0.156	168	0.4024	0.0688	1.000	1.000	
			-	Right	English	-0.0701	0.127	87.1	-0.0554	0.0956	1.000	1.000	
					Spanish-English	-0.05685	0.156	168	-0.3644	0.0716	1.000	1.000	
			-	Right	Chinese-English	-0.04608	0.156	168	-0.2954	0.0768	1.000	1.000	
					Spanish-English	0.28230	0.156	168	1.8093	0.0721	0.001	1.000	

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

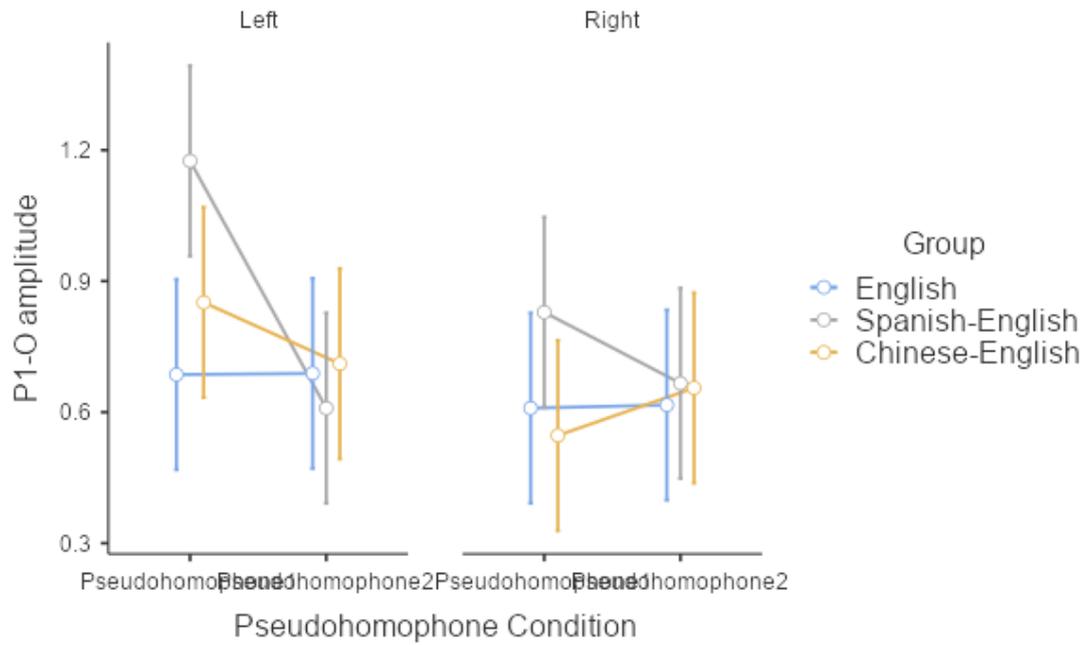
Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-			Right	Pseudohomophone2	English	0.21250	0.066	168	1.30	0.175	0.189	1.000
-			Right	Pseudohomophone2	Spanish-English	0.16266	0.127	87	1.284	0.202	0.099	1.000
-			Right	Pseudohomophone2	Chinese-English	0.17343	0.156	168	1.116	0.268	0.254	1.000
-		Chinese-English	Right	Pseudohomophone2	English	0.06979	0.156	168	0.447	0.655	1.000	1.000
-			Right	Pseudohomophone2	Spanish-English	0.11963	0.156	168	0.766	0.444	1.000	1.000
-			Right	Pseudohomophone2	Chinese-English	0.10886	0.127	87	0.859	0.392	0.099	1.000

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	phoIm
	Pseudohomophone2	English	-	Right	Pseudohomophone2	Spanish-English	-0.4984	0.1566	168	-0.3194	0.750	1.000
				Right	Pseudohomophone2	Chinese-English	-0.3907	0.1566	168	-0.2504	0.803	1.000
		Spanish-English	-	Right	Pseudohomophone2	Chinese-English	0.1077	0.1566	168	0.0690	0.945	1.000

Estimated Marginal Means

Pseudohomophone Condition \* Group \* Hemisphere



## Repeated Measures ANOVA

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Hemisphere	0.0493	1	0.0493	0.195	0.660	0.003
Hemisphere * Group	0.2823	2	0.1411	0.558	0.575	0.019
Residual	14.4190	57	0.2530			
Pseudohomophone Condition	1.3236	1	1.3236	7.986	0.006	0.123
Pseudohomophone Condition * Group	0.2081	2	0.1040	0.628	0.537	0.022
Residual	9.4476	57	0.1657			
Hemisphere * Pseudohomophone Condition	0.2139	1	0.2139	1.818	0.183	0.031
Hemisphere * Pseudohomophone Condition * Group	1.0593	2	0.5297	4.502	0.015	0.136
Residual	6.7062	57	0.1177			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Group	3.65	2	1.824	3.27	0.045	0.103
Residual	31.80	57	0.558			

Note. Type 3 Sums of Squares

### Assumptions

Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
PAA_P1.LeftOP\$Pseudohomophone1	2.331	2	57	0.106
PAA_P1.RightOP\$Pseudohomophone1	1.900	2	57	0.159
PAA_P1.LeftOP\$Pseudohomophone2	0.331	2	57	0.720
PAA_P1.RightOP\$Pseudohomophone2	1.973	2	57	0.148

### Post Hoc Tests

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison													
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm	
Left	Pseudohomophone1	English	-	Left	Pseudohomophone1	Sp ani sh- En glis h	- 0.4 207 2	0. 16 5	1 6 4	- 2. 54 36	0. 01 2	0. 32 1	0. 70 2

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	phoim
-			Left	Pseudohomophone1	Chines-English	-0.24816	0.165	16	-1.5003	0.135	0.939	1.000
-			Left	Pseudohomophone2	English	-0.10046	0.119	11	-0.8439	0.401	0.999	1.000
-			Left	Pseudohomophone2	Spanish-English	-0.07450	0.165	16	-0.4504	0.653	1.000	1.000
-			Left	Pseudohomophone2	Chines-English	-0.22745	0.165	16	-1.3751	0.171	0.967	1.000
-			Right	Pseudohomophone1	English	-0.08786	0.136	13	-0.6455	0.520	1.000	1.000
-			Right	Pseudohomophone1	Spanish-English	-0.29525	0.165	16	-1.7851	0.076	0.824	1.000

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
					Chi							
					nes	-						
					e-	0.3	0.16	16	-2.29	0.023	0.488	1.000
					En	788	5	4	29	3	8	0
					glis	4			04			
					h							
					En	0.2	0.14	14	1.07	0.119	0.915	1.000
					glis	276	5	9	57	9	5	0
					h	0			30			
					Sp							
					ani	-						
					sh-	0.1	0.16	16	1.07	0.284	0.995	1.000
					En	778	5	4	07	4	5	0
					glis	6			53			
					h							
					Chi							
					nes	-						
					e-	0.1	0.16	16	1.13	0.260	0.993	1.000
					En	870	5	4	13	0	3	0
					glis	1			06			
					h							
					Chi							
					nes	0.1	0.16	16	1.04	0.298	0.996	1.000
					e-	725	5	4	33	8	6	0
					En	6						
					glis							
					h							
					En	0.3	0.16	16	1.93	0.055	0.735	1.000
					glis	202	5	4	63	5	5	0
					h	6						
					e2							

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
-			Left	Pseudohomophone2	Spanish-English	0.3462	0.1192	11	2.9085	0.004	0.152	0.276
-			Left	Pseudohomophone2	Chinese-English	0.1932	0.1675	16	1.1685	0.244	0.991	1.000
-			Right	Pseudohomophone1	English	0.3328	0.1656	6	2.0124	0.046	0.684	1.000
-			Right	Pseudohomophone1	Spanish-English	0.1254	0.1376	13	0.9217	0.359	0.999	1.000
-			Right	Pseudohomophone1	Chinese-English	0.0418	0.1695	16	0.2532	0.800	1.000	1.000
-			Right	Pseudohomophone2	English	0.6483	0.1625	6	3.9797	<.001	0.007	0.009

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
					Spanish-English	0.2428	0.1456	109	1.67	0.096	0.874	1.000
					Chinese-English	0.2337	0.1615	64	1.46	0.160	0.959	1.000
		Chinese-English			English	0.1477	0.1605	64	0.89	0.373	0.999	1.000
					Spanish-English	0.1736	0.1605	64	1.04	0.295	0.996	1.000
					Chinese-English	0.0207	0.1119	111	0.17	0.862	1.000	1.000
					English	0.1602	0.1605	64	0.96	0.334	0.998	1.000

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
					Spanish							
			-	Right	Pseudohomophone1	0.04709	0.165	164	-0.2847	0.776	1.000	1.000
					Spanish							
			-	Right	Pseudohomophone1	0.13068	0.136	130	0.9600	0.339	0.998	1.000
					English							
			-	Right	Pseudohomophone2	0.47575	0.165	164	2.8764	0.005	0.0159	0.0283
					Spanish							
			-	Right	Pseudohomophone2	0.07030	0.165	164	0.4250	0.671	1.000	1.000
					English							
			-	Right	Pseudohomophone2	0.06115	0.145	149	0.4226	0.673	1.000	1.000
					Spanish							
	Pseudohomophone2	English	-	Left	Pseudohomophone2	0.02596	0.165	164	0.1569	0.875	1.000	1.000

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
-			Left	Pseudohomophone2	Chines-English	-0.1269	0.165	164	-0.7678	0.444	1.000	1.000
-			Right	Pseudohomophone1	English	0.01259	0.145	169	0.0870	0.931	1.000	1.000
-			Right	Pseudohomophone1	Spanish-English	-0.19479	0.165	164	-1.1777	0.241	0.990	1.000
-			Right	Pseudohomophone1	Chines-English	-0.27838	0.165	164	-1.6830	0.094	0.873	1.000
-			Right	Pseudohomophone2	English	0.32805	0.136	161	2.4099	0.018	0.409	0.995
-			Right	Pseudohomophone2	Spanish-English	-0.07740	0.165	164	-0.4680	0.640	1.000	1.000

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	phoIm
					Chi							
				Pseudohomophone2	nes	-						
					e-	0.0	0.	1	-	0.	1.	1.
					En	865	16	6	0.	60	00	00
					glis	5	5	4	52	1	0	0
					h				33			
					Chi							
				Pseudohomophone2	nes	-						
					e-	0.1	0.	1	-	0.	0.	1.
					En	529	16	6	0.	35	99	00
					glis	5	5	4	92	6	9	0
					h				47			
					Chi							
				Pseudohomophone1	En	-	0.	1	-	0.	1.	1.
					glis	0.0	0.	6	0.	93	00	00
					h	133	5	4	08	6	0	0
					h	6			08			
					Sp							
				Pseudohomophone1	ani	-	0.	1	-	0.	0.	1.
					sh-	0.2	0.	0	1.	13	93	00
					En	207	14	9	52	0	0	0
					glis	5	5	9	57			
					h							
					Chi							
				Pseudohomophone1	nes	-	0.	1	-	0.	0.	1.
					e-	0.3	0.	6	1.	06	79	00
					En	043	16	4	84	8	3	0
					glis	4	5	4	00			
					h							
					Chi							
				Pseudohomophone2	En	0.3	0.	1	1.	0.	0.	1.
					glis	021	16	6	82	07	80	00
					h	0	5	4	64	0	1	0

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
					Spanish	-	0.136	16	-0.7593	0.449	1.000	1.000
					Spanish	0.10336	0.136	16	0.7593	0.449	1.000	1.000
					Chinese	-	0.1251	16	-0.6802	0.497	1.000	1.000
					Chinese	0.1251	0.1251	16	0.6802	0.497	1.000	1.000
		Chinese										
					Spanish	-	0.0678	16	-0.4099	0.682	1.000	1.000
					Spanish	0.0678	0.0678	16	0.4099	0.682	1.000	1.000
					Chinese	-	0.1513	14	-1.0463	0.298	0.996	1.000
					Chinese	0.1513	0.1513	14	1.0463	0.298	0.996	1.000
					Chinese	0.4550	0.165	16	2.7512	0.007	0.021	0.040
					Chinese	0.4550	0.165	16	2.7512	0.007	0.021	0.040

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
					Spanish-English	0.0	0.169	16	0.0	0.765	1.000	1.000
					Chinese-English	0.0	0.134	13	0.0	0.767	1.000	1.000
Right	Pseudohomophone1	English	Right	Pseudohomophone1	Spanish-English	0.207	0.165	16	1.253	0.212	0.983	1.000
					Chinese-English	0.209	0.165	16	1.275	0.080	0.837	1.000
			Right	Pseudohomophone2	English	0.315	0.119	11	2.651	0.009	0.026	0.053
			Right	Pseudohomophone2	Spanish-English	0.0	0.169	16	0.0	0.587	1.000	1.000

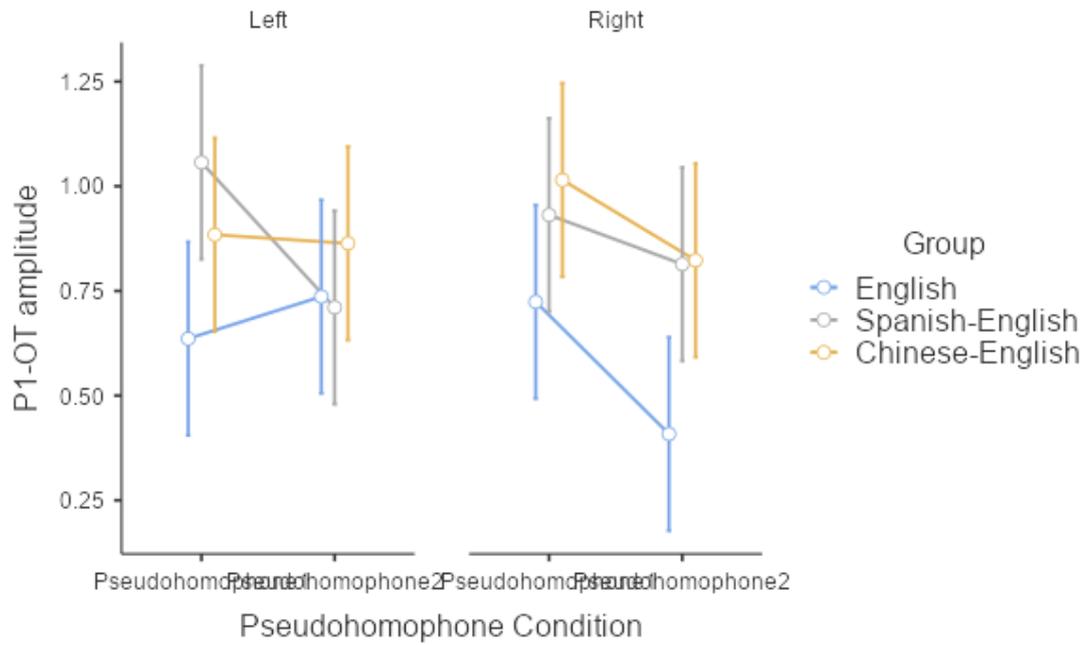


Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
					Spanish-English	0.20097	0.1657	164	1.21	0.226	0.267	1.000
					Chinese-English	0.19183	0.1193	113	1.61	0.110	0.109	1.000
	Pseudohomophone2	English			Spanish-English	-0.40546	0.1657	164	-2.45	0.015	0.038	0.871
	Pseudohomophone2	English			Chinese-English	-0.41460	0.1657	164	-2.50	0.013	0.034	0.763
		Spanish-English			Chinese-English	-0.0915	0.1657	164	-0.55	0.586	1.000	1.000

Estimated Marginal Means

Pseudohomophone Condition \* Group \* Hemisphere



## Repeated Measures ANOVA

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Hemisphere	0.76968	1	0.76968	6.7658	0.012	0.106
Hemisphere * Group	0.02770	2	0.01385	0.1217	0.886	0.004
Residual	6.48436	57	0.11376			
Pseudohomophone Condition	0.18762	1	0.18762	2.0724	0.155	0.035
Pseudohomophone Condition * Group	0.13039	2	0.06520	0.7201	0.491	0.025
Residual	5.16026	57	0.09053			
Hemisphere * Pseudohomophone Condition	0.04940	1	0.04940	0.7668	0.385	0.013
Hemisphere * Pseudohomophone Condition * Group	0.00829	2	0.00415	0.0644	0.938	0.002
Residual	3.67211	57	0.06442			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Group	1.82	2	0.912	3.12	0.052	0.099
Residual	16.64	57	0.292			

Note. Type 3 Sums of Squares

### Assumptions

Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
NAA_P1.LeftFC\$Pseudohomophone1	1.54	2	57	0.223
NAA_P1.RightFC\$Pseudohomophone1	1.88	2	57	0.163
NAA_P1.LeftFC\$Pseudohomophone2	4.26	2	57	0.019
NAA_P1.RightFC\$Pseudohomophone2	1.02	2	57	0.367

### Post Hoc Tests

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	Phi
Left	Pseudohomophone1	English	Left	Pseudohomophone1	Spanish	0.1	0.	1	1.	0.	0.	1.
					English	542	11	6	30	19	97	00
Left	Pseudohomophone1	English	Left	Pseudohomophone1	Spanish	2	84	2	27	5	8	0
					English							

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	phoim
-			Left	Pseudohomophone1	Chinese-English	0.21865	0.1184	16	1.84	0.067	0.789	1.00
-			Left	Pseudohomophone2	English	-0.0976	0.0880	11	-1.124	0.215	0.984	1.00
-			Left	Pseudohomophone2	Spanish-English	0.2085	0.1184	16	1.76	0.039	0.997	1.00
-			Left	Pseudohomophone2	Chinese-English	0.0794	0.1184	16	0.67	0.363	0.999	1.00
-			Right	Pseudohomophone1	English	0.1354	0.0944	10	1.429	0.232	0.988	1.00
-			Right	Pseudohomophone1	Spanish-English	0.0464	0.1184	16	0.392	0.486	0.852	1.00

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison													
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	phoim	
					Chi								
		-	Right	Pseudohomophone1	ne se-English	0.3084	0.1184	16	2.6051	0.010	0.286	0.612	
		-	Right	Pseudohomophone2	English	0.0627	0.1111	13	0.562	0.536	1.000	1.000	
		-	Right	Pseudohomophone2	Spanish-English	0.2566	0.1184	16	2.1679	0.032	0.575	1.000	
		-	Right	Pseudohomophone2	ne se-English	0.2255	0.1184	16	1.9049	0.059	0.755	1.000	
		Spanish-English	-	Left	Pseudohomophone1	ne se-English	0.0644	0.1184	6.54	0.587	1.000	1.000	
		Spanish-English	-	Left	Pseudohomophone2	English	0.2639	0.1184	6.22	2.2299	0.027	0.531	1.000

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	phoIm
-			Left	Pseudohomophone2	Spanish-English	-0.03337	0.080	11	-0.3791	0.705	1.000	1.000
-			Left	Pseudohomophone2	Chinese-English	0.04628	0.1184	16	0.3910	0.696	1.000	1.000
-			Right	Pseudohomophone1	English	0.04068	0.1184	16	0.3437	0.732	1.000	1.000
-			Right	Pseudohomophone1	Spanish-English	0.05042	0.0944	10	0.5342	0.594	1.000	1.000
-			Right	Pseudohomophone1	Chinese-English	0.05418	0.1184	16	0.4624	0.645	0.978	1.000
-			Right	Pseudohomophone2	English	0.09146	0.1184	16	0.7726	0.441	0.000	1.000

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	phoIm
-			Right	Pseudohomophone2	Spanish-English	0.10241	0.11	13	1.0133	0.313	0.997	1.00
-			Right	Pseudohomophone2	Chinese-English	0.07128	0.1184	16	0.6022	0.548	1.000	1.00
-		Chinese-English	Left	Pseudohomophone2	English	-0.32841	0.1184	16	-2.7742	0.006	0.201	0.39
-			Left	Pseudohomophone2	Spanish-English	-0.09780	0.1184	16	-0.8261	0.410	1.000	1.00
-			Left	Pseudohomophone2	Chinese-English	-0.11072	0.0880	11	-1.2578	0.211	0.983	1.00
-			Right	Pseudohomophone1	English	-0.0512	0.1184	16	-0.4380	0.376	0.999	1.00

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	phoim
-			Right	Pseudohomophone1	Spanish-English	-0.0140	0.1184	16	-0.11	0.906	1.000	1.000
-			Right	Pseudohomophone1	Chinese-English	0.0897	0.0944	10	0.9508	0.344	0.998	1.000
-			Right	Pseudohomophone2	English	-0.1558	0.1184	16	-1.3169	0.190	0.976	1.000
-			Right	Pseudohomophone2	Spanish-English	0.0379	0.1184	16	0.3208	0.749	1.000	1.000
-			Right	Pseudohomophone2	Chinese-English	0.0068	0.1105	11	0.0678	0.946	1.000	1.000
	Pseudohomophone2	English	Left	Pseudohomophone2	Spanish-English	0.2306	0.1184	16	1.9481	0.053	0.727	1.000

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	phoIm
-			Left	Pseudohomophone2	Chinese-English	0.1770	0.1184	16	1.8389	0.068	0.794	1.00
-			Right	Pseudohomophone1	English	0.2230	0.1011	13	2.2094	0.029	0.547	1.00
-			Right	Pseudohomophone1	Spanish-English	0.1440	0.1184	16	1.2058	0.009	0.258	0.539
-			Right	Pseudohomophone1	Chinese-English	0.1815	0.1184	16	1.5323	<.001	0.026	0.035
-			Right	Pseudohomophone2	English	0.7252	0.0944	16	7.678	0.000	0.799	1.00
-			Right	Pseudohomophone2	Spanish-English	0.6639	0.1184	16	5.5950	0.0002	0.092	0.151

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	phoIm
-			Right	Pseudohomophone2	Chinese-English	0.3526	0.1184	162	2.8321	0.005	0.177	0.334
-		Spanish-English	Left	Pseudohomophone2	Chinese-English	-0.01292	0.1184	162	-0.1091	0.913	1.000	1.000
-			Right	Pseudohomophone1	English	-0.00732	0.1184	162	-0.0618	0.951	1.000	1.000
-			Right	Pseudohomophone1	Spanish-English	0.08379	0.1111	103	0.7590	0.409	1.000	1.000
-			Right	Pseudohomophone1	Chinese-English	0.18754	0.1184	162	1.5842	0.115	0.091	0.200
-			Right	Pseudohomophone2	English	-0.05809	0.1184	162	-0.4907	0.624	1.000	1.000

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptu key	Pho lm
-			Right	Pseudohomophone2	Spanish-English	0.13578	0.0944	106	1.4385	0.153	0.953	1.000
-			Right	Pseudohomophone2	Chinese-English	0.10465	0.1184	106	0.8840	0.378	0.999	1.000
		Chinese-English	Right	Pseudohomophone1	English	0.00560	0.1184	106	0.0473	0.962	1.000	1.000
			Right	Pseudohomophone1	Spanish-English	0.09670	0.1184	106	0.8169	0.415	1.000	1.000
			Right	Pseudohomophone1	Chinese-English	0.20046	0.1113	106	1.9834	0.050	0.703	1.000
			Right	Pseudohomophone2	English	-0.04517	0.1184	106	-0.3816	0.703	1.000	1.000

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	phoIm
					Spanish-English	0.14870	0.1184	16	1.25	0.211	0.303	1.000
					Chinese-English	0.11757	0.0944	16	1.24	0.216	0.264	1.000
Right	Pseudohomophone1	English			Spanish-English	0.09110	0.1184	16	0.76	0.443	1.000	1.000
					Chinese-English	0.19486	0.1184	16	1.64	0.102	0.889	1.000
					English	0.05077	0.0880	1	0.57	0.565	1.000	1.000
					Spanish-English	0.14310	0.1184	16	1.20	0.229	0.298	1.000

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

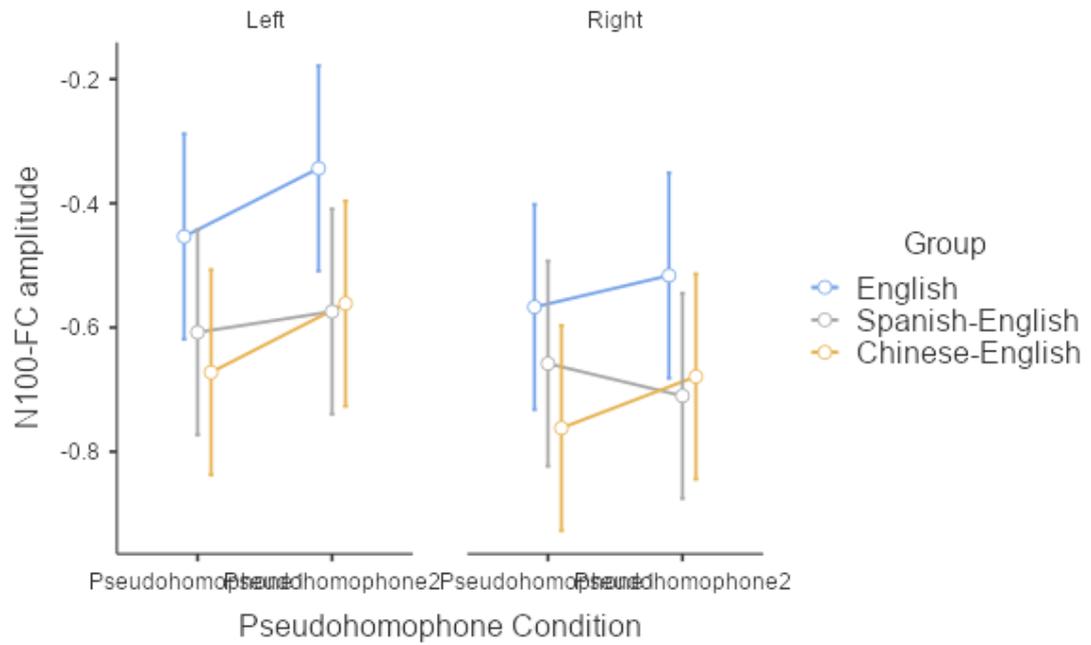
Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	phoIm
					Chinese-English							
			-	Right	Pseudohomophone2	0.1197	0.1184	162	0.9458	0.346	0.998	1.000
		Spanish-English										
			-	Right	Pseudohomophone1	0.0375	0.1184	162	0.8764	0.382	0.999	1.000
			-	Right	Pseudohomophone2	0.1418	0.1184	162	1.1985	0.232	0.988	1.000
			-	Right	Pseudohomophone2	0.0519	0.0801	159	0.5907	0.556	1.000	1.000
			-	Right	Pseudohomophone2	0.0208	0.1184	162	0.1762	0.860	1.000	1.000
		Chinese-English										
			-	Right	Pseudohomophone2	0.2456	0.1184	162	2.0749	0.040	0.641	1.000

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
-			Right	Pseudohomophone2	Spanish-English	-0.05176	0.1184	16	-0.4373	0.663	1.000	1.000
-			Right	Pseudohomophone2	Chinese-English	-0.08289	0.0880	19	-0.9417	0.348	0.998	1.000
	Pseudohomophone2	English	Right	Pseudohomophone2	Spanish-English	0.19387	0.1184	16	1.6377	0.030	0.892	1.000
	Pseudohomophone2		Right	Pseudohomophone2	Chinese-English	0.16274	0.1184	16	1.3747	0.171	0.967	1.000
		Spanish-English	Right	Pseudohomophone2	Chinese-English	-0.03113	0.1184	16	-0.2630	0.793	1.000	1.000

Estimated Marginal Means

Pseudohomophone Condition \* Group \* Hemisphere



## Repeated Measures ANOVA

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Hemisphere	1.306	1	1.306	1.028	0.315	0.018
Hemisphere * Group	4.032	2	2.016	1.587	0.213	0.053
Residual	72.412	57	1.270			
Pseudohomophone Condition	5.545	1	5.545	7.189	0.010	0.112
Pseudohomophone Condition * Group	1.682	2	0.841	1.090	0.343	0.037
Residual	43.961	57	0.771			
Hemisphere * Pseudohomophone Condition	3.962	1	3.962	7.988	0.006	0.123
Hemisphere * Pseudohomophone Condition * Group	0.457	2	0.228	0.460	0.633	0.016
Residual	28.270	57	0.496			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Group	0.496	2	0.248	0.0881	0.916	0.003
Residual	160.292	57	2.812			

Note. Type 3 Sums of Squares

### Assumptions

Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
NAA_N170.LeftOP\$Pseudohomophone1	1.27	2	57	0.290
NAA_N170.RightOP\$Pseudohomophone1	1.83	2	57	0.170
NAA_N170.LeftOP\$Pseudohomophone2	8.20	2	57	< .001
NAA_N170.RightOP\$Pseudohomophone2	1.25	2	57	0.295

### Post Hoc Tests

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison													
Hemisphere	Pseudohomophone Condition	Group		Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
Left	Pseudohomophone1	English	-	Left	Pseudohomophone1	Spanish-English	0.3580	0.366	157	0.974	0.329	0.329	1.000

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-			Left	Pseudohomophone1	Chinese-English	-0.1989	0.366	1574	-0.5438	0.587	1.000	1.000
-			Left	Pseudohomophone2	English	-0.3832	0.252	1089	-1.5226	0.131	0.931	1.000
-			Left	Pseudohomophone2	Spanish-English	-0.5033	0.366	1574	-1.3761	0.171	0.966	1.000
-			Left	Pseudohomophone2	Chinese-English	-0.6372	0.366	1574	-1.7423	0.083	0.846	1.000
-			Right	Pseudohomophone1	English	-0.6038	0.297	956	-2.0317	0.045	0.671	1.000
-			Right	Pseudohomophone1	Spanish-English	-0.3307	0.366	1574	-0.9041	0.367	0.999	1.000

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison													
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	phoim	
					Chi								
		-	Right	Pseudohomophone1	ne-se-Englis h	-0.199	0.366	1574	-0.3279	0.743	1.000	1.000	
		-	Right	Pseudohomophone2	Englis h	-0.422	0.320	1076	-1.3278	0.187	0.974	1.000	
		-	Right	Pseudohomophone2	Spansh-Englis h	-0.493	0.366	1574	-1.3482	0.180	0.971	1.000	
		-	Right	Pseudohomophone2	Chi-ne-se-Englis h	-0.278	0.366	1574	-0.7608	0.448	1.000	1.000	
		Spansh-Englis h	-	Left	Pseudohomophone1	Chi-ne-se-Englis h	-0.559	0.366	1574	-1.528	0.130	0.932	1.000
		Spansh-Englis h	-	Left	Pseudohomophone2	Englis h	-0.743	0.366	1574	-2.0270	0.044	0.674	1.000

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	phoim
-		Left		Pseudohomophone2	Spanish-English	-0.8613	0.252	108	-3.4217	<.001	0.040	0.058
-		Left		Pseudohomophone2	Chinese-English	-0.952	0.366	154	-2.7213	0.007	0.0226	0.470
-		Right		Pseudohomophone1	English	-0.9618	0.366	154	-2.6300	0.009	0.0272	0.591
-		Right		Pseudohomophone1	Spanish-English	-0.687	0.297	95.6	-2.3174	0.023	0.0472	1.000
-		Right		Pseudohomophone1	Chinese-English	-0.4780	0.366	154	-1.3069	0.193	0.0977	1.000
-		Right		Pseudohomophone2	English	-0.7823	0.366	154	-2.1390	0.034	0.0596	1.000

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	phoIm
-			Right	Pseudohomophone2	Spanish-English	-0.851	0.320	107	-2.6637	0.009	0.259	0.571
-			Right	Pseudohomophone2	Chinese-English	-0.6363	0.366	154	-1.7398	0.084	0.847	1.000
-		Chinese-English	Left	Pseudohomophone2	English	-0.1844	0.366	154	-0.5042	0.615	1.000	1.000
-			Left	Pseudohomophone2	Spanish-English	-0.3044	0.366	154	-0.8323	0.406	1.000	1.000
-			Left	Pseudohomophone2	Chinese-English	-0.4383	0.252	109	-1.7413	0.084	0.845	1.000
-			Right	Pseudohomophone1	English	-0.4049	0.366	154	-1.1072	0.270	0.994	1.000

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	phoIm
					Sp							
				Pseudohomophone1	Right	-0.1318	0.366	1574	-0.36	0.719	1.000	1.000
				Pseudohomophone1	Right	0.0789	0.297	956	0.2656	0.791	1.000	1.000
				Pseudohomophone2	Right	-0.2254	0.366	1574	-0.6162	0.539	1.000	1.000
				Pseudohomophone2	Right	-0.2942	0.366	1574	-0.8044	0.422	1.000	1.000
				Pseudohomophone2	Right	-0.0794	0.320	1079	-0.2484	0.804	1.000	1.000
	Pseudohomophone2	English		Pseudohomophone2	Left	-0.1200	0.366	1574	-0.3282	0.743	1.000	1.000

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	phoim
-			Left	Pseudohomophone2	Chinese-English	-0.2539	0.366	1574	-0.6943	0.488	1.000	1.000
-			Right	Pseudohomophone1	English	-0.2205	0.320	1076	-0.6902	0.492	1.000	1.000
-			Right	Pseudohomophone1	Spanish-English	0.0526	0.366	1574	0.1438	0.886	1.000	1.000
-			Right	Pseudohomophone1	Chinese-English	0.2633	0.366	1574	0.7200	0.473	1.000	1.000
-			Right	Pseudohomophone2	English	-0.0410	0.297	956	-0.1379	0.891	1.000	1.000
-			Right	Pseudohomophone2	Spanish-English	-0.1098	0.366	1574	-0.3002	0.764	1.000	1.000

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-			Right	Pseudohomophone2	Chinese-English	0.050	0.06	154	0.72	0.477	1.000	1.000
-		Spanish-English	Left	Pseudohomophone2	Chinese-English	-0.339	0.06	154	-3.62	0.000	1.000	1.000
-			Right	Pseudohomophone1	English	0.005	0.06	154	0.27	0.784	1.000	1.000
-			Right	Pseudohomophone1	Spanish-English	0.0726	0.06	106	0.54	0.590	1.000	1.000
-			Right	Pseudohomophone1	Chinese-English	0.0833	0.06	154	1.04	0.296	0.999	1.000
-			Right	Pseudohomophone2	English	0.0790	0.06	154	0.21	0.829	1.000	1.000

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	phoIm
					Spanish-English	0.0102	0.027	95.6	0.0344	0.003	1.000	1.000
					Chinese-English	0.2250	0.0366	15.74	0.6153	0.009	1.000	1.000
		Chinese-English			Spanish-English	0.0334	0.0366	15.74	0.0913	0.007	1.000	1.000
					Spanish-English	0.3065	0.0366	15.74	0.8382	0.003	1.000	1.000
					Chinese-English	0.5172	0.0320	10.76	1.6189	0.0108	0.088	1.000
					Spanish-English	0.2130	0.0366	15.74	0.5823	0.011	1.000	1.000

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	phoIm
					Spanish-English	0.1441	0.366	1574	0.3941	0.694	1.000	1.000
					Chinese-English	0.3589	0.297	956	1.2078	0.230	0.987	1.000
Right	Pseudohomophone1	English			Spanish-English	0.2731	0.366	1574	0.7468	0.456	1.000	1.000
					Chinese-English	0.4838	0.366	1574	1.3230	0.185	0.975	1.000
					English	0.1796	0.252	1062	0.7133	0.477	1.000	1.000
					Spanish-English	0.1107	0.366	1574	0.3077	0.762	1.000	1.000

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

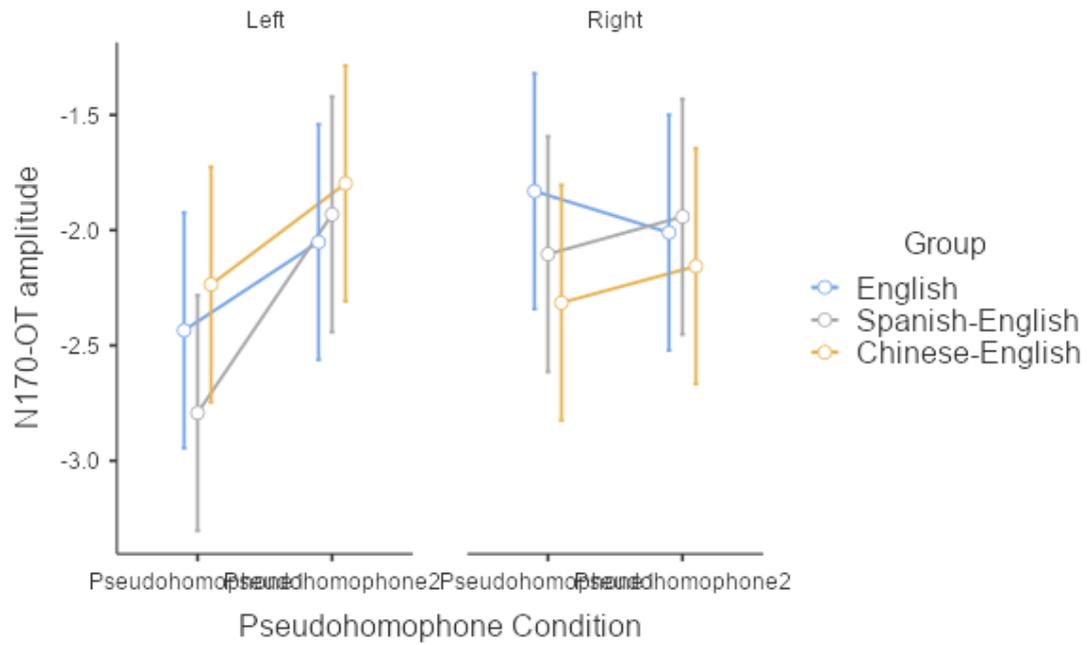
Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	phoim
					Chinese							
				Pseudohomophone2	English	0.255	0.036	154	7.02	0.0005	0.999	1.000
		Spanish-English			Chinese							
				Pseudohomophone1	English	0.107	0.036	154	2.96	0.003	1.000	1.000
				Pseudohomophone2	English	0.093	0.036	154	2.59	0.011	1.000	1.000
				Pseudohomophone2	Spanish-English	0.062	0.025	109	2.51	0.012	1.000	1.000
				Pseudohomophone2	Chinese	0.052	0.036	154	1.43	0.156	1.000	1.000
		Chinese-English			Chinese							
				Pseudohomophone2	English	0.043	0.036	154	1.21	0.227	1.000	1.000

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	phoIm
					Spanish	-	0.3731	1574	-1.0202	0.3097	0.3097	1.0000
					Spanish	0.1583	0.2532	1089	0.6289	0.5311	1.0000	1.0000
					Spanish	-0.0688	0.3668	1574	-0.1882	0.8511	1.0000	1.0000
					Spanish	0.1460	0.3668	1574	0.3992	0.6900	1.0000	1.0000
					Chinese	0.2148	0.3668	1574	0.5874	0.5508	1.0000	1.0000
					Chinese	0.1488	0.3668	1574	0.4074	0.5808	1.0000	1.0000
					Chinese	0.2148	0.3668	1574	0.5874	0.5508	1.0000	1.0000
					Chinese	0.1488	0.3668	1574	0.4074	0.5808	1.0000	1.0000

Estimated Marginal Means

Pseudohomophone Condition \* Group \* Hemisphere



## Repeated Measures ANOVA

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Hemisphere	1.5358	1	1.5358	14.2640	< .001	0.200
Hemisphere * Group	0.0294	2	0.0147	0.1367	0.872	0.005
Residual	6.1373	57	0.1077			
Task	0.5078	1	0.5078	4.6701	0.035	0.076
Task * Group	0.0203	2	0.0102	0.0935	0.911	0.003
Residual	6.1974	57	0.1087			
Hemisphere * Task	0.3146	1	0.3146	7.5388	0.008	0.117
Hemisphere * Task * Group	0.2904	2	0.1452	3.4798	0.038	0.109
Residual	2.3787	57	0.0417			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Group	0.433	2	0.216	0.552	0.579	0.019
Residual	22.367	57	0.392			

Note. Type 3 Sums of Squares

## Assumptions

Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
PAA_P1.LeftO\$oLDT	0.187	2	57	0.830
PAA_P1.RightO\$oLDT	0.536	2	57	0.588
PAA_P1.LeftO\$pLDT	0.667	2	57	0.517
PAA_P1.RightO\$pLDT	0.269	2	57	0.765

## Post Hoc Tests

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	$p_{Tukey}$	$p_{Holm}$
Left	oLDT	English	-	Left	Spanish	-	0.1	13	-	0.131	0.933	1.000
					-	0.19	27	4.178				
					English	356	5	7	8			

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-	Left	oL DT	Chinese-English	-	0.13309	0.1275	1327	4.436	-1.043	0.299	0.996	1.000
-	Left	pL DT	English	-	0.05928	0.0867	95	0.6835	0.483	0.496	1.000	1.000
-	Left	pL DT	Spanish-English	-	0.07291	0.1275	1327	0.5717	0.571	0.568	1.000	1.000
-	Left	pL DT	Chinese-English	-	0.03437	0.1275	1327	0.2695	0.269	0.788	1.000	1.000
-	Right	oL DT	English	-	0.13945	0.0864	95	1.6134	0.110	0.900	0.900	1.000
-	Right	oL DT	Spanish-English	-	0.08818	0.1275	1327	0.6915	0.490	1.000	1.000	1.000
-	Right	oL DT	Chinese-English	-	0.14293	0.1275	1327	1.1208	0.264	0.993	0.993	1.000
-	Right	pL DT	English	-	0.23811	0.1040	11	2.2891	0.024	0.490	0.000	1.000

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	ptukey	Pholm
			-	Right	pL DT	Spanish - English	0.05776	0.1275	134.529	0.451	0.651	1.000
			-	Right	pL DT	Chinese-English	0.13343	0.1275	134.463	1.046	0.297	0.996
		Spanish - English	-	Left	oL DT	Chinese-English	0.06047	0.1275	134.742	0.473	0.636	1.000
			-	Left	pL DT	English	0.25284	0.1275	134.826	1.976	0.049	0.704
			-	Left	pL DT	Spanish - English	0.26647	0.0867	95.721	3.072	0.003	0.105
			-	Left	pL DT	Chinese-English	0.22793	0.1275	134.873	1.773	0.076	0.822
			-	Right	oL DT	English	0.33301	0.1275	134.112	2.611	0.010	0.284
			-	Right	oL DT	Spanish - English	0.28174	0.0864	95.598	3.258	0.002	0.064

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub>	p <sub>holm</sub>
		-	Right	oL DT	Chinese-English	0.33649	0.1275	1347	2.6385	0.009	0.269	0.568
		-	Right	pL DT	English	0.43167	0.1275	1349	3.3849	<.001	0.0042	0.062
		-	Right	pL DT	Spanish-English	0.25132	0.1040	1140	2.4161	0.017	0.404	0.985
		-	Right	pL DT	Chinese-English	0.32699	0.1275	1347	2.5641	0.011	0.311	0.675
		Chinese-English	Left	pL DT	English	0.19237	0.1275	1345	1.5085	0.134	0.936	1.000
		-	Left	pL DT	Spanish-English	0.20600	0.1275	1347	1.6153	0.109	0.901	1.000
		-	Left	pL DT	Chinese-English	0.16746	0.0867	951	1.9307	0.056	0.737	1.000
		-	Right	oL DT	English	0.27254	0.1275	1347	2.1371	0.034	0.597	1.000

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison													
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub>	p <sub>holm</sub>	
			-	Right	oL DT	Spanish - English	0.22127	0.127	13.35	1.71	0.085	0.849	1.000
			-	Right	oL DT	Chinese-English	0.27602	0.0864	95.4	3.193	0.002	0.007	0.012
			-	Right	pL DT	English	0.37120	0.1275	13.4	2.910	0.004	0.014	0.026
			-	Right	pL DT	Spanish - English	0.19085	0.1275	13.4	1.496	0.137	0.093	1.000
			-	Right	pL DT	Chinese-English	0.26653	0.1040	11.4	2.562	0.012	0.031	0.069
	pL DT	English	-	Left	pL DT	Spanish - English	0.01363	0.1275	13.4	0.106	0.915	1.000	1.000
			-	Left	pL DT	Chinese-English	-0.02491	0.1275	13.4	-0.195	0.845	1.000	1.000
			-	Right	oL DT	English	0.08017	0.1040	11.4	0.770	0.442	1.000	1.000

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	ptukey	pholm
			-	Right	oL DT	Spanish - English	0.02890	0.1275	134.266	0.226	0.821	1.000
			-	Right	oL DT	Chinese-English	0.08365	0.1275	134.559	0.655	0.513	1.000
			-	Right	pL DT	English	0.17883	0.0864	95.690	2.069	0.041	0.645
			-	Right	pL DT	Spanish - English	-0.00152	0.1275	134.119	-0.011	0.990	1.000
			-	Right	pL DT	Chinese-English	0.07415	0.1275	134.815	0.581	0.562	1.000
		Spanish - English	-	Left	pL DT	Chinese-English	-0.03854	0.1275	134.022	-0.302	0.763	1.000
			-	Right	oL DT	English	0.06654	0.1275	134.217	0.521	0.603	1.000
			-	Right	oL DT	Spanish - English	0.01528	0.1040	114.468	0.148	0.884	1.000

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison													
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	ptukey	pholm	
			-	Right	oL DT	Chinese-English	0.07002	0.1275	1347	0.5490	0.584	1.000	1.000
			-	Right	pL DT	English	0.16520	0.1275	1347	1.2954	0.197	0.978	1.000
			-	Right	pL DT	Spanish-English	-0.01515	0.0864	954	-0.1753	0.861	1.000	1.000
			-	Right	pL DT	Chinese-English	0.06053	0.1275	1347	0.4746	0.636	1.000	1.000
		Chinese-English	-	Right	oL DT	English	0.10507	0.1275	1347	0.8239	0.411	1.000	1.000
			-	Right	oL DT	Spanish-English	0.05381	0.1275	1347	0.4220	0.674	1.000	1.000
			-	Right	oL DT	Chinese-English	0.10856	0.1040	1140	1.0436	0.299	0.996	1.000
			-	Right	pL DT	English	0.20373	0.1275	1347	1.5976	0.112	0.907	1.000

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	ptukey	Pholm
			-	Right	pL DT	Spanish - English	0.02339	0.1275	134.834	0.183	0.855	1.000
			-	Right	pL DT	Chinese-English	0.09906	0.0864	95.462	1.146	0.255	0.992
Right	oL DT	English	-	Right	oL DT	Spanish - English	-0.05126	0.1275	134.027	-0.400	0.688	1.000
			-	Right	oL DT	Chinese-English	0.00348	0.1275	134.273	0.027	0.978	1.000
			-	Right	pL DT	English	0.09866	0.0867	95.1375	1.137	0.258	0.992
			-	Right	pL DT	Spanish - English	-0.08169	0.1275	134.405	-0.640	0.523	1.000
			-	Right	pL DT	Chinese-English	-0.00601	0.1275	134.471	-0.047	0.962	1.000

Post Hoc Comparisons - Hemisphere \* Task \* Group

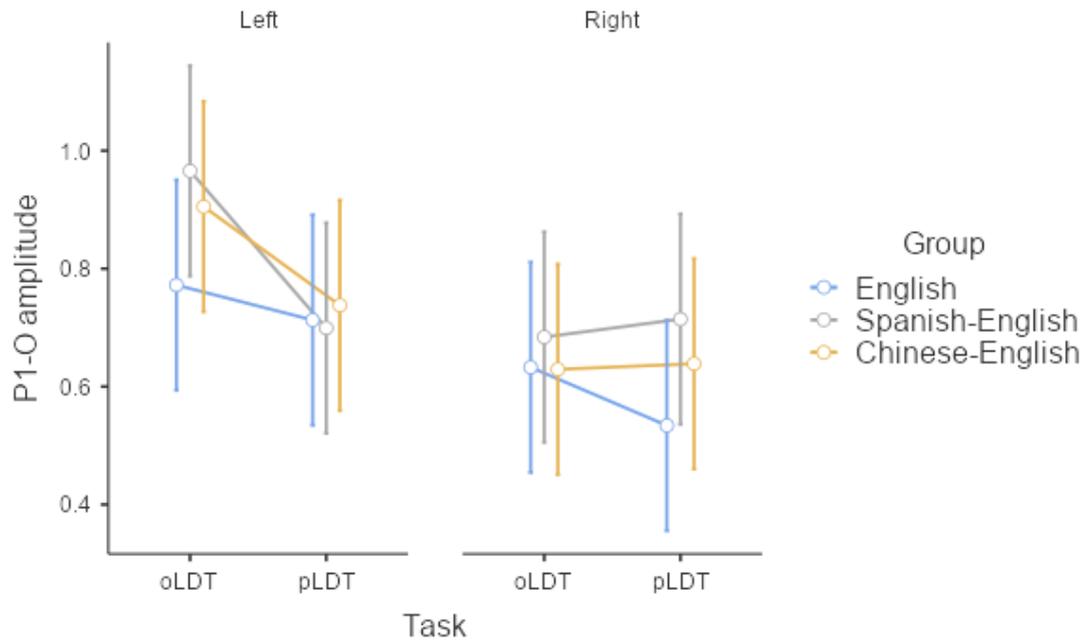
Comparison													
Hemi spher e	Tas k	Gro up	Hemi spher e	Tas k	Gro up	Mea n Diffe renc e	SE	df	t	p	p <sub>tu key</sub>	p <sub>hol m</sub>	
		Spa nish - Eng lish	-	Righ t	oL DT	Chi nes e- Eng lish	0.05 474	0.1 27 5	13 4. 7	0.4 29 3	0.6 68	1. 00 0	1. 00 0
			-	Righ t	pL DT	Eng lish	0.14 992	0.1 27 5	13 4. 7	1.1 75 6	0.2 42	0. 99 0	1. 00 0
			-	Righ t	pL DT	Spa nish - Eng lish	- 0.03 043	0.0 86 7	95 .1	- 0.3 50 8	0.7 27	1. 00 0	1. 00 0
			-	Righ t	pL DT	Chi nes e- Eng lish	0.04 525	0.1 27 5	13 4. 7	0.3 54 8	0.7 23	1. 00 0	1. 00 0
		Chi nes e- Eng lish	-	Righ t	pL DT	Eng lish	0.09 518	0.1 27 5	13 4. 7	0.7 46 3	0.4 57	1. 00 0	1. 00 0
			-	Righ t	pL DT	Spa nish - Eng lish	- 0.08 517	0.1 27 5	13 4. 7	- 0.6 67 8	0.5 05	1. 00 0	1. 00 0
			-	Righ t	pL DT	Chi nes e- Eng lish	- 0.00 949	0.0 86 7	95 .1	- 0.1 09 5	0.9 13	1. 00 0	1. 00 0

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	ptukey	pholm
	pL DT	English	-	Right	pL DT	Spanish - English	-0.18035	0.1275	13.472	0.160	0.959	1.000
			-	Right	pL DT	Chinese-English	-0.10467	0.1275	13.472	0.820	0.413	1.000
		Spanish-English	-	Right	pL DT	Chinese-English	0.07568	0.1275	13.472	0.593	0.554	1.000

**Estimated Marginal Means**

**Task \* Group \* Hemisphere**



## Repeated Measures ANOVA

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Hemisphere	0.0433	1	0.0433	0.219	0.642	0.004
Hemisphere * Group	0.9962	2	0.4981	2.516	0.090	0.081
Residual	11.2847	57	0.1980			
Task	0.4079	1	0.4079	3.349	0.072	0.055
Task * Group	0.3527	2	0.1764	1.448	0.244	0.048
Residual	6.9423	57	0.1218			
Hemisphere * Task	0.0187	1	0.0187	0.263	0.610	0.005
Hemisphere * Task * Group	0.9418	2	0.4709	6.616	0.003	0.188
Residual	4.0571	57	0.0712			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Group	3.04	2	1.520	3.44	0.039	0.108
Residual	25.19	57	0.442			

Note. Type 3 Sums of Squares

## Assumptions

Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
PAA_P1.LeftOP\$oLDT	0.655	2	57	0.523
PAA_P1.RightOP\$oLDT	3.066	2	57	0.054
PAA_P1.LeftOP\$pLDT	0.950	2	57	0.393
PAA_P1.RightOP\$pLDT	8.698	2	57	< .001

## Post Hoc Tests

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	$p_{Tukey}$	$p_{Holm}$
Left	oLDT	English	-	Left	Spanish	-	0.1	15	-	0.2	0.	1.
					-	0.18	44	5.	13	98	00	
					English	0.047	0.03	4	1.57	0.13	0.4	0

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-	Left	oL DT	Chinese-English	-	0.19826	0.1443	1544	5.740	-1.3740	0.171	0.967	1.000
-	Left	pL DT	English	-	0.01364	0.0982	1067	6.388	-0.1388	0.890	1.000	1.000
-	Left	pL DT	Spanish-English	-	0.03135	0.1443	1544	5.173	-0.2173	0.828	1.000	1.000
-	Left	pL DT	Chinese-English	-	0.03343	0.1443	1544	5.317	-0.2317	0.817	1.000	1.000
-	Right	oL DT	English	-	0.01852	0.1160	930	5.596	0.1596	0.874	1.000	1.000
-	Right	oL DT	Spanish-English	-	0.15412	0.1443	1544	5.681	-1.0681	0.287	0.996	1.000
-	Right	oL DT	Chinese-English	-	0.27080	0.1443	1544	5.767	-1.8767	0.062	0.772	1.000
-	Right	pL DT	English	-	0.27148	0.1264	1079	7.470	2.1470	0.034	0.591	1.000

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	ptukey	pholm
					Spanish	-	0.1	15	-	0.0	0.	0.
			Right	pL DT	- English	0.35195	0.443	44	2.4391	0.16	0.387	0.902
					Chinese-English	-	0.1	15	-	0.3	0.	1.
			Right	pL DT	e-English	0.13154	0.443	44	0.9116	0.63	0.999	1.000
		Spanish-English			Chinese-English	-	0.1	15	-	0.9	1.	1.
			Left	oL DT	e-English	0.01779	0.443	44	0.1233	0.902	1.000	1.000
					English	0.16683	0.443	44	1.1562	0.249	0.991	1.000
					Spanish-English	0.14912	0.0982	10	1.5181	0.132	0.932	1.000
			Left	pL DT	- English							
					Chinese-English	0.14704	0.443	44	1.0190	0.310	0.997	1.000
			Left	pL DT	e-English							
					English	0.19899	0.443	44	1.3790	0.170	0.966	1.000
			Right	oL DT	English							
					Spanish-English	0.02635	0.160	93	0.2271	0.821	1.000	1.000
			Right	oL DT	- English							

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	ptukey	pholm
			-	Right	oL DT	Chinese-English	-0.09033	0.1443	15.54	-0.6260	0.532	1.000
			-	Right	pL DT	English	0.45195	0.1443	15.54	3.1321	0.002	0.084
			-	Right	pL DT	Spanish-English	-0.17148	0.1264	10.79	-1.3562	0.178	0.969
			-	Right	pL DT	Chinese-English	0.04893	0.1443	15.54	0.3391	0.735	1.000
		Chinese-English	-	Left	pL DT	English	0.18463	0.1443	15.54	1.2795	0.203	0.981
			-	Left	pL DT	Spanish-English	0.16691	0.1443	15.54	1.1568	0.249	0.991
			-	Left	pL DT	Chinese-English	0.16484	0.0982	10.67	1.6781	0.096	0.874
			-	Right	oL DT	English	0.21678	0.1443	15.54	1.5023	0.135	0.938

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub>	p <sub>holm</sub>
			-	Right	oL DT	Spanish - English	0.04414	0.1443	15.059	0.305	0.760	1.000
			-	Right	oL DT	Chinese-English	-0.07254	0.1160	93.3253	-0.625	0.533	1.000
			-	Right	pL DT	English	0.46974	0.1443	15.554	3.255	0.001	0.069
			-	Right	pL DT	Spanish - English	-0.15369	0.1443	15.654	-1.065	0.288	0.996
			-	Right	pL DT	Chinese-English	0.06672	0.1264	10.727	0.527	0.599	1.000
	pL DT	English	-	Left	pL DT	Spanish - English	-0.01771	0.1443	15.5227	-0.122	0.902	1.000
			-	Left	pL DT	Chinese-English	-0.01979	0.1443	15.5371	-0.137	0.891	1.000
			-	Right	oL DT	English	0.03215	0.1264	10.749	0.254	0.800	1.000

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	ptukey	pholm
			-	Right	oL DT	Spanish - English	-0.14049	0.1443	15.736	0.332	0.998	1.000
			-	Right	oL DT	Chinese-English	-0.25716	0.1443	15.822	1.772	0.085	1.000
			-	Right	pL DT	English	0.28512	0.160	93.577	2.416	0.0379	0.902
			-	Right	pL DT	Spanish - English	-0.33831	0.1443	15.546	2.344	0.020	1.000
			-	Right	pL DT	Chinese-English	-0.11790	0.1443	15.517	0.81	0.415	1.000
		Spanish - English	-	Left	pL DT	Chinese-English	-0.00208	0.1443	15.514	0.044	0.989	1.000
			-	Right	oL DT	English	0.04986	0.1443	15.456	0.345	0.730	1.000
			-	Right	oL DT	Spanish - English	-0.12278	0.1264	10.719	0.971	0.334	1.000

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	ptukey	pholm
					Chinese-English	-0.23945	0.1443	154	-1.6594	0.099	0.883	1.000
					English	0.30283	0.1443	154	2.0987	0.037	0.624	1.000
					Spanish-English	-0.32060	0.1160	93.3	-2.7636	0.007	0.213	0.413
					Chinese-English	-0.10019	0.1443	154	-0.6944	0.488	1.000	1.000
		Chinese-English			English	0.05194	0.1443	154	0.3600	0.719	1.000	1.000
					Spanish-English	-0.12070	0.1443	154	-0.8365	0.404	1.000	1.000
					Chinese-English	-0.23737	0.1264	107	-1.8773	0.063	0.770	1.000
					English	0.30491	0.1443	154	2.1314	0.036	0.614	1.000

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison													
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	ptukey	pholm	
			-	Right	pL DT	Spanish - English	-0.31852	0.1443	15.544	-2.2074	0.029	0.547	1.000
			-	Right	pL DT	Chinese-English	-0.09811	0.1160	93.3458	-0.8458	0.400	0.999	1.000
Right	oL DT	English	-	Right	oL DT	Spanish - English	-0.17264	0.1443	15.544	-1.1964	0.233	0.989	1.000
			-	Right	oL DT	Chinese-English	-0.28931	0.1443	15.544	-2.0050	0.047	0.689	1.000
			-	Right	pL DT	English	0.25296	0.0982	10.673	2.5753	0.011	0.307	0.660
			-	Right	pL DT	Spanish - English	-0.37047	0.1443	15.544	-2.5674	0.011	0.307	0.660
			-	Right	pL DT	Chinese-English	-0.15006	0.1443	15.544	-1.0399	0.300	0.996	1.000

Post Hoc Comparisons - Hemisphere \* Task \* Group

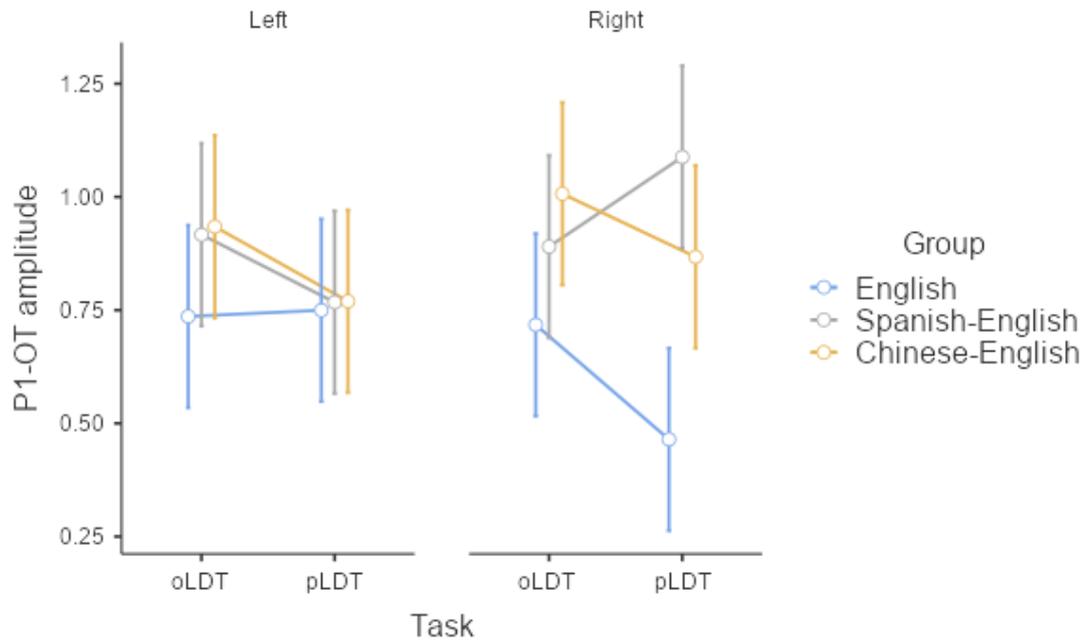
Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	ptukey	pholm
		Spanish - English	Right	oL DT	Chinese - English	-0.11667	0.1443	154	-0.8086	0.420	1.000	1.000
			Right	pL DT	English	0.42560	0.1443	154	2.9495	0.004	0.134	0.228
			Right	pL DT	Spanish - English	-0.19783	0.0982	106	-2.0140	0.047	0.683	1.000
			Right	pL DT	Chinese - English	0.02258	0.1443	154	0.1565	0.876	1.000	1.000
		Chinese - English	Right	pL DT	English	0.54228	0.1443	154	3.781	<.001	0.013	0.016
			Right	pL DT	Spanish - English	-0.08115	0.1443	154	-0.5624	0.575	1.000	1.000
			Right	pL DT	Chinese - English	0.13926	0.0982	106	1.4177	0.159	0.958	1.000

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	ptukey	pholm
	pL DT	English	-	Right	pL DT	Spanish - English	-0.62343	0.1443	15.205	<.001	0.002	0.002
			-	Right	pL DT	Chinese-English	-0.40302	0.1443	15.930	0.006	0.0193	0.0359
		Spanish-English	-	Right	pL DT	Chinese-English	0.22041	0.1443	15.275	0.129	0.0931	1.000

**Estimated Marginal Means**

**Task \* Group \* Hemisphere**



## Repeated Measures ANOVA

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Hemisphere	0.04441	1	0.04441	0.8264	0.367	0.014
Hemisphere * Group	0.03233	2	0.01617	0.3009	0.741	0.010
Residual	3.06270	57	0.05373			
Task	0.00101	1	0.00101	0.0166	0.898	0.000
Task * Group	1.00508	2	0.50254	8.3089	< .001	0.226
Residual	3.44749	57	0.06048			
Hemisphere * Task	0.01282	1	0.01282	0.3287	0.569	0.006
Hemisphere * Task * Group	0.01116	2	0.00558	0.1430	0.867	0.005
Residual	2.22269	57	0.03899			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Group	1.81	2	0.907	3.88	0.026	0.120
Residual	13.34	57	0.234			

Note. Type 3 Sums of Squares

## Assumptions

Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
NAA_P1.LeftFC\$oLDT	1.28	2	57	0.285
NAA_P1.RightFC\$oLDT	3.29	2	57	0.044
NAA_P1.LeftFC\$pLDT	8.48	2	57	< .001
NAA_P1.RightFC\$pLDT	2.64	2	57	0.080

## Post Hoc Tests

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison													
Hemi spher e	Tas k	Gro up		Hemi spher e	Tas k	Gro up	Mea n Diffe renc e	SE	df	t	p	P <sub>tu key</sub>	P <sub>hol m</sub>
Left	oL DT	Eng lish	-	Left	oL DT	Spa nish - Eng lish	0.08 736	0.0 98 4	1 3 6	0.8 87 9	0.3 76	0.9 99	1.0 00

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-	Left	oL DT	Chinese-English			0.14733	0.0984	136	1.4974	0.137	0.939	1.000
-	Left	pL DT	English			-0.09668	0.0705	109	-1.3708	0.173	0.967	1.000
-	Left	pL DT	Spanish-English			0.26126	0.0984	136	2.6554	0.009	0.260	0.532
-	Left	pL DT	Chinese-English			0.10166	0.0984	136	1.0332	0.303	0.997	1.000
-	Right	oL DT	English			0.06513	0.0681	111	0.9566	0.341	0.998	1.000
-	Right	oL DT	Spanish-English			0.07840	0.0984	136	0.7969	0.427	1.000	1.000
-	Right	oL DT	Chinese-English			0.21661	0.0984	136	2.2016	0.029	0.551	1.000
-	Right	pL DT	English			-0.06791	0.0756	116	-0.8986	0.371	0.999	1.000

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	ptukey	pholm
		-	Right	pL DT	Spanish - English	0.25946	0.0984	136	2.6371	0.009	0.270	0.551
		-	Right	pL DT	Chinese-English	0.11246	0.0984	136	1.1430	0.255	0.992	1.000
		Spanish - English	Left	oL DT	Chinese-English	0.05996	0.0984	136	0.6095	0.543	1.000	1.000
		-	Left	pL DT	English	-0.18404	0.0984	136	-1.8705	0.064	0.775	1.000
		-	Left	pL DT	Spanish - English	0.17390	0.0705	109	2.4658	0.015	0.373	0.853
		-	Left	pL DT	Chinese-English	0.01430	0.0984	136	0.1453	0.885	1.000	1.000
		-	Right	oL DT	English	-0.02223	0.0984	136	-0.2259	0.822	1.000	1.000

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	ptukey	pholm
			-	Right	oL DT	Spanish - English	-0.00896	0.0681	1316	-0.1316	0.896	1.000
			-	Right	oL DT	Chinese-English	0.12925	0.0984	1367	1.3137	0.191	0.976
			-	Right	pL DT	English	-0.15527	0.0984	1367	-1.5781	0.117	0.914
			-	Right	pL DT	Spanish - English	0.17210	0.0756	144	2.2774	0.025	0.499
			-	Right	pL DT	Chinese-English	0.02510	0.0984	1367	0.2551	0.799	1.000
		Chinese-English	-	Left	pL DT	English	-0.24400	0.0984	1367	-2.4800	0.014	0.362
			-	Left	pL DT	Spanish - English	0.11394	0.0984	1367	1.1580	0.249	0.991

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-			Left	pL DT	Chinese-English	-0.04567	0.0705	1709	-0.6475	0.519	1.000	1.000
-			Right	oL DT	English	-0.08219	0.0984	136	-0.8354	0.405	1.000	1.000
-			Right	oL DT	Spanish-English	-0.06892	0.0984	136	-0.7005	0.485	1.000	1.000
-			Right	oL DT	Chinese-English	0.06929	0.0681	111	1.0176	0.311	0.997	1.000
-			Right	pL DT	English	-0.21524	0.0984	136	-2.1876	0.030	0.561	1.000
-			Right	pL DT	Spanish-English	0.11214	0.0984	136	1.1397	0.256	0.992	1.000
-			Right	pL DT	Chinese-English	-0.03487	0.0756	144	-0.4614	0.645	1.000	1.000

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	ptukey	pholm
	pL DT	English	-	Left	pL DT	Spanish - English 0.35794	0.0984	136	3.6380	<.001	0.019	0.026
			-	Left	pL DT	Chinese-English 0.19834	0.0984	136	2.0158	0.046	0.682	1.000
			-	Right	oL DT	English 0.16181	0.0756	114	2.1412	0.034	0.595	1.000
			-	Right	oL DT	Spanish - English 0.17508	0.0984	136	1.7794	0.077	0.826	1.000
			-	Right	oL DT	Chinese-English 0.31329	0.0984	136	3.1842	0.002	0.074	0.112
			-	Right	pL DT	English 0.02877	0.0681	111	0.4225	0.673	1.000	1.000
			-	Right	pL DT	Spanish - English 0.35614	0.0984	136	3.6197	<.001	0.020	0.027
			-	Right	pL DT	Chinese-English 0.20914	0.0984	136	2.1256	0.035	0.606	1.000

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison													
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	ptukey	pholm	
		Spanish - English	-	Left	pL DT	Chinese-English	-0.15960	0.0984	136	1.622	0.107	0.898	1.000
			-	Right	oL DT	English	-0.19613	0.0984	136	1.9934	0.048	0.697	1.000
			-	Right	oL DT	Spanish-English	-0.18286	0.0756	114	2.4198	0.017	0.402	0.941
			-	Right	oL DT	Chinese-English	-0.04465	0.0984	136	0.4538	0.651	1.000	1.000
			-	Right	pL DT	English	-0.32917	0.0984	136	3.3456	0.001	0.047	0.068
			-	Right	pL DT	Spanish-English	-0.00180	0.0681	114	0.0264	0.979	1.000	1.000
			-	Right	pL DT	Chinese-English	-0.14880	0.0984	136	1.5124	0.133	0.935	1.000

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	ptukey	pholm
		Chinese-English	-	Right	oL DT	English	-0.03653	0.0984	136	-0.3712	0.711	1.000
			-	Right	oL DT	Spanish-English	-0.02326	0.0984	136	-0.2364	0.813	1.000
			-	Right	oL DT	Chinese-English	0.11495	0.0756	144	1.5212	0.131	0.932
			-	Right	pL DT	English	-0.16957	0.0984	136	-1.7234	0.087	0.854
			-	Right	pL DT	Spanish-English	0.15780	0.0984	136	1.6039	0.111	0.905
			-	Right	pL DT	Chinese-English	0.01080	0.0681	116	0.1586	0.874	1.000
Right	oL DT	English	-	Right	oL DT	Spanish-English	0.01327	0.0984	136	0.1349	0.893	1.000

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison													
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	ptukey	pholm	
			-	Right	oL DT	Chinese-English	0.15148	0.0984	1396	1.5396	0.126	0.927	1.000
			-	Right	pL DT	English	-0.13304	0.0705	1099	-1.8864	0.062	0.765	1.000
			-	Right	pL DT	Spanish-English	0.19433	0.0984	1376	1.9751	0.050	0.709	1.000
			-	Right	pL DT	Chinese-English	0.04733	0.0984	1386	0.4810	0.631	1.000	1.000
		Spanish-English	-	Right	oL DT	Chinese-English	0.13821	0.0984	1376	1.4047	0.162	0.961	1.000
			-	Right	pL DT	English	-0.14631	0.0984	1376	-1.4870	0.139	0.942	1.000
			-	Right	pL DT	Spanish-English	0.18106	0.0705	1099	2.5673	0.012	0.311	0.673

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	ptukey	pholm
			-	Right	pL DT	Chinese-English	0.03406	0.0984	136	0.3462	0.730	1.000
		Chinese-English	-	Right	pL DT	English	-0.28452	0.0984	136	-2.8918	0.004	0.156
			-	Right	pL DT	Spanish-English	0.04285	0.0984	136	0.4355	0.664	1.000
			-	Right	pL DT	Chinese-English	-0.10415	0.0705	109	-1.4768	0.143	0.944
	pL DT	English	-	Right	pL DT	Spanish-English	0.32737	0.0984	136	3.3273	0.001	0.050
			-	Right	pL DT	Chinese-English	0.18037	0.0984	136	1.8332	0.069	0.797
		Spanish-English	-	Right	pL DT	Chinese-English	-0.14700	0.0984	136	-1.4941	0.137	0.940

Post Hoc Comparisons - Task \* Group

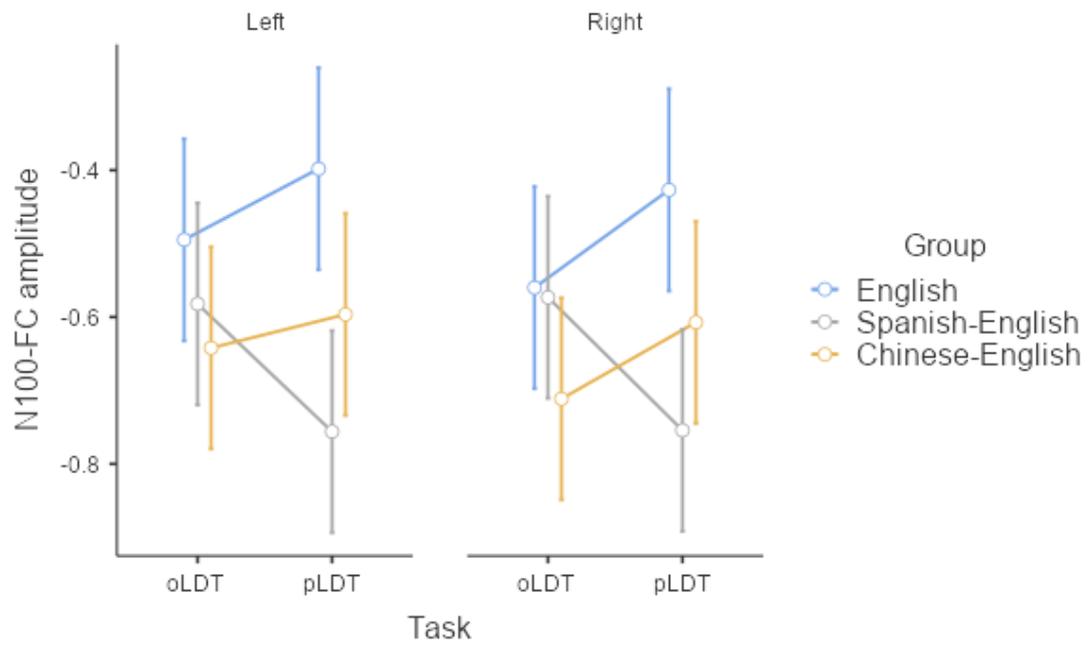
Comparison												
Task	Group		Task	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> <sub>y</sub>	P <sub>holm</sub>	
oLDT	English	-	oLDT	Spanish	0.0503	0.0858	84.6	0.586	0.559	0.992	1.000	
				English								
		-	oLDT	Chinese	0.1494	0.0858	84.6	1.741	0.085	0.509	0.621	
				English								
		-	pLDT	English	0.1149	0.0550	57.0	2.089	0.041	0.308	0.412	
	-	pLDT	Spanish	0.2278	0.0858	84.6	2.655	0.009	0.096	0.114		
			English									
	-	pLDT	Chinese	0.0745	0.0858	84.6	0.868	0.388	0.953	1.000		
			English									
	Spanish	English	-	oLDT	Chinese	0.0991	0.0858	84.6	1.155	0.251	0.857	1.000
					English							
-			pLDT	English	0.1652	0.0858	84.6	1.925	0.058	0.394	0.518	
-			pLDT	Spanish	0.1775	0.0550	57.0	3.227	0.002	0.024	0.029	
				English								
-	pLDT	Chinese	0.0242	0.0858	84.6	0.282	0.779	1.000	1.000			
		English										

Post Hoc Comparisons - Task \* Group

Comparison										
Task	Group	Task	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> <sub>y</sub>	P <sub>holm</sub>
	Chinese-English	pL	English	-0.2643	0.0858	84.6	-3.080	0.003	0.032	0.036
		pL	Spanish-English	0.0784	0.0858	84.6	0.914	0.364	0.942	1.000
		pL	Chinese-English	-0.0749	0.0550	57.0	-1.362	0.178	0.749	1.000
pLDT	English	pL	Spanish-English	0.3427	0.0858	84.6	3.993	<.001	0.002	0.002
		pL	Chinese-English	0.1894	0.0858	84.6	2.207	0.030	0.246	0.330
	Spanish-English	pL	Chinese-English	-0.1533	0.0858	84.6	-1.787	0.078	0.480	0.621

**Estimated Marginal Means**

**Task \* Group \* Hemisphere**



## Repeated Measures ANOVA

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Hemisphere	0.0522	1	0.0522	0.0466	0.830	0.001
Hemisphere * Group	3.7809	2	1.8905	1.6879	0.194	0.056
Residual	63.8422	57	1.1200			
Task	1.1581	1	1.1581	3.4767	0.067	0.057
Task * Group	1.1929	2	0.5964	1.7906	0.176	0.059
Residual	18.9870	57	0.3331			
Hemisphere * Task	1.3337	1	1.3337	4.4557	0.039	0.073
Hemisphere * Task * Group	0.4312	2	0.2156	0.7203	0.491	0.025
Residual	17.0619	57	0.2993			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Group	0.953	2	0.477	0.198	0.821	0.007
Residual	137.511	57	2.412			

Note. Type 3 Sums of Squares

## Assumptions

Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
NAA_N170.LeftOP\$oLDT	2.23	2	57	0.117
NAA_N170.RightOP\$oLDT	3.24	2	57	0.046
NAA_N170.LeftOP\$pLDT	6.35	2	57	0.003
NAA_N170.RightOP\$pLDT	1.79	2	57	0.175

## Post Hoc Tests

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison													
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	$p_{Tukey}$	$p_{Holm}$	
Left	oLDT	English	-	Left	oLDT	Spanish - English	0.36388	0.323	13.277	1.1	0.261	0.993	1.000

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-	Left	oL DT	Chinese-English	-	0.20501	0.323	1323	5.9	0.635	0.526	1.000	1.000
-	Left	pL DT	English	-	0.17080	0.178	1178	3.7	0.960	0.339	0.998	1.000
-	Left	pL DT	Spanish-English	-	0.13921	0.323	1323	5.9	0.431	0.667	1.000	1.000
-	Left	pL DT	Chinese-English	-	0.39519	0.323	1323	5.9	1.224	0.223	0.986	1.000
-	Right	oL DT	English	-	0.36318	0.266	85.4	5.9	1.363	0.176	0.967	1.000
-	Right	oL DT	Spanish-English	-	0.09903	0.323	1323	5.9	0.306	0.759	1.000	1.000
-	Right	oL DT	Chinese-English	0.08533	0.323	1323	5.9	0.264	0.792	1.000	1.000	

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemi spher e	Tas k	Gro up	Hemi spher e	Tas k	Gro up	Mea n Diffe renc e	SE	df	t	p	p <sub>tu key</sub>	p <sub>hol m</sub>
		-	Right	pL DT	Eng lish	- 0.10 507	0.2 70	88. 1	- 0.3 89 8	0.6 98	1.0 00	1.0 00
		-	Right	pL DT	Spa nish - Eng lish	- 0.19 522	0.3 23	13 5.9	- 0.6 05 0	0.5 46	1.0 00	1.0 00
		-	Right	pL DT	Chi nes e- Eng lish	- 0.04 611	0.3 23	13 5.9	- 0.1 42 9	0.8 87	1.0 00	1.0 00
		Spa nish - Eng lish	Left	oL DT	Chi nes e- Eng lish	- 0.56 889	0.3 23	13 5.9	- 1.7 63 0	0.0 80	0.8 35	1.0 00
		-	Left	pL DT	Eng lish	- 0.53 468	0.3 23	13 5.9	- 1.6 57 0	0.1 00	0.8 84	1.0 00
		-	Left	pL DT	Spa nish - Eng lish	- 0.50 309	0.1 78	11 3.7	- 2.8 29 1	0.0 06	0.1 82	0.3 64
		-	Left	pL DT	Chi nes e- Eng lish	- 0.75 908	0.3 23	13 5.9	- 2.3 52 4	0.0 20	0.4 45	1.0 00

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemi spher e	Tas k	Gro up	Hemi spher e	Tas k	Gro up	Mea n Diffe renc e	SE	df	t	p	P <sub>tu</sub> key	P <sub>hol</sub> m
-			Right	oL DT	Eng lish	- 0.72 706	0.3 23	13 5.9	- 2.2 53 2	0.0 26	0.5 15	1.0 00
-			Right	oL DT	Spa nish - Eng lish	- 0.46 291	0.2 66	85. 4	- 1.7 37 7	0.0 86	0.8 45	1.0 00
-			Right	oL DT	Chi nes e- Eng lish	- 0.27 855	0.3 23	13 5.9	- 0.8 63 2	0.3 90	0.9 99	1.0 00
-			Right	pL DT	Eng lish	- 0.46 895	0.3 23	13 5.9	- 1.4 53 3	0.1 48	0.9 50	1.0 00
-			Right	pL DT	Spa nish - Eng lish	- 0.55 910	0.2 70	88. 1	- 2.0 74 2	0.0 41	0.6 42	1.0 00
-			Right	pL DT	Chi nes e- Eng lish	- 0.40 999	0.3 23	13 5.9	- 1.2 70 6	0.2 06	0.9 81	1.0 00
-		Chi nes e- Eng lish	Left	pL DT	Eng lish	0.03 421	0.3 23	13 5.9	0.1 06 0	0.9 16	1.0 00	1.0 00

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-			Left	pL DT	Spanish - English	0.06580	0.323	135.9	0.2039	0.839	1.000	1.000
-			Left	pL DT	Chinese-English	-0.19019	0.178	113.7	-1.0695	0.287	0.995	1.000
-			Right	oL DT	English	-0.15817	0.323	135.9	-0.4902	0.625	1.000	1.000
-			Right	oL DT	Spanish - English	0.10598	0.323	135.9	0.3284	0.743	1.000	1.000
-			Right	oL DT	Chinese-English	0.29034	0.266	85.4	1.0899	0.279	0.994	1.000
-			Right	pL DT	English	0.09994	0.323	135.9	0.3097	0.757	1.000	1.000
-			Right	pL DT	Spanish - English	0.00979	0.323	135.9	0.0303	0.976	1.000	1.000

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	ptukey	pholm
			-	Right	pL DT	Chinese-English	0.15890	0.270	88.1	0.5895	0.557	1.000
	pL DT	English	-	Left	pL DT	Spanish-English	0.03159	0.323	13.59	0.0979	0.922	1.000
			-	Left	pL DT	Chinese-English	-0.22440	0.323	13.59	-0.6954	0.488	1.000
			-	Right	oL DT	English	-0.19238	0.270	88.1	-0.7137	0.477	1.000
			-	Right	oL DT	Spanish-English	0.07176	0.323	13.59	0.224	0.824	1.000
			-	Right	oL DT	Chinese-English	0.25613	0.323	13.59	0.7938	0.429	1.000
			-	Right	pL DT	English	0.06573	0.266	85.4	0.2467	0.806	1.000

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-			Right	pL DT	Spanish - English	-0.02442	0.323	135.9	0.075	0.940	1.000	1.000
-			Right	pL DT	Chinese-English	0.12469	0.323	135.9	0.3864	0.700	1.000	1.000
-		Spanish - English	Left	pL DT	Chinese-English	-0.25598	0.323	135.9	0.793	0.429	1.000	1.000
-			Right	oL DT	English	-0.22397	0.323	135.9	0.6941	0.489	1.000	1.000
-			Right	oL DT	Spanish - English	0.04018	0.270	88.1	0.1491	0.882	1.000	1.000
-			Right	oL DT	Chinese-English	0.22454	0.323	135.9	0.6959	0.488	1.000	1.000
-			Right	pL DT	English	0.03414	0.323	135.9	0.1058	0.916	1.000	1.000

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemi spher e	Tas k	Gro up	Hemi spher e	Tas k	Gro up	Mea n Diffe renc e	SE	df	t	p	P <sub>tu key</sub>	P <sub>hol m</sub>
			-	Right	pL DT	Spa nish - Eng lish 0.05 601	0.2 66	85. 4	- 0.2 10 2	0.8 34	1.0 00	1.0 00
			-	Right	pL DT	Chi nes e- Eng lish 0.09 310	0.3 23	13 5.9	0.2 88 5	0.7 73	1.0 00	1.0 00
		Chi nes e- Eng lish	-	Right	oL DT	Eng lish 0.03 201	0.3 23	13 5.9	0.0 99 2	0.9 21	1.0 00	1.0 00
			-	Right	oL DT	Spa nish - Eng lish 0.29 616	0.3 23	13 5.9	0.9 17 8	0.3 60	0.9 99	1.0 00
			-	Right	oL DT	Chi nes e- Eng lish 0.48 053	0.2 70	88. 1	1.7 82 7	0.0 78	0.8 23	1.0 00
			-	Right	pL DT	Eng lish 0.29 013	0.3 23	13 5.9	0.8 99 1	0.3 70	0.9 99	1.0 00
			-	Right	pL DT	Spa nish - Eng lish 0.19 998	0.3 23	13 5.9	0.6 19 7	0.5 36	1.0 00	1.0 00

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	ptukey	pholm
			-	Right	pL DT	Chinese-English	0.34909	0.266	85.4	1.3104	0.194	0.97600
Right	oL DT	English	-	Right	oL DT	Spanish-English	0.26415	0.323	135.9	0.8186	0.414	1.0000
			-	Right	oL DT	Chinese-English	0.44851	0.323	135.9	1.3900	0.167	0.96400
			-	Right	pL DT	English	0.25811	0.178	113.7	1.4515	0.149	0.95000
			-	Right	pL DT	Spanish-English	0.16796	0.323	135.9	0.5205	0.604	1.0000
			-	Right	pL DT	Chinese-English	0.31707	0.323	135.9	0.9826	0.328	0.99800
		Spanish-English	-	Right	oL DT	Chinese-English	0.18437	0.323	135.9	0.5714	0.569	1.0000

Post Hoc Comparisons - Hemisphere \* Task \* Group

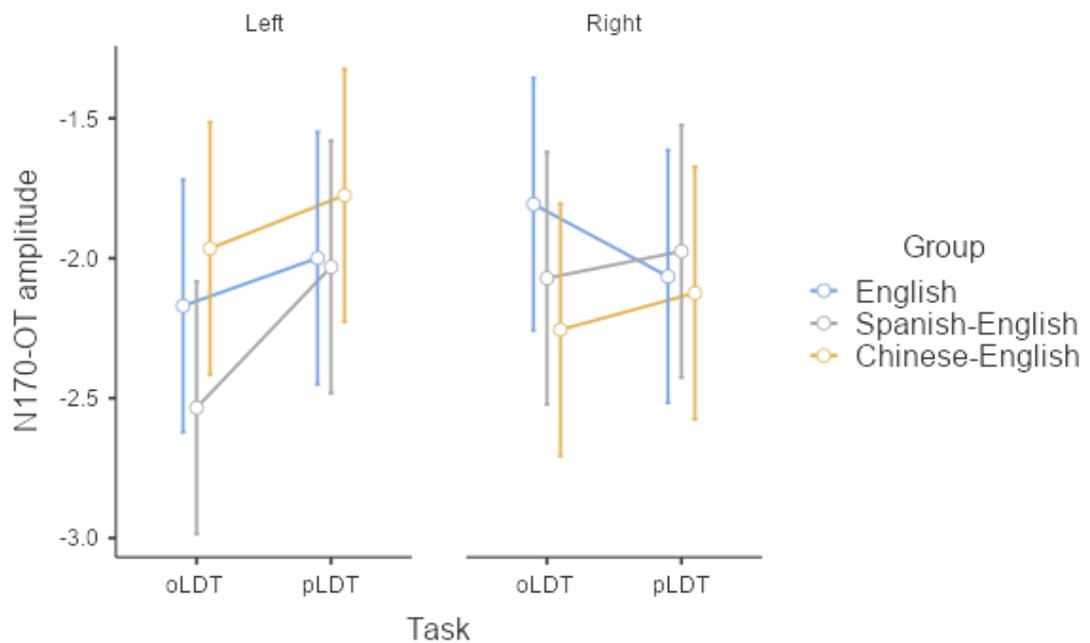
Comparison													
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	ptukey	pholm	
			-	Right	pL DT	Eng lish	- 0.00 603	0.3 23	13 5.9	- 0.0 18 7	0.9 85	1.0 00	1.0 00
			-	Right	pL DT	Spa nish - Eng lish	- 0.09 618	0.1 78	11 3.7	- 0.5 40 9	0.5 90	1.0 00	1.0 00
			-	Right	pL DT	Chi nes e- Eng lish	0.05 292	0.3 23	13 5.9	0.1 64 0	0.8 70	1.0 00	1.0 00
		Chi nes e- Eng lish	-	Right	pL DT	Eng lish	- 0.19 040	0.3 23	13 5.9	- 0.5 90 1	0.5 56	1.0 00	1.0 00
			-	Right	pL DT	Spa nish - Eng lish	- 0.28 055	0.3 23	13 5.9	- 0.8 69 4	0.3 86	0.9 99	1.0 00
			-	Right	pL DT	Chi nes e- Eng lish	- 0.13 144	0.1 78	11 3.7	- 0.7 39 2	0.4 61	1.0 00	1.0 00
	pL DT	Eng lish	-	Right	pL DT	Spa nish - Eng lish	- 0.09 015	0.3 23	13 5.9	- 0.2 79 4	0.7 80	1.0 00	1.0 00

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
		-	Right	pLDT	Chinese-English	0.05896	0.323	135.9	0.1827	0.855	1.000	1.000
		Spanish-English	Right	pLDT	Chinese-English	0.14911	0.323	135.9	0.4621	0.645	1.000	1.000

### Estimated Marginal Means

#### Task \* Group \* Hemisphere



## Appendix L: Study 1 statistical outputs – P1 and N170 latencies

### Repeated Measures ANOVA

Within Subjects Effects

	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
Hemisphere	225.72	1	225.72	7.998	0.006	0.123
Hemisphere * Group	36.50	2	18.25	0.647	0.528	0.022
Residual	1608.67	57	28.22			
oLDT Condition	212.96	1	212.96	6.347	0.015	0.100
oLDT Condition * Group	60.49	2	30.25	0.902	0.412	0.031
Residual	1912.47	57	33.55			
Hemisphere * oLDT Condition	2.10	1	2.10	0.126	0.724	0.002
Hemisphere * oLDT Condition * Group	74.37	2	37.18	2.224	0.117	0.072
Residual	952.82	57	16.72			

Note. Type 3 Sums of Squares

Between Subjects Effects

	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
Group	960	2	480.2	4.83	0.012	0.145
Residual	5663	57	99.4			

Note. Type 3 Sums of Squares

### Assumptions

Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
PAL50_P1.LeftO\$Word	3.03	2	57	0.056
PAL50_P1.RightO\$Word	1.82	2	57	0.171
PAL50_P1.LeftO\$Pseudohomophone1	5.39	2	57	0.007
PAL50_P1.RightO\$Pseudohomophone1	1.01	2	57	0.370

## Post Hoc Tests

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
Left	Word	English	-	Left	Word	Spanish-English	3.8941	2.11	1.48	0.067	0.789	1.000
						Chinese-English	-3.0640	2.11	-1.4531	0.148	0.950	1.000
						Pseudohomophone1	0.7448	1.59	0.4693	0.640	1.000	1.000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
-			Left	Pseudohomophone1	Spanish-English	5.2613	2.11	149	2.4952	0.014	0.351	0.725
-			Left	Pseudohomophone1	Chinese-English	1.0377	2.11	149	0.4921	0.623	1.000	1.000
-			Right	Word	English	2.2706	1.50	107	1.5148	0.133	0.933	1.000
-			Right	Word	Spanish-English	3.6337	2.11	149	1.7233	0.087	0.855	1.000
-			Right	Word	Chinese-English	1.3062	2.11	149	0.6195	0.537	1.000	1.000
-			Right	Pseudohomophone1	English	2.4538	1.76	136	1.3962	0.165	0.962	1.000
-			Right	Pseudohomophone1	Spanish-English	7.4422	2.11	149	3.5295	<.001	0.027	0.035

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
-			Right	Pseudohomophone1	Chinese-English	2.4048	2.11	149	1.1405	0.256	0.992	1.000
-		Spanish-English	Left	Word	Chinese-English	-6.9581	2.11	149	-3.2999	0.001	0.053	0.076
-			Left	Pseudohomophone1	English	-3.1494	2.11	149	-1.4936	0.137	0.940	1.000
-			Left	Pseudohomophone1	Spanish-English	1.3671	1.19	103	0.8624	0.391	0.999	1.000
-			Left	Pseudohomophone1	Chinese-English	-2.8564	2.11	149	-1.3547	0.178	0.970	1.000
-			Right	Word	English	-1.6236	2.11	149	-0.7700	0.443	1.000	1.000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
			-	Right	Word	Spanish-English	-0.2604	1.0507	1737	-0.17	0.862	1.000
			-	Right	Word	Chinese-English	-2.5879	2.1191	149	-1.2273	0.222	0.986
			-	Right	Pseudohomophone1	English	-1.4404	2.1191	149	-0.6831	0.496	1.000
			-	Right	Pseudohomophone1	Spanish-English	3.5481	1.0766	1388	2.0188	0.046	0.068
			-	Right	Pseudohomophone1	Chinese-English	-1.4893	2.1191	149	-0.7063	0.481	1.000
		Chinese-English	-	Left	Pseudohomophone1	English	3.8088	2.1191	149	1.8063	0.073	0.0812

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
-			Left	Pseudohomophone1	Spanish-English	8.3253	2.11	149	3.9482	<.001	0.007	0.008
-			Left	Pseudohomophone1	Chinese-English	4.1017	1.59	103	2.5872	0.011	0.031	0.069
-			Right	Word	English	5.3346	2.11	149	2.5299	0.012	0.033	0.067
-			Right	Word	Spanish-English	6.6977	2.11	149	3.1764	0.002	0.007	0.011
-			Right	Word	Chinese-English	4.3702	1.50	107	2.9155	0.004	0.015	0.024
-			Right	Pseudohomophone1	English	5.5177	2.11	149	2.6168	0.010	0.028	0.054
-			Right	Pseudohomophone1	Spanish-English	10.5062	2.11	149	4.9825	<.001	<.001	<.001

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	pholm
			-	Right	Pseudohomophone1	Chinese-English	5.4688	1.76	1117	3.11	0.002	0.092
	Pseudohomophone1	English	-	Left	Pseudohomophone1	Spanish-English	4.5165	2.11	1420	2.14	0.034	0.594
			-	Left	Pseudohomophone1	Chinese-English	0.2929	2.11	1389	0.13	0.890	1.000
			-	Right	Word	English	1.5258	1.76	186	0.86	0.387	0.999
			-	Right	Word	Spanish-English	2.8889	2.11	1437	1.37	0.173	0.967
			-	Right	Word	Chinese-English	0.5614	2.11	1426	0.26	0.790	1.000
			-	Right	Pseudohomophone1	English	1.7090	1.50	1407	1.14	0.257	0.992

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
-			Right	Pseudohomophone1	Spanish-English	6.6974	2.11	149	3.1763	0.002	0.005	0.0112
-			Right	Pseudohomophone1	Chinese-English	1.6601	2.11	149	0.7873	0.432	1.000	1.0000
-		Spanish-English	Left	Pseudohomophone1	Chinese-English	4.2236	2.11	149	2.0030	0.047	0.0691	1.0000
-			Right	Word	English	2.9907	2.11	149	1.4183	0.158	0.0958	1.0000
-			Right	Word	Spanish-English	1.6276	1.76	133	0.9261	0.356	0.0999	1.0000
-			Right	Word	Chinese-English	3.9551	2.11	149	1.8757	0.063	0.0772	1.0000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	pholm
			Right	Pseudohomophone1	English	-2.8075	2.11	149	-1.3315	0.185	0.974	1.000
			Right	Pseudohomophone1	Spanish-English	2.1809	1.50	107	1.4549	0.149	0.949	1.000
			Right	Pseudohomophone1	Chinese-English	-2.8564	2.11	149	-1.3547	0.178	0.970	1.000
		Chinese-English	Right	Word	English	1.2329	2.11	149	0.5847	0.560	1.000	1.000
			Right	Word	Spanish-English	2.5960	2.11	149	1.2312	0.220	0.986	1.000
			Right	Word	Chinese-English	0.2685	1.76	138	0.1528	0.879	1.000	1.000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	pholm
			-	Right	Pseudohomophone1	English	1.4161	2.11	149	0.6716	0.503	1.000
			-	Right	Pseudohomophone1	Spanish-English	6.4045	2.11	149	3.0373	0.003	0.0108
			-	Right	Pseudohomophone1	Chinese-English	1.3672	1.50	170	0.9121	0.364	0.999
Right	Word	English	-	Right	Word	Spanish-English	1.3631	2.11	149	0.6465	0.519	1.000
			-	Right	Word	Chinese-English	0.9644	2.11	149	0.4574	0.648	1.000
			-	Right	Pseudohomophone1	English	0.1832	1.50	170	0.1155	0.908	1.000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-			Right	Pseudohomophone1	Spanish-English	5.1716	2.11	149	2.4526	0.015	0.378	0.079
-			Right	Pseudohomophone1	Chinese-English	0.1343	2.11	149	0.0637	0.949	1.000	1.000
-		Spanish-English	Right	Word	Chinese-English	-2.3275	2.11	149	-1.1038	0.271	0.994	1.000
-			Right	Pseudohomophone1	English	-1.1799	2.11	149	-0.5596	0.577	1.000	1.000
-			Right	Pseudohomophone1	Spanish-English	3.8085	1.59	103	2.4023	0.018	0.044	0.0923
-			Right	Pseudohomophone1	Chinese-English	-1.2289	2.11	149	-0.5828	0.561	1.000	1.000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

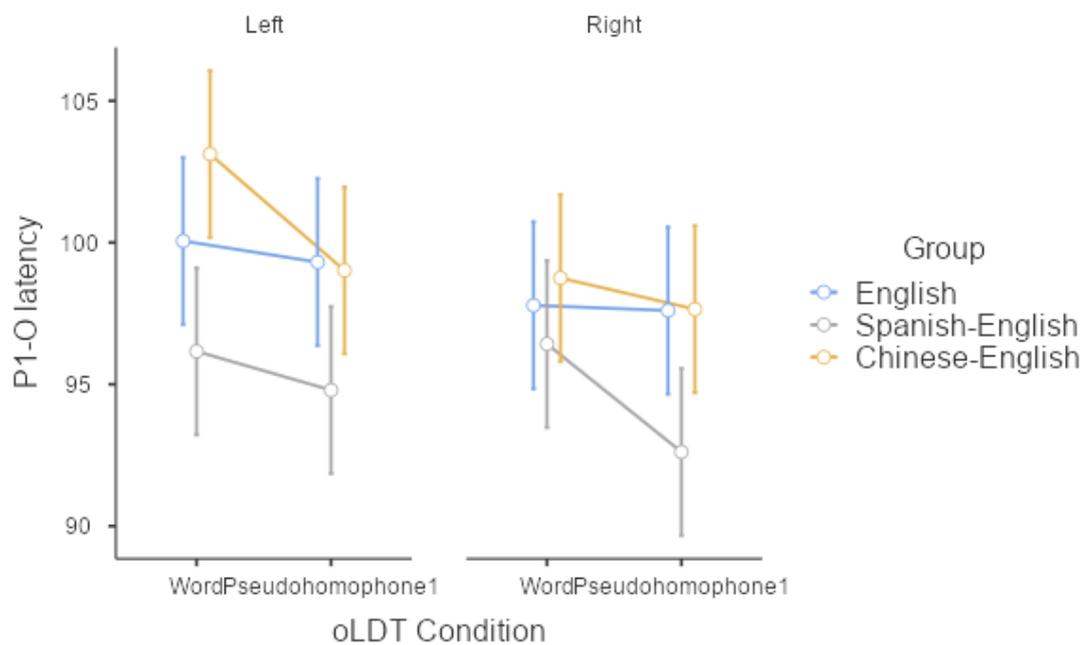
Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub>	p <sub>holm</sub>
		Chinese-English	Right	Pseudohomophone1	English	1.1476	2.11	149	0.5442	0.587	1.000	1.000
			Right	Pseudohomophone1	Spanish-English	6.1360	2.11	149	2.9100	0.004	0.0148	0.0242
			Right	Pseudohomophone1	Chinese-English	1.0986	1.59	103	0.6930	0.490	1.000	1.000
	Pseudohomophone1	English	Right	Pseudohomophone1	Spanish-English	4.9885	2.11	149	2.3658	0.019	0.0436	0.0945
			Right	Pseudohomophone1	Chinese-English	-0.0489	2.11	149	-0.0232	0.982	1.000	1.000
		Spanish-English	Right	Pseudohomophone1	Chinese-English	-5.0374	2.11	149	-2.3890	0.018	0.0420	0.0923

Post Hoc Comparisons - Group

Comparison									
Group	Group	Mean Difference	SE	df	t	p	p <sub>Tukey</sub>	p <sub>Holm</sub>	
English	- Spanish-English	3.691	1.58	57.0	2.342	0.023	0.058	0.045	
	- Chinese-English	-0.946	1.58	57.0	-0.600	0.551	0.821	0.551	
Spanish-English	- Chinese-English	-4.637	1.58	57.0	-2.942	0.005	0.013	0.014	

### Estimated Marginal Means

**oLDT Condition \* Group \* Hemisphere**



### Repeated Measures ANOVA

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Hemisphere	644.44	1	644.44	15.219	< .001	0.211
Hemisphere * Group	66.84	2	33.42	0.789	0.459	0.027
Residual	2413.58	57	42.34			
oLDT Condition	10.33	1	10.33	0.830	0.366	0.014
oLDT Condition * Group	61.40	2	30.70	2.465	0.094	0.080
Residual	709.99	57	12.46			
Hemisphere * oLDT Condition	3.41	1	3.41	0.289	0.593	0.005
Hemisphere * oLDT Condition * Group	59.72	2	29.86	2.529	0.089	0.082
Residual	672.94	57	11.81			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Group	944	2	471.9	10.2	< .001	0.264
Residual	2637	57	46.3			

Note. Type 3 Sums of Squares

## Assumptions

Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
PAL50_P1.LeftOP\$Word	0.822	2	57	0.445

Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
PAL50_P1.RightOP\$Word	0.149	2	57	0.862
PAL50_P1.LeftOP\$Pseudohomophone1	2.190	2	57	0.121
PAL50_P1.RightOP\$Pseudohomophone1	0.341	2	57	0.713

## Post Hoc Tests

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison													
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm	
Left	Word	English	-	Left	Word	Spanish-English	3.527	1.68	17	2.09	0.037	0.000	1.000
						Chinese-English	-1.813	1.68	17	-1.079	0.282	0.000	1.000
		-	Left	Pseudohomophone1	English	-0.753	1.10	11	-0.683	0.495	1.000	1.000	
					Spanish-English	3.083	1.68	17	1.833	0.068	0.000	1.000	

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
-		Left		Pseudohomophone1	Chinese-English	-1.1438	1.168	177	-0.6809	0.497	1.000	1.000
-		Right		Word	English	2.9856	1.165	865	1.8145	0.073	0.806	1.000
-		Right		Word	Spanish-English	5.5945	1.168	177	3.3303	0.001	0.008	0.002
-		Right		Word	Chinese-English	3.6832	1.168	177	2.1926	0.030	0.057	1.000
-		Right		Pseudohomophone1	English	0.272	1.166	876	0.1644	0.870	1.000	1.000
-		Right		Pseudohomophone1	Spanish-English	7.4988	1.168	177	4.4598	<.001	<.001	<.001
-		Right		Pseudohomophone1	Chinese-English	2.5392	1.168	177	1.5115	0.132	0.936	1.000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
		Spanish-English	-	Left	Word	Chinese-English -5.3432	1.68	177	-3.1808	0.002	0.073	0.098
			-	Left	Pseudohomophone1	English -4.289	1.68	177	-2.5496	0.012	0.317	0.525
			-	Left	Pseudohomophone1	Spanish-English -0.4464	1.10	113	-0.4053	0.686	1.000	1.000
			-	Left	Pseudohomophone1	Chinese-English -4.6736	1.68	177	-2.7821	0.006	0.197	0.300
			-	Right	Word	English -0.5441	1.68	177	-0.3239	0.746	1.000	1.000
			-	Right	Word	Spanish-English 2.067	1.65	865	1.2548	0.023	0.982	1.000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
					Chinese-English	0.1534	1.68	177	0.0913	0.007	1.000	1.000
					English	-3.2576	1.68	177	-1.9392	0.054	0.733	1.000
					Spanish-English	3.9620	1.68	187.9	2.3539	0.019	0.421	0.771
					Chinese-English	-0.996	1.68	177	-0.5897	0.556	1.000	1.000
		Chinese-English			English	1.063	1.68	177	0.6312	0.009	1.000	1.000
					Spanish-English	4.898	1.68	177	2.9150	0.004	0.145	0.214

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
-		Left		Pseudohomophone1	Chinese-English	0.6697	1.10	113	0.6080	0.544	1.000	1.000
-		Right		Word	English	4.7991	1.168	177	2.1857	0.005	0.0166	0.0245
-		Right		Word	Spanish-English	7.4080	1.168	177	4.1999	<.001	0.001	0.001
-		Right		Word	Chinese-English	5.4967	1.165	86	3.3406	0.001	0.0053	0.0070
-		Right		Pseudohomophone1	English	2.087	1.168	177	1.124	0.0216	0.0985	1.000
-		Right		Pseudohomophone1	Spanish-English	9.3053	1.168	177	5.5393	<.001	<.001	<.001
-		Right		Pseudohomophone1	Chinese-English	4.357	1.166	87	2.6296	0.010	0.0280	0.0464

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
	Pseudohomophone1	English	-	Left	Pseudohomophone1	Spanish-English	3.8365	1.68	1728	2.28	0.024	0.492
				Left	Pseudohomophone1	Chinese-English	-0.3906	1.68	1725	-0.23	0.816	1.000
				Right	Word	English	3.7388	1.68	87.9	2.25	0.026	0.513
				Right	Word	Spanish-English	6.3477	1.68	177.7	3.77	<.001	0.013
				Right	Word	Chinese-English	4.4364	1.68	1709	2.64	0.009	0.266
				Right	Pseudohomophone1	English	1.0254	1.68	86.5	0.62	0.535	1.000
				Right	Pseudohomophone1	Spanish-English	8.2450	1.68	1781	4.90	<.001	<.001

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub>	p <sub>holm</sub>
-			Right	Pseudohomophone1	Chinese-English	3.2924	1.68	177	1.9599	0.052	0.719	1.000
-		Spanish-English	Left	Pseudohomophone1	Chinese-English	-4.271	1.68	177	-2.5164	0.013	0.337	0.562
-			Right	Word	English	0.0977	1.68	177	0.0582	0.954	1.000	1.000
-			Right	Word	Spanish-English	2.5111	1.68	187.9	1.5170	0.133	0.932	1.000
-			Right	Word	Chinese-English	0.5998	1.68	177	0.3571	0.721	1.000	1.000
-			Right	Pseudohomophone1	English	-2.8112	1.68	177	-1.6735	0.096	0.878	1.000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
-			Right	Pseudohomophone1	Spanish-English	4.4084	1.65	86	2.6792	0.009	0.254	0.424
-			Right	Pseudohomophone1	Chinese-English	-0.5442	1.68	17	-0.3239	0.746	1.000	1.000
-		Chinese-English	Right	Word	English	4.1294	1.68	17	2.4582	0.015	0.374	0.643
-			Right	Word	Spanish-English	6.7383	1.68	17	4.0112	<.001	0.005	0.005
-			Right	Word	Chinese-English	4.8270	1.66	87	2.9161	0.004	0.0153	0.0234
-			Right	Pseudohomophone1	English	1.4160	1.68	17	0.8429	0.409	0.999	1.000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	pholm
			-	Right	Pseudohomophone1	Spanish-English	8.6356	1.68	17	5.1407	<.001	<.001
			-	Right	Pseudohomophone1	Chinese-English	3.6830	1.65	86	2.2383	0.028	0.0527
Right	Word	English	-	Right	Word	Spanish-English	2.6088	1.68	17	1.5530	0.122	0.0923
			-	Right	Word	Chinese-English	0.6976	1.68	17	0.4153	0.678	1.000
			-	Right	Pseudohomophone1	English	2.7135	1.10	11	2.4636	0.015	0.0373
			-	Right	Pseudohomophone1	Spanish-English	4.5061	1.68	17	2.6825	0.008	0.0244

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
					Chinese-English	-0.4465	1.068	176	-0.2658	0.791	1.000	1.000
					Spanish-English	1.9113	1.068	176	1.1378	0.257	0.992	1.000
					Spanish-English	5.3223	1.068	176	3.1683	0.002	0.005	0.010
					Spanish-English	1.8973	1.068	119	1.3726	0.088	0.085	1.000
					Chinese-English	3.0553	1.068	176	1.8188	0.071	0.086	1.000
					Chinese-English	3.4110	1.068	176	2.0305	0.044	0.067	1.000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

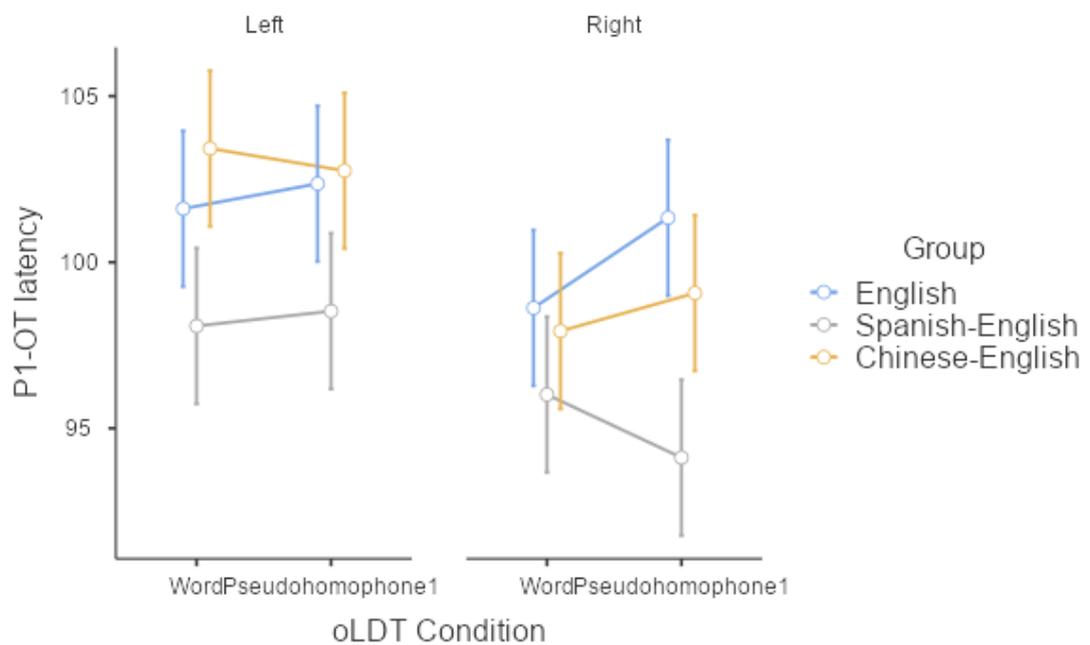
Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	pholm
			-	Right	Pseudohomophone1	Spanish-English	3.8086	1.68	17.72	2.265	0.025	0.04
			-	Right	Pseudohomophone1	Chinese-English	-1.1440	1.10	11.39	-1.0387	0.301	0.996
	Pseudohomophone1	English	-	Right	Pseudohomophone1	Spanish-English	7.2196	1.68	17.77	4.291	<.001	0.002
	Pseudohomophone1		-	Right	Pseudohomophone1	Chinese-English	2.2670	1.68	17.95	1.349	0.179	0.971
	Pseudohomophone1	Spanish-English	-	Right	Pseudohomophone1	Chinese-English	-4.9526	1.68	17.82	-2.9482	0.004	0.044

Post Hoc Comparisons - Group

Comparison								
Group	Group	Mean Difference	SE	df	t	p	p <sub>Tukey</sub>	p <sub>Holm</sub>
English	Spanish-English	4.299	1.08	57.0	3.997	< .001	< .001	< .001
	Chinese-English	0.190	1.08	57.0	0.177	0.860	0.983	0.860
Spanish-English	Chinese-English	-4.109	1.08	57.0	-3.820	< .001	< .001	< .001

### Estimated Marginal Means

oLDT Condition \* Group \* Hemisphere



### Repeated Measures ANOVA

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Hemisphere	125.66	1	125.656	6.1020	0.017	0.097
Hemisphere * Group	95.25	2	47.625	2.3127	0.108	0.075
Residual	1173.78	57	20.593			
oLDT Condition	3.94	1	3.944	0.2387	0.627	0.004
oLDT Condition * Group	158.08	2	79.042	4.7848	0.012	0.144
Residual	941.60	57	16.519			
Hemisphere * oLDT Condition	28.37	1	28.372	1.4192	0.238	0.024
Hemisphere * oLDT Condition * Group	1.67	2	0.837	0.0419	0.959	0.001
Residual	1139.52	57	19.991			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Group	1790	2	894.9	9.79	< .001	0.256
Residual	5208	57	91.4			

Note. Type 3 Sums of Squares

## Assumptions

Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
NAL50_P1.LeftFC\$Word	2.412	2	57	0.099

Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
NAL50_P1.RightFC\$Word	4.078	2	57	0.022
NAL50_P1.LeftFC\$Pseudohomophone1	3.452	2	57	0.038
NAL50_P1.RightFC\$Pseudohomophone1	0.449	2	57	0.640

## Post Hoc Tests

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
Left	Word	English	-	Left	Word	Spanish-English	4.9561	1.933	1.24	2.01	0.0306	0.0526
						Chinese-English	-0.8381	1.933	-0.4350	0.664	1.000	1.000
		-	Left	Pseudohomophone1	English	-2.4007	1.315	-1.7768	0.078	0.827	0.000	1.000
					Spanish-English	4.9073	1.315	2.5471	0.012	0.0321	0.0552	

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
-			Left	Pseudohomophone1	Chinese-English	0.3175	1.93	13	0.1648	0.869	1.000	1.000
-			Right	Word	English	2.4577	1.42	14	1.7253	0.087	0.853	1.000
-			Right	Word	Spanish-English	5.7048	1.93	13	2.9610	0.004	0.013	0.017
-			Right	Word	Chinese-English	-1.7659	1.93	13	-0.9166	0.361	0.999	1.000
-			Right	Pseudohomophone1	English	0.9684	1.36	13	0.7109	0.479	1.000	1.000
-			Right	Pseudohomophone1	Spanish-English	7.3405	1.93	13	3.8100	<.001	0.011	0.013
-			Right	Pseudohomophone1	Chinese-English	0.9197	1.93	13	0.4773	0.634	1.000	1.000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison													
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	pholm	
		Spanish-English	-	Left	Word	Chinese-English	-5.7942	1.93	13	-3.0074	0.003	0.118	0.161
			-	Left	Pseudohomophone1	English	-7.3568	1.93	13	-3.8184	<.001	0.011	0.013
			-	Left	Pseudohomophone1	Spanish-English	-0.0488	1.35	13	-0.0361	0.971	1.000	1.000
			-	Left	Pseudohomophone1	Chinese-English	-4.6386	1.93	13	-2.4076	0.017	0.408	0.732
			-	Right	Word	English	-2.4984	1.93	13	-1.2968	0.197	0.978	1.000
			-	Right	Word	Spanish-English	0.7487	1.42	14	0.5256	0.600	1.000	1.000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	pholm
					Chinese-English	-6.7220	1.93	13	-3.4890	<.001	0.031	0.037
					English	-3.9877	1.93	13	-2.0698	0.040	0.065	1.000
					Spanish-English	2.3844	1.36	13	1.7504	0.083	0.080	1.000
					Chinese-English	-4.0364	1.93	13	-2.0951	0.038	0.067	1.000
		Chinese-English			English	-1.5626	1.93	13	-0.8110	0.419	1.000	1.000
					Spanish-English	5.7455	1.93	13	2.9821	0.003	0.012	0.017

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
-			Left	Pseudohomophone1	Chinese-English	1.1557	1.35	13	0.853	0.394	0.999	1.000
-			Right	Word	English	3.2958	1.93	13	1.7106	0.089	0.860	1.000
-			Right	Word	Spanish-English	6.5429	1.93	13	3.3960	<.001	0.041	0.049
-			Right	Word	Chinese-English	-0.9278	1.42	14	-0.6513	0.516	1.000	1.000
-			Right	Pseudohomophone1	English	1.8065	1.93	13	0.9377	0.350	0.999	1.000
-			Right	Pseudohomophone1	Spanish-English	8.1787	1.93	13	4.2450	<.001	0.002	0.003
-			Right	Pseudohomophone1	Chinese-English	1.7578	1.36	13	1.2904	0.200	0.979	1.000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
	Pseudohomophone1	English	-	Left	Pseudohomophone1	Spanish-English	7.3080	1.93	133	3.79	<.001	0.012
			-	Left	Pseudohomophone1	Chinese-English	2.7182	1.93	133	1.41	0.16	0.95
			-	Right	Word	English	4.8584	1.36	156	3.56	<.001	0.025
			-	Right	Word	Spanish-English	8.1055	1.93	133	4.20	<.001	0.003
			-	Right	Word	Chinese-English	0.6348	1.93	133	0.32	0.74	1.00
			-	Right	Pseudohomophone1	English	3.3691	1.42	136	2.36	0.02	0.43
			-	Right	Pseudohomophone1	Spanish-English	9.7412	1.93	133	5.05	<.001	<.001

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
-			Right	Pseudohomophone1	Chinese-English	3.3204	1.93	13	1.7234	0.087	0.854	1.00
-		Spanish-English	Left	Pseudohomophone1	Chinese-English	-4.5898	1.93	13	-2.3823	0.019	0.425	0.763
-			Right	Word	English	-2.4497	1.93	13	-1.2715	0.206	0.981	1.00
-			Right	Word	Spanish-English	0.7974	1.93	13	0.5854	0.559	1.000	1.00
-			Right	Word	Chinese-English	-6.6733	1.93	13	-3.4637	<.001	0.033	0.039
-			Right	Pseudohomophone1	English	-3.9389	1.93	13	-2.0444	0.043	0.662	1.00

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison													
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	pholm	
			-	Right	Pseudohomophone1	Spanish-English	2.4332	1.42	114	1.7081	0.090	0.861	1.000
			-	Right	Pseudohomophone1	Chinese-English	-3.9877	1.93	133	-2.0697	0.040	0.645	1.000
		Chinese-English	-	Right	Word	English	2.1402	1.93	113	1.1108	0.269	0.994	1.000
			-	Right	Word	Spanish-English	5.3873	1.93	133	2.7962	0.006	0.019	0.285
			-	Right	Word	Chinese-English	-2.0835	1.93	133	-1.5295	0.129	0.929	1.000
			-	Right	Pseudohomophone1	English	0.6509	1.93	133	0.3378	0.736	1.000	1.000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison													
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	pholm	
			-	Right	Pseudohomophone1	Spanish-English	7.0230	1.93	1352	3.64	<.001	0.019	0.02
			-	Right	Pseudohomophone1	Chinese-English	0.6021	1.42	127	0.42	0.673	1.00	1.00
Right	Word	English	-	Right	Word	Spanish-English	3.2471	1.93	1354	1.68	0.094	0.872	1.00
			-	Right	Word	Chinese-English	-4.2236	1.93	133	-2.19	0.030	0.558	1.00
			-	Right	Pseudohomophone1	English	-1.4893	1.35	1102	-1.10	0.273	0.994	1.00
			-	Right	Pseudohomophone1	Spanish-English	4.8828	1.93	1344	2.53	0.012	0.328	0.559

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
					Chinese	-	1.5380	133	-0.7983	0.426	1.000	1.000
			Right	Pseudohomophone1	English	-	1.5380	133	-0.7983	0.426	1.000	1.000
		Spanish-English			Chinese	-	7.4707	933	-3.8775	<.001	0.009	0.010
			Right	Word	English	-	7.4707	933	-3.8775	<.001	0.009	0.010
					English	-	4.7364	933	-2.4583	0.015	0.0375	0.0655
			Right	Pseudohomophone1	English	-	4.7364	933	-2.4583	0.015	0.0375	0.0655
					Spanish-English	1.6357	1.335	131	1.2107	0.229	0.987	1.000
			Right	Pseudohomophone1	English	1.6357	1.335	131	1.2107	0.229	0.987	1.000
					Chinese	-	4.7851	933	-2.4836	0.014	0.0359	0.0627
			Right	Pseudohomophone1	English	-	4.7851	933	-2.4836	0.014	0.0359	0.0627
		Chinese-English			English	2.7343	1.933	132	1.4192	0.158	0.958	1.000
			Right	Pseudohomophone1	English	2.7343	1.933	132	1.4192	0.158	0.958	1.000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	pholm
			-	Right	Pseudohomophone1	Spanish-English	9.1064	1.93	133	4.7266	<.001	<.001
			-	Right	Pseudohomophone1	Chinese-English	2.6856	1.35	133	1.9877	0.049	0.701
	Pseudohomophone1	English	-	Right	Pseudohomophone1	Spanish-English	6.3721	1.93	133	3.3073	0.001	0.053
	Pseudohomophone1		-	Right	Pseudohomophone1	Chinese-English	-0.0487	1.93	133	-0.0253	0.980	1.000
	Pseudohomophone1	Spanish-English	-	Right	Pseudohomophone1	Chinese-English	-6.4209	1.93	133	-3.3326	0.001	0.049

Post Hoc Comparisons - oLDT Condition \* Group

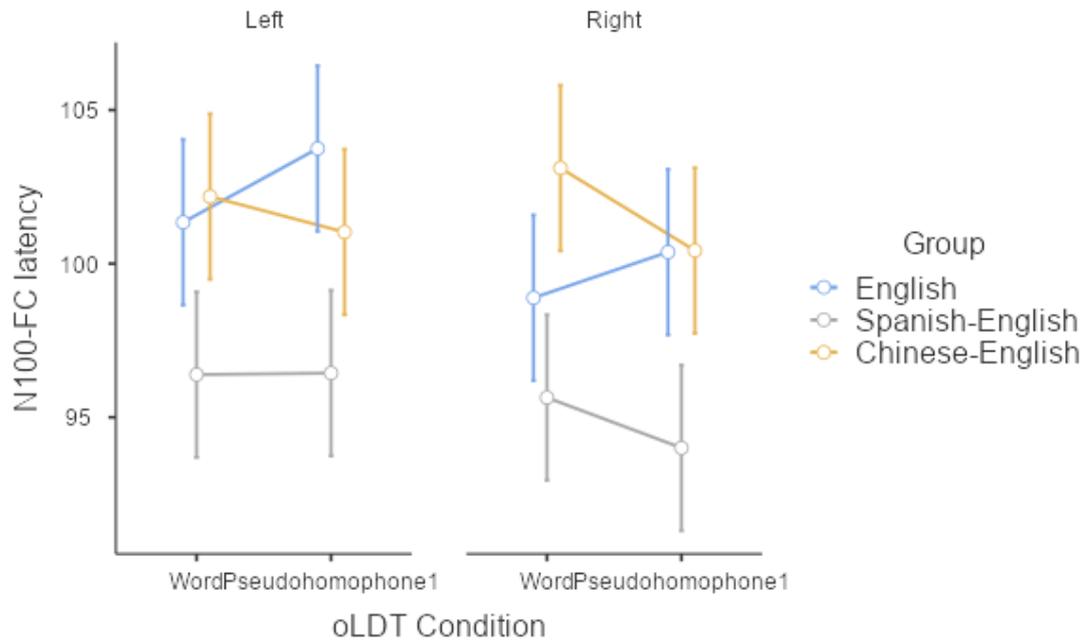
Comparison											
oLDT Condition	Group	oLDT Condition	Group	Mean Difference	SE	df	t	p	P <sub>tuk</sub> <sub>ey</sub>	P <sub>hol</sub> <sub>m</sub>	
Word	English	Word	Spanish - English	4.102	1.642	77.0	2.497	0.015	0.138	0.117	
			Chinese-English	-2.531	1.642	77.0	-1.541	0.127	0.639	0.637	
		Pseudohomophone 1	English	-1.945	0.909	57.0	-2.140	0.037	0.282	0.256	
			Pseudohomophone 1	Spanish - English	4.895	1.642	77.0	2.980	0.004	0.043	0.039
				Pseudohomophone 1	-0.610	1.642	77.0	-0.372	0.711	0.999	1.000
	Spanish - English	Word	Chinese-English	-6.632	1.642	77.0	-4.038	<.001	0.002	0.002	
			Pseudohomophone 1	-6.047	1.642	77.0	-3.682	<.001	0.006	0.005	
		Pseudohomophone 1	Spanish - English	0.793	0.909	57.0	0.873	0.386	0.951	1.000	

Post Hoc Comparisons - oLDT Condition \* Group

Comparison										
oLDT Condition	Group	oLDT Condition	Group	Mean Difference	SE	df	t	p	P <sub>tuk</sub> <sub>ey</sub>	P <sub>hol</sub> <sub>m</sub>
		Pseudohomophone 1	Chinese-English	-4.712	1.642	77	-2.869	0.005	0.057	0.048
	Chinese-English	Pseudohomophone 1	English	0.586	1.642	77	0.357	0.722	0.999	1.000
		Pseudohomophone 1	Spanish-English	7.426	1.642	77	4.521	<.001	<.001	<.001
		Pseudohomophone 1	Chinese-English	1.921	0.909	57	2.113	0.039	0.295	0.256
Pseudohomophone 1	English	Pseudohomophone 1	Spanish-English	6.840	1.642	77	4.165	<.001	0.001	0.001
		Pseudohomophone 1	Chinese-English	1.335	1.642	77	0.813	0.419	0.964	1.000
	Spanish-English	Pseudohomophone 1	Chinese-English	-5.505	1.642	77	-3.352	0.001	0.015	0.014

### Estimated Marginal Means

oLDT Condition \* Group \* Hemisphere



## Repeated Measures ANOVA

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Hemisphere	880.445	1	880.445	15.5277	< .001	0.214
Hemisphere * Group	155.134	2	77.567	1.3680	0.263	0.046
Residual	3231.983	57	56.701			
oLDT Condition	21.178	1	21.178	1.0583	0.308	0.018
oLDT Condition * Group	244.835	2	122.418	6.1176	0.004	0.177
Residual	1140.602	57	20.011			
Hemisphere * oLDT Condition	0.301	1	0.301	0.0181	0.893	0.000
Hemisphere * oLDT Condition * Group	21.822	2	10.911	0.6554	0.523	0.022
Residual	948.902	57	16.647			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Group	3022	2	1511	11.9	< .001	0.294
Residual	7246	57	127			

Note. Type 3 Sums of Squares

## Assumptions

Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
NAL50_N170.LeftOP\$Word	0.165	2	57	0.848
NAL50_N170.RightOP\$Word	0.460	2	57	0.634
NAL50_N170.LeftOP\$Pseudohomophone1	0.658	2	57	0.522
NAL50_N170.RightOP\$Pseudohomophone1	2.250	2	57	0.115

## Post Hoc Tests

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	P <sub>tukey</sub>	P <sub>holm</sub>
Left	Word	English	-	Left	Word	8.615	2.35	138	3.66	< .001	0.017	0.018
					Spanish-English			292	3.92	< .001	0.007	0.008

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
-	Left	Word	Chinese-English	2.713	2.35	138.2	1.157	0.000	0.000	0.000	1.000	
-	Left	Pseudohomophone1	English	3.153	1.35	113.3	2.389	0.002	0.003	0.008	0.858	
-	Left	Pseudohomophone1	Spanish-English	7.275	2.35	138.2	3.092	0.002	0.003	0.005	0.115	
-	Left	Pseudohomophone1	Chinese-English	2.895	2.35	138.2	1.230	0.022	0.005	0.000	1.000	
-	Right	Word	English	3.027	1.92	87.8	1.588	0.011	0.008	0.001	1.000	
-	Right	Word	Spanish-English	15.409	2.35	138.2	6.563	<.001	<.001	<.001	<.000	
-	Right	Word	Chinese-English	4.597	2.35	138.2	1.952	0.052	0.072	0.000	1.000	

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
-			Right	Pseudohomophone1	English	5.643	1.96	92	2.8814	0.005	0.165	0.231
-			Right	Pseudohomophone1	Spanish-English	12.688	2.35	138	5.4043	<.001	<.001	<.001
-			Right	Pseudohomophone1	Chinese-English	6.271	2.35	138	2.6710	0.008	0.025	0.037
-		Spanish-English	Left	Word	Chinese-English	-5.901	2.35	138	-2.5135	0.013	0.034	0.056
-			Left	Pseudohomophone1	English	-5.462	2.35	138	-2.3263	0.021	0.046	0.085
-			Left	Pseudohomophone1	Spanish-English	-1.339	1.35	113	-0.9892	0.325	0.998	1.000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
-		Left		Pseudohomophone1	Chinese-English	-5.720	2.35	138	-2.4363	0.016	0.389	0.67
-		Right		Word	English	-5.587	2.35	138	-2.3798	0.019	0.427	0.76
-		Right		Word	Spanish-English	6.794	1.92	87	3.5477	<.001	0.029	0.032
-		Right		Word	Chinese-English	-4.018	2.35	138	-1.7114	0.089	0.860	1.00
-		Right		Pseudohomophone1	English	-2.972	2.35	138	-1.2657	0.208	0.982	1.00
-		Right		Pseudohomophone1	Spanish-English	4.074	1.96	92	2.0800	0.040	0.638	1.00

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	pholm
					Chi							
		-	Right	Pseudohomophone1	English	-2.344	2.35	138	-0.9983	0.320	0.898	1.000
		Chi										
		-	Left	Pseudohomophone1	English	0.439	2.35	138	0.1872	0.852	1.000	1.000
		-	Left	Pseudohomophone1	Spanish-English	4.562	2.35	138	1.9431	0.054	0.730	1.000
		-	Left	Pseudohomophone1	English	0.181	1.35	113	0.1339	0.894	1.000	1.000
		-	Right	Word	English	0.314	2.35	138	0.1337	0.894	1.000	1.000
		-	Right	Word	Spanish-English	12.695	2.35	138	5.4073	<.001	<.001	<.001

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison													
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim	
			-	Right	Word	Chinese-English	1.883	1.29	87.98	0.34	0.328	0.998	1.000
			-	Right	Pseudohomophone1	English	2.930	2.35	138.279	1.24	0.044	0.998	1.000
			-	Right	Pseudohomophone1	Spanish-English	9.975	2.35	138.286	4.241	<.001	0.002	0.002
			-	Right	Pseudohomophone1	Chinese-English	3.558	1.96	92.865	1.813	0.073	0.805	1.000
	Pseudohomophone1	English	-	Left	Pseudohomophone1	Spanish-English	4.123	2.35	138.259	1.751	0.081	0.838	1.000
	Pseudohomophone1	English	-	Left	Pseudohomophone1	Chinese-English	-0.258	2.35	138.200	-0.110	0.913	1.000	1.000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-			Right	Word	English	-0.126	1.096	92.8	-0.0641	0.949	1.000	1.000
-			Right	Word	Spanish-English	12.256	2.35	138.2	5.2201	<.001	<.001	<.001
-			Right	Word	Chinese-English	1.444	2.35	138.2	0.6150	0.540	1.000	1.000
-			Right	Pseudohomophone1	English	2.490	1.096	87.8	1.3004	0.197	0.977	1.000
-			Right	Pseudohomophone1	Spanish-English	9.535	2.35	138.2	4.0614	<.001	0.004	0.004
-			Right	Pseudohomophone1	Chinese-English	3.118	2.35	138.2	1.3281	0.186	0.974	1.000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
		Spanish-English	Left	Pseudohomophone1	Chinese-English	-4.381	2.35	138	-1.8659	0.064	0.778	1.000
			Right	Word	English	-4.248	2.35	138	-1.8094	0.073	0.810	1.000
			Right	Word	Spanish-English	8.133	1.96	92.8	4.1529	<.001	0.004	0.004
			Right	Word	Chinese-English	-2.679	2.35	138	-1.1409	0.256	0.992	1.000
			Right	Pseudohomophone1	English	-1.632	2.35	138	-0.6952	0.488	1.000	1.000
			Right	Pseudohomophone1	Spanish-English	5.413	1.96	87.8	2.8265	0.006	0.018	0.026

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
					Chinese-English	-1.004	2.35	138	-0.4278	0.669	1.00	1.00
		Chinese-English			English	0.133	2.35	138	0.0565	0.955	1.00	1.00
					Spanish-English	12.514	2.35	138	5.3301	<.001	<.001	<.001
					Chinese-English	1.702	1.96	928	0.8691	0.387	0.999	1.000
					English	2.748	2.35	138	1.1706	0.244	0.990	1.000
					Spanish-English	9.794	2.35	138	4.1714	<.001	0.003	0.003

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison													
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	pholm	
			-	Right	Pseudohomophone1	Chinese-English	3.376	1.92	87.76	1.76	0.081	0.833	1.000
Right	Word	English	-	Right	Word	Spanish-English	12.381	2.35	13.82	5.2736	<.001	<.001	<.001
			-	Right	Word	Chinese-English	1.569	2.35	13.82	0.6685	0.505	1.000	1.000
			-	Right	Pseudohomophone1	English	2.616	1.35	11.30	1.9322	0.056	0.737	1.000
			-	Right	Pseudohomophone1	Spanish-English	9.661	2.35	13.82	4.1149	<.001	0.004	0.004
			-	Right	Pseudohomophone1	Chinese-English	3.244	2.35	13.82	1.3816	0.169	0.965	1.000

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
		Spanish-English	Right	Word	Chinese-English	-10.812	2.35	138	-4.6051	<.001	<.001	<.001
			Right	Pseudohomophone1	English	-9.766	2.35	138	-4.1594	<.001	0.003	0.003
			Right	Pseudohomophone1	Spanish-English	-2.720	1.35	110	-2.0094	0.047	0.068	1.000
			Right	Pseudohomophone1	Chinese-English	-9.138	2.35	138	-3.8920	<.001	0.008	0.008
		Chinese-English	Right	Pseudohomophone1	English	1.046	2.35	138	0.4457	0.657	1.000	1.000
			Right	Pseudohomophone1	Spanish-English	8.092	2.35	138	3.4464	<.001	0.035	0.038

Post Hoc Comparisons - Hemisphere \* oLDT Condition \* Group

Comparison												
Hemisphere	oLDT Condition	Group	Hemisphere	oLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	pholm
					Chinese-English	1.674	1.35	1130	1.2366	0.219	0.985	1.000
	Pseudohomophone1	English			Spanish-English	7.045	2.35	1382	3.0007	0.003	0.0120	0.0153
					Chinese-English	0.628	2.35	1382	0.2674	0.790	1.000	1.000
		Spanish-English			Chinese-English	-6.417	2.35	1382	-2.7334	0.007	0.0222	0.0319

Post Hoc Comparisons - oLDT Condition \* Group

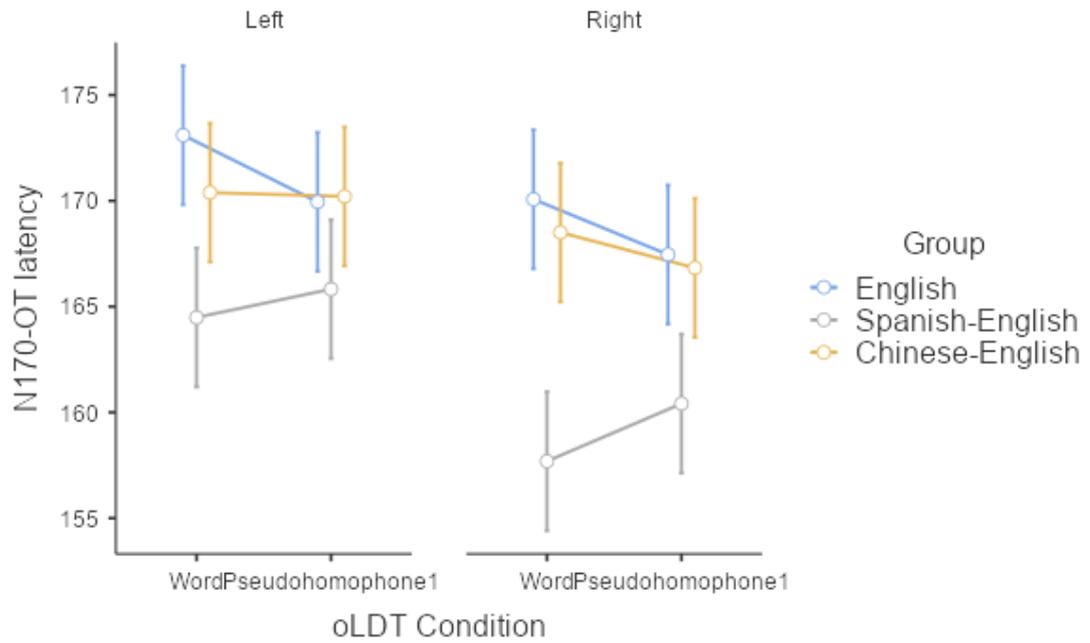
Comparison											
oLDT Condition	Group	oLDT Condition	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> ey	P <sub>holm</sub> m	
Word	English	-	Word	Spanish - English	10.498	1.92	74.5	5.4736	<.001	<.001	<.001
				Chinese-English	2.141	1.92	74.5	1.1165	0.268	0.873	1.000
		-	Pseudohomophone 1	English	2.884	1.00	57.0	2.8836	0.006	0.059	0.044
				Spanish - English	8.468	1.92	74.5	4.4153	<.001	<.001	<.001
				Chinese-English	3.069	1.92	74.5	1.6003	0.114	0.601	0.569
	Spanish - English	-	Word	Chinese-English	-8.357	1.92	74.5	-4.3571	<.001	<.001	<.001
				Pseudohomophone 1	-7.614	1.92	74.5	-3.9697	<.001	0.002	0.002
		-	Pseudohomophone 1	Spanish - English	-2.030	1.00	57.0	-2.0293	0.047	0.339	0.283

Post Hoc Comparisons - oLDT Condition \* Group

Comparison										
oLDT Condition	Group	oLDT Condition	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> ey	P <sub>holm</sub> m
		Pseudohomophone 1	Chinese-English	-7.429	1.92	74.5	-3.8734	<.001	0.003	0.003
	Chinese-English	Pseudohomophone 1	English	0.743	1.92	74.5	0.3874	0.700	0.999	1.000
		Pseudohomophone 1	Spanish-English	6.327	1.92	74.5	3.2988	0.001	0.018	0.015
		Pseudohomophone 1	Chinese-English	0.928	1.00	57.0	0.9275	0.358	0.938	1.000
Pseudohomophone 1	English	Pseudohomophone 1	Spanish-English	5.584	1.92	74.5	2.9114	0.005	0.052	0.043
		Pseudohomophone 1	Chinese-English	0.185	1.92	74.5	0.0964	0.923	1.000	1.000
	Spanish-English	Pseudohomophone 1	Chinese-English	-5.399	1.92	74.5	-2.8150	0.006	0.066	0.044

**Estimated Marginal Means**

**oLDT Condition \* Group \* Hemisphere**



## Repeated Measures ANOVA

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Hemisphere	631.3	1	631.3	26.725	< .001	0.319
Hemisphere * Group	91.0	2	45.5	1.926	0.155	0.063
Residual	1346.4	57	23.6			
pLDT Condition	34.3	1	34.3	0.617	0.436	0.011
pLDT Condition * Group	119.5	2	59.8	1.074	0.348	0.036
Residual	3170.8	57	55.6			
Hemisphere * pLDT Condition	72.9	1	72.9	6.574	0.013	0.103
Hemisphere * pLDT Condition * Group	32.6	2	16.3	1.472	0.238	0.049
Residual	631.8	57	11.1			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Group	1482	2	741	5.59	0.006	0.164
Residual	7557	57	133			

Note. Type 3 Sums of Squares

## Assumptions

Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
PAL50_P1.LeftO\$Pseudoword	0.345	2	57	0.710
PAL50_P1.RightO\$Pseudoword	0.479	2	57	0.622
PAL50_P1.LeftO\$Pseudohomophone2	1.984	2	57	0.147
PAL50_P1.RightO\$Pseudohomophone2	0.873	2	57	0.423

## Post Hoc Tests

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
Left	Pseudoword	English	-	Left	Pseudoword	8.093	2.36	132	3.4284	<.001	0.037	0.049
					Spanish-English							

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-		Left		Pseudoword	Chinese-English	3.723	2.36	1326	1.572	0.117	0.914	1.000
-		Left		Pseudohomophone2	English	3.357	1.83	788	1.831	0.070	0.792	1.000
-		Left		Pseudohomophone2	Spanish-English	7.190	2.36	1326	3.045	0.003	0.107	0.151
-		Left		Pseudohomophone2	Chinese-English	2.307	2.36	1326	0.974	0.330	0.998	1.000
-		Right		Pseudoword	English	4.382	1.32	1038	3.328	0.001	0.053	0.069
-		Right		Pseudoword	Spanish-English	11.377	2.36	1326	4.819	<.001	<.001	<.001
-		Right		Pseudoword	Chinese-English	9.094	2.36	1326	3.852	<.001	0.010	0.012

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
-			Right	Pseudohomophone2	English	3.504	1.99	98	1.7600	0.082	0.835	1.00
-			Right	Pseudohomophone2	Spanish-English	8.879	2.36	132	3.7610	<.001	0.013	0.016
-			Right	Pseudohomophone2	Chinese-English	6.897	2.36	132	2.9216	0.004	0.015	0.023
-		Spanish-English	Left	Pseudoword	Chinese-English	4.370	2.36	132	1.8512	0.066	0.076	1.00
-			Left	Pseudohomophone2	English	4.736	2.36	132	2.0063	0.047	0.068	1.00
-			Left	Pseudohomophone2	Spanish-English	0.903	1.83	78	0.4947	0.622	1.000	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
-	Left	Pseudohomophone2	Chinese-English	-5.786	2.36	13.26	-2.4510	0.016	0.038	0.002	0.000	0.076
-	Right	Pseudoword	English	-3.711	2.36	13.26	-1.5720	0.118	0.091	0.006	0.000	1.000
-	Right	Pseudoword	Spanish-English	3.284	1.32	10.82	2.4927	0.014	0.035	0.007	0.005	0.071
-	Right	Pseudoword	Chinese-English	1.001	2.36	13.26	0.4240	0.062	0.000	0.000	1.000	1.000
-	Right	Pseudohomophone2	English	-4.590	2.36	13.26	-1.9443	0.054	0.072	0.009	0.000	1.000
-	Right	Pseudohomophone2	Spanish-English	0.785	1.32	10.82	0.5945	0.069	0.004	0.000	1.000	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	pholm
					Chi							
		-	Right	Pseudohomophone2	English	-1.196	2.36	1326	-0.5068	0.613	1.000	1.000
		Chi										
		-	Left	Pseudohomophone2	English	0.366	2.36	1326	0.1552	0.877	1.000	1.000
		-	Left	Pseudohomophone2	Spanish	3.467	2.36	1326	1.4685	0.144	0.946	1.000
		-	Left	Pseudohomophone2	English	1.416	1.83	783	0.7753	0.440	1.000	1.000
		-	Right	Pseudoword	English	0.659	2.36	1326	0.2792	0.781	1.000	1.000
		-	Right	Pseudoword	Spanish	7.654	2.36	1326	3.2421	0.002	0.064	0.083

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
					Chinese							
		-	Right	Pseudoword	English	5.371	1.32	108	4.07	<.001	0.05	0.06
		-	Right	Pseudohomophone2	English	-0.220	2.36	132	-0.09	0.926	1.00	1.00
		-	Right	Pseudohomophone2	Spanish	5.155	2.36	132	2.18	0.031	0.04	1.00
		-	Right	Pseudohomophone2	Chinese	3.174	1.99	98	1.59	0.114	0.07	1.00
	Pseudohomophone2	English	-	Left	Pseudohomophone2	Spanish	3.833	2.36	132	1.62	0.107	0.07
	Pseudohomophone2	English	-	Left	Pseudohomophone2	Chinese	-1.050	2.36	132	-0.44	0.657	1.00
	Pseudohomophone2	English	-	Right	Pseudoword	English	1.025	1.99	98	0.51	0.608	1.00

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
-			Right	Pseudoword	Spanish-English	8.020	2.36	136	3.3973	<.001	0.041	0.053
-			Right	Pseudoword	Chinese-English	5.737	2.36	136	2.4303	0.016	0.394	0.788
-			Right	Pseudohomophone2	English	0.147	1.32	108	0.1112	0.912	1.000	1.000
-			Right	Pseudohomophone2	Spanish-English	5.522	2.36	136	2.3390	0.021	0.455	0.958
-			Right	Pseudohomophone2	Chinese-English	3.540	2.36	136	1.4996	0.136	0.938	1.000
-		Spanish-English	Left	Pseudohomophone2	Chinese-English	-4.883	2.36	136	-2.0683	0.041	0.646	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
-			Right	Pseudoword	English	-2.808	2.36	132	-1.1893	0.236	0.99	1.00
-			Right	Pseudoword	Spanish-English	4.187	1.99	989	2.1034	0.038	0.622	1.000
-			Right	Pseudoword	Chinese-English	1.904	2.36	132	0.8067	0.421	1.000	1.000
-			Right	Pseudohomophone2	English	-3.686	2.36	132	-1.5616	0.121	0.920	1.000
-			Right	Pseudohomophone2	Spanish-English	1.689	1.302	1028	1.2820	0.203	0.980	1.000
-			Right	Pseudohomophone2	Chinese-English	-0.293	2.36	132	-0.1241	0.901	1.000	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
		Chinese-English	Right	Pseudoword	English	2.075	2.36	1326	0.8790	0.3819	0.999	1.000
			Right	Pseudoword	Spanish-English	9.070	2.36	1326	3.8420	<.001	0.010	0.012
			Right	Pseudoword	Chinese-English	6.787	1.99	989	3.4095	<.001	0.042	0.055
			Right	Pseudohomophone2	English	1.196	2.36	1326	0.5068	0.613	1.000	1.000
			Right	Pseudohomophone2	Spanish-English	6.571	2.36	1326	2.7837	0.0066	0.0199	0.0314
			Right	Pseudohomophone2	Chinese-English	4.590	1.32	1082	3.4843	<.001	0.034	0.045

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison														
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>		
Right	Pseudoword	English	-	Right	Pseudoword	Spanish-English	6.95	2.36	132	2.96	0.004	0.013	0.019	
						Chinese-English	4.71	2.36	132	1.99	0.048	0.069	1.000	
		-	Right	Pseudohomophone2	English	-0.87	1.08	78	-0.48	0.632	1.000	1.000		
					Spanish-English	4.49	2.36	132	1.90	0.059	0.075	1.000		
		-	Right	Pseudohomophone2	Chinese-English	2.51	2.36	132	1.06	0.289	0.996	1.000		
					Chinese-English	-2.28	2.36	132	-0.96	0.335	0.998	1.000		
		-	Spanish-English	-	Right	Pseudoword	Chinese-English	-	2.36	132	-	0.33	0.998	1.000
							Spanish-English	2.28	2.36	132	0.96	0.335	0.998	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
-			Right	Pseudohomophone2	English	-7.873	2.366	132	-3.3352	0.0019	0.049	0.063
-			Right	Pseudohomophone2	Spanish-English	-2.498	1.833	78	-1.3679	0.175	0.966	1.000
-			Right	Pseudohomophone2	Chinese-English	-4.480	2.366	132	-1.8977	0.060	0.759	1.000
		Chinese-English	Right	Pseudohomophone2	English	-5.591	2.366	132	-2.3682	0.019	0.435	0.908
			Right	Pseudohomophone2	Spanish-English	-0.216	2.366	132	-0.0913	0.927	1.000	1.000
			Right	Pseudohomophone2	Chinese-English	-2.197	1.833	78	-1.2030	0.233	0.987	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

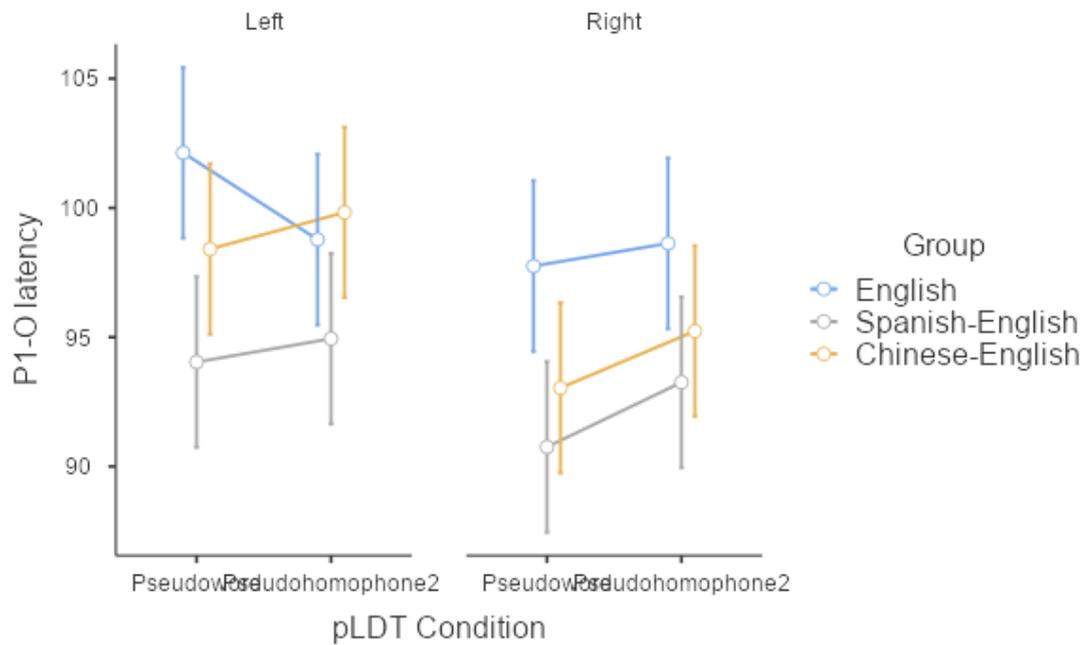
Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>Tukey</sub>	p <sub>Holm</sub>
	Pseudohomophone2	English	Right	Pseudohomophone2	Spanish-English	5.375	2.36	132	2.27	0.024	0.048	1.000
			Right	Pseudohomophone2	Chinese-English	3.394	2.36	132	1.43	0.153	0.095	1.000
		Spanish-English	Right	Pseudohomophone2	Chinese-English	-1.982	2.36	132	-0.839	0.403	0.099	1.000

Post Hoc Comparisons - Group

Comparison									
Group	Group	Mean Difference	SE	df	t	p	p <sub>Tukey</sub>	p <sub>Holm</sub>	
English	Spanish-English	6.07	1.82	57.0	3.34	0.001	0.004	0.004	
	Chinese-English	2.69	1.82	57.0	1.48	0.144	0.308	0.144	
Spanish-English	Chinese-English	-3.38	1.82	57.0	-1.86	0.069	0.161	0.137	

## Estimated Marginal Means

pLDT Condition \* Group \* Hemisphere



## Repeated Measures ANOVA

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Hemisphere	833.02	1	833.02	21.785	< .001	0.277
Hemisphere * Group	16.11	2	8.06	0.211	0.811	0.007
Residual	2179.54	57	38.24			
pLDT Condition	23.39	1	23.39	0.801	0.374	0.014
pLDT Condition * Group	77.46	2	38.73	1.327	0.273	0.044
Residual	1663.43	57	29.18			
Hemisphere * pLDT Condition	53.34	1	53.34	3.910	0.053	0.064
Hemisphere * pLDT Condition * Group	5.68	2	2.84	0.208	0.813	0.007
Residual	777.58	57	13.64			

#### Within Subjects Effects

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	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
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Note. Type 3 Sums of Squares

#### Between Subjects Effects

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	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
Group	623	2	311.5	4.92	0.011	0.147
Residual	3606	57	63.3			

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Note. Type 3 Sums of Squares

## Assumptions

#### Homogeneity of Variances Test (Levene's)

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	<b>F</b>	<b>df1</b>	<b>df2</b>	<b>p</b>
PAL50_P1.LeftOP\$Pseudoword	0.498	2	57	0.610
PAL50_P1.RightOP\$Pseudoword	0.853	2	57	0.431
PAL50_P1.LeftOP\$Pseudohomophone2	0.933	2	57	0.399
PAL50_P1.RightOP\$Pseudohomophone2	0.831	2	57	0.441

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## Post Hoc Tests

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
Left	Pseudoword	English	-	Left	Pseudoword	Spanish-English	3.5715	1.90	1826	1.8803	0.062	0.770
						English	5	0	6	03	2	0
		-	Left	Pseudoword	Chinese-English	3.4250	1.90	1826	1.8031	0.073	0.814	0.000
					English	0	0	6	31	3	4	0
		-	Left	Pseudohomophone2	English	1.3742	1.46	1076	0.9391	0.350	0.999	0.000
					English	2	6	7	91	0	9	0
-	Left	Pseudohomophone2	Spanish-English	4.8132	1.90	1826	2.5339	0.012	0.326	0.008		
			English	2	0	6	39	2	6	8		
-	Left	Pseudohomophone2	Chinese-English	1.7649	1.90	1826	0.9291	0.354	0.999	0.000		
			English	9	0	6	91	4	9	0		
-	Right	Pseudoword	English	4.8830	1.46	931	3.3018	0.003	0.113	0.017		

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
		-	Right	Pseudoword	Spanish-English	8.9427	1.90	186	4.70	<.001	<.001	<.001
		-	Right	Pseudoword	Chinese-English	7.1778	1.90	186	3.77	<.001	0.011	0.013
		-	Right	Pseudohomophone2	English	3.6203	1.84	112	1.97	0.051	0.071	1.000
		-	Right	Pseudohomophone2	Spanish-English	8.2938	1.90	186	4.36	<.001	0.001	0.001
		-	Right	Pseudohomophone2	Chinese-English	4.3876	1.90	186	2.30	0.022	0.047	1.000
		-	Left	Pseudoword	Chinese-English	-0.1465	1.90	186	-0.07	0.939	1.000	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
-	Left	Pseudohomophone2	English	English	-2.1973	1.90	1826	-1.1568	0.249	0.249	0.991	1.000
-	Left	Pseudohomophone2	Spanish-English	Spanish-English	1.2416	1.466	1007	0.8485	0.398	0.398	0.999	1.000
-	Left	Pseudohomophone2	Chinese-English	Chinese-English	-1.8066	1.906	1826	-0.9511	0.343	0.343	0.998	1.000
-	Right	Pseudoword	English	English	1.3115	1.90	1826	0.6904	0.491	0.491	1.000	1.000
-	Right	Pseudoword	Spanish-English	Spanish-English	5.3711	1.961	931	3.3349	0.001	0.001	0.053	0.072
-	Right	Pseudoword	Chinese-English	Chinese-English	3.6063	1.906	1826	1.8986	0.059	0.059	0.759	1.000
-	Right	Pseudohomophone2	English	English	0.0488	1.906	1826	0.0257	0.980	0.980	1.000	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-			Right	Pseudohomophone2	Spanish-English	4.7223	1.84	1120	2.570	0.011	0.308	0.0594
-			Right	Pseudohomophone2	Chinese-English	0.8161	1.90	1826	0.4296	0.668	1.000	1.000
-		Chinese-English	Left	Pseudohomophone2	English	-2.0508	1.90	1826	-1.0797	0.282	0.995	1.000
-			Left	Pseudohomophone2	Spanish-English	1.3881	1.90	1826	0.7308	0.466	1.000	1.000
-			Left	Pseudohomophone2	Chinese-English	-1.6601	1.96	1071	-0.845	0.259	0.992	1.000
-			Right	Pseudoword	English	1.4580	1.90	1826	0.7676	0.444	1.000	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
					Spanish-English	5.5176	1.09	1826	2.9048	0.004	0.0148	0.007
					Chinese-English	3.7528	1.061	9331	2.3301	0.022	0.0463	0.000
					English	0.1953	1.09	1826	0.178	0.0918	1.000	1.000
					Spanish-English	4.8688	1.09	1826	2.5632	0.011	0.0309	0.0592
					Chinese-English	0.9626	1.084	1126	0.5243	0.0601	1.000	1.000
	Pseudohomophone2	English			Spanish-English	3.4389	1.09	1826	1.8104	0.072	0.0810	0.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
-	Left	Pseudohomophone2	Chinese-English	0.397	1.090	1826	0.0057	1.006	0.02057	0.007	1.000	1.000
-	Right	Pseudoword	English	3.5088	1.084	1120	1.0011	1.0011	1.0011	0.009	0.000	1.000
-	Right	Pseudoword	Spanish-English	7.5684	1.090	1826	3.0045	1.001	3.001	<.001	0.005	0.006
-	Right	Pseudoword	Chinese-English	5.8036	1.090	1826	3.0053	1.006	3.003	0.003	0.010	0.015
-	Right	Pseudohomophone2	English	2.2461	1.061	931	1.0039	1.0046	1.0016	0.006	0.002	1.000
-	Right	Pseudohomophone2	Spanish-English	6.9196	1.090	1826	3.0029	1.006	3.001	<.001	0.008	0.001
-	Right	Pseudohomophone2	Chinese-English	3.0134	1.090	1826	1.0064	1.006	1.0058	0.004	0.011	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
		Spanish-English	Left	Pseudohomophone2	Chinese-English	-3.0482	1.090	186	-1.6048	0.110	0.05	1.00
			Right	Pseudoword	English	0.0688	1.090	186	0.0368	0.971	1.00	1.00
			Right	Pseudoword	Spanish-English	4.1295	1.084	110	2.2491	0.026	0.08	1.00
			Right	Pseudoword	Chinese-English	2.3647	1.090	186	1.249	0.215	0.04	1.00
			Right	Pseudohomophone2	English	-1.1928	1.090	186	-0.6280	0.531	1.00	1.00
			Right	Pseudohomophone2	Spanish-English	3.4807	1.061	93	2.1611	0.033	0.01	1.00
			Right	Pseudohomophone2	Chinese-English	-0.4255	1.090	186	-0.2240	0.823	1.00	1.00

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
		Chinese-English	Right	Pseudoword	English	3.181	1.090	186	1.64	0.102	0.089	1.000
			Right	Pseudoword	Spanish-English	7.177	1.090	186	3.28	<.001	0.001	0.003
			Right	Pseudoword	Chinese-English	5.412	1.084	119	2.22	0.004	0.013	0.021
			Right	Pseudohomophone2	English	1.855	1.094	186	0.97	0.330	0.998	1.000
			Right	Pseudohomophone2	Spanish-English	6.528	1.090	186	3.43	<.001	0.003	0.004
			Right	Pseudohomophone2	Chinese-English	2.622	1.067	937	1.62	0.107	0.089	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison													
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm	
Right	Pseudoword	English	-	Right	Pseudoword	Spanish-English	4.057	1.90	1826	2.1372	0.034	0.057	1.000
						Chinese-English	2.2948	1.906	1826	1.2081	0.229	0.2298	0.988
		-	Right	Pseudohomophone2	English	-1.2627	1.406	107	-0.8629	0.390	0.399	0.999	1.000
					Spanish-English	3.4109	1.906	1826	1.7957	0.074	0.078	0.818	1.000
		-	Right	Pseudohomophone2	Chinese-English	-0.4953	1.906	1826	-0.2608	0.795	0.795	1.000	1.000
					Spanish-English	-1.7648	1.906	1826	-0.9291	0.354	0.359	0.999	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
-			Right	Pseudohomophone2	English	-5.3223	1.90	1826	-2.8020	0.006	0.18	0.304
-			Right	Pseudohomophone2	Spanish-English	-0.648	1.46	1047	-0.4434	0.658	1.00	1.000
-			Right	Pseudohomophone2	Chinese-English	-4.550	1.90	1826	-2.3980	0.017	0.41	0.857
-		Chinese-English	Right	Pseudohomophone2	English	-3.5575	1.90	1826	-1.8729	0.063	0.77	1.000
-			Right	Pseudohomophone2	Spanish-English	1.1160	1.90	1826	0.5875	0.558	1.00	1.000
-			Right	Pseudohomophone2	Chinese-English	-2.7902	1.46	1047	-1.9068	0.059	0.75	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

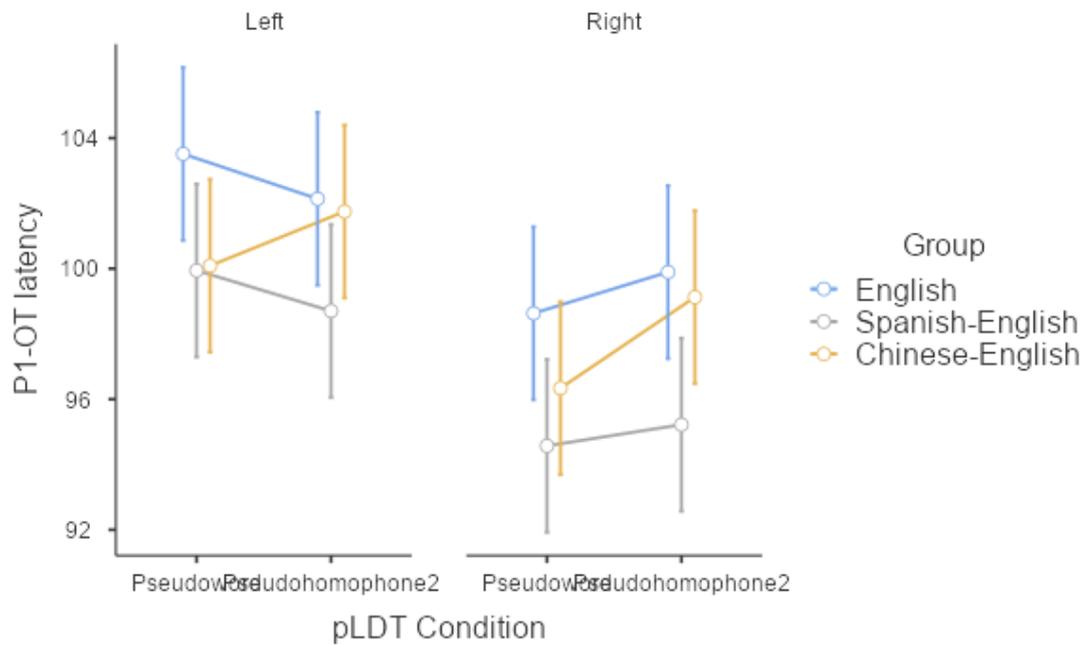
Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
	Pseudohomophone2	English	Right	Pseudohomophone2	Spanish-English	4.6735	1.90	1826	2.4604	0.015	0.0372	0.0740
			Right	Pseudohomophone2	Chinese-English	0.673	1.90	1826	0.3540	0.727	1.000	1.000
		Spanish-English	Right	Pseudohomophone2	Chinese-English	-3.9062	1.90	1826	-2.0565	0.041	0.0654	0.1000

Post Hoc Comparisons - Group

Comparison									
Group	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>	
English	Spanish-English	3.94	1.26	57.0	3.13	0.003	0.008	0.008	
	Chinese-English	1.72	1.26	57.0	1.37	0.177	0.365	0.177	
Spanish-English	Chinese-English	-2.22	1.26	57.0	-1.76	0.083	0.191	0.167	

## Estimated Marginal Means

pLDT Condition \* Group \* Hemisphere



## Repeated Measures ANOVA

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Hemisphere	111.9261	1	111.9261	3.62228	0.062	0.060
Hemisphere * Group	165.3794	2	82.6897	2.67610	0.077	0.086
Residual	1761.2618	57	30.8993			
pLDT Condition	65.6042	1	65.6042	1.86936	0.177	0.032
pLDT Condition * Group	17.7939	2	8.8969	0.25351	0.777	0.009
Residual	2000.3824	57	35.0944			
Hemisphere * pLDT Condition	0.0585	1	0.0585	0.00208	0.964	0.000
Hemisphere * pLDT Condition * Group	294.8881	2	147.4441	5.24444	0.008	0.155
Residual	1602.5197	57	28.1144			

#### Within Subjects Effects

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	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
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Note. Type 3 Sums of Squares

#### Between Subjects Effects

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	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
Group	637	2	318.6	3.85	0.027	0.119
Residual	4719	57	82.8			

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Note. Type 3 Sums of Squares

## Assumptions

#### Homogeneity of Variances Test (Levene's)

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	<b>F</b>	<b>df1</b>	<b>df2</b>	<b>p</b>
NAL50_P1.LeftFC\$Pseudoword	2.076	2	57	0.135
NAL50_P1.RightFC\$Pseudoword	0.402	2	57	0.671
NAL50_P1.LeftFC\$Pseudohomophone2	0.198	2	57	0.821
NAL50_P1.RightFC\$Pseudohomophone2	4.683	2	57	0.013

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## Post Hoc Tests

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison													
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>	
Left	Pseudoword	English	-	Left	Pseudoword	Spanish-English	0.9685	2.10	181	0.460	0.646	1.000	1.000
						Chinese-English	-3.9631	2.10	181	-1.8845	0.061	0.077	1.000
			-	Left	Pseudohomophone2	English	-3.7515	1.78	113	-2.11026	0.037	0.061	1.000
						Spanish-English	0.3663	2.10	181	0.17417	0.0862	1.000	
			-	Left	Pseudohomophone2	Chinese-English	-2.8400	2.10	181	-1.35046	0.179	0.091	1.000
						Right	English	-3.3691	1.72	113	-1.96136	0.052	0.078

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
					Spanish-English	2.2379	2.10	181	1.064	0.289	0.996	1.000
					Chinese-English	2.1403	2.10	181	1.0175	0.310	0.997	1.000
					English	1.8716	1.82	14	-1.03035	0.305	0.997	1.000
					Spanish-English	2.1566	2.10	181	1.02551	0.306	0.997	1.000
					Chinese-English	2.3192	2.10	181	1.10281	0.272	0.994	1.000
		Spanish-English			Chinese-English	4.9316	2.10	181	2.34503	0.020	0.449	0.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
-			Left	Pseudohomophone2	English	-4.7200	2.10	181	-2.2443	0.026	0.0520	1.000
-			Left	Pseudohomophone2	Spanish-English	-0.6022	1.078	138	-0.3373	0.0735	1.0000	1.000
-			Left	Pseudohomophone2	Chinese-English	-3.8085	2.10	181	-1.81098	0.072	0.0810	1.000
-			Right	Pseudoword	English	-4.3376	2.10	181	-2.06259	0.041	0.0650	1.000
-			Right	Pseudoword	Spanish-English	1.2695	1.072	139	0.73904	0.0461	1.0000	1.000
-			Right	Pseudoword	Chinese-English	1.1719	2.10	181	0.55723	0.0578	1.0000	1.000
-			Right	Pseudohomophone2	English	-2.8401	2.10	181	-1.35051	0.179	0.0971	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
			-	Right	Pseudohomophone2	Spanish-English	1.1882	1.2	14	0.654	0.514	1.000
			-	Right	Pseudohomophone2	Chinese-English	-3.2877	2.1	81	-1.563	0.120	0.920
		Chinese-English	-	Left	Pseudohomophone2	English	0.2116	2.1	80	0.100	0.920	1.000
			-	Left	Pseudohomophone2	Spanish-English	4.3294	2.1	81	2.058	0.041	0.065
			-	Left	Pseudohomophone2	Chinese-English	1.1231	1.7	38	0.631	0.529	1.000
			-	Right	Pseudoword	English	0.5940	2.1	82	0.277	0.778	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
					Spanish-English	6.2011	2.10	181	2.948	0.004	0.013	0.023
					Chinese-English	6.1034	1.72	141	3.514	<.001	0.006	0.003
					English	2.0915	2.10	181	0.994	0.321	0.998	1.000
					Spanish-English	6.1198	2.10	181	2.910	0.004	0.014	0.026
					Chinese-English	1.6439	1.82	141	0.904	0.367	0.999	1.000
	Pseudohomophone2	English	Left	Pseudohomophone2	Spanish-English	4.1178	2.10	181	1.958	0.052	0.072	0.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
-	Left			Pseudohomophone2	Chinese-English	0.9115	2.10	181	0.433	0.665	1.000	1.000
-	Right			Pseudoword	English	0.3824	1.82	104	0.210	0.834	1.000	1.000
-	Right			Pseudoword	Spanish-English	5.9895	2.10	108	2.848	0.005	0.016	0.030
-	Right			Pseudoword	Chinese-English	5.8919	2.10	108	2.801	0.006	0.018	0.034
-	Right			Pseudohomophone2	English	1.8799	1.72	140	1.094	0.276	0.994	1.000
-	Right			Pseudohomophone2	Spanish-English	5.9082	2.10	142	2.809	0.006	0.018	0.031
-	Right			Pseudohomophone2	Chinese-English	1.4323	2.10	110	0.681	0.497	1.000	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
		Spanish-English			Chinese-English	-3.2063	2.10	181	-1.524	0.129	0.932	1.000
			Left	Pseudohomophone2	English	-3.7354	2.10	181	-1.776	0.077	0.829	1.000
					Spanish-English	1.8717	1.82	134	1.030	0.305	0.997	1.000
			Right	Pseudoword	English	1.7740	2.10	181	0.843	0.400	0.999	1.000
					Chinese-English	-2.2379	2.10	181	-1.064	0.289	0.996	1.000
			Right	Pseudohomophone2	English	1.7904	1.72	127	1.042	0.299	0.996	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
					Chinese							
		-	Right	Pseudohomophone2	English	-2.6855	2.10	181	-1.27698	0.203	0.981	1.000
		Chinese										
		-	Right	Pseudoword	English	-0.5291	2.10	181	-0.25161	0.802	1.000	1.000
					Spanish							
		-	Right	Pseudoword	English	5.0780	2.10	181	2.41464	0.017	0.402	0.921
					Chinese							
		-	Right	Pseudoword	English	4.9803	1.82	147	2.74171	0.007	0.022	0.426
					English							
		-	Right	Pseudohomophone2	English	0.9684	2.10	181	0.46047	0.646	1.000	1.000
					Spanish							
		-	Right	Pseudohomophone2	English	4.9967	2.10	181	2.37598	0.019	0.428	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
					Chinese							
		-	Right	Pseudohomophone2	English	0.5208	1.72	114	0.303	0.762	1.000	1.000
					Spanish							
Right	Pseudoword	English	-	Right	Pseudoword	5.6071	2.10	118	2.666	0.008	0.025	0.049
					Chinese							
		-	Right	Pseudoword	English	5.5095	2.10	118	2.619	0.010	0.027	0.054
					English							
		-	Right	Pseudohomophone2	English	1.4975	1.78	113	0.842	0.401	0.999	1.000
					Spanish							
		-	Right	Pseudohomophone2	English	5.5258	2.10	118	2.627	0.009	0.027	0.051
					Chinese							
		-	Right	Pseudohomophone2	English	1.0499	2.10	118	0.499	0.618	1.000	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

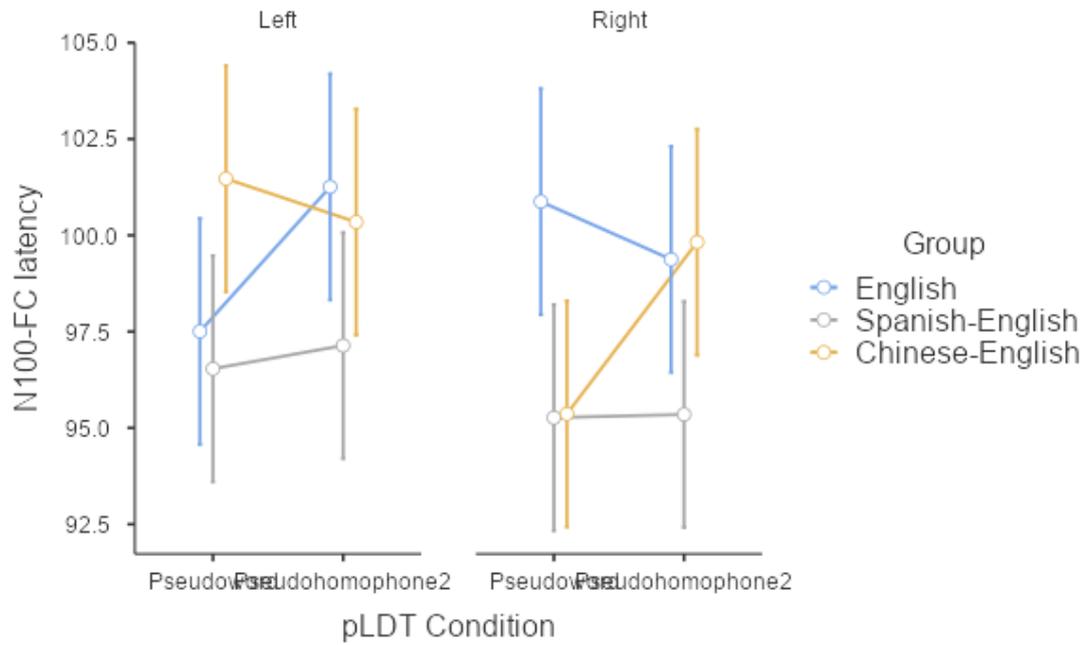
Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
		Spanish-English	Right	Pseudoword	Chinese-English	-0.0976	2.10	181	-0.04642	0.963	1.000	1.000
			Right	Pseudohomophone2	English	-4.1096	2.10	181	-1.95416	0.052	0.723	1.000
			Right	Pseudohomophone2	Spanish-English	-0.0813	1.78	143	-0.04573	0.964	1.000	1.000
			Right	Pseudohomophone2	Chinese-English	-4.5571	2.10	181	-2.16698	0.032	0.576	1.000
		Chinese-English	Right	Pseudohomophone2	English	-4.0120	2.10	181	-1.90774	0.058	0.753	1.000
			Right	Pseudohomophone2	Spanish-English	-0.0163	2.10	181	-0.00776	0.994	1.000	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
					Chinese-English	-	1.7595	13	-2.508	0.014	0.036	0.079
					Spanish-English	4.0283	2.1000	181	1.915	0.057	0.078	1.000
					Chinese-English	-	2.4760	181	-0.212	0.832	1.000	1.000
					Spanish-English	4.4758	2.1000	181	2.128	0.035	0.063	0.000

**Estimated Marginal Means**

**pLDT Condition \* Group \* Hemisphere**



## Repeated Measures ANOVA

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Hemisphere	1352.592	1	1352.592	21.9934	< .001	0.278
Hemisphere * Group	171.981	2	85.990	1.3982	0.255	0.047
Residual	3505.500	57	61.500			
pLDT Condition	79.800	1	79.800	2.9638	0.091	0.049
pLDT Condition * Group	104.181	2	52.091	1.9346	0.154	0.064
Residual	1534.750	57	26.925			
Hemisphere * pLDT Condition	0.876	1	0.876	0.0374	0.847	0.001
Hemisphere * pLDT Condition * Group	36.569	2	18.285	0.7797	0.463	0.027
Residual	1336.707	57	23.451			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Group	1879	2	939	6.26	0.003	0.180
Residual	8550	57	150			

Note. Type 3 Sums of Squares

## Assumptions

Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
NAL50_N170.LeftOP\$Pseudoword	4.45479	2	57	0.016
NAL50_N170.RightOP\$Pseudoword	1.38031	2	57	0.260
NAL50_N170.LeftOP\$Pseudohomophone2	0.00633	2	57	0.994
NAL50_N170.RightOP\$Pseudohomophone2	3.13537	2	57	0.051

## Post Hoc Tests

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	P <sub>t</sub> key	P <sub>h</sub> oIm
Left	Pseudoword	English	-	Left	Pseudoword	7.1149	2.56	149	2.7807	0.006	0.200	0.314
					Spanish-English							

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-	Left	Pseudoword	Chinese	English	Chinese-English	4.1573	2.56	149	1.6248	0.106	0.897	1.000
-	Left	Pseudohomophone2	Chinese	English	Chinese-English	1.1021	1.59	115	0.6944	0.489	1.000	1.000
-	Left	Pseudohomophone2	Spanish	English	Spanish-English	5.6640	2.56	149	2.2136	0.028	0.054	1.000
-	Left	Pseudohomophone2	Chinese	English	Chinese-English	1.4089	2.56	149	0.5507	0.583	1.000	1.000
-	Right	Pseudoword	Chinese	English	Chinese-English	5.9360	2.06	950	2.8802	0.005	0.165	0.255
-	Right	Pseudoword	Spanish	English	Spanish-English	14.3344	2.56	149	5.6023	<.001	<.001	<.001
-	Right	Pseudoword	Chinese	English	Chinese-English	5.6082	2.56	149	2.1919	0.030	0.055	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
-			Right	Pseudohomophone2	English	6.2012	2.10	98	2.9492	0.004	0.140	0.211
-			Right	Pseudohomophone2	Spanish-English	11.0979	2.56	149	4.3373	<.001	0.002	0.002
-			Right	Pseudohomophone2	Chinese-English	4.7573	2.56	149	1.8593	0.065	0.078	1.000
-		Spanish-English	Left	Pseudoword	Chinese-English	-2.9577	2.56	149	-1.1559	0.250	0.991	1.000
-			Left	Pseudohomophone2	English	-6.0129	2.56	149	-2.3500	0.020	0.047	0.092
-			Left	Pseudohomophone2	Spanish-English	-1.4510	1.59	115	-0.9142	0.363	0.999	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
-	Left	Pseudohomophone2	Chinese-English	English	-5.7060	2.56	149	-2.2301	0.027	0.0531	1.000	1.000
-	Right	Pseudoword	English	English	-1.1789	2.56	149	-0.4607	0.646	1.000	1.000	1.000
-	Right	Pseudoword	Spanish-English	English	7.2195	2.60	950	3.5030	<.001	0.032	0.040	0.040
-	Right	Pseudoword	Chinese-English	English	1.5067	2.56	149	0.5889	0.557	1.000	1.000	1.000
-	Right	Pseudohomophone2	English	English	0.9138	2.56	149	0.3571	0.722	1.000	1.000	1.000
-	Right	Pseudohomophone2	Spanish-English	English	3.9829	2.10	989	1.8942	0.061	0.0760	1.000	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
					Chinese-English	-2.3576	2.56	149	-0.9214	0.358	0.999	1.000
		Chinese-English			English	-3.0552	2.56	149	-1.1941	0.234	0.989	1.000
					Spanish-English	1.5067	2.56	149	0.5889	0.557	1.000	1.000
					Chinese-English	2.7483	1.59	115	1.7317	0.086	0.850	1.000
					English	1.7788	2.56	149	0.6952	0.488	1.000	1.000
					Spanish-English	10.1772	2.56	149	3.9775	<.001	0.006	0.007

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
					Chinese-English	1.4510	2.06	95	0.7040	0.483	1.000	1.000
					English	2.0439	2.056	141	0.7988	0.426	1.000	1.000
					Spanish-English	6.9406	2.056	141	2.7126	0.008	0.0231	0.0375
					Chinese-English	0.6001	2.010	98	0.2854	0.776	1.000	1.000
	Pseudohomophone2	English			Spanish-English	4.5619	2.056	141	1.7829	0.077	0.0825	1.000
					Chinese-English	0.3069	2.056	141	0.1199	0.905	1.000	1.000
					English	4.8340	2.010	98	2.2990	0.024	0.044	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
-			Right	Pseudoword	Spanish-English	13.2324	2.56	149	5.1716	<.001	<.001	<.001
-			Right	Pseudoword	Chinese-English	4.5062	2.56	149	1.7611	0.080	0.836	1.000
-			Right	Pseudohomophone2	English	5.0991	2.60	954	2.4741	0.015	0.369	0.711
-			Right	Pseudohomophone2	Spanish-English	9.9958	2.56	149	3.9066	<.001	0.008	0.009
-			Right	Pseudohomophone2	Chinese-English	3.6553	2.56	149	1.4286	0.155	0.956	1.000
-		Spanish-English	Left	Pseudohomophone2	Chinese-English	4.2551	2.56	149	1.6630	0.099	0.882	1.000
-			Right	Pseudoword	English	0.2720	2.56	149	0.1063	0.915	1.000	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
-	Right	Pseudoword	Spanish	English	Spanish-English	8.6704	2.10	98	4.1235	<.001	0.004	0.005
-	Right	Pseudoword	Chinese	English	Chinese-English	-0.0558	2.56	149	-0.0218	0.983	1.000	1.000
-	Right	Pseudohomophone2	Chinese	English	Chinese-English	0.5372	2.56	149	0.2099	0.834	1.000	1.000
-	Right	Pseudohomophone2	Spanish	English	Spanish-English	5.4339	2.60	95	2.6366	0.010	0.0275	0.0479
-	Right	Pseudohomophone2	Chinese	English	Chinese-English	-0.9067	2.56	149	-0.3544	0.724	1.000	1.000
-	Chinese-English	Pseudoword	Chinese	English	Chinese-English	4.5271	2.56	149	1.7693	0.079	0.0832	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
			-	Right	Pseudoword	Spanish-English	12.9255	2.56	149	5.0516	<.001	<.001
			-	Right	Pseudoword	Chinese-English	4.1993	2.10	989	1.9971	0.049	0.0694
			-	Right	Pseudohomophone2	English	4.7922	2.56	149	1.8729	0.063	0.0774
			-	Right	Pseudohomophone2	Spanish-English	9.6889	2.56	149	3.7867	<.001	0.012
			-	Right	Pseudohomophone2	Chinese-English	3.3484	2.06	950	1.6247	0.108	0.0896
Right	Pseudoword	English	-	Right	Pseudoword	Spanish-English	8.3984	2.56	149	3.2823	0.001	0.056

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
					Chinese-English	-0.3278	2.56	149	-0.1281	0.898	1.000	1.000
					English	0.2651	1.59	1135	0.1670	0.868	1.000	1.000
					Spanish-English	5.1618	2.56	149	2.0174	0.046	0.0681	1.000
					Chinese-English	-1.1787	2.56	149	-0.4607	0.646	1.000	1.000
		Spanish-English			Chinese-English	-8.7262	2.56	149	-3.4104	<.001	0.039	0.047
		Spanish-English			English	-8.1333	2.56	149	-3.1787	0.002	0.075	0.098

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	ptukey	pholm
					Spanish-English	-3.2366	1.59	113	-2.0393	0.044	0.666	1.000
					Chinese-English	-9.5771	2.56	149	-3.7430	<.001	0.014	0.015
		Chinese-English			English	0.5929	2.56	149	0.2317	0.817	1.000	1.000
					Spanish-English	5.4896	2.56	149	2.1455	0.034	0.059	1.000
					Chinese-English	-0.8509	1.59	113	-0.5361	0.593	1.000	1.000
	Pseudohomophone2	English			Spanish-English	4.8967	2.56	149	1.9138	0.058	0.074	1.000

Post Hoc Comparisons - Hemisphere \* pLDT Condition \* Group

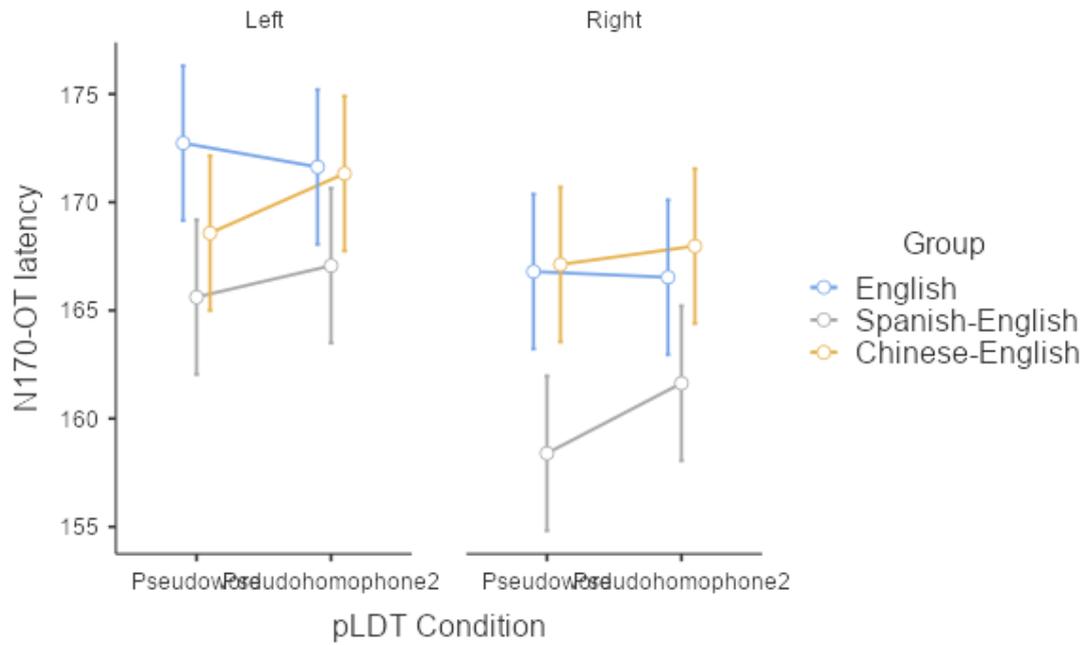
Comparison												
Hemisphere	pLDT Condition	Group	Hemisphere	pLDT Condition	Group	Mean Difference	SE	df	t	p	p <sub>Tukey</sub>	p <sub>Holm</sub>
		-	Right	Pseudohomophone2	Chinese-English	-1.4438	2.56	149	-0.5643	0.573	1.000	1.000
		-	Spanish-English	Pseudohomophone2	Chinese-English	-6.3405	2.56	149	-2.4781	0.014	0.0362	0.0690

Post Hoc Comparisons - Group

Comparison									
Group	Group	Mean Difference	SE	df	t	p	p <sub>Tukey</sub>	p <sub>Holm</sub>	
English	- Spanish-English	6.243	1.94	57.0	3.224	0.002	0.006	0.006	
	- Chinese-English	0.673	1.94	57.0	0.348	0.729	0.936	0.729	
Spanish-English	- Chinese-English	-5.570	1.94	57.0	-2.876	0.006	0.015	0.011	

### Estimated Marginal Means

pLDT Condition \* Group \* Hemisphere



## Repeated Measures ANOVA

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Hemisphere	227.452	1	227.452	12.45461	< .001	0.179
Hemisphere * Group	42.059	2	21.029	1.15151	0.323	0.039
Residual	1040.963	57	18.263			
Pseudohomophone Condition	0.190	1	0.190	0.00440	0.947	0.000
Pseudohomophone Condition * Group	17.069	2	8.534	0.19768	0.821	0.007
Residual	2460.905	57	43.174			
Hemisphere * Pseudohomophone Condition	2.274	1	2.274	0.14531	0.704	0.003
Hemisphere * Pseudohomophone Condition * Group	63.072	2	31.536	2.01560	0.143	0.066
Residual	891.820	57	15.646			

Note. Type 3 Sums of Squares

Within Subjects Effects

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	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
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Between Subjects Effects

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	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Group	1028	2	514	4.98	0.010	0.149
Residual	5888	57	103			

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Note. Type 3 Sums of Squares

## Assumptions

Homogeneity of Variances Test (Levene's)

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	F	df1	df2	p
PAL50_P1.LeftO\$Pseudohomophone1	5.394	2	57	0.007
PAL50_P1.RightO\$Pseudohomophone1	1.012	2	57	0.370
PAL50_P1.LeftO\$Pseudohomophone2	1.984	2	57	0.147
PAL50_P1.RightO\$Pseudohomophone2	0.873	2	57	0.423

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## Post Hoc Tests

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison													
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	phoIm	
Left	Pseudohomophone1	English	-	Left	Spanish-English	4.5165	2.12	14	2.12	0.035	0.605	1.00	
					Chinese-English	0.2929	2.11	14	0.1379	0.890	1.00	1.00	
			-	Left	Pseudohomophone2	English	0.5371	1.71	93	0.3132	0.755	1.00	1.00
					Pseudohomophone2	Spanish-English	4.3700	2.11	14	2.0578	0.041	0.653	1.00
			-	Left	Pseudohomophone2	Chinese-English	-0.5127	2.11	14	-0.2414	0.810	1.00	1.00
					Pseudohomophone1	English	1.7090	1.30	11	1.3125	0.192	0.976	1.00

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	phoIm
-			Right	Pseudohomophone1	Spanish-English	6.6974	2.12	144	3.1539	0.002	0.080	0.126
-			Right	Pseudohomophone1	Chinese-English	1.6601	2.12	144	0.7817	0.436	1.000	1.000
-			Right	Pseudohomophone2	English	0.6836	1.075	97	0.639	0.520	1.000	1.000
-			Right	Pseudohomophone2	Spanish-English	6.0587	2.12	144	2.8531	0.005	0.170	0.299
-			Right	Pseudohomophone2	Chinese-English	4.0771	2.12	144	1.9199	0.057	0.745	1.000
-		Spanish-English	Left	Pseudohomophone1	Chinese-English	4.2236	2.12	144	1.9889	0.049	0.700	1.000

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
-			Left	Pseudohomophone2	English	-3.9795	2.1	144	-1.8740	0.063	0.773	1.000
-			Left	Pseudohomophone2	Spanish-English	-0.1466	1.7	935	-0.0855	0.932	1.000	1.000
-			Left	Pseudohomophone2	Chinese-English	-5.0292	2.1	144	-2.3683	0.019	0.434	1.000
-			Right	Pseudohomophone1	English	-2.8075	2.1	144	-1.3221	0.188	0.975	1.000
-			Right	Pseudohomophone1	Spanish-English	2.1809	1.3	1133	1.6749	0.097	0.876	1.000
-			Right	Pseudohomophone1	Chinese-English	-2.8565	2.1	144	-1.3451	0.181	0.971	1.000
-			Right	Pseudohomophone2	English	-3.8329	2.1	144	-1.8050	0.073	0.813	1.000

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	phoIm
-			Right	Pseudohomophone2	Spanish-English	1.5421	1.75	97	0.8799	0.381	0.99	1.00
-			Right	Pseudohomophone2	Chinese-English	-0.4394	2.11	14	-0.2069	0.836	1.00	1.00
-		Chinese-English	Left	Pseudohomophone2	English	0.2441	2.11	14	0.1150	0.909	1.00	1.00
-			Left	Pseudohomophone2	Spanish-English	4.0770	2.11	14	1.9199	0.057	0.745	1.00
-			Left	Pseudohomophone2	Chinese-English	-0.8056	1.75	93	-0.4698	0.640	1.00	1.00
-			Right	Pseudohomophone1	English	1.4161	2.11	14	0.6668	0.506	1.00	1.00

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	phoIm
			-	Right	Spanish-English	6.4045	2.12	144	3.0159	0.003	0.115	0.188
			-	Right	Chinese-English	1.3672	1.30	113	1.0500	0.296	0.996	1.000
			-	Right	English	0.3907	2.14	144	0.1840	0.854	1.000	1.000
			-	Right	Spanish-English	5.7657	2.11	144	2.7151	0.007	0.230	0.432
			-	Right	Chinese-English	3.7842	1.75	97.9	2.1591	0.033	0.583	1.000
	Pseudohomophone2	English	-	Left	Spanish-English	3.8329	2.11	144	1.8049	0.073	0.813	1.000

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	phoim
-			Left	Pseudohomophone2	Chinese-English	-1.0498	2.12	144	-0.4943	0.622	1.000	1.000
-			Right	Pseudohomophone1	English	1.1719	1.75	97	0.6687	0.505	1.000	1.000
-			Right	Pseudohomophone1	Spanish-English	6.1604	2.12	144	2.9010	0.004	0.015	0.026
-			Right	Pseudohomophone1	Chinese-English	1.1230	2.12	144	0.5288	0.598	1.000	1.000
-			Right	Pseudohomophone2	English	0.1465	1.30	113	0.1125	0.911	1.000	1.000
-			Right	Pseudohomophone2	Spanish-English	5.5216	2.12	144	2.6002	0.010	0.029	0.058

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	phoIm
-			Right	Pseudohomophone2	Chineses-English	3.5400	2.12	144	1.6670	0.098	0.880	1.000
-		Spanish-English	Left	Pseudohomophone2	Chineses-English	-4.8827	2.12	144	-2.2993	0.023	0.482	1.000
-			Right	Pseudohomophone1	English	-2.6610	2.12	144	-1.2531	0.212	0.983	1.000
-			Right	Pseudohomophone1	Spanish-English	2.3275	1.75	97	1.3280	0.187	0.973	1.000
-			Right	Pseudohomophone1	Chineses-English	-2.7099	2.12	144	-1.2761	0.204	0.981	1.000
-			Right	Pseudohomophone2	English	-3.6864	2.12	144	-1.7359	0.085	0.848	1.000

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	phoIm
-			Right	Pseudohomophone2	Spanish-English	1.6887	1.30	113	1.29	0.197	0.08	1.00
-			Right	Pseudohomophone2	Chinese-English	-0.2929	2.14	141	-0.1379	0.891	1.00	1.00
-		Chinese-English	Right	Pseudohomophone1	English	2.2217	2.11	142	1.0462	0.297	0.06	1.00
-			Right	Pseudohomophone1	Spanish-English	7.2102	2.11	144	3.3953	<.001	0.041	0.058
-			Right	Pseudohomophone1	Chinese-English	2.1728	1.75	97.9	1.2397	0.218	0.984	1.00
-			Right	Pseudohomophone2	English	1.1963	2.11	145	0.5633	0.574	1.00	1.00

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
					Spanish-English	6.5714	2.12	144	3.09	0.002	0.04	0.15
					Chinese-English	4.5898	1.30	113	3.52	<.001	0.029	0.04
Right	Pseudohomophone1	English			Spanish-English	4.9885	2.12	144	2.34	0.020	0.448	1.00
					Chinese-English	0.0489	2.12	144	0.0230	0.982	1.000	1.00
					English	1.0254	1.07	935	0.5979	0.551	1.000	1.00
					Spanish-English	4.3497	2.12	144	2.0483	0.042	0.660	1.00

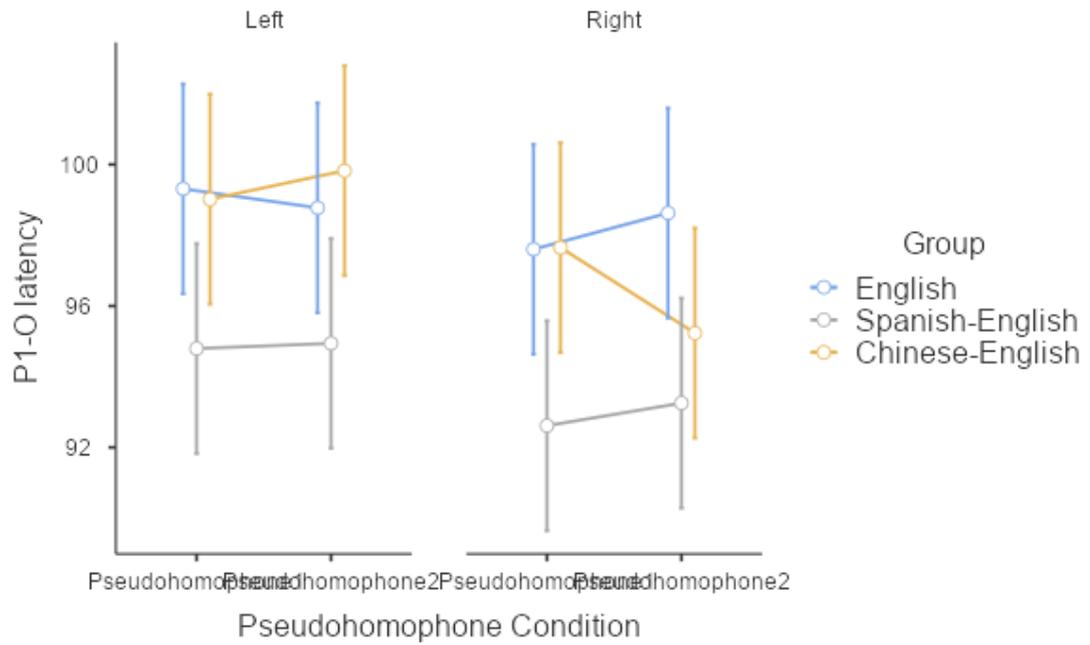


Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
					Spanish-English							
			Right	Pseudohomophone2		4.3986	2.12	144	2.07	0.04	0.04	1.00
			Right	Pseudohomophone2	Chinese-English	2.4170	1.07	935	1.40	0.16	0.95	1.00
	Pseudohomophone2	English	Right	Pseudohomophone2	Spanish-English	5.3751	2.12	144	2.53	0.01	0.33	0.69
			Right	Pseudohomophone2	Chinese-English	3.3935	2.12	144	1.59	0.11	0.90	1.00
		Spanish-English	Right	Pseudohomophone2	Chinese-English	1.9816	2.12	144	0.93	0.35	0.99	1.00

**Estimated Marginal Means**

**Pseudohomophone Condition \* Group \* Hemisphere**



## Repeated Measures ANOVA

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Hemisphere	508.450	1	508.450	13.0526	< .001	0.186
Hemisphere * Group	55.061	2	27.531	0.7067	0.498	0.024
Residual	2220.375	57	38.954			
Pseudohomophone Condition	2.989	1	2.989	0.1272	0.723	0.002
Pseudohomophone Condition * Group	23.555	2	11.778	0.5013	0.608	0.017
Residual	1339.245	57	23.496			
Hemisphere * Pseudohomophone Condition	0.981	1	0.981	0.0518	0.821	0.001
Hemisphere * Pseudohomophone Condition * Group	16.394	2	8.197	0.4328	0.651	0.015
Residual	1079.624	57	18.941			

Note. Type 3 Sums of Squares

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
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Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Group	1062	2	530.8	10.9	< .001	0.276
Residual	2785	57	48.9			

Note. Type 3 Sums of Squares

## Assumptions

Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
PAL50_P1.LeftOP\$Pseudohomophone1	2.190	2	57	0.121
PAL50_P1.RightOP\$Pseudohomophone1	0.341	2	57	0.713
PAL50_P1.LeftOP\$Pseudohomophone2	0.933	2	57	0.399
PAL50_P1.RightOP\$Pseudohomophone2	0.831	2	57	0.441

## Post Hoc Tests

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	phoIm
Left	Pseudohomophone1	English	-	Left	Spanish-English	3.8365	1.80	201	2.161	0.035	0.060	1.000
					Chinese-English	-0.3906	1.80	201	-0.2165	0.829	1.000	
			-	Left	English	0.2232	1.46	113	0.1532	0.879	1.000	
					Spanish-English	3.6621	1.80	201	2.0295	0.044	0.067	
					Chinese-English	0.6139	1.80	201	0.3402	0.734	1.000	
					English	1.0254	1.70	102	0.6027	0.548	1.000	

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
-			Right	Pseudohomophone1	Spanish-English	8.2450	1.800	2192	4.56	<.001	<.001	<.001
-			Right	Pseudohomophone1	Chinese-English	3.2924	1.800	2146	1.82	0.070	0.803	1.000
-			Right	Pseudohomophone2	English	2.4693	1.777	1074	1.39	0.165	0.962	1.000
-			Right	Pseudohomophone2	Spanish-English	7.1428	1.800	2184	3.95	<.001	0.006	0.006
-			Right	Pseudohomophone2	Chinese-English	3.2366	1.800	2137	1.79	0.074	0.820	1.000
-		Spanish-English	Left	Pseudohomophone1	Chinese-English	4.2271	1.800	2126	2.34	0.020	0.450	1.000

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
-			Left	Pseudohomophone2	English	-3.6134	1.080	201	-2.0025	0.047	0.691	1.000
-			Left	Pseudohomophone2	Spanish-English	-0.1744	1.046	113	-0.1197	0.905	1.000	1.000
-			Left	Pseudohomophone2	Chinese-English	-3.2227	1.080	201	-1.7859	0.076	0.824	1.000
-			Right	Pseudohomophone1	English	-2.8112	1.080	201	-1.5579	0.121	0.922	1.000
-			Right	Pseudohomophone1	Spanish-English	4.4084	1.070	102	2.5911	0.011	0.029	0.053
-			Right	Pseudohomophone1	Chinese-English	-0.5442	1.080	201	-0.3016	0.763	1.000	1.000
-			Right	Pseudohomophone2	English	-1.3673	1.080	201	-0.7577	0.450	1.000	1.000

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
-			Right	Pseudohomophone2	Spanish-English	3.3063	1.77	107	1.8711	0.064	0.774	1.000
-			Right	Pseudohomophone2	Chinese-English	-0.5999	1.08	201	-0.5525	0.574	1.000	1.000
-		Chinese-English	Left	Pseudohomophone2	English	0.6138	1.08	201	0.5601	0.573	1.000	1.000
-			Left	Pseudohomophone2	Spanish-English	4.0527	1.08	201	2.2459	0.026	0.519	1.000
-			Left	Pseudohomophone2	Chinese-English	1.0045	1.04	103	0.9696	0.329	1.000	1.000
-			Right	Pseudohomophone1	English	1.4160	1.08	201	0.7847	0.434	1.000	1.000

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
			-	Right	Spanish-English	8.6356	1.800	2157	4.7857	<.001	<.001	<.001
			-	Right	Chinese-English	3.6830	1.700	1247	2.1647	0.033	0.058	1.000
			-	Right	English	2.8599	1.800	2149	1.5849	0.115	0.093	1.000
			-	Right	Spanish-English	7.5334	1.800	2149	4.1749	<.001	0.003	0.003
			-	Right	Chinese-English	3.6272	1.700	1277	2.0527	0.043	0.067	1.000
	Pseudohomophone2	English	-	Left	Spanish-English	3.4389	1.800	2158	1.9058	0.058	0.074	1.000

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	plm
-			Left	Pseudohomophone2	Chinese-English	0.3907	1.800	2165	0.2165	0.829	1.000	1.000
-			Right	Pseudohomophone1	English	0.8022	1.777	1740	0.4540	0.651	1.000	1.000
-			Right	Pseudohomophone1	Spanish-English	8.0218	1.800	2455	4.4455	<.001	<.001	<.001
-			Right	Pseudohomophone1	Chinese-English	3.0692	1.800	2709	1.7091	0.091	0.866	1.000
-			Right	Pseudohomophone2	English	2.2461	1.700	1702	1.3201	0.190	0.975	1.000
-			Right	Pseudohomophone2	Spanish-English	6.9196	1.800	2847	3.8471	<.001	0.009	0.010

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
-			Right	Pseudohomophone2	Chineses-English	3.0134	1.80	201	1.6700	0.096	0.880	1.000
-		Spanish-English	Left	Pseudohomophone2	Chineses-English	-3.0482	1.80	201	-1.6893	0.093	0.871	1.000
-			Right	Pseudohomophone1	English	-2.6367	1.80	201	-1.4612	0.146	0.949	1.000
-			Right	Pseudohomophone1	Spanish-English	4.5828	1.77	107	2.5935	0.011	0.297	0.053
-			Right	Pseudohomophone1	Chineses-English	0.3697	1.80	201	0.2049	0.838	1.000	1.000
-			Right	Pseudohomophone2	English	1.1928	1.80	201	0.6611	0.509	1.000	1.000

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
-			Right	Pseudohomophone2	Spanish-English	3.4807	1.700	12	2.0458	0.043	0.661	1.000
-			Right	Pseudohomophone2	Chinese-English	-0.4255	1.080	201	-0.2358	0.814	1.000	1.000
-		Chinese-English	Right	Pseudohomophone1	English	0.4115	1.080	201	0.2280	0.820	1.000	1.000
-			Right	Pseudohomophone1	Spanish-English	7.6311	1.080	201	4.2290	<.001	0.002	0.002
-			Right	Pseudohomophone1	Chinese-English	2.6785	1.077	107	1.5158	0.133	0.933	1.000
-			Right	Pseudohomophone2	English	1.8554	1.080	201	1.0282	0.305	0.997	1.000

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
					Spanish							
			Right	Pseudohomophone2	Spanish-English	6.5289	1.80	21	3.6182	<.001	0.019	0.02
			Right	Pseudohomophone2	Chinese-English	2.6227	1.70	120	1.5415	0.126	0.0925	1.000
Right	Pseudohomophone1	English	Right	Pseudohomophone1	Spanish-English	7.2196	1.80	210	4.0010	<.001	0.005	0.005
			Right	Pseudohomophone1	Chinese-English	2.2670	1.80	201	1.2563	0.210	0.0983	1.000
			Right	Pseudohomophone2	English	1.4439	1.46	113	0.9913	0.324	0.0998	1.000
			Right	Pseudohomophone2	Spanish-English	6.1174	1.80	202	3.3902	<.001	0.039	0.048

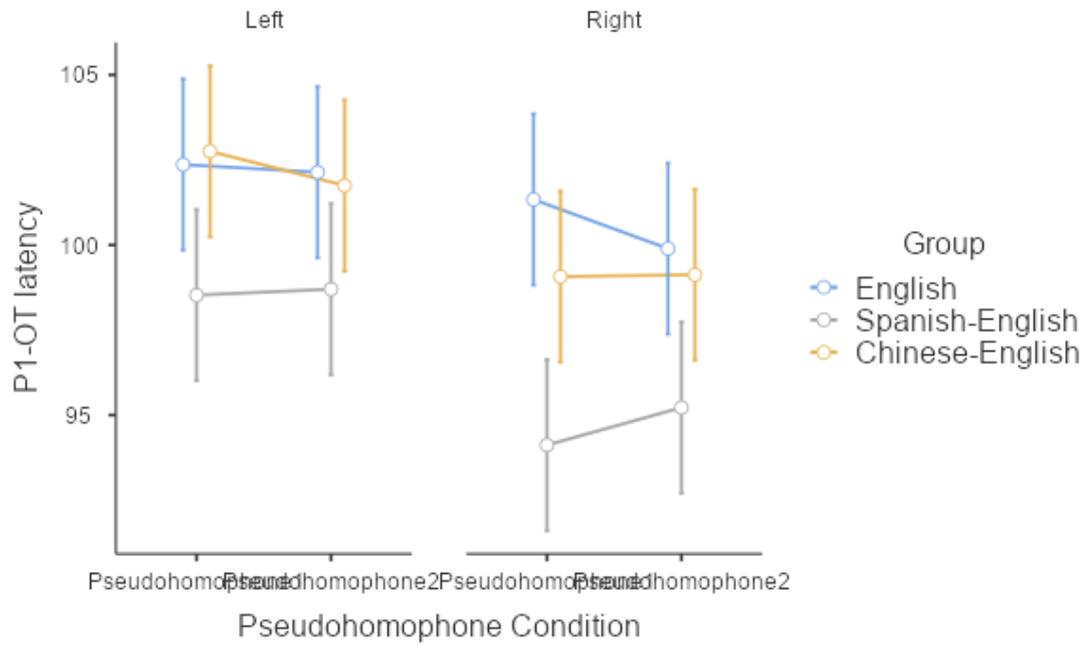


Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
					Spanish-English							
			Right	Pseudohomophone2		3.8504	1.800	2138	2.138	0.034	0.599	1.000
			Right	Pseudohomophone2	Chinese-English	-0.0558	1.406	1133	-0.083	0.970	1.000	1.000
	Pseudohomophone2	English										
					Spanish-English							
			Right	Pseudohomophone2		4.6735	1.800	25900	2.5900	0.010	0.293	0.546
			Right	Pseudohomophone2	Chinese-English	0.7673	1.800	204252	0.4252	0.671	1.000	1.000
		Spanish-English										
					Chinese-English							
			Right	Pseudohomophone2		-3.9062	1.800	201647	-2.1647	0.032	0.577	1.000

Estimated Marginal Means

Pseudohomophone Condition \* Group \* Hemisphere



## Repeated Measures ANOVA

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Hemisphere	187.11	1	187.11	6.9162	0.011	0.108
Hemisphere * Group	46.15	2	23.07	0.8529	0.432	0.029
Residual	1542.05	57	27.05			
Pseudohomophone Condition	12.46	1	12.46	0.3181	0.575	0.006
Pseudohomophone Condition * Group	77.62	2	38.81	0.9905	0.378	0.034
Residual	2233.25	57	39.18			
Hemisphere * Pseudohomophone Condition	8.16	1	8.16	0.3217	0.573	0.006
Hemisphere * Pseudohomophone Condition * Group	5.02	2	2.51	0.0990	0.906	0.003
Residual	1446.51	57	25.38			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Group	1393	2	696.4	8.76	< .001	0.235
Residual	4529	57	79.5			

Note. Type 3 Sums of Squares

### Assumptions

Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
NAL50_P1.LeftFC\$Pseudohomophone1	3.452	2	57	0.038
NAL50_P1.RightFC\$Pseudohomophone1	0.449	2	57	0.640
NAL50_P1.LeftFC\$Pseudohomophone2	0.198	2	57	0.821
NAL50_P1.RightFC\$Pseudohomophone2	4.683	2	57	0.013

### Post Hoc Tests

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
Left	Pseudohomophone1	English	-	Left	Pseudohomophone1	7.3080	2.07	118	3.53	< .001	0.025	0.033
					Spanish-English							

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	phoIm
-			Left	Pseudohomophone1	Chineses-English	2.7182	2.07	18	1.3144	0.190	0.976	1.000
-			Left	Pseudohomophone2	English	2.4903	1.08	109	1.3861	0.169	0.964	1.000
-			Left	Pseudohomophone2	Spanish-English	6.6081	2.07	81	3.1954	0.002	0.070	0.010
-			Left	Pseudohomophone2	Chineses-English	3.4018	2.07	81	1.6450	0.102	0.890	1.000
-			Right	Pseudohomophone1	English	3.3691	1.06	14	2.0808	0.040	0.637	1.000
-			Right	Pseudohomophone1	Spanish-English	9.7412	2.07	81	4.7104	<.001	<.001	<.001

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
					Chi							
			-	Right	Pseudohomophone1	En-Englis h	3.30204	2.07	181	1.6056	0.110	0.905
			-	Right	Pseudohomophone2	Englis h	4.3702	1.082	140	2.215	0.018	0.041
			-	Right	Pseudohomophone2	Spansh-Englis h	8.3985	2.07	108	4.0611	<.001	0.004
			-	Right	Pseudohomophone2	Chi-Englis h	3.9227	2.07	189	1.8968	0.059	0.076
		Spanish-English	-	Left	Pseudohomophone1	Chi-Englis h	4.5898	2.07	181	2.2194	0.028	0.053
		Spanish-English	-	Left	Pseudohomophone2	Englis h	4.8177	2.07	181	2.3296	0.021	0.046

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-			Left	Pseudohomophone2	Spanish-English	-0.6999	1.0800	109	-0.3896	0.6988	1.0000	1.0000
-			Left	Pseudohomophone2	Chinese-English	-3.9062	2.0077	108	-1.8889	0.0611	0.0765	1.0000
-			Right	Pseudohomophone1	English	-3.9389	2.0077	108	-1.9047	0.0588	0.0755	1.0000
-			Right	Pseudohomophone1	Spanish-English	2.4332	1.0622	104	1.5028	0.1366	0.9377	1.0000
-			Right	Pseudohomophone1	Chinese-English	-3.9877	2.0077	108	-1.9283	0.0555	0.0740	1.0000
-			Right	Pseudohomophone2	English	-2.9378	2.0077	108	-1.4206	0.1577	0.9588	1.0000

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
-			Right	Pseudohomophone2	Spanish-English	1.0905	1.82	110	0.5992	0.550	1.000	1.000
-			Right	Pseudohomophone2	Chinese-English	-3.3854	2.07	118	-1.6370	0.103	0.893	1.000
-		Chinese-English	Left	Pseudohomophone2	English	-0.2279	2.07	118	-0.1102	0.912	1.000	1.000
-			Left	Pseudohomophone2	Spanish-English	3.8899	2.07	118	1.8810	0.062	0.769	1.000
-			Left	Pseudohomophone2	Chinese-English	0.6836	1.08	109	0.6305	0.524	1.000	1.000
-			Right	Pseudohomophone1	English	0.6509	2.07	118	0.3147	0.753	1.000	1.000

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
-			Right	Pseudohomophone1	Spanish-English	7.0230	2.07	181	3.3960	<.001	0.039	0.052
-			Right	Pseudohomophone1	Chinese-English	0.6021	1.062	134	0.5719	0.571	1.000	1.000
-			Right	Pseudohomophone2	English	1.6520	2.07	188	0.7942	0.425	1.000	1.000
-			Right	Pseudohomophone2	Spanish-English	5.6803	2.07	187	2.7467	0.007	0.0213	0.035
-			Right	Pseudohomophone2	Chinese-English	1.2044	1.082	160	1.118	0.269	1.000	1.000
	Pseudohomophone2	English	Left	Pseudohomophone2	Spanish-English	4.1178	2.07	112	1.9912	0.048	0.0699	1.000

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
-			Left	Pseudohomophone2	Chinese-English	0.9115	2.07	181	0.4408	0.6600	1.0000	1.0000
-			Right	Pseudohomophone1	English	0.8788	1.082	110	0.4829	0.6300	1.0000	1.0000
-			Right	Pseudohomophone1	Spanish-English	7.2509	2.07	181	3.5062	<.001	0.028	0.036
-			Right	Pseudohomophone1	Chinese-English	0.8301	2.07	181	0.4014	0.689	1.0000	1.0000
-			Right	Pseudohomophone2	English	1.8799	1.062	110	1.1611	0.248	0.991	1.0000
-			Right	Pseudohomophone2	Spanish-English	5.9082	2.07	181	2.8569	0.005	0.0166	0.0272

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-			Right	Pseudohomophone2	Chineses-English	1.4323	2.07	181	0.6926	0.489	1.000	1.000
-		Spanish-English	Left	Pseudohomophone2	Chineses-English	-3.2063	2.07	181	-1.5504	0.123	0.924	1.000
-			Right	Pseudohomophone1	English	-3.2390	2.07	181	-1.5662	0.119	0.919	1.000
-			Right	Pseudohomophone1	Spanish-English	3.1331	1.82	170	1.7217	0.088	0.854	1.000
-			Right	Pseudohomophone1	Chineses-English	-3.2878	2.07	181	-1.5898	0.114	0.911	1.000
-			Right	Pseudohomophone2	English	-2.2379	2.07	181	-1.0822	0.281	0.995	1.000

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
-			Right	Pseudohomophone2	Spanish-English	1.7904	1.62	114	1.1058	0.271	0.494	1.000
-			Right	Pseudohomophone2	Chinese-English	-2.6855	2.07	181	-1.2986	0.196	0.978	1.000
-		Chinese-English	Right	Pseudohomophone1	English	-0.0327	2.07	181	-0.0158	0.987	1.000	1.000
-			Right	Pseudohomophone1	Spanish-English	6.3394	2.07	181	3.0654	0.003	0.009	0.0145
-			Right	Pseudohomophone1	Chinese-English	-0.0815	1.82	114	-0.0448	0.964	1.000	1.000
-			Right	Pseudohomophone2	English	0.9684	2.07	181	0.4683	0.640	1.000	1.000

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	P <sub>tukey</sub>	P <sub>holm</sub>
			-	Right	Spanish-English	4.9967	2.07	181	2.4162	0.017	0.401	0.851
			-	Right	Chinese-English	0.5208	1.162	134	0.4517	0.654	1.000	1.000
Right	Pseudohomophone1	English	-	Right	Spanish-English	6.3721	2.07	181	3.0813	0.002	0.095	0.141
			-	Right	Chinese-English	0.0487	2.07	181	0.0236	0.981	1.000	1.000
			-	Right	English	1.0011	1.080	109	0.5572	0.579	1.000	1.000
			-	Right	Spanish-English	5.0294	2.07	181	2.4320	0.016	0.390	0.832

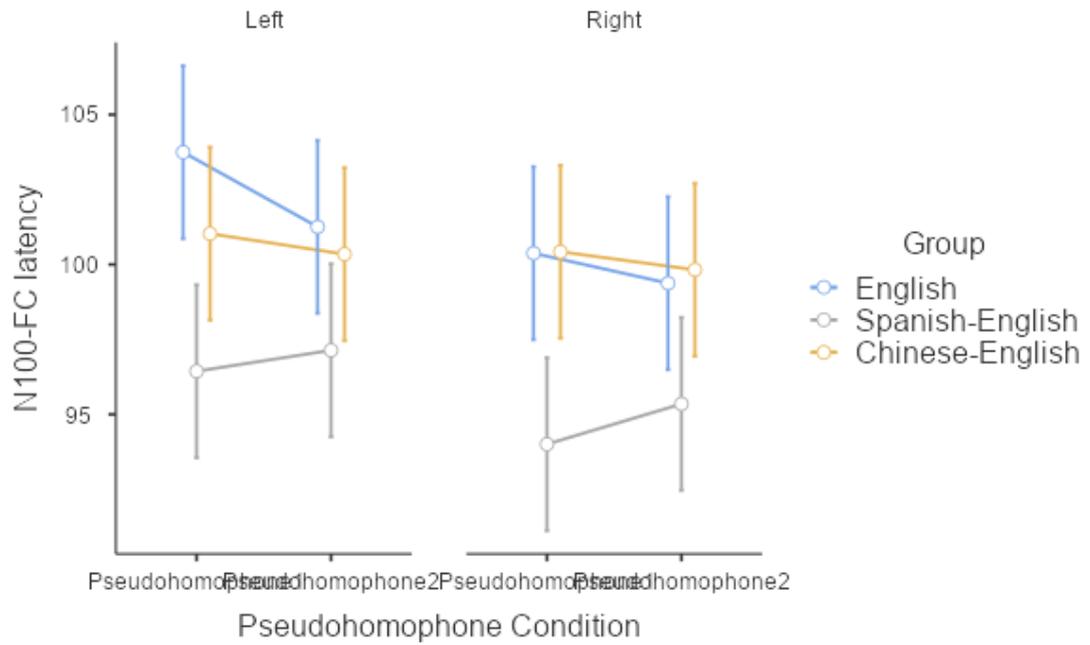


Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
					Spanish-English							
			Right	Pseudohomophone2		5.0781	2.07	181	2.4556	0.015	0.375	0.796
			Right	Pseudohomophone2	Chinese-English	0.6023	1.08	109	0.552	0.58	1.00	1.00
	Pseudohomophone2	English	Right	Pseudohomophone2	Spanish-English	4.0283	2.07	181	1.9479	0.053	0.727	1.00
	Pseudohomophone2		Right	Pseudohomophone2	Chinese-English	0.4476	2.07	181	0.2164	0.829	1.00	1.00
	Pseudohomophone2	Spanish-English	Right	Pseudohomophone2	Chinese-English	4.4758	2.07	181	2.1643	0.032	0.577	1.00

Estimated Marginal Means

Pseudohomophone Condition \* Group \* Hemisphere



## Repeated Measures ANOVA

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Hemisphere	1055.10	1	1055.10	20.185	< .001	0.262
Hemisphere * Group	47.25	2	23.63	0.452	0.639	0.016
Residual	2979.41	57	52.27			
Pseudohomophone Condition	49.97	1	49.97	1.737	0.193	0.030
Pseudohomophone Condition * Group	8.72	2	4.36	0.151	0.860	0.005
Residual	1640.32	57	28.78			
Hemisphere * Pseudohomophone Condition	11.28	1	11.28	0.504	0.481	0.009
Hemisphere * Pseudohomophone Condition * Group	22.75	2	11.38	0.508	0.604	0.018
Residual	1275.80	57	22.38			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Group	1473	2	736	5.79	0.005	0.169
Residual	7245	57	127			

Note. Type 3 Sums of Squares

### Assumptions

Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
NAL50_N170.LeftOP\$Pseudohomophone1	0.65765	2	57	0.522
NAL50_N170.RightOP\$Pseudohomophone1	2.25012	2	57	0.115
NAL50_N170.LeftOP\$Pseudohomophone2	0.00633	2	57	0.994
NAL50_N170.RightOP\$Pseudohomophone2	3.13537	2	57	0.051

### Post Hoc Tests

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison													
Hemisphere	Pseudohomophone Condition	Group		Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
Left	Pseudohomophone1	English	-	Left	Pseudohomophone1	Spanish-English	4.123	2.40	149	1.7172	0.088	0.858	1.000

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	phoIm
-		Left		Pseudohomophone1	Chinese-English	-0.258	2.40	149	-0.1075	0.915	1.000	1.000
-		Left		Pseudohomophone2	English	-1.681	1.60	112	-1.0511	0.295	0.996	1.000
-		Left		Pseudohomophone2	Spanish-English	2.881	2.40	149	1.2000	0.232	0.988	1.000
-		Left		Pseudohomophone2	Chinese-English	1.374	2.40	149	0.5724	0.568	1.000	1.000
-		Right		Pseudohomophone1	English	2.490	1.93	98	1.2890	0.200	0.979	1.000
-		Right		Pseudohomophone1	Spanish-English	9.535	2.40	149	3.9719	<.001	0.006	0.007

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	phoIm
					Chinese							
			-	Right	Pseudohomophone1	3.18	2.40	1498	1.2988	0.196	0.978	1.000
					English							
			-	Right	Pseudohomophone2	3.418	2.01	1052	1.6979	0.092	0.865	1.000
					Spanish							
			-	Right	Pseudohomophone2	8.315	2.40	1498	3.4634	<.001	0.033	0.041
					Chinese							
			-	Right	Pseudohomophone2	1.974	2.40	1498	0.8223	0.412	1.000	1.000
		Spanish-English										
			-	Left	Pseudohomophone1	4.381	2.40	1498	1.8248	0.070	0.802	1.000
					English							
			-	Left	Pseudohomophone2	5.804	2.40	1498	2.4175	0.017	0.401	0.808

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	phoIm
-		Left		Pseudohomophone2	Spanish-English	-1.242	1.060	112	-0.7764	0.439	1.000	1.000
-		Left		Pseudohomophone2	Chinese-English	-5.497	2.040	149	-2.6896	0.023	0.0489	1.000
-		Right		Pseudohomophone1	English	-1.632	2.040	149	-0.6799	0.498	1.000	1.000
-		Right		Pseudohomophone1	Spanish-English	5.413	1.093	983	2.8017	0.006	0.0196	0.331
-		Right		Pseudohomophone1	Chinese-English	-1.004	2.040	149	-0.4184	0.676	1.000	1.000
-		Right		Pseudohomophone2	English	0.705	2.040	149	0.2935	0.770	1.000	1.000

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	phoIm
-			Right	Pseudohomophone2	Spanish-English	4.192	2.01	1052	2.0825	0.040	0.636	1.000
-			Right	Pseudohomophone2	Chinese-English	-2.148	2.040	1498	-0.8949	0.372	0.999	1.000
		Chinese-English	-	Left	Pseudohomophone2	-1.423	2.040	1498	-0.5927	0.554	1.000	1.000
-			Left	Pseudohomophone2	Spanish-English	3.139	2.040	1498	1.3075	0.193	0.977	1.000
-			Left	Pseudohomophone2	Chinese-English	-1.116	1.060	1122	-0.6978	0.487	1.000	1.000
-			Right	Pseudohomophone1	English	2.748	2.040	1498	1.1448	0.254	0.992	1.000

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	phoIm
					Spanish-English	9.794	2.40	1498	4.0795	< .001	0.04	0.05
					Chinese-English	3.376	1.93	983	1.7475	0.084	0.841	1.000
					English	3.676	2.40	1498	1.5313	0.128	0.929	1.000
					Spanish-English	8.573	2.40	1498	3.5710	< .001	0.023	0.029
					Chinese-English	2.232	2.10	1052	1.1089	0.270	0.994	1.000
	Pseudohomophone e2	English	Left	Pseudohomophone e2	Spanish-English	4.562	2.40	1498	1.9002	0.059	0.757	1.000

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	phoIm
-		Left		Pseudohomophone2	Chinese-English	0.307	2.40	1498	0.1278	0.898	1.000	1.000
-		Right		Pseudohomophone1	English	4.171	2.01	1052	2.0722	0.041	0.643	1.000
-		Right		Pseudohomophone1	Spanish-English	11.217	2.40	1498	4.6722	<.001	<.001	<.001
-		Right		Pseudohomophone1	Chinese-English	4.799	2.40	1498	1.9991	0.047	0.693	1.000
-		Right		Pseudohomophone2	English	5.099	1.93	983	2.6393	0.010	0.273	0.493
-		Right		Pseudohomophone2	Spanish-English	9.996	2.40	1498	4.1637	<.001	0.003	0.003

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	phoIm
-			Right	Pseudohomophone2	Chinese-English	3.655	2.40	1498	1.526	0.130	0.932	1.000
-		Spanish-English	Left	Pseudohomophone2	Chinese-English	-4.255	2.40	1498	-1.7724	0.078	0.830	1.000
-			Right	Pseudohomophone1	English	-0.391	2.40	1498	-0.1627	0.871	1.000	1.000
-			Right	Pseudohomophone1	Spanish-English	6.655	2.101	1052	3.3057	0.001	0.056	0.075
-			Right	Pseudohomophone1	Chinese-English	0.237	2.40	1498	0.0988	0.921	1.000	1.000
-			Right	Pseudohomophone2	English	0.537	2.40	1498	0.2238	0.823	1.000	1.000

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	phoIm
-			Right	Pseudohomophone2	Spanish-English	5.434	1.93	98	2.8125	0.006	0.191	0.326
-			Right	Pseudohomophone2	Chinese-English	-0.907	2.40	149	-0.3777	0.706	1.000	1.000
		Chinese-English	Right	Pseudohomophone1	English	3.864	2.40	149	1.6097	0.110	0.903	1.000
-			Right	Pseudohomophone1	Spanish-English	10.910	2.40	149	4.5444	<.001	<.001	<.001
-			Right	Pseudohomophone1	Chinese-English	4.492	2.10	105	2.16	0.028	0.531	1.000
-			Right	Pseudohomophone2	English	4.792	2.40	149	1.9962	0.048	0.695	1.000

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
					Spanish-English	9.689	2.40	149	4.0359	<.001	0.05	0.05
					Chinese-English	3.348	1.93	983	1.7331	0.086	0.84	1.00
Right	Pseudohomophone1	English			Spanish-English	7.045	2.40	148	2.9346	0.004	0.14	0.216
					Chinese-English	0.628	2.40	148	0.2615	0.794	1.00	1.00
					English	0.928	1.60	112	0.5801	0.563	1.00	1.00
					Spanish-English	5.824	2.40	148	2.4261	0.016	0.39	0.806

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

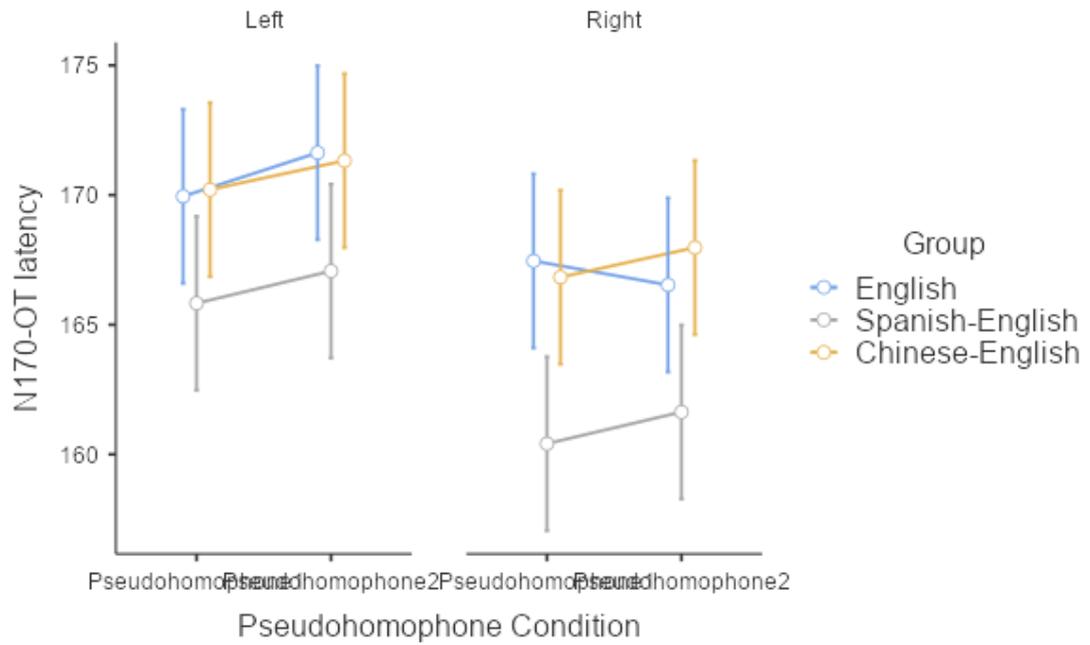
Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
					Chinese							
		-	Right	Pseudohomophone2	English	-0.516	2.40	149	-0.2150	0.8300	1.0000	1.0000
					Chinese							
					Spanish-English							
		-	Right	Pseudohomophone1	English	-6.417	2.40	149	-2.6731	0.0088	0.0250	0.4422
					English							
		-	Right	Pseudohomophone2	English	-6.117	2.40	149	-2.5482	0.0129	0.0319	0.5922
					Spanish-English							
		-	Right	Pseudohomophone2	English	-1.221	1.16	112	-0.7633	0.4477	1.0000	1.0000
					Chinese							
		-	Right	Pseudohomophone2	English	-7.561	2.40	149	-3.1496	0.0022	0.0081	0.1133
					Chinese							
					Spanish-English							
		-	Right	Pseudohomophone2	English	0.300	2.40	149	0.1249	0.9011	1.0000	1.0000

Post Hoc Comparisons - Hemisphere \* Pseudohomophone Condition \* Group

Comparison												
Hemisphere	Pseudohomophone Condition	Group	Hemisphere	Pseudohomophone Condition	Group	Mean Difference	SE	df	t	p	ptukey	plim
					Spanish-English	5.197	2.40	149	2.16	0.032	0.578	1.000
					Chinese-English	-1.144	1.06	112	-0.715	0.476	1.000	1.000
	Pseudohomophone2	English			Spanish-English	4.897	2.40	149	2.039	0.043	0.666	1.000
	Pseudohomophone2				Chinese-English	-1.444	2.40	149	-0.601	0.548	1.000	1.000
		Spanish-English			Chinese-English	-6.341	2.40	149	-2.641	0.009	0.267	0.475

Estimated Marginal Means

Pseudohomophone Condition \* Group \* Hemisphere



## Repeated Measures ANOVA

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Hemisphere	402.99	1	402.99	21.033	< .001	0.270
Hemisphere * Group	54.93	2	27.47	1.433	0.247	0.048
Residual	1092.13	57	19.16			
Task	113.66	1	113.66	5.940	0.018	0.094
Task * Group	136.78	2	68.39	3.574	0.034	0.111
Residual	1090.65	57	19.13			
Hemisphere * Task	25.51	1	25.51	3.773	0.057	0.062
Hemisphere * Task * Group	8.81	2	4.40	0.651	0.525	0.022
Residual	385.41	57	6.76			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Group	1084	2	542.2	5.60	0.006	0.164
Residual	5520	57	96.8			

Note. Type 3 Sums of Squares

## Assumptions

Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
PAL50_P1.LeftO\$oLDT	1.888	2	57	0.161
PAL50_P1.RightO\$oLDT	0.599	2	57	0.553
PAL50_P1.LeftO\$pLDT	0.450	2	57	0.640
PAL50_P1.RightO\$pLDT	2.926	2	57	0.062

## Post Hoc Tests

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison						Mean	SE	df	t	p	$p_{tuke}$	$p_{holm}$
Hemi	Tas	Gro	Hemi	Tas	Gro	Diffe						
spher	k	up	spher	k	up	renc						
e			re			e						
Left	oL	Eng	-	Left	oL	Spa	4.20	1.	11	2.2	0.0	0.5
	DT	lish		DT		nish	53	88	3.	328	28	30
						-			0	1		00
						Eng						
						lish						

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	ptuk	pHol
-			Left	oL DT	Chinese-English	-1.3855	1.88	113.0	-0.7356	0.463	1.000	1.000
-			Left	pL DT	English	-0.7691	1.14	92.8	0.6758	0.501	1.000	1.000
-			Left	pL DT	Spanish-English	5.1940	1.88	113.0	2.7577	0.007	0.213	0.333
-			Left	pL DT	Chinese-English	0.5677	1.88	113.0	0.3014	0.764	1.000	1.000
-			Right	oL DT	English	1.9898	1.14	92.8	1.7477	0.084	0.841	1.000
-			Right	oL DT	Spanish-English	5.1656	1.88	113.0	2.7426	0.007	0.220	0.340
-			Right	oL DT	Chinese-English	1.4831	1.88	113.0	0.7874	0.433	1.000	1.000
-			Right	pL DT	English	1.4954	1.38	114.0	1.0806	0.282	0.995	1.000

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	ptuk	pHol
					Spanish - English	7.6802	1.88	1130	4.07779	<.001	0.05	0.05
					Chinese-English	5.5481	1.88	1130	2.94573	0.004	0.139	0.196
		Spanish - English			Chinese-English	-5.5909	1.88	1130	-2.96846	0.004	0.132	0.186
					English	-4.9744	1.88	1130	-2.64115	0.009	0.270	0.443
					Spanish - English	0.9887	1.14	928	0.86891	0.387	0.999	1.000
					Chinese-English	-3.6376	1.88	1130	-1.93140	0.056	0.737	1.000
					English	-2.2155	1.88	1130	-1.17634	0.242	0.990	1.000

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	ptuk	pHol
			Right	oL DT	Spanish - English	0.9602	1.14	92.8	0.84346	0.401	0.99	1.00
			Right	oL DT	Chinese-English	-2.7222	1.88	113.0	-1.44535	0.151	0.952	1.00
			Right	pL DT	English	-2.7099	1.88	113.0	-1.43884	0.153	0.953	1.00
			Right	pL DT	Spanish - English	3.4749	1.38	114.0	2.51122	0.013	0.344	0.618
			Right	pL DT	Chinese-English	1.3427	1.88	113.0	0.71292	0.477	1.00	1.00
		Chinese-English	Left	pL DT	English	0.6165	1.88	113.0	0.32731	0.744	1.00	1.00
			Left	pL DT	Spanish - English	6.5796	1.88	113.0	3.49342	<.001	0.032	0.040

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison													
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	ptuk	pHol	
			-	Left	pL DT	Chinese-English	1.9532	1.14	92.8	1.71653	0.089	0.856	1.000
			-	Right	oL DT	English	3.3753	1.88	113.0	1.79212	0.076	0.819	1.000
			-	Right	oL DT	Spanish-English	6.5511	1.88	113.0	3.47830	<.001	0.033	0.042
			-	Right	oL DT	Chinese-English	2.8687	1.14	92.8	2.51978	0.013	0.341	0.618
			-	Right	pL DT	English	2.8809	1.88	113.0	1.52962	0.129	0.929	1.000
			-	Right	pL DT	Spanish-English	9.0657	1.88	113.0	4.81344	<.001	<.001	<.001
			-	Right	pL DT	Chinese-English	6.9336	1.38	114.0	5.01078	<.001	<.001	<.001
	pL DT	English	-	Left	pL DT	Spanish-English	5.9631	1.88	113.0	3.16611	0.002	0.080	0.107

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	ptuk	pHol
			-	Left	pL DT	Chinese-English	1.3368	1.88	113.0	0.70975	0.479	1.000
			-	Right	oL DT	English	2.7589	1.38	114.0	1.99378	0.049	0.697
			-	Right	oL DT	Spanish-English	5.9346	1.88	113.0	3.15099	0.002	0.083
			-	Right	oL DT	Chinese-English	2.2522	1.88	113.0	1.19581	0.234	0.988
			-	Right	pL DT	English	2.2645	1.14	92.8	1.98905	0.050	0.699
			-	Right	pL DT	Spanish-English	8.4493	1.88	113.0	4.48613	<.001	0.001
			-	Right	pL DT	Chinese-English	6.3171	1.88	113.0	3.35407	0.001	0.048
		Spanish-English	-	Left	pL DT	Chinese-English	-4.6264	1.88	113.0	-2.45636	0.016	0.378

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	ptuk ey	pHol m
-	Right	oL DT	English	-	English	3.2043	1.88	1130	1.70130	0.092	0.864	1.000
-	Right	oL DT	Spanish - English	-	Spanish - English	0.0285	1.38	1140	0.02058	0.984	1.000	1.000
-	Right	oL DT	Chinese-English	-	Chinese-English	3.7109	1.88	1130	1.97030	0.051	0.712	1.000
-	Right	pL DT	English	-	English	3.6987	1.88	1130	1.96380	0.052	0.716	1.000
-	Right	pL DT	Spanish - English	-	Spanish - English	2.4861	1.14	928	2.18378	0.032	0.565	1.000
-	Right	pL DT	Chinese-English	-	Chinese-English	0.3540	1.88	1130	0.18796	0.851	1.000	1.000
-	Right	oL DT	English	Chinese-English	English	1.4221	1.88	1130	0.75506	0.452	1.000	1.000

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison													
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub>	p <sub>holm</sub>	
			-	Right	oL DT	Spanish - English	4.579	1.88	113.40	2.4412	0.016	0.388	0.696
			-	Right	oL DT	Chinese-English	0.9154	1.38	114.0	0.66158	0.510	1.000	1.000
			-	Right	pL DT	English	0.9277	1.88	113.0	0.49256	0.623	1.000	1.000
			-	Right	pL DT	Spanish - English	7.1125	1.88	113.0	3.77637	<.001	0.013	0.016
			-	Right	pL DT	Chinese-English	4.9804	1.14	92.8	4.37465	<.001	0.002	0.002
Right	oL DT	English	-	Right	oL DT	Spanish - English	3.1758	1.88	113.0	1.68618	0.095	0.871	1.000
			-	Right	oL DT	Chinese-English	-0.5067	1.88	113.0	-0.26901	0.788	1.000	1.000

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	ptuk ey	p <sub>hol</sub> m
			-	Right	pL DT	Eng lish	- 0.49 44	1. 14	92 .8	- 0.4 344 9	0.6 65	1.0 00 1.0 00
			-	Right	pL DT	Spa nish - Eng lish	5.69 04	1. 88	11 3. 0	3.0 213 1	0.0 03	0.1 16 0.1 62
			-	Right	pL DT	Chi nes e- Eng lish	3.55 83	1. 88	11 3. 0	1.8 892 6	0.0 61	0.7 63 1.0 00
		Spa nish - Eng lish	-	Right	oL DT	Chi nes e- Eng lish	- 3.68 24	1. 88	11 3. 0	- 1.9 551 9	0.0 53	0.7 22 1.0 00
			-	Right	pL DT	Eng lish	- 3.67 02	1. 88	11 3. 0	- 1.9 486 8	0.0 54	0.7 26 1.0 00
			-	Right	pL DT	Spa nish - Eng lish	2.51 46	1. 14	92 .8	2.2 099 0	0.0 30	0.5 47 1.0 00
			-	Right	pL DT	Chi nes e- Eng lish	0.38 25	1. 88	11 3. 0	0.2 030 8	0.8 39	1.0 00 1.0 00

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	ptuk	pHol
		Chinese-English	Right	pL DT	English	0.0123	1.88	113.0	0.0065	0.995	1.000	1.000
			Right	pL DT	Spanish-English	6.1971	1.88	113.0	3.29032	0.001	0.057	0.075
			Right	pL DT	Chinese-English	4.0649	1.14	92.8	3.57233	<.001	0.026	0.034
	pL DT	English	Right	pL DT	Spanish-English	6.1848	1.88	113.0	3.28382	0.001	0.058	0.075
			Right	pL DT	Chinese-English	4.0527	1.88	113.0	2.15176	0.034	0.587	1.000
		Spanish-English	Right	pL DT	Chinese-English	-2.1321	1.88	113.0	-1.13206	0.260	0.993	1.000

Post Hoc Comparisons - Task \* Group

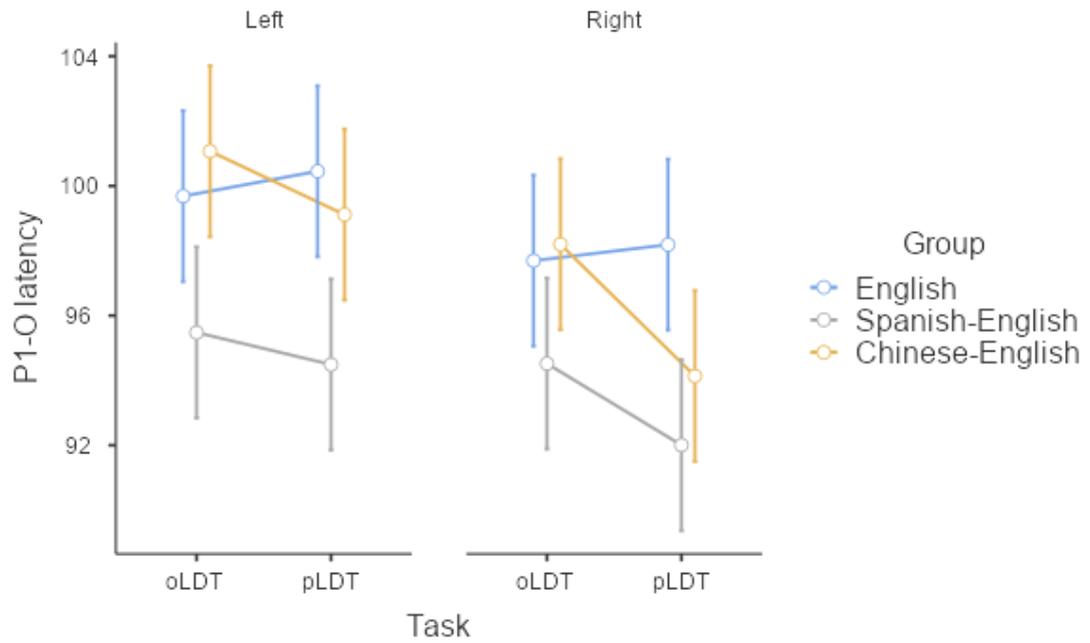
Comparison											
Task	Group		Task	Group	Mean Difference	SE	df	t	p	$p_{\text{Tukey}}$	$p_{\text{Holm}}$
oLDT	English	-	oLDT	Spanish-English	3.691	1.703	78.7	2.167	0.033	0.265	0.299
				Chinese-English	-0.946	1.703	78.7	-0.556	0.580	0.994	1.000
		-	pLDT	English	-0.632	0.978	57.0	-0.646	0.521	0.987	1.000
				Spanish-English	5.442	1.703	78.7	3.196	0.002	0.024	0.026
	Spanish-English	-	pLDT	Chinese-English	2.063	1.703	78.7	1.212	0.229	0.830	1.000
				Chinese-English	-4.637	1.703	78.7	-2.723	0.008	0.082	0.088
		-	pLDT	English	-4.322	1.703	78.7	-2.538	0.013	0.126	0.131
				Spanish-English	1.752	0.978	57.0	1.791	0.079	0.480	0.550
	-	pLDT	Chinese-English	-1.628	1.703	78.7	-0.956	0.342	0.930	1.000	

Post Hoc Comparisons - Task \* Group

Comparison											
Task	Group	Task	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub>	p <sub>holm</sub>	
	Chinese-English	-	pL English	0.314	1.703	78.7	0.185	0.854	1.000	1.000	
		-	pL Spanish-English	6.388	1.703	78.7	3.752	<.001	0.004	0.005	
		-	pL Chinese-English	3.009	0.978	57.0	3.076	0.003	0.036	0.039	
pLDT	English	-	pL Spanish-English	6.074	1.703	78.7	3.567	<.001	0.008	0.009	
		-	pL Chinese-English	2.695	1.703	78.7	1.583	0.118	0.612	0.705	
	Spanish-English	-	pL Chinese-English	-3.379	1.703	78.7	-1.985	0.051	0.360	0.405	

**Estimated Marginal Means**

**Task \* Group \* Hemisphere**



## Repeated Measures ANOVA

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Hemisphere	735.71	1	735.71	23.664	< .001	0.293
Hemisphere * Group	15.44	2	7.72	0.248	0.781	0.009
Residual	1772.11	57	31.09			
Task	6.45	1	6.45	0.584	0.448	0.010
Task * Group	40.34	2	20.17	1.826	0.170	0.060
Residual	629.68	57	11.05			
Hemisphere * Task	3.02	1	3.02	0.328	0.569	0.006
Hemisphere * Task * Group	26.03	2	13.02	1.415	0.251	0.047
Residual	524.45	57	9.20			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Group	743	2	371.5	8.50	< .001	0.230
Residual	2492	57	43.7			

Note. Type 3 Sums of Squares

## Assumptions

Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
PAL50_P1.LeftOP\$oLDT	0.1097	2	57	0.896
PAL50_P1.RightOP\$oLDT	0.0652	2	57	0.937
PAL50_P1.LeftOP\$pLDT	0.6273	2	57	0.538
PAL50_P1.RightOP\$pLDT	1.0962	2	57	0.341

## Post Hoc Tests

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison													
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	$p_{tuke}$	$p_{holm}$	
Left	oLDT	English	-	Left	oLDT	Spanish - English	3.6831	1.54	167.0	2.3892	0.018	0.419	0.756

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub>	p <sub>holm</sub>
-	Left	oL DT	Chinese-English	-	1.1021	1.54	1670	0.7149	0.476	1.000	1.000	
-	Left	pL DT	English	-	0.8405	1.01	1131	0.8354	0.405	1.000	1.000	
-	Left	pL DT	Spanish-English	2.6647	1.54	1670	1.7286	0.086	0.852	1.000		
-	Left	pL DT	Chinese-English	1.0673	1.54	1670	0.6924	0.490	1.000	1.000		
-	Right	oL DT	English	2.0055	1.42	880	1.4130	0.161	0.958	1.000		
-	Right	oL DT	Spanish-English	6.9197	1.54	1670	4.4888	<.001	<.001	<.001		
-	Right	oL DT	Chinese-English	3.4878	1.54	1670	2.2625	0.025	0.507	0.948		
-	Right	pL DT	English	2.7240	1.45	930	1.8767	0.064	0.770	1.000		

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub>	p <sub>holm</sub>
		-	Right	pL DT	Spanish - English	7.0906	1.54	1670	4.5996	<.001	<.001	<.001
		-	Right	pL DT	Chinese-English	4.2551	1.54	1670	2.7602	0.006	0.207	0.302
	Spanish - English	-	Left	oL DT	Chinese-English	-4.7852	1.54	1670	-3.1041	0.002	0.090	0.119
		-	Left	pL DT	English	-4.5237	1.54	1670	-2.9345	0.004	0.139	0.194
		-	Left	pL DT	Spanish - English	-1.0185	1.01	1131	-1.0122	0.314	0.997	1.000
		-	Left	pL DT	Chinese-English	-2.6158	1.54	1670	-1.699	0.092	0.867	1.000
		-	Right	oL DT	English	-1.6777	1.54	1670	-1.0883	0.278	0.995	1.000

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub>	p <sub>holm</sub>
		-	Right	oL DT	Spanish - English	3.2366	1.42	88.0	2.2803	0.025	0.498	0.948
		-	Right	oL DT	Chinese-English	-0.1954	1.54	167.0	-0.1267	0.899	1.000	1.000
		-	Right	pL DT	English	-0.9591	1.54	167.0	-0.6222	0.535	1.000	1.000
		-	Right	pL DT	Spanish - English	3.4075	1.45	93.0	2.3476	0.021	0.452	0.845
		-	Right	pL DT	Chinese-English	0.5719	1.54	167.0	0.3710	0.711	1.000	1.000
		-	Left	pL DT	English	0.2615	1.54	167.0	0.1696	0.865	1.000	1.000
		-	Left	pL DT	Spanish - English	3.7667	1.54	167.0	2.4435	0.016	0.383	0.670

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison													
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	p <sub>Tukey</sub>	p <sub>Holm</sub>	
			-	Left	pL DT	Chinese-English	2.1694	1.01	113.561	2.156	0.033	0.584	1.000
			-	Right	oL DT	English	3.1075	1.54	167.0	2.0158	0.045	0.682	1.000
			-	Right	oL DT	Spanish-English	8.0218	1.54	167.0	5.2037	<.001	<.001	<.001
			-	Right	oL DT	Chinese-English	4.5898	1.42	88.0	3.2338	0.002	0.070	0.094
			-	Right	pL DT	English	3.8261	1.54	167.0	2.4819	0.014	0.359	0.623
			-	Right	pL DT	Spanish-English	8.1927	1.54	167.0	5.3145	<.001	<.001	<.001
			-	Right	pL DT	Chinese-English	5.3571	1.45	93.0	3.6908	<.001	0.018	0.022
	pL DT	English	-	Left	pL DT	Spanish-English	3.5052	1.54	167.0	2.2738	0.024	0.499	0.946

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison													
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub>	p <sub>holm</sub>	
			-	Left	pL DT	Chinese-English	1.9079	1.54	167.0	1.2376	0.218	0.985	1.000
			-	Right	oL DT	English	2.8460	1.45	93.0	1.9608	0.053	0.718	1.000
			-	Right	oL DT	Spanish-English	7.7602	1.54	167.0	5.0340	<.001	<.001	<.001
			-	Right	oL DT	Chinese-English	4.3283	1.54	167.0	2.8077	0.006	0.186	0.268
			-	Right	pL DT	English	3.5645	1.42	88.0	2.5114	0.014	0.347	0.623
			-	Right	pL DT	Spanish-English	7.9311	1.54	167.0	5.1449	<.001	<.001	<.001
			-	Right	pL DT	Chinese-English	5.0956	1.54	167.0	3.3055	0.001	0.051	0.066
		Spanish-English	-	Left	pL DT	Chinese-English	-1.5974	1.54	167.0	-1.0362	0.302	0.997	1.000

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub>	p <sub>holm</sub>
		-	Right	oL DT	English	-0.6592	1.54	1670	-0.4276	0.669	1.000	1.000
		-	Right	oL DT	Spanish - English	4.2550	1.45	930	2.9315	0.004	0.147	0.212
		-	Right	oL DT	Chinese - English	0.8231	1.54	1670	0.5339	0.594	1.000	1.000
		-	Right	pL DT	English	0.0593	1.54	1670	0.0385	0.969	1.000	1.000
		-	Right	pL DT	Spanish - English	4.4259	1.42	880	3.1183	0.002	0.094	0.128
		-	Right	pL DT	Chinese - English	1.5904	1.54	1670	1.0317	0.304	0.997	1.000
		Chinese - English	Right	oL DT	English	0.9382	1.54	1670	0.6086	0.544	1.000	1.000

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison													
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub>	p <sub>holm</sub>	
			-	Right	oL DT	Spanish - English	5.8524	1.54	167.0	3.7964	<.001	0.011	0.012
			-	Right	oL DT	Chinese-English	2.4205	1.45	93.0	1.6676	0.099	0.878	1.000
			-	Right	pL DT	English	1.6567	1.54	167.0	1.0747	0.284	0.995	1.000
			-	Right	pL DT	Spanish - English	6.0233	1.54	167.0	3.9073	<.001	0.007	0.008
			-	Right	pL DT	Chinese-English	3.1878	1.42	88.0	2.2460	0.027	0.522	0.980
Right	oL DT	English	-	Right	oL DT	Spanish - English	4.9142	1.54	167.0	3.1878	0.002	0.072	0.094
			-	Right	oL DT	Chinese-English	1.4823	1.54	167.0	0.9616	0.338	0.998	1.000
			-	Right	pL DT	English	0.7185	1.01	113.1	0.7141	0.477	1.000	1.000

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub>	p <sub>holm</sub>
			Right	pL DT	Spanish - English	5.0851	1.54	1670	3.2987	0.001	0.052	0.066
			Right	pL DT	Chinese-English	2.2496	1.54	1670	1.4593	0.146	0.949	1.000
		Spanish - English	Right	oL DT	Chinese-English	-3.4319	1.54	1670	-2.2263	0.027	0.533	0.980
			Right	pL DT	English	-4.1957	1.54	1670	-2.7217	0.007	0.225	0.330
			Right	pL DT	Spanish - English	0.1709	1.01	1131	0.1698	0.865	1.000	1.000
			Right	pL DT	Chinese-English	-2.6646	1.54	1670	-1.7285	0.086	0.852	1.000
		Chinese-English	Right	pL DT	English	-0.7638	1.54	1670	-0.4955	0.621	1.000	1.000

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	p <sub>Tukey</sub>	p <sub>Holm</sub>
		-	Right	pL DT	Spanish - English	3.6028	1.54	1670	2.371	0.021	0.455	0.845
		-	Right	pL DT	Chinese-English	0.7673	1.01	1131	0.766	0.447	1.000	1.000
	pL DT	English	Right	pL DT	Spanish - English	4.3666	1.54	1670	2.836	0.005	0.176	0.254
		-	Right	pL DT	Chinese-English	1.5311	1.54	1670	0.9932	0.322	0.998	1.000
		Spanish - English	Right	pL DT	Chinese-English	-2.8355	1.54	1670	-1.8394	0.068	0.794	1.000

Post Hoc Comparisons - Group

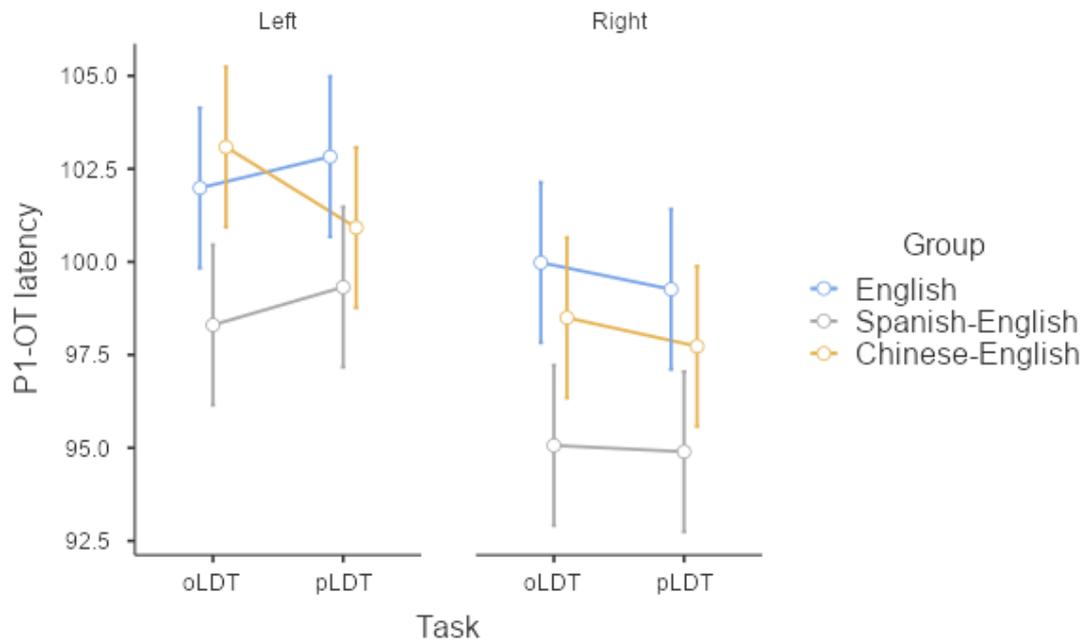
Comparison									
Group	Group	Mean Difference	SE	df	t	p	p <sub>Tukey</sub>	p <sub>Holm</sub>	
English	- Spanish-English	4.117	1.05	57.0	3.938	< .001	< .001	< .001	

Post Hoc Comparisons - Group

Comparison								
Group	Group	Mean Difference	SE	df	t	p	p <sub>Tukey</sub>	p <sub>Holm</sub>
-	Chinese-English	0.955	1.05	57.0	0.913	0.365	0.634	0.365
Spanish-English	Chinese-English	-3.163	1.05	57.0	-3.025	0.004	0.010	0.007

### Estimated Marginal Means

Task \* Group \* Hemisphere



### Repeated Measures ANOVA

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Hemisphere	118.6917	1	118.6917	8.21079	0.006	0.126
Hemisphere * Group	3.1145	2	1.5573	0.10773	0.898	0.004

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Residual	823.9676	57	14.4556			
Task	73.5001	1	73.5001	3.44143	0.069	0.057
Task * Group	85.1692	2	42.5846	1.99390	0.146	0.065
Residual	1217.3736	57	21.3574			
Hemisphere * Task	0.0993	1	0.0993	0.00879	0.926	0.000
Hemisphere * Task * Group	127.2004	2	63.6002	5.63314	0.006	0.165
Residual	643.5512	57	11.2904			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Group	1128	2	564.2	8.58	< .001	0.231
Residual	3747	57	65.7			

Note. Type 3 Sums of Squares

## Assumptions

Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
NAL50_P1.LeftFC\$oLDT	3.399	2	57	0.040
NAL50_P1.RightFC\$oLDT	1.680	2	57	0.195
NAL50_P1.LeftFC\$pLDT	0.658	2	57	0.522

Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
NAL50_P1.RightFC\$pLDT	3.497	2	57	0.037

Post Hoc Tests

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison																					
Hemisphere	Task	Group		Hemisphere	Task	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub>	P <sub>holm</sub>								
Left	oLDT	English	-	Left	oLDT	Spanish - English	6.132	1.68	142	3.651	<.001	0.018	0.022								
			-			Left	oLDT	Chinese - English	0.940	1.68	142	0.560	0.577	1.000	1.000						
			-					Left	pLDT	English	3.166	1.28	104	2.478	0.015	0.366	0.608				
			-							Left	pLDT	Spanish - English	5.709	1.68	142	3.399	<.001	0.040	0.051		
			-									Left	pLDT	Chinese - English	1.640	1.68	142	0.976	0.331	0.998	1.000
			-											Right	oLDT	English	2.913	1.13	112	2.568	0.012

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub>	p <sub>holm</sub>
			Right	oL DT	Spanish - English	7.723	1.68	142	4.598	< .001	< .001	< .001
			Right	oL DT	Chinese-English	0.777	1.68	142	0.463	0.644	1.000	1.000
			Right	pL DT	English	2.421	1.34	110	1.809	0.073	0.809	1.000
			Right	pL DT	Spanish - English	7.239	1.68	142	4.310	< .001	0.002	0.002
			Right	pL DT	Chinese-English	4.952	1.68	142	2.948	0.004	0.136	0.190
		Spanish - English	Left	oL DT	Chinese-English	-5.192	1.68	142	-3.091	0.002	0.095	0.127
			Left	pL DT	English	-2.966	1.68	142	-1.766	0.080	0.833	1.000
			Left	pL DT	Spanish - English	-0.423	1.28	104	-0.331	0.741	1.000	1.000

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	p <sub>tuk</sub> ey	p <sub>hol</sub> m
-			Left	pL DT	Chinese- English	-4.492	1.68	142	-2.675	0.008	0.250	0.368
-			Right	oL DT	English	-3.219	1.68	142	-1.916	0.057	0.747	1.000
-			Right	oL DT	Spanish- English	1.591	1.13	112	1.402	0.164	0.961	1.000
-			Right	oL DT	Chinese- English	-5.355	1.68	142	-3.188	0.002	0.073	0.097
-			Right	pL DT	English	-3.711	1.68	142	-2.210	0.029	0.546	1.000
-			Right	pL DT	Spanish- English	1.107	1.34	110	0.827	0.410	1.000	1.000
-			Right	pL DT	Chinese- English	-1.180	1.68	142	-0.703	0.483	1.000	1.000
-		Chinese- English	Left	pL DT	English	2.226	1.68	142	1.325	0.187	0.974	1.000

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub>	p <sub>holm</sub>
-			Left	pL DT	Spanish - English	4.769	1.68	142	2.839	0.005	0.175	0.238
-			Left	pL DT	Chinese-English	0.700	1.28	104	0.548	0.585	1.000	1.000
-			Right	oL DT	English	1.973	1.68	142	1.175	0.242	0.990	1.000
-			Right	oL DT	Spanish - English	6.783	1.68	142	4.039	<.001	0.005	0.006
-			Right	oL DT	Chinese-English	0.163	1.13	112	0.144	0.886	1.000	1.000
-			Right	pL DT	English	1.481	1.68	142	0.882	0.379	0.999	1.000
-			Right	pL DT	Spanish - English	6.299	1.68	142	3.750	<.001	0.013	0.016
-			Right	pL DT	Chinese-English	4.012	1.34	110	2.998	0.003	0.123	0.175

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub>	p <sub>holm</sub>
	pL DT	English	-	Left	pL DT	Spanish - English 2.543	1.68	142	1.514	0.132	0.934	1.000
			-	Left	pL DT	Chinese-English -1.526	1.68	142	-0.908	0.365	0.999	1.000
			-	Right	oL DT	English -0.252	1.34	110	-0.189	0.851	1.000	1.000
			-	Right	oL DT	Spanish - English 4.557	1.68	142	2.713	0.007	0.231	0.337
			-	Right	oL DT	Chinese-English -2.389	1.68	142	-1.422	0.157	0.957	1.000
			-	Right	pL DT	English -0.745	1.13	112	-0.656	0.513	1.000	1.000
			-	Right	pL DT	Spanish - English 4.073	1.68	142	2.425	0.017	0.396	0.662
			-	Right	pL DT	Chinese-English 1.786	1.68	142	1.064	0.289	0.996	1.000

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub>	p <sub>holm</sub>
		Spanish - English	-	Left	pL DT	Chinese-English	-4.069	1.68	-2.423	0.017	0.398	0.662
			-	Right	oL DT	English	-2.795	1.68	-1.664	0.098	0.881	1.000
			-	Right	oL DT	Spanish-English	2.014	1.34	1.510	0.135	0.936	1.000
			-	Right	oL DT	Chinese-English	-4.932	1.68	-2.936	0.004	0.140	0.194
			-	Right	pL DT	English	-3.288	1.68	-1.958	0.052	0.721	1.000
			-	Right	pL DT	Spanish-English	1.530	1.13	1.348	0.180	0.970	1.000
			-	Right	pL DT	Chinese-English	-0.757	1.68	-0.451	0.653	1.000	1.000
		Chinese-English	-	Right	oL DT	English	1.273	1.68	0.758	0.450	1.000	1.000

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub>	p <sub>holm</sub>
			-	Right	oL DT	Spanish - English	6.083	1.68	142	3.622	<.001	0.020
			-	Right	oL DT	Chinese-English	0.863	1.34	110	0.645	0.520	1.000
			-	Right	pL DT	English	0.781	1.68	142	0.465	0.643	1.000
			-	Right	pL DT	Spanish - English	5.599	1.68	142	3.334	0.001	0.049
			-	Right	pL DT	Chinese-English	3.312	1.13	112	2.919	0.004	0.148
Right	oL DT	English	-	Right	oL DT	Spanish - English	4.810	1.68	142	2.864	0.005	0.166
			-	Right	oL DT	Chinese-English	2.136	1.68	142	1.272	0.205	0.981
			-	Right	pL DT	English	0.492	1.28	104	0.385	0.701	1.000

Post Hoc Comparisons - Hemisphere \* Task \* Group

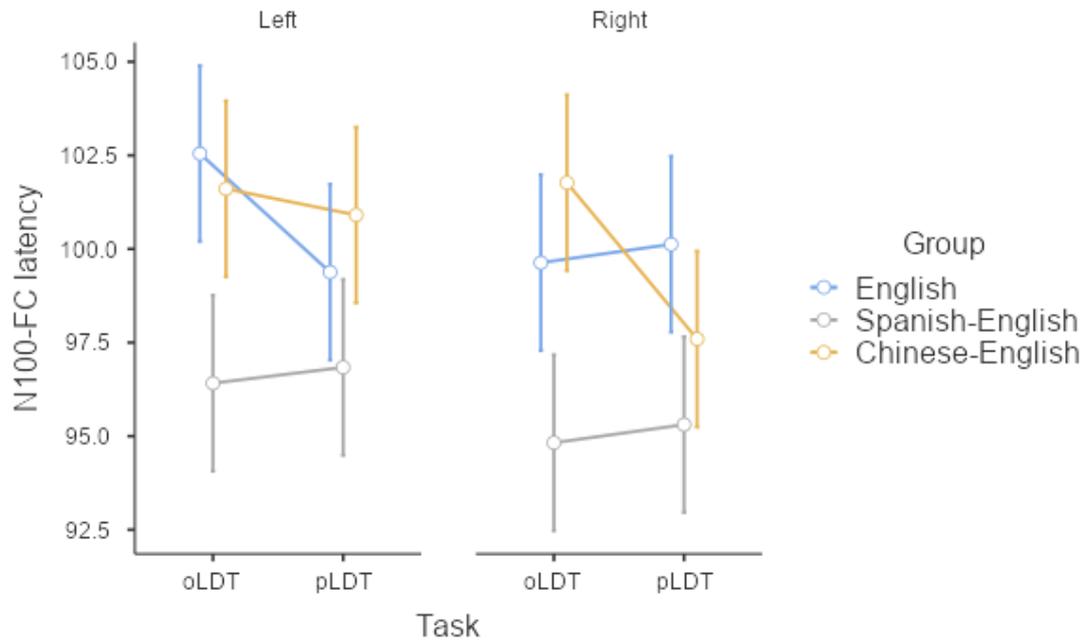
Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub>	p <sub>holm</sub>
					Spanish - English	4.325	1.68	142	2.575	0.011	0.304	0.475
					Chinese-English	2.039	1.68	142	1.214	0.227	0.987	1.000
		Spanish - English			Chinese-English	-6.946	1.68	142	-4.136	<.001	0.003	0.004
					English	-5.302	1.68	142	-3.157	0.002	0.080	0.105
					Spanish - English	-0.484	1.28	104	-0.379	0.705	1.000	1.000
					Chinese-English	-2.771	1.68	142	-1.650	0.101	0.887	1.000
		Chinese-English			English	1.644	1.68	142	0.979	0.329	0.998	1.000

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub>	p <sub>holm</sub>
			Right	pL DT	Spanish - English	6.462	1.68	142	3.847	<.001	0.009	0.011
			Right	pL DT	Chinese-English	4.175	1.28	104	3.268	0.001	0.062	0.082
	pL DT	English	Right	pL DT	Spanish - English	4.818	1.68	142	2.868	0.005	0.164	0.228
			Right	pL DT	Chinese-English	2.531	1.68	142	1.507	0.134	0.936	1.000
		Spanish - English	Right	pL DT	Chinese-English	2.287	1.68	142	1.362	0.176	0.969	1.000

**Estimated Marginal Means**

**Task \* Group \* Hemisphere**



## Repeated Measures ANOVA

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Hemisphere	1103.8970	1	1103.8970	26.32294	< .001	0.316
Hemisphere * Group	137.6105	2	68.8052	1.64069	0.203	0.054
Residual	2390.3916	57	41.9367			
Task	0.0910	1	0.0910	0.00571	0.940	0.000
Task * Group	34.5573	2	17.2786	1.08460	0.345	0.037
Residual	908.0634	57	15.9309			
Hemisphere * Task	12.6214	1	12.6214	0.73534	0.395	0.013
Hemisphere * Task * Group	25.9469	2	12.9735	0.75585	0.474	0.026
Residual	978.3495	57	17.1640			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Group	2416	2	1208	9.85	< .001	0.257
Residual	6990	57	123			

Note. Type 3 Sums of Squares

## Assumptions

Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
NAL50_N170.LeftOP\$oLDT	0.253	2	57	0.778
NAL50_N170.RightOP\$oLDT	1.276	2	57	0.287
NAL50_N170.LeftOP\$pLDT	1.033	2	57	0.363
NAL50_N170.RightOP\$pLDT	0.773	2	57	0.467

## Post Hoc Tests

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison													
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	$p_{Tukey}$	$p_{Holm}$	
Left	oLDT	English	-	Left	oLDT	Spanish - English	6.369	2.22	128.649	2.86	0.005	0.166	0.214

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub>	p <sub>holm</sub>
-	Left	oL	DT	Chinese-English	1.228	2.22	128.4	0.552	0.582	1.000	1.000	
-	Left	pL	DT	English	-0.656	1.29	113.8	-0.509	0.611	1.000	1.000	
-	Left	pL	DT	Spanish-English	5.183	2.22	128.4	2.331	0.021	0.460	0.873	
-	Left	pL	DT	Chinese-English	1.576	2.22	128.4	0.709	0.480	1.000	1.000	
-	Right	oL	DT	English	2.759	1.72	97.0	1.604	0.112	0.903	1.000	
-	Right	oL	DT	Spanish-English	12.472	2.22	128.4	5.610	<.001	<.001	<.001	
-	Right	oL	DT	Chinese-English	3.857	2.22	128.4	1.735	0.085	0.848	1.000	
-	Right	pL	DT	English	4.862	1.70	94.8	2.858	0.005	0.173	0.225	

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub>	p <sub>holm</sub>
			-	Right	pL DT	Spanish - English	11.509	2.22	128.4	5.1775	<.001	<.001
			-	Right	pL DT	Chinese-English	3.976	2.22	128.4	1.7886	0.076	0.821
		Spanish - English	-	Left	oL DT	Chinese-English	-5.141	2.22	128.4	-2.3127	0.022	0.473
			-	Left	pL DT	English	-7.024	2.22	128.4	-3.1599	0.002	0.080
			-	Left	pL DT	Spanish - English	-1.186	1.29	113.8	-0.9219	0.359	0.999
			-	Left	pL DT	Chinese-English	-4.792	2.22	128.4	-2.1558	0.033	0.584
			-	Right	oL DT	English	-3.610	2.22	128.4	-1.6239	0.107	0.897

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison													
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub>	p <sub>holm</sub>	
			-	Right	oL DT	Spanish - English	6.103	1.72	97.0	3.55	<.001	0.028	0.031
			-	Right	oL DT	Chinese-English	-2.511	2.22	128.4	-1.17	0.261	0.993	1.000
			-	Right	pL DT	English	-1.507	2.22	128.4	-0.68	0.499	1.000	1.000
			-	Right	pL DT	Spanish - English	5.141	1.70	94.8	3.02	0.003	0.118	0.148
			-	Right	pL DT	Chinese-English	-2.393	2.22	128.4	-1.07	0.284	0.995	1.000
		Chinese-English	-	Left	pL DT	English	-1.883	2.22	128.4	-0.84	0.398	0.999	1.000
			-	Left	pL DT	Spanish - English	3.955	2.22	128.4	1.77	0.078	0.826	1.000

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub>	p <sub>holm</sub>
			-	Left	pL DT	Chinese-English	0.349	1.29	113.8	0.271	0.787	1.000
			-	Right	oL DT	English	1.531	2.22	128.4	0.688	0.492	1.000
			-	Right	oL DT	Spanish-English	11.244	2.22	128.4	5.053	<.001	<.001
			-	Right	oL DT	Chinese-English	2.630	1.72	97.0	1.529	0.129	0.928
			-	Right	pL DT	English	3.634	2.22	128.4	1.639	0.105	0.893
			-	Right	pL DT	Spanish-English	10.282	2.22	128.4	4.623	<.001	<.001
			-	Right	pL DT	Chinese-English	2.748	1.70	94.8	1.615	0.109	0.899
	pL DT	English	-	Left	pL DT	Spanish-English	5.838	2.22	128.4	2.626	0.010	0.276

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison													
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub>	p <sub>holm</sub>	
			-	Left	pL DT	Chinese-English	2.232	2.22	128.4	1.0041	0.317	0.997	1.000
			-	Right	oL DT	English	3.414	1.70	94.8	2.0073	0.048	0.687	1.000
			-	Right	oL DT	Spanish-English	13.128	2.22	128.4	5.9055	<.001	<.001	<.001
			-	Right	oL DT	Chinese-English	4.513	2.22	128.4	2.0302	0.044	0.672	1.000
			-	Right	pL DT	English	5.518	1.72	97.0	3.2097	0.002	0.073	0.087
			-	Right	pL DT	Spanish-English	12.165	2.22	128.4	5.4725	<.001	<.001	<.001
			-	Right	pL DT	Chinese-English	4.632	2.22	128.4	2.0836	0.039	0.635	1.000
		Spanish-English	-	Left	pL DT	Chinese-English	-3.606	2.22	128.4	-1.6223	0.107	0.898	1.000

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemi spher e	Tas k	Gro up	Hemi spher e	Tas k	Gro up	Mea n Diffe renc e	SE	df	t	p	p <sub>tuk ey</sub>	p <sub>hol m</sub>
		-	Righ t	oL DT	Eng lish	- 2.42 4	2. 22	12 8. 4	- 1.0 90 4	0.2 78	0.9 95	1.0 00
		-	Righ t	oL DT	Spa nish - Eng lish	7.28 9	1. 70	94 .8	4.2 85 3	< . 00 1	0.0 02	0.0 02
		-	Righ t	oL DT	Chi nes e- Eng lish	- 1.32 5	2. 22	12 8. 4	- 0.5 96 2	0.5 52	1.0 00	1.0 00
		-	Righ t	pL DT	Eng lish	- 0.32 1	2. 22	12 8. 4	- 0.1 44 3	0.8 85	1.0 00	1.0 00
		-	Righ t	pL DT	Spa nish - Eng lish	6.32 7	1. 72	97 .0	3.6 80 4	< . 00 1	0.0 19	0.0 20
		-	Righ t	pL DT	Chi nes e- Eng lish	- 1.20 7	2. 22	12 8. 4	- 0.5 42 8	0.5 88	1.0 00	1.0 00
		Chi nes e- Eng lish	Righ t	oL DT	Eng lish	1.18 2	2. 22	12 8. 4	0.5 31 9	0.5 96	1.0 00	1.0 00

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub>	p <sub>holm</sub>
			-	Right	oL DT	Spanish - English	10.896	2.22	128.4	4.901	< .001	< .001
			-	Right	oL DT	Chinese-English	2.281	1.70	94.8	1.341	0.183	0.971
			-	Right	pL DT	English	3.285	2.22	128.4	1.478	0.142	0.944
			-	Right	pL DT	Spanish - English	9.933	2.22	128.4	4.468	< .001	0.001
			-	Right	pL DT	Chinese-English	2.400	1.72	97.0	1.396	0.166	0.962
Right	oL DT	English	-	Right	oL DT	Spanish - English	9.713	2.22	128.4	4.369	< .001	0.001
			-	Right	oL DT	Chinese-English	1.099	2.22	128.4	0.494	0.622	1.000
			-	Right	pL DT	English	2.103	1.29	113.8	1.634	0.105	0.892

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub>	p <sub>holm</sub>
					Spanish - English	8.751	2.22	128.4	3.9365	<.001	0.007	0.008
					Chinese-English	1.217	2.22	128.4	0.5476	0.585	1.000	1.000
		Spanish - English			Chinese-English	-8.615	2.22	128.4	-3.8753	<.001	0.009	0.009
					English	-7.610	2.22	128.4	-3.4234	<.001	0.038	0.042
					Spanish - English	-0.963	1.29	118	-0.7484	0.456	1.000	1.000
					Chinese-English	-8.496	2.22	128.4	-3.8219	<.001	0.011	0.011
		Chinese-English			English	1.004	2.22	128.4	0.4519	0.652	1.000	1.000

Post Hoc Comparisons - Hemisphere \* Task \* Group

Comparison												
Hemisphere	Task	Group	Hemisphere	Task	Group	Mean Difference	SE	df	t	p	p <sub>Tukey</sub>	p <sub>Holm</sub>
		-	Right	pL DT	Spanish - English	7.652	2.22	128.4	3.442	< .001	0.036	0.040
		-	Right	pL DT	Chinese-English	0.119	1.29	113.8	0.092	0.927	1.000	1.000
	pL DT	English	Right	pL DT	Spanish - English	6.648	2.22	128.4	2.990	0.003	0.124	0.150
		-	Right	pL DT	Chinese-English	-0.886	2.22	128.4	-0.398	0.691	1.000	1.000
		Spanish - English	Right	pL DT	Chinese-English	-7.533	2.22	128.4	-3.389	< .001	0.042	0.046

Post Hoc Comparisons - Group

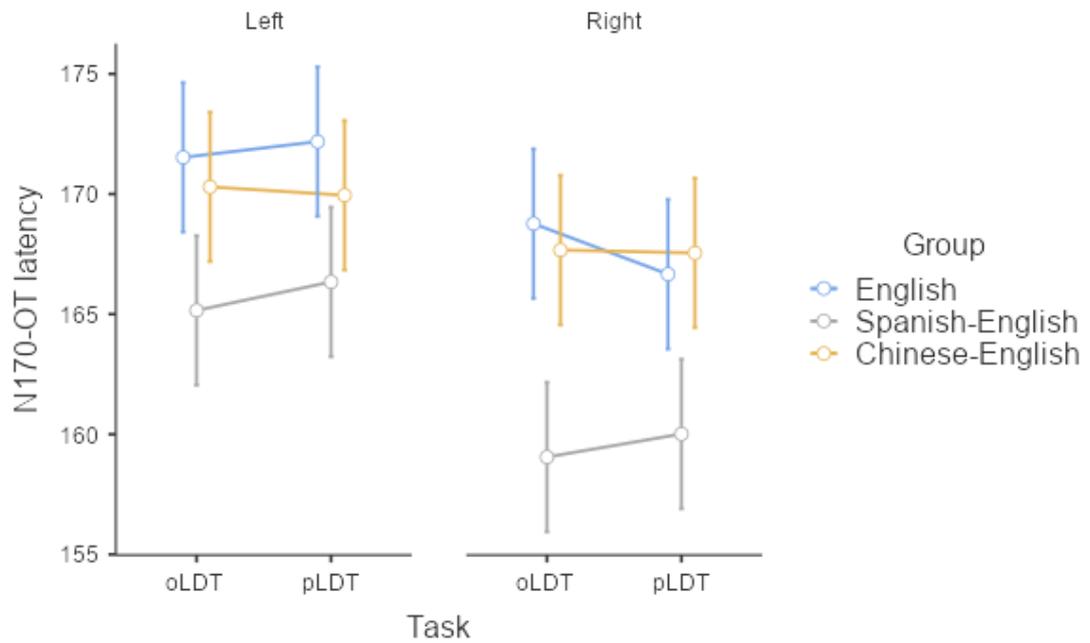
Comparison									
Group	Group	Mean Difference	SE	df	t	p	p <sub>Tukey</sub>	p <sub>Holm</sub>	
English	- Spanish-English	7.142	1.75	57.0	4.079	< .001	< .001	< .001	

Post Hoc Comparisons - Group

Comparison								
Group	Group	Mean Difference	SE	df	t	p	p <sub>Tukey</sub>	p <sub>Holm</sub>
-	Chinese-English	0.918	1.75	57.0	0.524	0.602	0.860	0.602
Spanish-English	Chinese-English	-6.224	1.75	57.0	-3.555	< .001	0.002	0.002

### Estimated Marginal Means

Task \* Group \* Hemisphere



## Appendix M: Study 2 stimulus set with psycholinguistic values

*P+O+ (RRTA prime, RRTB TARGET – alphabetical order)*

<i>Stimulus</i>	<i>Phonemes</i>	<i>CELEX</i>	<i>Bigram F</i>	<i>Biphone F</i>	<i>ON</i>	<i>PN</i>	<i>Imageability</i>
<b>beast</b>	4	16.65	2230.73	463.91	5	16	558
<b>boss</b>	3	27.43	1659.76	117.93	9	17	468
<b>bush</b>	3	41.96	1148.82	218.32	9	6	549
<b>cake</b>	3	21.4	2599.49	1481.09	18	24	624
<b>call</b>	3	238.72	3267.9	1084.9	12	28	424
<b>camp</b>	4	69.61	1415.33	161.06	6	9	588
<b>chord</b>	3	2.35	1221.56	913.87	2	36	-1
<b>dark</b>	3	186.09	1380.32	277.79	10	15	586
<b>dash</b>	3	8.66	1273.68	86.84	10	11	-1
<b>dish</b>	3	21.79	595.11	792.79	5	11	594
<b>file</b>	3	28.32	1844.75	637.11	12	25	442
<b>gift</b>	4	31.28	853.66	225.64	5	8	547
<b>grass</b>	4	82.85	1192.25	718.77	7	9	627
<b>half</b>	3	329.33	2886.84	602.73	5	13	458
<b>hill</b>	3	70.28	3165.94	5411.04	14	31	607
<b>judge</b>	3	55.2	302.68	62.13	3	5	558
<b>king</b>	3	89.27	1521.11	518.07	9	16	585
<b>lime</b>	3	8.49	4096.24	2672.07	12	22	563
<b>meat</b>	3	71.51	6858.02	745.78	13	13	636
<b>mouse</b>	3	8.16	3648.97	368.58	6	12	615
<b>neck</b>	3	74.02	1150.27	157.26	5	14	608
<b>niece</b>	3	4.8	805.45	394.18	1	10	-1
<b>page</b>	3	65.25	684.78	245.22	11	14	555
<b>peach</b>	4	3.02	2529.48	246.05	7	18	613
<b>pitch</b>	4	20.22	1328.29	1883.82	7	25	408
<b>price</b>	4	97.37	2122.26	267.88	5	8	-1
<b>rest</b>	4	216.59	2884.53	502.04	11	24	396
<b>saint</b>	4	15.08	1911.68	310.8	4	7	421
<b>ship</b>	3	45.25	1904.97	102.35	8	17	612
<b>skate</b>	4	3.52	674.81	645.45	3	9	563
<b>skill</b>	4	38.32	1152.3	631.4	4	15	305
<b>sock</b>	3	3.02	1697.98	130.74	12	20	553
<b>spade</b>	4	2.85	557.69	889.21	5	15	578
<b>steam</b>	4	17.99	1489.98	1197.78	3	10	591
<b>sting</b>	4	5.25	3528.19	2171.65	6	11	553
<b>task</b>	4	66.93	1315.63	510.21	7	6	410
<b>track</b>	4	41.84	1258.28	545.9	6	13	499
<b>tribe</b>	4	23.24	749.42	375.73	4	7	505
<b>wife</b>	3	211.01	4023.99	1218.05	9	15	575
<b>zone</b>	3	11.28	1160.21	277.15	8	11	432

ON= Orthographic neighbourhood; PN = Phonological neighbourhood

*P+O+ (RRTB prime, RRTA TARGET – corresponding order)*

<i>Stimulus</i>	<i>Phonemes</i>	<i>CELEX</i>	<i>Bigram F</i>	<i>Biphone F</i>	<i>ON</i>	<i>PN</i>	<i>Imageability</i>
feast	4	12.18	1838.49	213.02	3	14	610
loss	3	78.27	1895.01	688.37	12	23	409
rush	3	28.27	1121.53	192.8	10	17	404
lake	3	40.11	2472.9	1080.22	15	27	616
wall	3	138.16	3098.84	822.74	12	30	576
lamp	4	21.28	1288.74	170.09	8	11	575
sword	3	13.24	417.54	474.48	3	28	597
bark	3	9.11	1761.37	272.02	14	30	540
rash	3	10.28	1173.16	143.99	11	16	520
wish	3	127.65	3828.97	6563.77	6	18	399
mile	3	34.64	1637.4	813.32	18	24	511
lift	4	45.75	1760.03	577.13	9	15	482
class	4	211.9	1247.28	559.57	8	6	-1
calf	3	10.39	1435.68	435.16	3	14	559
till	3	76.65	3685.78	1333.07	15	31	520
fudge	3	1.34	329.26	68.93	3	9	567
wing	3	32.63	4610.4	6790.26	11	21	576
time	3	1792.91	3621.42	1919.06	9	21	413
seat	3	77.99	6997.02	870.67	15	22	604
house	3	558.72	3678.92	577.85	5	21	606
deck	3	19.16	970.06	336.23	8	19	539
piece	3	116.31	767.58	252.15	1	14	395
cage	3	13.07	847.77	656.68	13	14	585
beach	4	59.22	2909.52	1553	7	21	660
witch	4	15.59	1312.15	8209.62	7	24	589
spice	4	2.74	1858.73	358.35	7	11	592
nest	4	13.74	3024.33	375.95	13	18	584
paint	4	40.39	2090.94	257.22	6	14	567
whip	3	13.02	3573.84	6471.54	5	30	579
plate	4	36.65	1356.64	745.78	4	15	596
grill	4	4.75	1904.55	900.5	3	14	-1
rock	3	83.07	1108.06	279.96	12	21	583
blade	4	11.45	904.15	371.25	5	15	568
dream	4	57.43	1216.77	256.41	3	5	463
swing	4	30.67	2528.18	1133.25	6	10	590
mask	4	14.08	2032.27	544.73	9	11	555
snack	4	3.24	677.77	206.72	5	10	-1
bribe	4	4.97	661.9	460.78	3	6	269
life	3	736.31	1867.94	2258.04	10	17	482
tone	3	43.91	1629.88	312.21	15	29	283

ON= Orthographic neighbourhood; PN = Phonological neighbourhood

*P+O- (RRTA prime, RRTB TARGET – alphabetical order)*

<b>Stimulus</b>	<b>Phonemes</b>	<b>CELEX</b>	<b>Bigram F</b>	<b>Biphone F</b>	<b>ON</b>	<b>PN</b>	<b>Imageability</b>
<b>base</b>	3	70.56	1849.66	570.53	12	23	436
<b>beam</b>	3	9.94	2600.78	1616.64	8	17	539
<b>boat</b>	3	55.87	5962.28	569.88	9	26	631
<b>brawl</b>	4	0.84	545.42	632.2	4	10	485
<b>bread</b>	4	74.13	1280.06	532.12	6	15	650
<b>case</b>	3	383.58	1856.34	1089.97	14	22	517
<b>cloak</b>	4	6.87	732.37	498.28	2	14	543
<b>dome</b>	3	10.56	4294.42	521.43	12	22	529
<b>drone</b>	4	1.62	1173.44	345.56	3	12	-1
<b>firm</b>	3	72.63	946.18	134.11	5	15	320
<b>gate</b>	3	50	738.56	681.38	13	25	632
<b>goat</b>	3	11.68	5890.29	294.11	7	19	636
<b>harm</b>	3	36.31	3023.06	495.22	7	21	376
<b>joke</b>	3	34.13	1474.73	188.77	5	11	413
<b>lane</b>	3	35.47	2025.69	455.86	16	29	543
<b>line</b>	3	219.05	2562.13	2135.98	22	28	491
<b>maze</b>	3	6.82	1231.68	1680.05	11	25	555
<b>moan</b>	3	3.91	2262.44	285.86	7	24	475
<b>moose</b>	3	0.73	1939.63	422.71	4	16	-1
<b>news</b>	4	116.31	579.68	161.02	6	12	484
<b>peak</b>	3	23.07	1466.72	353.59	11	18	493
<b>pipe</b>	3	22.91	307.5	106.96	7	19	617
<b>plane</b>	4	45.53	1158.25	505.32	6	14	556
<b>rain</b>	3	71.56	1796.22	493.41	10	34	618
<b>scale</b>	4	73.35	802.54	339.09	6	13	463
<b>scene</b>	3	88.88	383.4	2307.22	2	14	432
<b>scoop</b>	4	5.36	284.25	419.24	4	11	416
<b>seal</b>	3	12.85	2028.63	818.07	13	23	607
<b>sense</b>	4	287.71	1498.41	1443.73	2	14	368
<b>sheep</b>	3	40.11	2981.34	351.73	6	11	641
<b>shout</b>	3	19.72	2385.38	101.79	6	15	484
<b>smile</b>	4	93.13	1331.08	350.21	2	7	647
<b>space</b>	4	126.2	1258.44	996.81	6	6	538
<b>tale</b>	3	17.49	1375.4	633.47	16	32	285
<b>talk</b>	3	260.89	1243.14	443.27	8	21	453
<b>toast</b>	4	14.53	1081.33	681.18	3	12	594
<b>town</b>	3	185.92	1492.83	816.93	5	14	553
<b>verse</b>	3	9.94	1573	90.25	3	12	489
<b>week</b>	3	271.12	4068.24	416.32	7	15	481
<b>wheat</b>	3	29.44	4574.52	600.71	1	19	577

*ON= Orthographic neighbourhood; PN = Phonological neighbourhood*

*P+O-* (RRTB prime, RRTA TARGET – corresponding order)

<i>Stimulus</i>	<i>Phonemes</i>	<i>CELEX</i>	<i>Bigram F</i>	<i>Biphone F</i>	<i>ON</i>	<i>PN</i>	<i>Imageability</i>
race	3	77.21	1689.64	726.65	14	25	457
theme	3	27.71	5287.47	190.16	3	7	154
note	3	82.63	639.53	466.71	9	22	557
stall	4	7.26	1849	1316.92	5	15	441
shred	4	1.96	1533.49	105.44	3	10	-1
face	3	446.93	1985.69	816.99	11	23	581
smoke	4	58.44	529.74	376.99	4	9	615
foam	3	6.82	604.1	312.89	4	17	583
groan	4	2.96	1194.46	722.11	2	17	506
germ	3	2.74	2325.81	87.79	1	9	442
wait	3	118.66	1984.46	646.93	12	26	357
vote	3	53.3	556.02	223.35	5	10	477
palm	3	19.72	1178.94	461.39	5	14	555
yolk	3	2.63	1193.61	51.57	1	10	530
vein	3	5.2	813.81	298.27	3	19	511
sign	3	101.17	493.57	767.07	1	22	534
phase	3	32.29	1601.73	881.98	1	32	160
cone	3	3.46	1700.51	373.68	18	28	559
juice	3	20.39	1877.69	289.92	1	7	593
fuse	4	6.37	1384.36	138.25	4	17	479
leek	3	0	2453.93	0	8	-1	-1
type	3	95.59	228.44	1081.16	3	17	423
brain	4	69.22	1159.75	556.57	5	18	572
cane	3	9.83	2152.28	856.73	19	31	543
snail	4	2.57	501.25	66.43	1	8	577
bean	3	3.8	3316.05	3281.48	13	18	538
group	4	305.14	1686.56	692.1	1	11	467
peel	3	10.56	2075.44	485.37	8	27	475
fence	4	22.29	948.93	1200.51	2	11	611
heap	3	10.45	2235.83	394.86	8	18	494
doubt	3	151.45	2328.36	792.71	0	17	-1
style	4	87.88	1358.7	1197.98	3	11	399
chase	4	14.8	1850.81	527.82	4	11	-1
mail	3	25.31	2627.12	1317.78	15	33	565
pork	3	8.38	2178.27	407.12	8	23	541
ghost	4	19.61	1524.64	785.03	0	12	622
noun	3	1.01	878.06	724.31	2	10	368
nurse	3	33.02	1552.31	103.58	2	13	654
beak	3	4.86	2583.57	1660.53	11	24	579
sheet	3	34.41	2997.59	445.34	5	13	594

ON= Orthographic neighbourhood; PN = Phonological neighbourhood

*P-O+ (RRTA prime, RRTB TARGET – alphabetical order)*

<i>Stimulus</i>	<i>Phonemes</i>	<i>CELEX</i>	<i>Bigram F</i>	<i>Biphone F</i>	<i>ON</i>	<i>PN</i>	<i>Imageability</i>
<b>band</b>	4	32.79	2462.68	437.91	14	20	579
<b>bear</b>	3	70.39	3039.46	2770.52	18	22	572
<b>break</b>	4	105.03	1280.32	511.32	6	14	398
<b>carp</b>	3	4.97	1362.55	269.77	7	17	360
<b>cash</b>	3	54.58	1661.41	1189.05	12	14	575
<b>comb</b>	3	5.7	1700.31	362.79	5	22	-1
<b>cork</b>	3	5.53	2541.49	904.92	8	21	619
<b>couch</b>	4	9.16	3910.02	20.77	6	10	511
<b>cove</b>	3	2.07	2986.57	108.49	14	18	-1
<b>deaf</b>	3	10.22	1690.7	243.26	5	10	323
<b>dough</b>	3	10.28	2340.21	13.02	4	25	558
<b>dove</b>	3	2.96	3310.75	267.13	13	14	616
<b>food</b>	3	254.3	2363.14	307.73	10	17	539
<b>foot</b>	3	116.59	2029.77	598.46	12	10	597
<b>form</b>	3	267.99	2181.75	4868.07	10	16	452
<b>gasp</b>	4	5.08	996.87	533.56	3	4	486
<b>golf</b>	4	30.5	1137.41	98.54	3	1	621
<b>head</b>	3	456.48	2653.57	2467.84	12	26	593
<b>hour</b>	3	160.17	1902.85	1568.76	6	9	408
<b>howl</b>	3	2.68	926.24	288.33	3	16	536
<b>mood</b>	3	45.75	3306.21	305.61	8	24	258
<b>north</b>	3	150.11	1440.13	288.33	2	6	-1
<b>pint</b>	4	10.34	1634.75	676.5	11	9	624
<b>post</b>	4	73.3	2954.53	514.65	13	16	607
<b>roll</b>	3	28.04	2844.92	702.9	7	31	514
<b>scarf</b>	4	7.93	768.79	343.12	3	7	610
<b>soul</b>	3	40.84	1781.54	460.45	4	24	280
<b>steak</b>	4	8.16	1526.11	1196.04	5	20	647
<b>stove</b>	4	16.76	1392.43	1165.97	6	9	592
<b>swan</b>	4	5.42	1014.32	195.1	8	10	-1
<b>swap</b>	4	1.79	293.82	191.48	9	12	-1
<b>threat</b>	4	61.4	850.6	100.25	2	7	408
<b>treat</b>	4	37.65	1498.58	417.63	2	7	360
<b>ward</b>	3	24.92	1485.6	651.72	15	34	473
<b>wart</b>	3	0.78	1517.27	1312.07	20	29	-1
<b>watch</b>	4	108.77	1805.08	6963.52	7	11	525
<b>womb</b>	3	8.83	1588.62	355	3	15	461
<b>wool</b>	3	21.45	2022.2	1718.96	6	13	586
<b>word</b>	3	220.67	2316.41	2782.27	10	25	-1

youth 3 64.75 2802.36 315.51 2 6 507  
 ON= Orthographic neighbourhood; PN = Phonological neighbourhood

*P-O+ (RRTB prime, RRTA TARGET – corresponding order)*

<i>Stimulus</i>	<i>Phonemes</i>	<i>CELEX</i>	<i>Bigram F</i>	<i>Biphone F</i>	<i>ON</i>	<i>PN</i>	<i>Imageability</i>
wand	4	1.56	2300.3	534.13	9	13	513
year	3	508.66	2103.8	1799.14	11	18	428
freak	4	5.2	1196.3	1548.08	3	8	435
warp	3	2.29	1193.49	426.43	10	14	-1
wash	3	40	1492.35	6931.63	12	13	522
tomb	3	13.85	1629.68	372.43	5	19	596
work	3	834.02	2429.8	2829.61	8	22	458
touch	4	95.81	3417.03	1210.14	5	11	456
love	3	353.07	3275.17	386.9	12	13	569
leaf	3	15.53	1869.57	311.9	7	18	655
cough	3	12.68	2854.03	43.15	5	14	497
move	3	185.03	3766.05	235.87	10	9	413
hood	3	7.43	2383.69	3453.74	10	12	580
root	3	22.96	2050.01	415.77	14	27	539
worm	3	7.37	2233.65	2485.2	9	16	578
wasp	4	2.4	1299.5	393.83	6	4	-1
wolf	4	6.7	1044.35	92.34	2	2	610
bead	3	1.9	3013.29	1796.75	13	33	-1
tour	3	41.23	1975.25	48.77	7	8	354
bowl	3	29.27	1122.63	787.61	7	27	579
wood	3	72.4	2415.03	4959.35	8	14	577
worth	3	106.48	2676.18	2489.21	2	13	275
hint	4	17.26	1717.13	273.29	8	12	322
cost	4	139.55	3317.75	245.8	10	19	401
doll	3	17.43	3312.44	114.05	11	17	565
dwarf	4	7.21	711.15	6.22	0	3	608
foul	3	10.06	1171.38	13.64	6	13	372
creak	4	1.56	1207.56	237.31	6	15	-1
glove	4	4.58	768.68	164.32	3	5	596
plan	4	97.04	1138.67	439.52	3	9	379
trap	4	21.62	180.75	383.72	6	14	469
cheat	4	4.53	3293.12	502.8	4	11	457
sweat	4	28.88	831.21	131.67	3	8	481
card	3	46.09	1654.66	438.97	12	33	576
cart	3	8.83	1686.33	575.05	14	25	597
match	4	56.98	1775.49	745.61	7	18	490
bomb	3	29.72	1753.66	116.31	3	16	606
fool	3	36.09	1970.31	251.62	10	19	353
cord	3	8.27	2428.11	913.87	10	36	455

mouth 3 134.69 2950.34 138.77 3 3 613  
 ON= Orthographic neighbourhood; PN = Phonological neighbourhood

*P-O- (RRTA prime, RRTB TARGET – alphabetical order)*

<i>Stimulus</i>	<i>Phonemes</i>	<i>CELEX</i>	<i>Bigram F</i>	<i>Biphone F</i>	<i>ON</i>	<i>PN</i>	<i>Imageability</i>
bait	3	32.29	2146.84	463.83	3	28	395
bank	4	133.02	1730.31	231.22	16	15	560
broom	4	6.48	867.4	474	4	10	595
cell	3	36.31	3165.54	2714.97	10	25	469
coach	4	28.32	2253.11	120	4	15	624
disk	4	0.89	483.39	0	7	-1	-1
dress	4	84.53	1317.71	602.43	5	7	661
drug	4	19.61	103.93	207.66	2	8	580
dust	4	45.31	3031.4	875.68	11	14	497
fight	3	94.86	2533.89	1867.67	8	26	543
fine	3	143.18	1904.72	650.45	16	26	392
flat	4	110.06	5490.57	265.7	9	16	-1
foil	3	4.41	539.86	42.38	9	15	495
globe	4	10.28	466.79	93.05	1	7	583
grave	4	30.11	1077.53	584.02	9	5	619
hall	3	120.67	4719.07	522.65	17	29	559
heat	3	119.16	7382.3	488.47	11	19	507
heel	3	11.9	2832.58	435.86	7	24	550
horn	3	9.27	2155.69	265.9	6	25	566
lawn	3	20.56	1104.63	284.6	7	24	598
ledge	3	8.27	555.07	544.67	4	15	464
light	3	287.65	2289.04	3353.21	8	32	542
lock	3	21.28	1540	732.74	14	31	532
maid	3	12.68	3542.57	1741.63	7	27	-1
meal	3	53.07	1889.63	693.18	12	23	573
moon	3	53.13	3112.69	341.2	10	17	648
park	3	67.82	1605.05	551.95	13	27	607
probe	4	5.7	648.17	210.19	3	6	331
quote	4	15.08	771.67	266.51	2	6	-1
rate	3	141.34	722	619.95	16	34	311
risk	4	68.32	536.47	225.91	5	7	405
sack	3	14.02	3141.32	879.77	14	29	555
skirt	4	20.89	375.83	320.96	1	8	573
soil	3	44.08	1150.03	62.35	6	14	566
tape	3	28.38	639.81	492.45	10	14	573
taste	4	56.03	938.57	235.01	6	16	425
tent	4	36.7	1476.33	1125.89	15	20	593
toad	3	3.13	1109.57	251.49	5	29	591

<b>torch</b>	4	9.11	1974.12	236.63	2	9	627
<b>tune</b>	3	14.8	728.63	44.75	5	6	420

*ON= Orthographic neighbourhood; PN = Phonological neighbourhood*

*P-O- (RRTB prime, RRTA TARGET – corresponding order)*

<b>Stimulus</b>	<b>Phonemes</b>	<b>CELEX</b>	<b>Bigram F</b>	<b>Biphone F</b>	<b>ON</b>	<b>PN</b>	<b>Imageability</b>
<b>dive</b>	3	5.42	2696.08	347.16	10	14	586
<b>drip</b>	4	3.07	194.25	235.89	3	9	-1
<b>clap</b>	4	3.3	311.07	427.45	10	15	-1
<b>knot</b>	3	7.99	1214.31	7271.65	4	25	547
<b>flame</b>	4	15.03	725.96	274.67	4	10	647
<b>flute</b>	4	2.51	796.67	255.55	1	13	581
<b>spoon</b>	4	12.74	567.62	306.02	4	11	584
<b>milk</b>	4	104.3	1505.14	501.74	6	9	626
<b>rack</b>	3	8.32	1902.83	822.54	15	27	485
<b>court</b>	3	126.98	3103.75	1574.22	1	30	552
<b>tube</b>	3	15.03	117.91	40.65	3	4	548
<b>list</b>	3	75.81	3562.11	652.31	11	20	494
<b>mark</b>	3	82.63	2250.62	270.12	12	26	434
<b>mould</b>	4	9.5	5191.34	843.57	4	23	-1
<b>joint</b>	4	39.22	2219.58	208.98	2	7	-1
<b>soap</b>	3	20.45	1209.04	201.65	6	21	600
<b>dock</b>	3	11.34	1575.58	205.74	11	21	559
<b>wave</b>	3	45.36	4509.26	469.33	14	21	594
<b>kick</b>	3	19.72	1077.45	271	12	28	551
<b>hope</b>	3	190	681.55	738.13	13	23	421
<b>drive</b>	4	89.33	883.53	259.24	1	7	517
<b>grief</b>	4	15.53	1005.76	591.85	1	6	480
<b>soup</b>	3	20.22	1770.72	201.22	4	20	608
<b>lung</b>	3	9.44	557.53	491.28	7	17	560
<b>pack</b>	3	26.82	2228.08	778.47	15	29	404
<b>farm</b>	3	66.15	1379.71	385.05	6	16	560
<b>cape</b>	3	15.53	873.87	651.68	14	21	520
<b>bride</b>	4	10.45	753.02	597.63	3	17	668
<b>sound</b>	4	166.82	3091.36	490.34	7	13	497
<b>ball</b>	3	92.96	3261.22	613.66	18	28	622
<b>flag</b>	4	19.89	317.9	240.97	8	11	607
<b>girl</b>	3	276.2	583.8	286.03	3	16	634
<b>flood</b>	4	15.87	781.72	278.23	2	10	571
<b>hash</b>	3	2.12	3112.57	6682.07	12	18	-1
<b>kiss</b>	3	27.93	917.54	2636.36	5	19	644
<b>clock</b>	4	35.59	973.91	464.19	7	17	640
<b>drum</b>	4	8.72	100.97	203.18	2	9	599
<b>nail</b>	3	12.01	1570.88	347.86	10	29	588

<b>gloom</b>	4	10.95	614.39	104.91	2	9	416
<b>nerve</b>	3	14.36	666.35	72.04	3	7	486

ON= Orthographic neighbourhood; PN = Phonological neighbourhood

## Appendix N: Study 2 statistical outputs – accuracy and response times

### Repeated Measures ANOVA

Within Subjects Effects

	Sphericity Correction	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Condition	None	83762	3	27921	237.5	< .001	0.806
	Greenhouse-Geisser	83762	1.93	43438	237.5	< .001	0.806
	Huynh-Feldt	83762	1.99	41996	237.5	< .001	0.806
Condition * Group	None	25806	6	4301	36.6	< .001	0.562
	Greenhouse-Geisser	25806	3.86	6691	36.6	< .001	0.562
	Huynh-Feldt	25806	3.99	6469	36.6	< .001	0.562
Residual	None	20100	171	118			
	Greenhouse-Geisser	20100	109.91	183			
	Huynh-Feldt	20100	113.69	177			

Note. Type 3 Sums of Squares

### Between Subjects Effects

	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
Group	37523	2	18761	86.9	< .001	0.753
Residual	12299	57	216			

Note. Type 3 Sums of Squares

## Assumptions

### Tests of Sphericity

	<b>Mauchly's W</b>	<b>p</b>	<b>Greenhouse-Geisser <math>\epsilon</math></b>	<b>Huynh-Feldt <math>\epsilon</math></b>
Condition	0.298	< .001	0.643	0.665

### Homogeneity of Variances Test (Levene's)

	<b>F</b>	<b>df1</b>	<b>df2</b>	<b>p</b>
PhonOrth_accuracy	8.697	2	57	< .001
Phon_accuracy	7.950	2	57	< .001
Orth_accuracy	6.663	2	57	0.003
Control_accuracy	0.674	2	57	0.514

## Post Hoc Tests

Post Hoc Comparisons - Condition \* Group

Comparison											
Condition	Group	Condition	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> <sub>y</sub>	P <sub>holm</sub>	
Phon Orth	Englis h	-	Phon	Spani sh- Englis h	12.25 0	3.7 7	20 9	3.24 96	0.00 1	0.05 9	0.03 5
			-	Phon Orth	Chine se- Englis h	10.50 0	3.7 7	20 9	2.78 54	0.00 6	0.19 4
		-	Phon	Englis h	3.569	3.4 3	17 1	1.04 10	0.29 9	0.99 6	1.00 0
		-	Phon	Spani sh- Englis h	41.13 5	3.7 7	20 9	10.9 121	<.0 01	<.0 01	<.0 01
		-	Phon	Chine se- Englis h	27.78 0	3.7 7	20 9	7.36 93	<.0 01	<.0 01	<.0 01
		-	Orth	Englis h	10.93 7	3.4 3	17 1	3.19 02	0.00 2	0.07 1	0.04 2
		-	Orth	Spani sh- Englis h	75.68 7	3.7 7	20 9	20.0 781	<.0 01	<.0 01	<.0 01
		-	Orth	Chine se- Englis h	62.56 2	3.7 7	20 9	16.5 964	<.0 01	<.0 01	<.0 01
		-	Contr ol	Englis h	-0.697	3.4 3	17 1	- 0.20 33	0.83 9	1.00 0	1.00 0
		-	Contr ol	Spani sh- Englis h	1.354	3.7 7	20 9	0.35 92	0.72 0	1.00 0	1.00 0

Post Hoc Comparisons - Condition \* Group

Comparison											
Condit ion	Group	Condit ion	Group	Mean Differe nce	SE	df	t	p	P <sub>tuke</sub> y	P <sub>holm</sub>	
		-	Contr ol	Chine se- Englis h	3.790	3.7 7	20 9	1.00 54	0.31 6	0.99 7	1.00 0
	Spani sh- Englis h	-	Phon Orth	Chine se- Englis h	-1.750	3.7 7	20 9	- 0.46 42	0.64 3	1.00 0	1.00 0
		-	Phon	Englis h	-8.681	3.7 7	20 9	- 2.30 28	0.02 2	0.47 8	0.42 3
		-	Phon	Spani sh- Englis h	28.88 5	3.4 3	17 1	8.42 50	< .0 01	< .0 01	< .0 01
		-	Phon	Chine se- Englis h	15.53 0	3.7 7	20 9	4.11 96	< .0 01	0.00 3	0.00 2
		-	Orth	Englis h	-1.313	3.7 7	20 9	- 0.34 82	0.72 8	1.00 0	1.00 0
		-	Orth	Spani sh- Englis h	63.43 7	3.4 3	17 1	18.5 030	< .0 01	< .0 01	< .0 01
		-	Orth	Chine se- Englis h	50.31 2	3.7 7	20 9	13.3 467	< .0 01	< .0 01	< .0 01
		-	Contr ol	Englis h	- 12.94 7	3.7 7	20 9	- 3.43 46	< .0 01	0.03 4	0.02 0

Post Hoc Comparisons - Condition \* Group

Comparison										
Condit ion	Group	Condit ion	Group	Mean Differe nce	SE	df	t	p	P <sub>tuke</sub> y	P <sub>holm</sub>
	-	Contr ol	Spani sh- Englis h	- 10.89 6	3.4 3	17 1	- 3.17 80	0.00 2	0.07 4	0.04 2
	-	Contr ol	Chine se- Englis h	-8.460	3.7 7	20 9	- 2.24 42	0.02 6	0.52 0	0.46 6
	-	Phon	Englis h	-6.931	3.7 7	20 9	- 1.83 86	0.06 7	0.79 5	0.94 3
	-	Phon	Spani sh- Englis h	30.63 5	3.7 7	20 9	8.12 67	< .0 01	< .0 01	< .0 01
	-	Phon	Chine se- Englis h	17.28 0	3.4 3	17 1	5.04 00	< .0 01	< .0 01	< .0 01
	-	Orth	Englis h	0.437	3.7 7	20 9	0.11 61	0.90 8	1.00 0	1.00 0
	-	Orth	Spani sh- Englis h	65.18 7	3.7 7	20 9	17.2 927	< .0 01	< .0 01	< .0 01
	-	Orth	Chine se- Englis h	52.06 2	3.4 3	17 1	15.1 853	< .0 01	< .0 01	< .0 01
	-	Contr ol	Englis h	- 11.19 7	3.7 7	20 9	- 2.97 03	0.00 3	0.12 5	0.07 6

Post Hoc Comparisons - Condition \* Group

Comparison											
Condit ion	Group	Condit ion	Group	Mean Differe nce	SE	df	t	p	P <sub>tuke</sub> y	P <sub>holm</sub>	
Phon	Englis h	-	Contr ol	Spani sh- Englis h	-9.146	3.7 7	20 9	- 2.42 62	0.01 6	0.39 3	0.32 2
		-	Contr ol	Chine se- Englis h	-6.710	3.4 3	17 1	- 1.95 71	0.05 2	0.72 1	0.83 1
		-	Phon	Spani sh- Englis h	37.56 6	3.7 7	20 9	9.96 53	< .0 01	< .0 01	< .0 01
		-	Phon	Chine se- Englis h	24.21 1	3.7 7	20 9	6.42 25	< .0 01	< .0 01	< .0 01
		-	Orth	Englis h	7.368	3.4 3	17 1	2.14 92	0.03 3	0.58 8	0.56 1
		-	Orth	Spani sh- Englis h	72.11 8	3.7 7	20 9	19.1 313	< .0 01	< .0 01	< .0 01
		-	Orth	Chine se- Englis h	58.99 3	3.7 7	20 9	15.6 496	< .0 01	< .0 01	< .0 01
		-	Contr ol	Englis h	-4.266	3.4 3	17 1	- 1.24 43	0.21 5	0.98 4	1.00 0
-	Contr ol	Spani sh- Englis h	-2.215	3.7 7	20 9	- 0.58 76	0.55 7	1.00 0	1.00 0		

Post Hoc Comparisons - Condition \* Group

Comparison										
Condit ion	Group	Condit ion	Group	Mean Differe nce	SE	df	t	p	P <sub>tuke</sub> y	P <sub>holm</sub>
		-	Control	Chinese-English	0.221	3.77	20.9	0.0586	0.953	1.000
	Spanish-English	-	Phon	Chinese-English	-13.355	3.77	20.9	-3.5428	<.001	0.024
		-	Orth	English	-30.197	3.77	20.9	-8.0107	<.001	<.001
		-	Orth	Spanish-English	34.553	3.43	17.1	10.0781	<.001	<.001
		-	Orth	Chinese-English	21.428	3.77	20.9	5.6842	<.001	<.001
		-	Control	English	-41.832	3.77	20.9	-11.0970	<.001	<.001
		-	Control	Spanish-English	-39.781	3.43	17.1	-11.6030	<.001	<.001
		-	Control	Chinese-English	-37.345	3.77	20.9	-9.9067	<.001	<.001
	Chinese-English	-	Orth	English	-16.842	3.77	20.9	-4.4678	<.001	<.001

Post Hoc Comparisons - Condition \* Group

Comparison											
Condit ion	Group	Condit ion	Group	Mean Differ ence	SE	df	t	p	P <sub>tuke</sub> y	P <sub>holm</sub>	
		-	Orth	Spani sh- Englis h	47.90 8	3.7 7	20 9	12.7 088	< .0 01	< .0 01	< .0 01
		-	Orth	Chine se- Englis h	34.78 3	3.4 3	17 1	10.1 452	< .0 01	< .0 01	< .0 01
		-	Contr ol	Englis h	- 28.47 7	3.7 7	20 9	- 7.55 42	< .0 01	< .0 01	< .0 01
		-	Contr ol	Spani sh- Englis h	- 26.42 5	3.7 7	20 9	- 7.01 00	< .0 01	< .0 01	< .0 01
		-	Contr ol	Chine se- Englis h	- 23.99 0	3.4 3	17 1	- 6.99 71	< .0 01	< .0 01	< .0 01
Orth	Englis h	-	Orth	Spani sh- Englis h	64.75 0	3.7 7	20 9	17.1 766	< .0 01	< .0 01	< .0 01
		-	Orth	Chine se- Englis h	51.62 5	3.7 7	20 9	13.6 949	< .0 01	< .0 01	< .0 01
		-	Contr ol	Englis h	- 11.63 5	3.4 3	17 1	- 3.39 35	< .0 01	0.03 9	0.02 3
		-	Contr ol	Spani sh- Englis h	-9.583	3.7 7	20 9	- 2.54 22	0.01 2	0.32 0	0.24 7

Post Hoc Comparisons - Condition \* Group

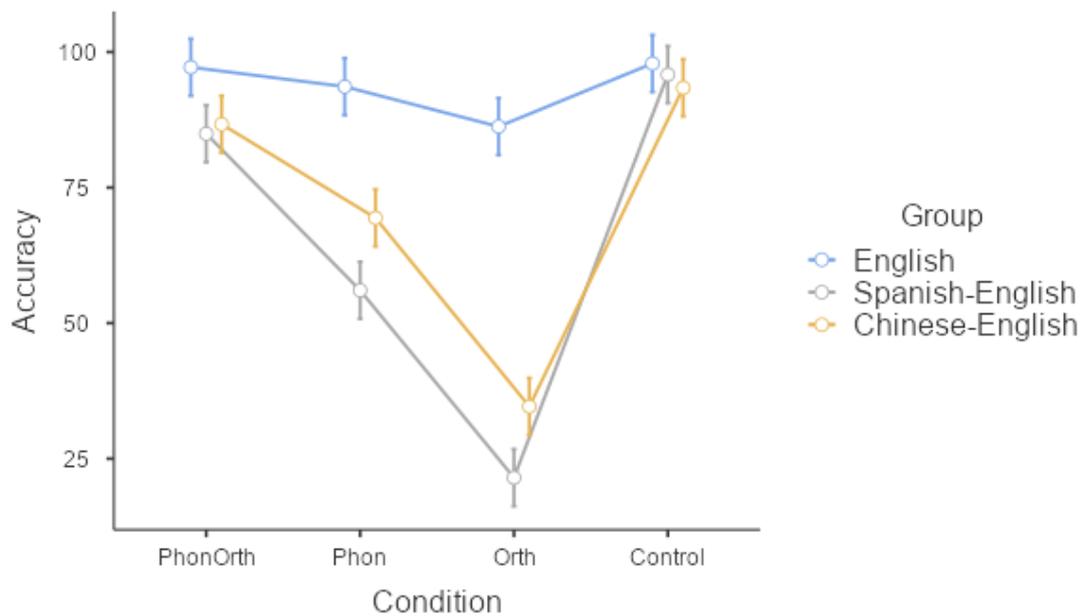
Comparison										
Condit ion	Group	Condit ion	Group	Mean Differe nce	SE	df	t	p	P <sub>tuke</sub> y	P <sub>holm</sub>
		-	Chine se- Englis h	-7.147	3.7 7	20 9	- 1.89 60	0.05 9	0.76 0	0.89 0
	Spani sh- Englis h	-	Orth	- 13.12 5	3.7 7	20 9	- 3.48 18	< .0 01	0.02 9	0.01 8
		-	Contr ol	- 76.38 5	3.7 7	20 9	- 20.2 630	< .0 01	< .0 01	< .0 01
		-	Contr ol	- 74.33 3	3.4 3	17 1	- 21.6 811	< .0 01	< .0 01	< .0 01
		-	Contr ol	- 71.89 7	3.7 7	20 9	- 19.0 727	< .0 01	< .0 01	< .0 01
	Chine se- Englis h	-	Contr ol	- 63.26 0	3.7 7	20 9	- 16.7 813	< .0 01	< .0 01	< .0 01
		-	Contr ol	- 61.20 8	3.7 7	20 9	- 16.2 371	< .0 01	< .0 01	< .0 01
		-	Contr ol	- 58.77 2	3.4 3	17 1	- 17.1 424	< .0 01	< .0 01	< .0 01
Contr ol	Englis h	-	Contr ol	2.051	3.7 7	20 9	0.54 42	0.58 7	1.00 0	1.00 0

Post Hoc Comparisons - Condition \* Group

Comparison										
Condition	Group	Condition	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub> <sub>y</sub>	p <sub>holm</sub>
		Control	Chinese-English	4.487	3.77	209	1.1903	0.235	0.989	1.000
	Spanish-English	Control	Chinese-English	2.436	3.77	209	0.6462	0.519	1.000	1.000

Estimated Marginal Means

Condition \* Group



Repeated Measures ANOVA

Within Subjects Effects

	<b>Sphericity Correction</b>	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
Condition	None	2.72e+6	3	907270	155.7	< .001	0.732
	Greenhouse-Geisser	2.72e+6	2.08	1.31e+6	155.7	< .001	0.732
	Huynh-Feldt	2.72e+6	2.16	1.26e+6	155.7	< .001	0.732
Condition * Group	None	445022	6	74170	12.7	< .001	0.309
	Greenhouse-Geisser	445022	4.16	107024	12.7	< .001	0.309
	Huynh-Feldt	445022	4.32	103052	12.7	< .001	0.309
Residual	None	996420	171	5827			
	Greenhouse-Geisser	996420	118.51	8408			
	Huynh-Feldt	996420	123.08	8096			

Note. Type 3 Sums of Squares

Between Subjects Effects

	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
Group	5.74e+6	2	2.87e+6	33.8	< .001	0.543
Residual	4.84e+6	57	84899			

Note. Type 3 Sums of Squares

## Assumptions

Tests of Sphericity

	<b>Mauchly's W</b>	<b>p</b>	<b>Greenhouse-Geisser <math>\epsilon</math></b>	<b>Huynh-Feldt <math>\epsilon</math></b>
Condition	0.517	< .001	0.693	0.720

Homogeneity of Variances Test (Levene's)

	<b>F</b>	<b>df1</b>	<b>df2</b>	<b>p</b>
PhonOrth_RT	5.01	2	57	0.010
Phon_RT	4.86	2	57	0.011
Orth_RT	6.04	2	57	0.004
Control_RT	4.62	2	57	0.014

## Post Hoc Tests

Post Hoc Comparisons - Condition \* Group

<b>Comparison</b>											
<b>Condit ion</b>	<b>Group</b>	<b>Condit ion</b>	<b>Group</b>	<b>Mean Differe nce</b>	<b>SE</b>	<b>df</b>	<b>t</b>	<b>p</b>	<b>p<sub>tuke</sub> y</b>	<b>p<sub>holm</sub></b>	
Phon Orth	Englis h	Phon Orth	Spani sh- Englis h	- 317.2 7	50. 6	81. 7	- 6.27 1	< .0 01	< .0 01	< .0 01	
			Chine se- Englis h	- 256.5 9	50. 6	81. 7	- 5.07 2	< .0 01	< .0 01	< .0 01	
			Englis h	-45.15	24. 1	171 .0	- 1.87 0	0.06 3	0.77 6	0.75 8	

Post Hoc Comparisons - Condition \* Group

Comparison										
Condit ion	Group	Condit ion	Group	Mean Differ ence	SE	df	t	p	P <sub>tuke</sub> y	P <sub>holm</sub>
	-	Phon	Spani sh- Englis h	- 474.5 7	50. 6	81. 7	- 9.38 0	< .0 01	< .0 01	< .0 01
	-	Phon	Chine se- Englis h	- 362.7 3	50. 6	81. 7	- 7.17 0	< .0 01	< .0 01	< .0 01
	-	Orth	Englis h	- 155.9 8	24. 1	171 .0	- 6.46 2	< .0 01	< .0 01	< .0 01
	-	Orth	Spani sh- Englis h	- 635.4 5	50. 6	81. 7	- 12.5 60	< .0 01	< .0 01	< .0 01
	-	Orth	Chine se- Englis h	- 489.8 6	50. 6	81. 7	- 9.68 3	< .0 01	< .0 01	< .0 01
	-	Contr ol	Englis h	-4.92	24. 1	171 .0	- 0.20 4	0.83 9	1.00 0	1.00 0
	-	Contr ol	Spani sh- Englis h	- 214.1 7	50. 6	81. 7	- 4.23 3	< .0 01	0.00 3	0.00 1
	-	Contr ol	Chine se- Englis h	- 236.3 8	50. 6	81. 7	- 4.67 2	< .0 01	< .0 01	< .0 01
	-	Phon Orth	Chine se- Englis h	60.68	50. 6	81. 7	1.19 9	0.23 4	0.98 8	1.00 0
	-	Phon	Englis h	272.1 2	50. 6	81. 7	5.37 9	< .0 01	< .0 01	< .0 01

Post Hoc Comparisons - Condition \* Group

Comparison										
Condit ion	Group	Condit ion	Group	Mean Differ ence	SE	df	t	p	P <sub>tuke</sub> y	P <sub>holm</sub>
	-	Phon	Spani sh- Englis h	- 157.3 0	24. 1	171 .0	- 6.51 6	< .0 01	< .0 01	< .0 01
	-	Phon	Chine se- Englis h	-45.46	50. 6	81. 7	- 0.89 9	0.37 2	0.99 9	1.00 0
	-	Orth	Englis h	161.2 9	50. 6	81. 7	3.18 8	0.00 2	0.08 0	0.03 5
	-	Orth	Spani sh- Englis h	- 318.1 8	24. 1	171 .0	- 13.1 81	< .0 01	< .0 01	< .0 01
	-	Orth	Chine se- Englis h	- 172.5 9	50. 6	81. 7	- 3.41 1	0.00 1	0.04 4	0.01 9
	-	Contr ol	Englis h	312.3 5	50. 6	81. 7	6.17 4	< .0 01	< .0 01	< .0 01
	-	Contr ol	Spani sh- Englis h	103.1 0	24. 1	171 .0	4.27 1	< .0 01	0.00 2	< .0 01
	-	Contr ol	Chine se- Englis h	80.89	50. 6	81. 7	1.59 9	0.11 4	0.90 5	1.00 0
	-	Phon	Englis h	211.4 4	50. 6	81. 7	4.17 9	< .0 01	0.00 4	0.00 2
	-	Phon	Spani sh- Englis h	- 217.9 8	50. 6	81. 7	- 4.30 9	< .0 01	0.00 3	0.00 1

Post Hoc Comparisons - Condition \* Group

Comparison										
Condit ion	Group	Condit ion	Group	Mean Differ ence	SE	df	t	p	P <sub>tuke</sub> y	P <sub>holm</sub>
		-	Chine se- Englis h	- 106.1 4	24. 1	171 .0	- 4.39 7	< .0 01	0.00 1	< .0 01
		-	Orth	100.6 1	50. 6	81. 7	1.98 9	0.05 0	0.69 9	0.65 1
		-	Spani sh- Englis h	- 378.8 6	50. 6	81. 7	- 7.48 9	< .0 01	< .0 01	< .0 01
		-	Orth	- 233.2 7	24. 1	171 .0	- 9.66 3	< .0 01	< .0 01	< .0 01
		-	Contr ol	251.6 7	50. 6	81. 7	4.97 5	< .0 01	< .0 01	< .0 01
		-	Spani sh- Englis h	42.42	50. 6	81. 7	0.83 9	0.40 4	0.99 9	1.00 0
		-	Contr ol	20.21	24. 1	171 .0	0.83 7	0.40 4	1.00 0	1.00 0
Phon	Englis h	-	Spani sh- Englis h	- 429.4 2	50. 6	81. 7	- 8.48 8	< .0 01	< .0 01	< .0 01
		-	Chine se- Englis h	- 317.5 8	50. 6	81. 7	- 6.27 7	< .0 01	< .0 01	< .0 01
		-	Orth	- 110.8 3	24. 1	171 .0	- 4.59 1	< .0 01	< .0 01	< .0 01

Post Hoc Comparisons - Condition \* Group

Comparison										
Condition	Group	Condition	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> <sub>y</sub>	P <sub>holm</sub>
			Spanish-English	-590.30	50.6	81.7	-11.668	<.001	<.001	<.001
			Chinese-English	-444.71	50.6	81.7	-8.790	<.001	<.001	<.001
			English	40.23	24.1	171.0	1.667	0.097	0.881	1.000
			Spanish-English	-169.02	50.6	81.7	-3.341	0.001	0.053	0.023
			Chinese-English	-191.23	50.6	81.7	-3.780	<.001	0.015	0.006
	Spanish-English		Chinese-English	111.84	50.6	81.7	2.211	0.030	0.547	0.418
			English	318.59	50.6	81.7	6.297	<.001	<.001	<.001
			Spanish-English	-160.88	24.1	171.0	-6.665	<.001	<.001	<.001
			Chinese-English	-15.29	50.6	81.7	-0.302	0.763	1.000	1.000
			English	469.65	50.6	81.7	9.283	<.001	<.001	<.001

Post Hoc Comparisons - Condition \* Group

Comparison										
Condit ion	Group	Condit ion	Group	Mean Differe nce	SE	df	t	p	P <sub>tuke</sub> y	P <sub>holm</sub>
		-	Spani sh- Englis h	260.4 0	24. 1	171 .0	10.7 88	< .0 01	< .0 01	< .0 01
		-	Chine se- Englis h	238.1 9	50. 6	81. 7	4.70 8	< .0 01	< .0 01	< .0 01
	Chine se- Englis h	-	Englis h	206.7 4	50. 6	81. 7	4.08 7	< .0 01	0.00 5	0.00 2
		-	Spani sh- Englis h	- 272.7 2	50. 6	81. 7	- 5.39 1	< .0 01	< .0 01	< .0 01
		-	Chine se- Englis h	- 127.1 3	24. 1	171 .0	- 5.26 7	< .0 01	< .0 01	< .0 01
		-	Englis h	357.8 1	50. 6	81. 7	7.07 3	< .0 01	< .0 01	< .0 01
		-	Spani sh- Englis h	148.5 6	50. 6	81. 7	2.93 6	0.00 4	0.14 8	0.06 9
		-	Chine se- Englis h	126.3 5	24. 1	171 .0	5.23 4	< .0 01	< .0 01	< .0 01
Orth	Englis h	-	Spani sh- Englis h	- 479.4 7	50. 6	81. 7	- 9.47 7	< .0 01	< .0 01	< .0 01

Post Hoc Comparisons - Condition \* Group

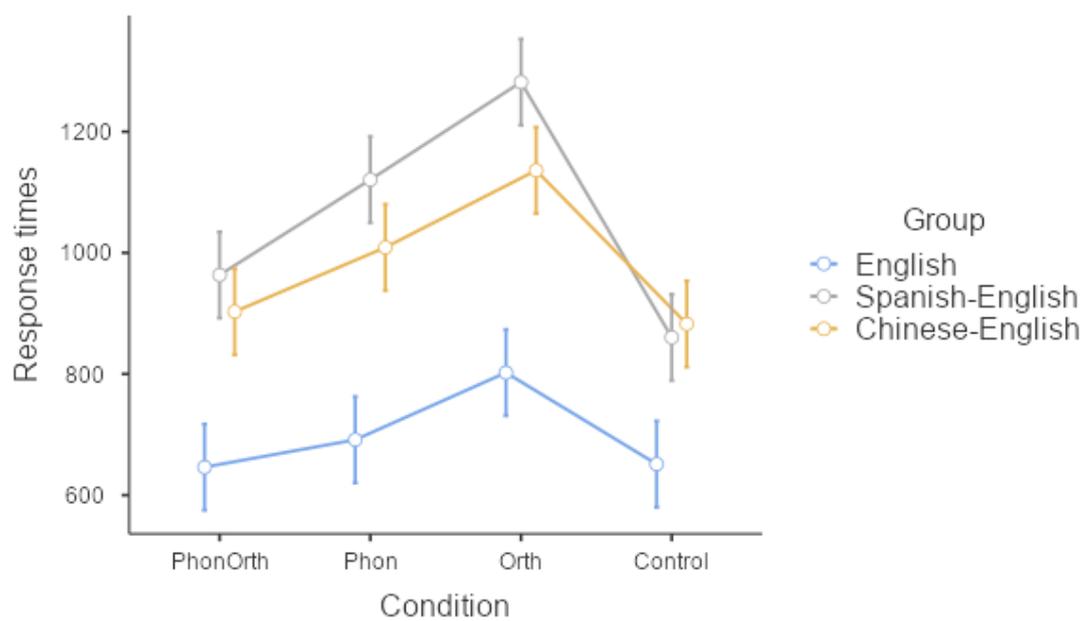
Comparison										
Condition	Group	Condition	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> <sub>y</sub>	P <sub>holm</sub>
	-	Orth	Chinese-English	-333.87	50.6	81.7	-6.599	<.001	<.001	<.001
			English	151.07	24.1	171.0	6.258	<.001	<.001	<.001
	-	Control	Spanish-English	-58.18	50.6	81.7	-1.150	0.253	0.991	1.000
			Chinese-English	-80.40	50.6	81.7	-1.589	0.116	0.908	1.000
Spanish-English	-	Orth	Chinese-English	145.59	50.6	81.7	2.878	0.005	0.169	0.077
			English	630.53	50.6	81.7	12.463	<.001	<.001	<.001
	-	Control	Spanish-English	421.28	24.1	171.0	17.452	<.001	<.001	<.001
			Chinese-English	399.07	50.6	81.7	7.888	<.001	<.001	<.001
Chinese-English	-	Control	English	484.94	50.6	81.7	9.585	<.001	<.001	<.001
			Spanish-English	275.69	50.6	81.7	5.449	<.001	<.001	<.001

Post Hoc Comparisons - Condition \* Group

Comparison											
Condit ion	Group	Condit ion	Group	Mean Differe nce	SE	df	t	p	P <sub>tuke</sub> y	P <sub>holm</sub>	
		-	Chine se-Englis h	253.48	24.1	171.0	10.501	<.001	<.001	<.001	
Contr ol	Englis h	-	Spani sh-Englis h	-209.25	50.6	81.7	-4.136	<.001	0.005	0.002	
		-	Chine se-Englis h	-231.46	50.6	81.7	-4.575	<.001	<.001	<.001	
	Spani sh-Englis h	-	Chine se-Englis h	-22.21	50.6	81.7	-0.439	0.662	1.000	1.000	

Estimated Marginal Means

Condition \* Group





## Appendix O: Study 2 statistical outputs – P1 and N170 amplitudes

### *P1-0 amplitude*

## Repeated Measures ANOVA

Within Subjects Effects

	<b>Sphericity Correction</b>	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
RRT Target	None	4.310	3	1.4368	7.154	< .001	0.112
	Greenhouse-Geisser	4.310	1.99	2.1700	7.154	0.001	0.112
	Huynh-Feldt	4.310	2.06	2.0946	7.154	0.001	0.112
RRT Target * Group	None	10.196	6	1.6994	8.462	< .001	0.229
	Greenhouse-Geisser	10.196	3.97	2.5667	8.462	< .001	0.229
	Huynh-Feldt	10.196	4.12	2.4775	8.462	< .001	0.229
Residual	None	34.341	171	0.2008			
	Greenhouse-Geisser	34.341	113.22	0.3033			
	Huynh-Feldt	34.341	117.29	0.2928			
Hemisphere	None	1.296	1	1.2956	4.786	0.033	0.077
	Greenhouse-Geisser	1.296	1.00	1.2956	4.786	0.033	0.077
	Huynh-Feldt	1.296	1.00	1.2956	4.786	0.033	0.077
Hemisphere * Group	None	0.861	2	0.4304	1.590	0.213	0.053
	Greenhouse-Geisser	0.861	2.00	0.4304	1.590	0.213	0.053
	Huynh-Feldt	0.861	2.00	0.4304	1.590	0.213	0.053

Within Subjects Effects

	<b>Sphericity Correction</b>	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
Residual	None	15.431	57	0.2707			
	Greenhouse-Geisser	15.431	57.00	0.2707			
	Huynh-Feldt	15.431	57.00	0.2707			
RRT Target * Hemisphere	None	0.136	3	0.0455	0.598	0.617	0.010
	Greenhouse-Geisser	0.136	2.60	0.0524	0.598	0.594	0.010
	Huynh-Feldt	0.136	2.74	0.0498	0.598	0.602	0.010
RRT Target * Hemisphere * Group	None	0.428	6	0.0713	0.937	0.470	0.032
	Greenhouse-Geisser	0.428	5.21	0.0821	0.937	0.461	0.032
	Huynh-Feldt	0.428	5.48	0.0781	0.937	0.464	0.032
Residual	None	13.004	171	0.0760			
	Greenhouse-Geisser	13.004	148.36	0.0877			
	Huynh-Feldt	13.004	156.09	0.0833			

Note. Type 3 Sums of Squares

Between Subjects Effects

	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
Group	1.51	2	0.755	0.346	0.709	0.012
Residual	124.41	57	2.183			

Note. Type 3 Sums of Squares

## Assumptions

### Tests of Sphericity

	Mauchly's W	p	Greenhouse-Geisser $\epsilon$	Huynh-Feldt $\epsilon$
RRT Target	0.486	< .001	0.662	0.686
Hemisphere	1.000	NaN <sup>a</sup>	1.000	1.000
RRT Target * Hemisphere	0.811	0.039	0.868	0.913

<sup>a</sup> The repeated measures has only two levels. The assumption of sphericity is always met when the repeated measures has only two levels

### Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
PAA_P1.LeftO\$PhonOrth_TARGET	0.179	2	57	0.836
PAA_P1.RightO\$PhonOrth_TARGET	0.801	2	57	0.454
PAA_P1.LeftO\$Phon_TARGET	2.233	2	57	0.116
PAA_P1.RightO\$Phon_TARGET	0.953	2	57	0.392
PAA_P1.LeftO\$Orth_TARGET	0.333	2	57	0.718
PAA_P1.RightO\$Orth_TARGET	0.870	2	57	0.424
PAA_P1.LeftO\$Control_TARGET	1.947	2	57	0.152
PAA_P1.RightO\$Control_TARGET	3.513	2	57	0.036

## Post Hoc Tests

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison													
RRT Target	Hemisphere	Group		RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
PhonOrth	Left	English	-	PhonOrth	Left	Spanish-English	0.07569	0.203	124	0.37357	0.709	1.000	1.000
			-			PhonOrth	Left	Chinese-English	-0.14258	0.203	124	-0.70371	0.483
			-	PhonOrth	Right			English	-0.02071	0.112	1157	-0.18547	0.853
			-			PhonOrth	Right	Spanish-English	0.30726	0.203	124	1.51652	0.132
			-	PhonOrth	Right			Chinese-English	-0.00804	0.203	124	-0.03967	0.968
			-			Phon	Left	English	-0.12753	0.118	1184	-1.08390	0.279
			-	Phon	Left			Spanish-English	0.18448	0.203	124	0.91054	0.364

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Phon	Left	Chinese-English	-	0.04	0.20401	0.203	124	-0.21723	0.828	1.000	1.000
-	Phon	Right	English	-	0.19	0.13200	0.137	248	1.40366	0.162	0.999	1.000
-	Phon	Right	Spanish-English	0.24	0.20874	0.203	243	1.22769	0.222	1.000	1.000	
-	Phon	Right	Chinese-English	0.11	0.20464	0.203	244	0.56585	0.573	1.000	1.000	
-	Orth	Left	English	-	0.04	0.11868	0.118	284	0.41370	0.679	1.000	1.000
-	Orth	Left	Spanish-English	-	0.54	0.20348	0.203	243	2.68243	0.008	0.536	1.000
-	Orth	Left	Chinese-English	-	0.00	0.20891	0.203	243	0.04399	0.965	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Orth	Rig	Eng	Right	English	0.01699	0.137	248	-0.124	0.901	1.000	1.000
-	Orth	Rig	Spa	Right	nish-English	0.26079	0.203	24	-1.287	0.200	1.000	1.000
-	Orth	Rig	Chi	Right	nese-English	0.01930	0.203	24	0.095	0.924	1.000	1.000
-	Control	Left	Eng	Left	English	0.04794	0.118	24	0.407	0.684	1.000	1.000
-	Control	Left	Spa	Left	nish-English	0.22404	0.203	24	1.105	0.271	1.000	1.000
-	Control	Left	Chi	Left	nese-English	0.17036	0.203	24	0.840	0.402	1.000	1.000
-	Control	Rig	Eng	Right	English	0.07707	0.137	248	0.563	0.574	1.000	1.000
-	Control	Rig	Spa	Right	nish-English	0.44540	0.203	24	2.198	0.030	0.863	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk	Phol
-			Control	Right	Chinese-English	0.01823	0.203	12	0.08998	0.928	1.000	1.000
-		Spanish-English	PhonOrth	Left	Chinese-English	0.21826	0.203	12	1.07728	0.283	1.000	1.000
-			PhonOrth	Right	English	0.09640	0.203	12	0.47580	0.635	1.000	1.000
-			PhonOrth	Right	Spanish-English	0.23157	0.112	15	2.07359	0.040	0.918	1.000
-			PhonOrth	Right	Chinese-English	0.08372	0.203	12	0.41324	0.680	1.000	1.000
-			Phon	Left	English	0.20322	0.203	12	1.00303	0.318	1.000	1.000
-			Phon	Left	Spanish-English	0.10879	0.118	18	0.92465	0.356	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Phon	Left	Phon	Left	Chinese-English	-0.11970	0.203	124	0.59080	0.556	1.000	1.000
-	Phon	Right	Phon	Right	English	-0.26769	0.203	124	1.32122	0.189	1.000	1.000
-	Phon	Right	Phon	Right	Spanish-English	0.17305	0.137	138	1.26512	0.207	1.000	1.000
-	Phon	Right	Phon	Right	Chinese-English	0.03896	0.203	124	0.19228	0.848	1.000	1.000
-	Orth	Left	Orth	Left	English	-0.12436	0.203	124	0.61382	0.540	1.000	1.000
-	Orth	Left	Orth	Left	Spanish-English	-0.61916	0.118	118	-5.26234	<.001	<.001	<.001
-	Orth	Left	Orth	Left	Chinese-English	-0.08460	0.203	124	-0.41756	0.677	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Orth	Rig	Eng	Right	English	-0.09268	0.203	124	-0.457	0.648	1.000	1.000
-	Orth	Rig	Spa	Right	nish-English	-0.33647	0.137	248	-2.459	0.015	0.705	1.000
-	Orth	Rig	Chi	Right	nese-English	-0.09499	0.203	124	-0.468	0.640	1.000	1.000
-	Control	Left	Eng	Left	English	-0.02775	0.203	124	-0.136	0.891	1.000	1.000
-	Control	Left	Spa	Left	nish-English	0.14836	0.118	248	1.260	0.208	1.000	1.000
-	Control	Left	Chi	Left	nese-English	-0.24605	0.203	124	-1.214	0.227	1.000	1.000
-	Control	Rig	Eng	Right	English	0.00139	0.203	124	0.006	0.995	1.000	1.000
-	Control	Rig	Spa	Right	nish-English	0.36971	0.137	248	2.702	0.007	0.517	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk	Phol
-			Control	Right	Chinese-English	-0.05746	0.203	124	-0.28359	0.777	1.000	1.000
-		Chinese-English	PhonOrth	Right	English	0.12186	0.203	124	0.60148	0.549	1.000	1.000
-			PhonOrth	Right	Spanish-English	0.44983	0.203	124	2.22023	0.028	0.852	1.000
-			PhonOrth	Right	Chinese-English	0.13454	0.112	157	1.20472	0.230	1.000	1.000
-			Phon	Left	English	0.01504	0.203	124	0.07425	0.941	1.000	1.000
-			Phon	Left	Spanish-English	0.32706	0.203	124	1.61425	0.109	0.995	1.000
-			Phon	Left	Chinese-English	0.09856	0.118	184	0.83770	0.403	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Phon	Right	English	-	English	0.04943	0.203	124	0.24395	0.808	1.000	1.000
-	Phon	Right	Spanish-English	-	Spanish-English	0.39131	0.203	124	1.93140	0.056	0.958	1.000
-	Phon	Right	Chinese-English	-	Chinese-English	0.25722	0.137	248	1.88045	0.061	0.970	1.000
-	Orth	Left	English	-	English	0.09390	0.203	124	0.46346	0.644	1.000	1.000
-	Orth	Left	Spanish-English	-	Spanish-English	0.40090	0.203	124	1.97872	0.050	0.946	1.000
-	Orth	Left	Chinese-English	-	Chinese-English	0.13366	0.118	248	1.13601	0.257	1.000	1.000
-	Orth	Right	English	-	English	0.12558	0.203	124	0.61983	0.537	1.000	1.000
-	Orth	Right	Spanish-English	-	Spanish-English	0.11821	0.203	124	0.58346	0.561	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
		-	Orth	Right	Chinese-English	0.12328	0.137	248	0.90123	0.368	1.000	1.000
		-	Control	Left	English	0.19051	0.203	124	0.94031	0.349	1.000	1.000
		-	Control	Left	Spanish-English	0.36662	0.203	124	1.80952	0.073	0.979	1.000
		-	Control	Left	Chinese-English	0.02779	0.118	238	0.23617	0.813	1.000	1.000
		-	Control	Right	English	0.21965	0.203	124	1.08413	0.280	1.000	1.000
		-	Control	Right	Spanish-English	0.58797	0.203	124	2.90205	0.004	0.375	1.000
		-	Control	Right	Chinese-English	0.16081	0.137	248	1.17561	0.241	1.000	1.000
	Right	English	PhonOrth	Right	Spanish-English	0.32797	0.203	124	1.61875	0.108	0.995	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	PhonOrth		Right	Chinese-English	Chinese-English	0.01268	0.203	124	0.06256	0.950	1.000	1.000
-	Phon		Left	English	English	0.10682	0.137	248	0.78092	0.436	1.000	1.000
-	Phon		Left	Spanish-English	Spanish-English	0.20519	0.203	124	1.01277	0.313	1.000	1.000
-	Phon		Left	Chinese-English	Chinese-English	0.02330	0.203	124	0.11500	0.909	1.000	1.000
-	Phon		Right	English	English	0.17129	0.118	248	1.45579	0.147	0.999	1.000
-	Phon		Right	Spanish-English	Spanish-English	0.26945	0.203	124	1.32992	0.186	1.000	1.000
-	Phon		Right	Chinese-English	Chinese-English	0.13536	0.203	124	0.66808	0.505	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk	Phol
-	Orth	Left	English			-0.02796	0.137	24	-0.20443	0.838	1.000	1.000
-	Orth	Left	Spanish-English			-0.52276	0.203	24	-2.58020	0.011	0.614	1.000
-	Orth	Left	Chinese-English			0.01180	0.203	24	0.05824	0.954	1.000	1.000
-	Orth	Right	English			0.00372	0.118	28	0.03161	0.975	1.000	1.000
-	Orth	Right	Spanish-English			-0.24007	0.203	24	-1.18494	0.238	1.000	1.000
-	Orth	Right	Chinese-English			0.00141	0.203	24	0.00697	0.994	1.000	1.000
-	Control	Left	English			0.06865	0.137	28	0.50188	0.616	1.000	1.000
-	Control	Left	Spanish-English			0.24476	0.203	24	1.20804	0.229	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Control	Left	Chinese-English	-	0.14965	0.203	1204	-0.738	0.462	1.000	1.000	1.000
-	Control	Right	English	0.09779	0.118	2084	0.831	0.411	0.407	1.000	1.000	1.000
-	Control	Right	Spanish-English	0.46611	0.203	2043	2.300	0.057	0.023	0.807	1.000	1.000
-	Control	Right	Chinese-English	0.03894	0.203	2043	0.192	0.821	0.848	1.000	1.000	1.000
-	Spanish-English	PhonOrth	Right	Chinese-English	-0.31529	0.203	2043	-1.556	0.122	0.097	0.900	1.000
-	Spanish-English	Phon	Left	English	-0.43479	0.203	2043	-2.145	0.034	0.887	1.000	1.000
-	Spanish-English	Phon	Left	Spanish-English	-0.12277	0.137	1378	-0.897	0.357	0.370	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Phon	Left	Phon	Left	Chinese-English	-0.35127	0.203	12	1.733	0.085	0.987	1.000
-	Phon	Right	Phon	Right	English	-0.49926	0.203	12	2.464	0.015	0.700	1.000
-	Phon	Right	Phon	Right	Spanish-English	-0.05852	0.118	118	0.497	0.619	1.000	1.000
-	Phon	Right	Phon	Right	Chinese-English	-0.19261	0.203	12	0.950	0.344	1.000	1.000
-	Orth	Left	Orth	Left	English	-0.35593	0.203	12	1.756	0.081	0.985	1.000
-	Orth	Left	Orth	Left	Spanish-English	-0.85073	0.137	137	6.219	<.001	<.001	<.001
-	Orth	Left	Orth	Left	Chinese-English	-0.31617	0.203	12	1.560	0.021	0.997	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Orth	Right	English	-	0.32425	0.203	124	1.600	0.112	0.995	1.000	
-	Orth	Right	Spanish-English	-	0.56804	0.118	278	4.827	<.001	<.001	<.001	
-	Orth	Right	Chinese-English	-	0.32656	0.203	278	1.611	0.110	0.995	1.000	
-	Control	Left	English	-	0.25932	0.203	292	1.279	0.203	1.000	1.000	
-	Control	Left	Spanish-English	-	0.08321	0.137	434	0.608	0.544	1.000	1.000	
-	Control	Left	Chinese-English	-	0.47762	0.203	38	2.357	0.020	0.772	1.000	
-	Control	Right	English	-	0.23018	0.203	34	1.136	0.258	1.000	1.000	

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Control	Right	Spanish-English	0.13814	0.118	284	1.17407	0.241	1.000	1.000		
-	Control	Right	Chinese-English	0.28902	0.203	204	1.42654	0.156	0.999	1.000		
-	Chinese-English	Phon	Left	English	0.11949	0.203	204	0.58978	0.556	1.000	1.000	
-	Phon	Left	Spanish-English	0.19252	0.203	204	0.95021	0.344	1.000	1.000		
-	Phon	Left	Chinese-English	0.03597	0.137	138	0.26300	0.793	1.000	1.000		
-	Phon	Right	English	0.18396	0.203	204	0.90798	0.366	1.000	1.000		
-	Phon	Right	Spanish-English	0.25677	0.203	204	1.26736	0.207	1.000	1.000		

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk	ptom
-	Phon	Right	Chinese-English			0.12268	0.118	28	1.042	0.298	1.000	1.000
-	Orth	Left	English			-0.04064	0.203	124	-0.200	0.841	1.000	1.000
-	Orth	Left	Spanish-English			-0.53544	0.203	124	-2.642	0.009	0.566	1.000
-	Orth	Left	Chinese-English			-8.75e-4	0.137	248	-0.006	0.995	1.000	1.000
-	Orth	Right	English			0.00896	0.203	124	0.044	0.965	1.000	1.000
-	Orth	Right	Spanish-English			0.25275	0.203	124	1.247	0.215	1.000	1.000
-	Orth	Right	Chinese-English			0.01126	0.118	28	0.095	0.924	1.000	1.000
-	Control	Left	English			0.05597	0.203	124	0.276	0.783	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> ey	P <sub>hol</sub> m
		-	Control	Left	Spanish-English	0.23 208	0.20 3	1 2 4	1.1 45 48	0.2 54	1.0 00	1.0 00
		-	Control	Left	Chinese-English	0.16 233	0.13 7	2 4 8	- 1.1 86 71	0.2 36	1.0 00	1.0 00
		-	Control	Right	English	0.08 511	0.20 3	1 2 4	0.4 20 09	0.6 75	1.0 00	1.0 00
		-	Control	Right	Spanish-English	0.45 343	0.20 3	1 2 4	2.2 38 01	0.0 27	0.8 43	1.0 00
		-	Control	Right	Chinese-English	0.02 627	0.11 8	2 8 4	0.2 23 26	0.8 23	1.0 00	1.0 00
Phon	Left	English	Phon	Left	Spanish-English	0.31 201	0.20 3	1 2 4	1.5 40 00	0.1 26	0.9 97	1.0 00
		-	Phon	Left	Chinese-English	0.08 352	0.20 3	1 2 4	0.4 12 22	0.6 81	1.0 00	1.0 00

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Phon	Right	English	-	0.06447	0.112	157	0.577	0.529	0.565	1.000	1.000
-	Phon	Right	Spanish-English	-	0.37627	0.203	24	1.857	0.066	0.972	1.000	1.000
-	Phon	Right	Chinese-English	-	0.24217	0.203	24	1.195	0.234	1.000	1.000	1.000
-	Orth	Left	English	-	0.07886	0.118	28	0.670	0.503	1.000	1.000	1.000
-	Orth	Left	Spanish-English	-	0.41594	0.203	24	2.052	0.042	0.924	1.000	1.000
-	Orth	Left	Chinese-English	-	0.11862	0.203	24	0.585	0.559	1.000	1.000	1.000
-	Orth	Right	English	-	0.11054	0.137	48	0.808	0.420	1.000	1.000	1.000
-	Orth	Right	Spanish-English	-	0.13326	0.203	24	0.657	0.512	1.000	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Orth	Right	Chinese-English			0.10823	0.203	124	0.534	0.594	1.000	1.000
-	Control	Left	English			0.17547	0.118	284	1.491	0.137	0.999	1.000
-	Control	Left	Spanish-English			0.35157	0.203	243	1.735	0.085	0.987	1.000
-	Control	Left	Chinese-English			-0.04283	0.203	243	-0.211	0.833	1.000	1.000
-	Control	Right	English			0.20461	0.137	248	1.495	0.136	0.998	1.000
-	Control	Right	Spanish-English			0.57293	0.203	243	2.827	0.005	0.427	1.000
-	Control	Right	Chinese-English			0.14576	0.203	243	0.719	0.473	1.000	1.000
-	Spanish-English	Phon	Left	Chinese-English		-0.22849	0.203	243	-1.127	0.262	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Phon	Right	English	-	0.37648	0.203	124	1.858	0.066	0.972	1.000	
-	Phon	Right	Spanish-English	-	0.06426	0.112	57	0.575	0.566	1.000	1.000	
-	Phon	Right	Chinese-English	-	0.06984	0.203	124	0.344	0.731	1.000	1.000	
-	Orth	Left	English	-	0.23316	0.203	124	1.150	0.252	1.000	1.000	
-	Orth	Left	Spanish-English	-	0.72796	0.118	84	6.186	<.001	<.001	<.001	
-	Orth	Left	Chinese-English	-	0.19339	0.203	124	0.954	0.342	1.000	1.000	
-	Orth	Right	English	-	0.20148	0.203	124	0.994	0.322	1.000	1.000	

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Orth	Right	Spanish-English	-	0.44	0.13	2	4	3.2	0.001	0.168	0.343
-	Orth	Right	Chinese-English	-	0.20	0.20	1	2	1.0	0.316	1.000	1.000
-	Control	Left	English	-	0.13	0.20	1	2	0.6	0.502	1.000	1.000
-	Control	Left	Spanish-English	0.03	0.11	2	8	0.3	0.737	0.737	1.000	1.000
-	Control	Left	Chinese-English	0.35	0.20	1	2	1.7	0.051	0.082	0.986	1.000
-	Control	Right	English	0.10	0.20	1	2	0.5	0.530	0.597	1.000	1.000
-	Control	Right	Spanish-English	0.26	0.13	2	4	1.9	0.07	0.058	0.965	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk	Phol
-			Control	Right	Chinese-English	-0.16625	0.203	12	-0.820	0.413	1.000	1.000
-		Chinese-English	Phon	Right	English	-0.14799	0.203	12	-0.730	0.467	1.000	1.000
-			Phon	Right	Spanish-English	0.29275	0.203	12	1.444	0.151	0.999	1.000
-			Phon	Right	Chinese-English	0.15866	0.112	27	1.420	0.157	0.999	1.000
-			Orth	Left	English	-0.00466	0.203	12	0.023	0.982	1.000	1.000
-			Orth	Left	Spanish-English	-0.49946	0.203	12	-2.465	0.015	0.999	1.000
-			Orth	Left	Chinese-English	0.03510	0.118	28	0.298	0.766	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Orth	Rig	Eng	0.02	702	0.203	12	0.133	0.136	0.894	1.000	1.000
-	Orth	Rig	Spa	-	0.21	0.203	12	1.069	-1.094	0.287	1.000	1.000
-	Orth	Rig	Chi	0.02	471	0.137	24	0.180	0.167	0.857	1.000	1.000
-	Control	Left	Eng	0.09	195	0.203	12	0.453	0.484	0.651	1.000	1.000
-	Control	Left	Spa	0.26	806	0.203	12	1.323	1.304	0.188	1.000	1.000
-	Control	Left	Chi	-	0.12	0.118	28	1.073	-1.086	0.284	1.000	1.000
-	Control	Rig	Eng	0.12	109	0.203	12	0.597	0.65	0.551	1.000	1.000
-	Control	Rig	Spa	0.48	941	0.203	12	2.415	2.58	0.017	0.734	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk	Phol
		-	Control	Right	Chinese-English	0.06224	0.137	248	0.455	0.649	1.000	1.000
	Right	English	-	Phon	Right	Spanish-English	0.44074	0.203	124	2.175	0.032	0.874
		-	Phon	Right	Chinese-English	0.30664	0.203	124	1.513	0.133	0.998	1.000
		-	Orth	Left	English	0.14333	0.137	248	1.047	0.296	1.000	1.000
		-	Orth	Left	Spanish-English	0.35148	0.203	124	1.734	0.085	0.987	1.000
		-	Orth	Left	Chinese-English	0.18309	0.203	124	0.903	0.368	1.000	1.000
		-	Orth	Right	English	0.17501	0.118	248	1.487	0.138	0.999	1.000
		-	Orth	Right	Spanish-English	0.06879	0.203	124	0.339	0.735	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Orth	Right	Chinese-English			0.17270	0.203	12	0.85239	0.396	1.000	1.000
-	Control	Left	English			0.23994	0.137	24	1.75411	0.081	0.987	1.000
-	Control	Left	Spanish-English			0.41604	0.203	24	2.05346	0.042	0.923	1.000
-	Control	Left	Chinese-English			0.02164	0.203	12	0.10680	0.915	1.000	1.000
-	Control	Right	English			0.26908	0.118	28	2.28690	0.023	0.820	1.000
-	Control	Right	Spanish-English			0.63740	0.203	24	3.14600	0.002	0.229	0.548
-	Control	Right	Chinese-English			0.21023	0.203	12	1.03764	0.301	1.000	1.000
-	Spanish-English	Phon	Right	Chinese-English		0.13409	0.203	12	0.66185	0.509	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> ey	P <sub>hol</sub> m
-	Orth	Left	English			-0.29741	0.203	124	-1.46794	0.145	0.999	1.000
-	Orth	Left	Spanish-English			-0.79221	0.137	248	-5.79163	<.001	<.001	<.001
-	Orth	Left	Chinese-English			-0.25765	0.203	243	-1.27168	0.206	1.000	1.000
-	Orth	Right	English			-0.26573	0.203	124	-1.31157	0.192	1.000	1.000
-	Orth	Right	Spanish-English			-0.50953	0.118	248	-4.33052	<.001	0.005	0.006
-	Orth	Right	Chinese-English			-0.26804	0.203	243	-1.32295	0.188	1.000	1.000
-	Control	Left	English			-0.20080	0.203	124	-0.99109	0.324	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Control	Left	Spanish-English	-	0.02469	0.137	24	0.18053	0.857	1.000	1.000	
-	Control	Left	Chinese-English	-	0.41910	0.203	24	2.06855	0.041	0.918	1.000	
-	Control	Right	English	-	0.17166	0.203	24	0.84727	0.398	1.000	1.000	
-	Control	Right	Spanish-English	0.19666	0.118	24	1.67143	0.096	0.993	1.000		
-	Control	Right	Chinese-English	0.23051	0.203	24	1.13771	0.257	1.000	1.000		
-	Orth	Left	English	0.16332	0.203	24	0.80609	0.422	1.000	1.000		
-	Orth	Left	Spanish-English	0.65812	0.203	24	3.24827	0.001	0.181	0.396		

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Orth	Left	Chinese-English	Left	Chinese-English	-0.12356	0.137	248	-0.90328	0.367	1.000	1.000
-	Orth	Right	English	Right	English	-0.13164	0.203	244	-0.64972	0.517	1.000	1.000
-	Orth	Right	Spanish-English	Right	Spanish-English	-0.37543	0.203	244	-1.85301	0.066	0.973	1.000
-	Orth	Right	Chinese-English	Right	Chinese-English	-0.13394	0.118	244	-1.13840	0.256	1.000	1.000
-	Control	Left	English	Left	English	-0.06671	0.203	244	-0.32924	0.743	1.000	1.000
-	Control	Left	Spanish-English	Left	Spanish-English	-0.10940	0.203	244	-0.53996	0.590	1.000	1.000
-	Control	Left	Chinese-English	Left	Chinese-English	-0.28501	0.137	248	-2.08360	0.038	0.917	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
		-	Control	Right	English	-0.03757	0.203	124	-0.18543	0.853	1.000	1.000
		-	Control	Right	Spanish-English	0.33075	0.203	124	1.63250	0.105	0.994	1.000
		-	Control	Right	Chinese-English	-0.09641	0.118	84	-0.81942	0.413	1.000	1.000
Orth	Left	English	Orth	Left	Spanish-English	-0.49480	0.203	124	-2.44218	0.016	0.715	1.000
		-	Orth	Left	Chinese-English	0.03976	0.203	124	0.19626	0.845	1.000	1.000
		-	Orth	Right	English	0.03168	0.112	57	0.28369	0.777	1.000	1.000
		-	Orth	Right	Spanish-English	-0.21211	0.203	124	-1.04692	0.297	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Orth	Right	Chinese-English			0.02938	0.203	124	0.14499	0.885	1.000	1.000
-	Control	Left	English			0.09661	0.118	284	0.82112	0.412	1.000	1.000
-	Control	Left	Spanish-English			0.27272	0.203	243	1.34606	0.181	1.000	1.000
-	Control	Left	Chinese-English			0.12169	0.203	243	0.60061	0.549	1.000	1.000
-	Control	Right	English			0.12575	0.137	248	0.91932	0.359	1.000	1.000
-	Control	Right	Spanish-English			0.49407	0.203	243	2.43859	0.016	0.718	1.000
-	Control	Right	Chinese-English			0.06691	0.203	243	0.33023	0.742	1.000	1.000
-	Spanish-English	Orth	Left	Chinese-English		0.53456	0.203	243	2.63844	0.009	0.569	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Orth	Rig	Eng	Right	English	0.52648	0.203	124	2.59855	0.011	0.600	1.000
-	Orth	Rig	Spa	Right	nish-English	0.28269	0.112	157	2.53134	0.012	0.651	1.000
-	Orth	Rig	Chi	Right	nese-English	0.52418	0.203	124	2.58717	0.011	0.608	1.000
-	Control	Left	Eng	Left	English	0.59141	0.203	124	2.91903	0.004	0.364	1.000
-	Control	Left	Spa	Left	nish-English	0.76752	0.118	248	6.52324	<.001	<.001	<.001
-	Control	Left	Chi	Left	nese-English	0.37311	0.203	124	1.84157	0.068	0.974	1.000
-	Control	Rig	Eng	Right	English	0.62055	0.203	124	3.06285	0.003	0.274	0.708
-	Control	Rig	Spa	Right	nish-English	0.98887	0.137	248	7.22935	<.001	<.001	<.001

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-			Control	Right	Chinese-English	0.56171	0.203	124	2.77241	0.006	0.468	1.000
		Chinese-English	Orth	Right	English	-0.00808	0.203	124	-0.03989	0.968	1.000	1.000
			Orth	Right	Spanish-English	-0.25188	0.203	124	-1.24318	0.216	1.000	1.000
			Orth	Right	Chinese-English	-0.01039	0.112	57	-0.09302	0.926	1.000	1.000
			Control	Left	English	0.05685	0.203	124	0.28059	0.779	1.000	1.000
			Control	Left	Spanish-English	0.23296	0.203	124	1.14980	0.252	1.000	1.000
			Control	Left	Chinese-English	-0.16145	0.118	84	-1.37218	0.171	1.000	1.000
			Control	Right	English	0.08599	0.203	124	0.42441	0.672	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
		-	Control	Right	Spanish-English	0.45431	0.203	12	2.24233	0.027	0.840	1.000
		-	Control	Right	Chinese-English	0.02714	0.137	24	0.19844	0.843	1.000	1.000
	Right	English	Orth	Right	Spanish-English	-0.24379	0.203	24	-1.20329	0.231	1.000	1.000
		-	Orth	Right	Chinese-English	-0.00231	0.203	24	-0.01138	0.991	1.000	1.000
		-	Control	Left	English	0.06493	0.137	24	0.47469	0.635	1.000	1.000
		-	Control	Left	Spanish-English	0.24104	0.203	24	1.18969	0.236	1.000	1.000
		-	Control	Left	Chinese-English	-0.15337	0.203	24	-0.75698	0.451	1.000	1.000
		-	Control	Right	English	0.09407	0.118	24	0.79950	0.425	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> <sub>ey</sub>	P <sub>hol</sub> <sub>m</sub>
-			Control	Right	Spanish-English	0.46239	0.203	12	2.282	0.024	0.818	1.000
-			Control	Right	Chinese-English	0.03523	0.203	12	0.173	0.862	1.000	1.000
-	Spanish-English		Orth	Right	Chinese-English	0.24149	0.203	12	1.191	0.236	1.000	1.000
-			Control	Left	English	0.30873	0.203	12	1.523	0.130	0.998	1.000
-			Control	Left	Spanish-English	0.48483	0.137	24	3.544	<.001	0.076	0.126
-			Control	Left	Chinese-English	0.09043	0.203	12	0.446	0.631	1.000	1.000
-			Control	Right	English	0.33786	0.203	12	1.667	0.098	0.992	1.000
-			Control	Right	Spanish-English	0.70618	0.118	24	6.001	<.001	<.001	<.001

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-			Control	Right	Chinese-English	0.27902	0.203	124	1.37715	0.171	0.999	1.000
		Chinese-English	Control	Left	English	0.06724	0.203	124	0.33186	0.741	1.000	1.000
			Control	Left	Spanish-English	0.24334	0.203	124	1.20107	0.232	1.000	1.000
			Control	Left	Chinese-English	0.15106	0.137	248	1.10437	0.271	1.000	1.000
			Control	Right	English	0.09638	0.203	124	0.47568	0.635	1.000	1.000
			Control	Right	Spanish-English	0.46470	0.203	124	2.29360	0.024	0.812	1.000
			Control	Right	Chinese-English	0.03753	0.118	248	0.31898	0.750	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison													
RRT Target	Hemisphere	Group		RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> ey	P <sub>hol</sub> m
Control	Left	English	-	Control	Left	Spanish-English	0.17611	0.203	12	0.869	0.386	1.000	1.000
						Chinese-English	-0.21830	0.203	12	-1.077	0.283	1.000	1.000
						English	0.02914	0.112	15	0.260	0.795	1.000	1.000
						Spanish-English	0.39746	0.203	12	1.961	0.052	0.951	1.000
						Chinese-English	-0.02971	0.203	12	-0.146	0.884	1.000	1.000
	Spanish-English	-	Control	-	Left	Chinese-English	-0.39441	0.203	12	-1.946	0.054	0.954	1.000
						English	-0.14697	0.203	12	-0.725	0.470	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-			Control	Right	Spanish-English	0.22135	0.112	157	1.982	0.049	0.947	1.000
-			Control	Right	Chinese-English	0.20581	0.203	214	1.01583	0.312	1.000	1.000
-		Chinese-English	Control	Right	English	0.24744	0.203	214	1.22128	0.224	1.000	1.000
-			Control	Right	Spanish-English	0.61576	0.203	214	3.03920	0.003	0.288	0.759
-			Control	Right	Chinese-English	0.18859	0.112	157	1.68877	0.093	0.991	1.000
	Right	English	Control	Right	Spanish-English	0.36832	0.203	214	1.81792	0.071	0.978	1.000
			Control	Right	Chinese-English	0.05884	0.203	214	0.29043	0.772	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> <sub>ey</sub>	P <sub>hol</sub> <sub>m</sub>
		Spanish-English	Control	Right	Chinese-English	-0.42717	0.203	120	-2.108	0.037	0.903	1.000

Post Hoc Comparisons - RRT Target \* Group

Comparison											
RRT Target	Group	RRT Target	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> <sub>y</sub>	P <sub>hol</sub> <sub>m</sub>	
Phon Orth	English	Phon Orth	Spanish-English	0.20183	0.187	90.5	1.08170	0.282	0.995	1.000	
		Phon Orth	Chinese-English	-0.06495	0.187	90.5	-0.34810	0.729	1.000	1.000	
		Phon	English	-0.14941	0.100	171.0	-1.49102	0.138	0.941	1.000	
		Phon	Spanish-English	0.22697	0.187	90.5	1.21643	0.227	0.986	1.000	
		Phon	Chinese-English	0.04567	0.187	90.5	0.24478	0.807	1.000	1.000	

Post Hoc Comparisons - RRT Target \* Group

Comparison										
RRT Target	Group	RRT Target	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> y	P <sub>holm</sub> m
-		Orth	English	0.02248	0.100	171.0	-0.22432	0.823	1.000	1.000
-		Orth	Spanish-English	0.39178	0.187	90.5	-2.09973	0.039	0.624	1.000
-		Orth	Chinese-English	0.00375	0.187	90.5	-0.02010	0.984	1.000	1.000
-		Control	English	0.07286	0.100	171.0	0.72712	0.468	1.000	1.000
-		Control	Spanish-English	0.34508	0.187	90.5	1.84945	0.068	0.786	1.000
-		Control	Chinese-English	0.06571	0.187	90.5	-0.35217	0.726	1.000	1.000
-	Spanish-English	Phon Orth	Chinese-English	0.26678	0.187	90.5	-1.42981	0.156	0.954	1.000
-		Phon	English	0.35124	0.187	90.5	-1.88247	0.063	0.767	1.000
-		Phon	Spanish-English	0.02514	0.100	171.0	0.25086	0.802	1.000	1.000
-		Phon	Chinese-English	0.15616	0.187	90.5	-0.83692	0.405	0.999	1.000

Post Hoc Comparisons - RRT Target \* Group

Comparison										
RRT Target	Group	RRT Target	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> <sub>y</sub>	P <sub>hol</sub> <sub>m</sub>
-	Orth	English	English	0.22431	0.187	90.5	-1.20218	0.232	0.988	1.000
-	Orth	Spanish-English	Spanish-English	0.59360	0.100	171.0	-5.92380	<.001	<.001	<.001
-	Orth	Chinese-English	Chinese-English	0.20558	0.187	90.5	-1.10180	0.273	0.994	1.000
-	Control	English	English	0.12897	0.187	90.5	-0.69120	0.491	1.000	1.000
-	Control	Spanish-English	Spanish-English	0.14325	0.100	171.0	1.42953	0.155	0.956	1.000
-	Control	Chinese-English	Chinese-English	0.26754	0.187	90.5	-1.43388	0.155	0.953	1.000
-	Chinese-English	Phon	English	0.08446	0.187	90.5	-0.45266	0.652	1.000	1.000
-	Chinese-English	Phon	Spanish-English	0.29192	0.187	90.5	1.56453	0.121	0.917	1.000
-	Chinese-English	Phon	Chinese-English	0.11062	0.100	171.0	1.10394	0.271	0.994	1.000
-	Chinese-English	Orth	English	0.04247	0.187	90.5	0.22763	0.820	1.000	1.000

Post Hoc Comparisons - RRT Target \* Group

Comparison											
RRT Target	Group	RRT Target	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> y	P <sub>holm</sub> m	
		-	Orth	Spanish-English	-0.32683	0.187	90.5	-1.75163	0.083	0.839	1.000
		-	Orth	Chinese-English	0.06120	0.100	171.0	0.61074	0.542	1.000	1.000
		-	Control	English	0.13781	0.187	90.5	0.73861	0.462	1.000	1.000
		-	Control	Spanish-English	0.41003	0.187	90.5	2.19755	0.031	0.556	1.000
		-	Control	Chinese-English	-0.759e-4	0.100	171.0	-0.00758	0.994	1.000	1.000
Phon	English	-	Phon	Spanish-English	0.37637	0.187	90.5	2.01719	0.047	0.681	1.000
		-	Phon	Chinese-English	0.19508	0.187	90.5	1.04554	0.299	0.996	1.000
		-	Orth	English	0.12693	0.100	171.0	1.26670	0.207	0.982	1.000
		-	Orth	Spanish-English	-0.24237	0.187	90.5	-1.29897	0.197	0.977	1.000
		-	Orth	Chinese-English	0.14566	0.187	90.5	0.78067	0.437	1.000	1.000

Post Hoc Comparisons - RRT Target \* Group

Comparison										
RRT Target	Group	RRT Target	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> y	P <sub>holm</sub> m
-	Control	Control	English	0.2227	0.100	171.0	2.21814	0.028	0.539	1.000
-	Control	Control	Spanish-English	0.4949	0.187	90.5	2.65021	0.009	0.269	0.598
-	Control	Control	Chinese-English	0.0837	0.187	90.5	0.44859	0.655	1.000	1.000
-	Spanish-English	Phon	Chinese-English	-0.18129	0.187	90.5	-0.97165	0.334	0.998	1.000
-	Spanish-English	Orth	English	-0.24944	0.187	90.5	-1.33690	0.185	0.972	1.000
-	Spanish-English	Orth	Spanish-English	-0.61874	0.100	171.0	-6.17466	<.001	<.001	<.001
-	Spanish-English	Orth	Chinese-English	-0.23072	0.187	90.5	-1.23653	0.219	0.984	1.000
-	Spanish-English	Control	English	-0.15410	0.187	90.5	-0.82592	0.411	1.000	1.000
-	Spanish-English	Control	Spanish-English	0.11811	0.100	171.0	1.17868	0.240	0.990	1.000
-	Spanish-English	Control	Chinese-English	-0.29267	0.187	90.5	-1.56860	0.120	0.916	1.000

Post Hoc Comparisons - RRT Target \* Group

Comparison										
RRT Target	Group	RRT Target	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> y	P <sub>holm</sub> m
Orth	Chinese-English	Orth	English	-0.06815	0.187	90.5	-0.36525	0.716	1.000	1.000
			Spanish-English	-0.43745	0.187	90.5	-2.34451	0.021	0.454	1.000
		Orth	Chinese-English	-0.04942	0.100	171.0	-0.49320	0.623	1.000	1.000
			Control	English	0.02719	0.187	90.5	0.14573	0.884	1.000
		Control	Spanish-English	0.29940	0.187	90.5	1.60467	0.112	0.903	1.000
			Control	Chinese-English	-0.11138	0.100	171.0	-1.11152	0.268	0.994
	English	Orth	Spanish-English	-0.36930	0.187	90.5	-1.97926	0.051	0.706	1.000
			Orth	Chinese-English	0.01873	0.187	90.5	0.10037	0.920	1.000
		Control	English	0.09534	0.100	171.0	0.95144	0.343	0.998	1.000
			Control	Spanish-English	0.36755	0.187	90.5	1.96992	0.052	0.712

Post Hoc Comparisons - RRT Target \* Group

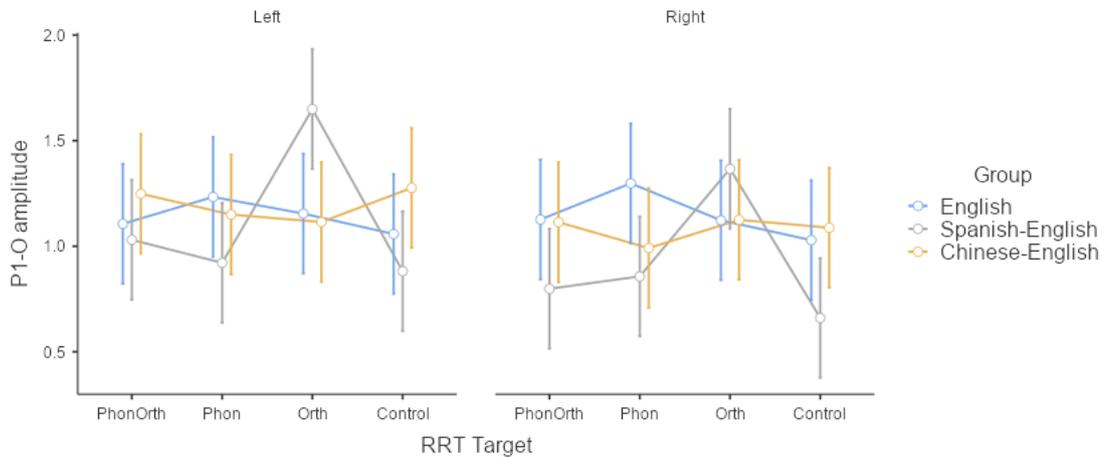
Comparison											
RRT Target	Group	RRT Target	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> <sub>y</sub>	P <sub>holm</sub> <sub>m</sub>	
		-	Control	Chinese-English	-0.04323	0.187	90.5	-0.23170	0.817	1.000	1.000
	Spanish-English	-	Orth	Chinese-English	0.38803	0.187	90.5	2.07963	0.040	0.638	1.000
		-	Control	English	0.46464	0.187	90.5	2.49024	0.015	0.359	0.905
		-	Control	Spanish-English	0.73685	0.100	171.0	7.35334	<.001	<.001	<.001
		-	Control	Chinese-English	0.32607	0.187	90.5	1.74756	0.084	0.841	1.000
	Chinese-English	-	Control	English	0.07661	0.187	90.5	0.41061	0.682	1.000	1.000
		-	Control	Spanish-English	0.34883	0.187	90.5	1.86955	0.065	0.774	1.000
		-	Control	Chinese-English	-0.06196	0.100	171.0	-0.61832	0.537	1.000	1.000
Control	English	-	Control	Spanish-English	0.27221	0.187	90.5	1.45894	0.148	0.948	1.000

Post Hoc Comparisons - RRT Target \* Group

Comparison		RRT Target	Group	RRT Target	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub>	p <sub>holm</sub>
		-	Control	Chinese-English	-0.13857	0.187	90.5	-0.74268	0.460	1.000	1.000	
		-	Spanish-English	Chinese-English	0.41079	0.187	90.5	2.20162	0.030	0.553	1.000	

Estimated Marginal Means

RRT Target \* Group \* Hemisphere



Repeated Measures ANOVA

Within Subjects Effects

	Sphericity Correction	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Hemisphere	None	0.128	1	0.1281	0.762	0.386	0.013
	Greenhouse-Geisser	0.128	1.00	0.1281	0.762	0.386	0.013

Within Subjects Effects

	<b>Sphericity Correction</b>	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
	Huynh-Feldt	0.128	1.00	0.1281	0.762	0.386	0.013
Hemisphere * Group	None	0.531	2	0.2655	1.580	0.215	0.053
	Greenhouse-Geisser	0.531	2.00	0.2655	1.580	0.215	0.053
	Huynh-Feldt	0.531	2.00	0.2655	1.580	0.215	0.053
Residual	None	9.578	57	0.1680			
	Greenhouse-Geisser	9.578	57.00	0.1680			
	Huynh-Feldt	9.578	57.00	0.1680			
RRT diff	None	4.310	3	1.4368	7.154	< .001	0.112
	Greenhouse-Geisser	4.310	1.99	2.1700	7.154	0.001	0.112
	Huynh-Feldt	4.310	2.06	2.0946	7.154	0.001	0.112
RRT diff * Group	None	10.196	6	1.6994	8.462	< .001	0.229
	Greenhouse-Geisser	10.196	3.97	2.5667	8.462	< .001	0.229
	Huynh-Feldt	10.196	4.12	2.4775	8.462	< .001	0.229
Residual	None	34.341	171	0.2008			
	Greenhouse-Geisser	34.341	113.22	0.3033			
	Huynh-Feldt	34.341	117.29	0.2928			
Hemisphere * RRT diff	None	0.136	3	0.0455	0.598	0.617	0.010
	Greenhouse-Geisser	0.136	2.60	0.0524	0.598	0.594	0.010
	Huynh-Feldt	0.136	2.74	0.0498	0.598	0.602	0.010

Within Subjects Effects

	<b>Sphericity Correction</b>	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
Hemisphere * RRT diff * Group	None	0.428	6	0.0713	0.937	0.470	0.032
	Greenhouse-Geisser	0.428	5.21	0.0821	0.937	0.461	0.032
	Huynh-Feldt	0.428	5.48	0.0781	0.937	0.464	0.032
Residual	None	13.004	171	0.0760			
	Greenhouse-Geisser	13.004	148.36	0.0877			
	Huynh-Feldt	13.004	156.09	0.0833			

Note. Type 3 Sums of Squares

Between Subjects Effects

	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
Group	0.0698	2	0.0349	0.0242	0.976	0.001
Residual	82.3369	57	1.4445			

Note. Type 3 Sums of Squares

## Assumptions

Tests of Sphericity

	<b>Mauchly's W</b>	<b>p</b>	<b>Greenhouse-Geisser <math>\epsilon</math></b>	<b>Huynh-Feldt <math>\epsilon</math></b>
Hemisphere	1.000	NaN <sup>a</sup>	1.000	1.000
RRT diff	0.486	< .001	0.662	0.686
Hemisphere * RRT diff	0.811	0.039	0.868	0.913

Tests of Sphericity

	Mauchly's W	p	Greenhouse-Geisser ε	Huynh-Feldt ε
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<sup>a</sup> The repeated measures has only two levels. The assumption of sphericity is always met when the repeated measures has only two levels

Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
PAA_P1.LeftO\$PhonOrth_PTdiff	0.0956	2	57	0.909
PAA_P1.RightO\$PhonOrth_PTdiff	0.5380	2	57	0.587
PAA_P1.LeftO\$Phon_PTdiff	0.9315	2	57	0.400
PAA_P1.RightO\$Phon_PTdiff	0.0606	2	57	0.941
PAA_P1.LeftO\$Orth_PTdiff	1.2255	2	57	0.301
PAA_P1.RightO\$Orth_PTdiff	0.1119	2	57	0.894
PAA_P1.LeftO\$Control_PTdiff	1.1076	2	57	0.337
PAA_P1.RightO\$Control_PTdiff	1.4763	2	57	0.237

## Post Hoc Tests

Post Hoc Comparisons - RRT diff \* Group

Comparison										
RRT diff	Group	RRT diff	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub>	p <sub>holm</sub>
Phon Orth	English	-	Spanish-English	-0.10929	0.160	108	-0.68324	0.496	1.000	1.000
			Chinese-English	0.04484	0.160	108	0.28034	0.780	1.000	1.000

Post Hoc Comparisons - RRT diff \* Group

Comparison										
RRT diff	Group	RRT diff	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub>	p <sub>holm</sub>
-	Phon	English	English	0.14941	0.100	171	1.49102	0.138	0.941	1.000
-	Phon	Spanish-English	Spanish-English	0.13443	0.160	108	0.84039	0.403	0.999	1.000
-	Phon	Chinese-English	Chinese-English	0.06578	0.160	108	0.41122	0.682	1.000	1.000
-	Orth	English	English	0.02248	0.100	171	0.22432	0.823	1.000	1.000
-	Orth	Spanish-English	Spanish-English	0.48431	0.160	108	3.02770	0.003	0.115	0.185
-	Orth	Chinese-English	Chinese-English	0.01636	0.160	108	0.10226	0.919	1.000	1.000
-	Control	English	English	0.07286	0.100	171	0.72712	0.468	1.000	1.000
-	Control	Spanish-English	Spanish-English	0.25254	0.160	108	1.57876	0.117	0.913	1.000
-	Control	Chinese-English	Chinese-English	0.04560	0.160	108	0.28509	0.776	1.000	1.000
-	Spanish-English	Phon	Chinese-English	0.15413	0.160	108	0.96358	0.337	0.998	1.000

Post Hoc Comparisons - RRT diff \* Group

Comparison										
RRT diff	Group	RRT diff	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub> <sub>y</sub>	p <sub>holm</sub>
-	Phon	English	English	0.25870	0.160	108	1.61728	0.109	0.899	1.000
-	Phon	Spanish-English	Spanish-English	-0.02514	0.100	171	-0.25086	0.802	1.000	1.000
-	Phon	Chinese-English	Chinese-English	0.04351	0.160	108	0.27202	0.786	1.000	1.000
-	Orth	English	English	0.13177	0.160	108	0.82376	0.412	1.000	1.000
-	Orth	Spanish-English	Spanish-English	0.59360	0.100	171	5.92380	<.001	<.001	<.001
-	Orth	Chinese-English	Chinese-English	0.09293	0.160	108	0.58098	0.562	1.000	1.000
-	Control	English	English	0.03643	0.160	108	0.22773	0.820	1.000	1.000
-	Control	Spanish-English	Spanish-English	-0.14325	0.100	171	-1.42953	0.155	0.956	1.000
-	Control	Chinese-English	Chinese-English	0.15489	0.160	108	0.96832	0.335	0.998	1.000
-	Chinese-English	Phon	English	0.10457	0.160	108	0.65370	0.515	1.000	1.000

Post Hoc Comparisons - RRT diff \* Group

Comparison										
RRT diff	Group	RRT diff	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub> <sub>y</sub>	p <sub>holm</sub>
		- Phon	Spanish-English	-0.17927	0.160	108	-1.12072	0.265	0.993	1.000
		- Phon	Chinese-English	-0.11062	0.100	171	-1.10394	0.271	0.994	1.000
		- Orth	English	-0.02236	0.160	108	-0.13981	0.889	1.000	1.000
		- Orth	Spanish-English	0.43947	0.160	108	2.74736	0.007	0.218	0.408
		- Orth	Chinese-English	-0.06120	0.100	171	-0.61074	0.542	1.000	1.000
		- Control	English	-0.11771	0.160	108	-0.73584	0.463	1.000	1.000
		- Control	Spanish-English	-0.29738	0.160	108	-1.85910	0.066	0.781	1.000
		- Control	Chinese-English	7.59e-4	0.100	171	0.00758	0.994	1.000	1.000
Phon	English	- Phon	Spanish-English	-0.28384	0.160	108	-1.77443	0.079	0.828	1.000

Post Hoc Comparisons - RRT diff \* Group

Comparison										
RRT diff	Group	RRT diff	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> <sub>y</sub>	P <sub>holm</sub>
		- Phon	Chinese-English	-0.21519	0.160	108	-1.34526	0.181	0.971	1.000
		- Orth	English	-0.12693	0.100	171	-1.26670	0.207	0.982	1.000
		- Orth	Spanish-English	0.33490	0.160	108	2.09366	0.039	0.628	1.000
		- Orth	Chinese-English	-0.16577	0.160	108	-1.03630	0.302	0.996	1.000
		- Control	English	-0.22227	0.100	171	-2.21814	0.028	0.539	1.000
		- Control	Spanish-English	-0.40195	0.160	108	-2.51280	0.013	0.344	0.753
		- Control	Chinese-English	-0.10381	0.160	108	-0.64895	0.518	1.000	1.000
	Spanish-English	- Phon	Chinese-English	0.06865	0.160	108	0.42917	0.669	1.000	1.000
		- Orth	English	0.15691	0.160	108	0.98091	0.329	0.998	1.000
		- Orth	Spanish-English	0.61874	0.100	171	6.17466	<.001	<.001	<.001

Post Hoc Comparisons - RRT diff \* Group

Comparison										
RRT diff	Group	RRT diff	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> <sub>y</sub>	P <sub>holm</sub>
		-	Chinese-English	0.11807	0.160	108	0.73813	0.462	1.000	1.000
		-	Control	0.06157	0.160	108	0.38488	0.701	1.000	1.000
		-	Spanish-English	0.11811	0.100	171	1.17868	0.240	0.990	1.000
		-	Control	0.18003	0.160	108	1.12547	0.263	0.993	1.000
Chinese-English		-	Orth	0.08826	0.160	108	0.55174	0.582	1.000	1.000
		-	Orth	0.55009	0.160	108	3.43892	< .001	0.038	0.051
		-	Orth	0.04942	0.100	171	0.49320	0.623	1.000	1.000
		-	Control	0.00708	0.160	108	0.04428	0.965	1.000	1.000
		-	Control	0.18676	0.160	108	1.16754	0.246	0.990	1.000

Post Hoc Comparisons - RRT diff \* Group

Comparison												
RRT diff	Group	RRT diff	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub>	p <sub>holm</sub>		
Orth	English	-	Control	Chinese-English	0.11138	0.100	171	1.11152	0.268	0.994	1.000	
		-	Orth	Spanish-English	0.46183	0.160	108	2.88718	0.005	0.160	0.277	
		-	Orth	Chinese-English	-0.03884	0.160	108	-0.24278	0.809	1.000	1.000	
		-	Control	English	-0.09534	0.100	171	-0.95144	0.343	0.998	1.000	
		-	Control	Spanish-English	-0.27502	0.160	108	-1.71929	0.088	0.855	1.000	
	-	Control	Chinese-English	0.02312	0.160	108	0.14456	0.885	1.000	1.000		
	-	Spanish-English	-	Orth	Chinese-English	-0.50067	0.160	108	-3.12996	0.002	0.089	0.137
	-		Control	English	-0.55717	0.160	108	-3.48320	<.001	0.033	0.045	
	-		Control	Spanish-English	-0.73685	0.100	171	-7.35334	<.001	<.001	<.001	

Post Hoc Comparisons - RRT diff \* Group

Comparison										
RRT diff	Group	RRT diff	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub> <sub>y</sub>	p <sub>holm</sub>
		-	Chinese-English	0.43871	0.160	108	-2.74261	0.007	0.220	0.408
	Chinese-English	-	English	0.05651	0.160	108	0.35325	0.725	1.000	1.000
		-	Spanish-English	0.23618	0.160	108	-1.47651	0.143	0.944	1.000
		-	Chinese-English	0.06196	0.160	171	0.61832	0.537	1.000	1.000
Control	English	-	Spanish-English	0.17968	0.160	108	-1.12326	0.264	0.993	1.000
		-	Chinese-English	0.11846	0.160	108	0.74059	0.461	1.000	1.000
	Spanish-English	-	Chinese-English	0.29814	0.160	108	1.86385	0.065	0.778	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison													
Hemisphere	RRT diff	Group		Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
Left	PhonOrth	English	-	Left	PhonOrth	Spanish-English	-0.00650	0.178	15	-0.0372	0.970	1.000	1.000
						Chinese-English	0.11503	0.178	15	0.6582	0.511	1.000	1.000
				Left	Phon	English	0.12753	0.177	84	1.0839	0.279	1.000	1.000
						Spanish-English	-0.11529	0.178	15	-0.6597	0.510	1.000	1.000
				Left	Phon	Chinese-English	0.01647	0.178	15	0.0942	0.925	1.000	1.000
						Orth	English	0.04867	0.177	84	0.4137	0.679	1.000
				Left	Orth	Spanish-English	0.61266	0.178	15	3.5058	<.001	0.090	0.156

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
			-	Left	Orth	Chinese-English	-0.01863	0.1748	15	0.1066	0.915	1.000
			-	Left	Control	English	-0.04794	0.1177	28	0.4074	0.684	1.000
			-	Left	Control	Spanish-English	-0.15485	0.1748	51	0.8861	0.377	1.000
			-	Left	Control	Chinese-English	0.14282	0.1748	51	0.8172	0.415	1.000
			-	Right	PhonOrth	English	0.07143	0.0995	19	0.717	0.474	1.000
			-	Right	PhonOrth	Spanish-English	-0.14066	0.1748	51	0.8049	0.422	1.000
			-	Right	PhonOrth	Chinese-English	0.04608	0.1748	51	0.2637	0.792	1.000
			-	Right	Phon	English	0.24271	0.1271	23	1.9103	0.057	0.965

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Group	Hemi sphe re	RRT diff	Group	Mean Diff erence	SE	df	t	p	ptuk ey	Phol m
		-	Rig ht	Pho n	Spa nis h- Eng lish	- 0.08 214	0.1 74 8	1 5 1	- 0.4 70 0	0.6 39	1.0 00	1.0 00
		-	Rig ht	Pho n	Chi nes e- Eng lish	- 0.07 660	0.1 74 8	1 5 1	- 0.4 38 3	0.6 62	1.0 00	1.0 00
		-	Rig ht	Ort h	Eng lish	0.06 771	0.1 27 1	2 8 3	0.5 32 9	0.5 95	1.0 00	1.0 00
		-	Rig ht	Ort h	Spa nis h- Eng lish	0.42 739	0.1 74 8	1 5 1	2.4 45 6	0.0 16	0.7 13	1.0 00
		-	Rig ht	Ort h	Chi nes e- Eng lish	0.05 735	0.1 74 8	1 5 1	0.3 28 1	0.7 43	1.0 00	1.0 00
		-	Rig ht	Con trol	Eng lish	- 0.02 636	0.1 27 1	2 8 3	- 0.2 07 5	0.8 36	1.0 00	1.0 00
		-	Rig ht	Con trol	Spa nis h- Eng lish	- 0.27 880	0.1 74 8	1 5 1	- 1.5 95 4	0.1 13	0.9 96	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison													
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>	
		-	Rig ht	Con trol	Chi nes e- Eng lish	0.01 981	0.1 74 8	1 5 1	0.1 13 4	0.9 10	1.0 00	1.0 00	
		-	Spa nis h- Eng lish	Left	Pho nOr th	Chi nes e- Eng lish	0.12 153	0.1 74 8	1 5 1	0.6 95 4	0.4 88	1.0 00	1.0 00
		-	Left	Pho n	Eng lish	0.13 403	0.1 74 8	1 5 1	0.7 67 0	0.4 44	1.0 00	1.0 00	
		-	Left	Pho n	Spa nis h- Eng lish	- 0.10 879	0.1 17 7	2 8 4	- 0.9 24 7	0.3 56	1.0 00	1.0 00	
		-	Left	Pho n	Chi nes e- Eng lish	0.02 296	0.1 74 8	1 5 1	0.1 31 4	0.8 96	1.0 00	1.0 00	
		-	Left	Ort h	Eng lish	0.05 517	0.1 74 8	1 5 1	0.3 15 7	0.7 53	1.0 00	1.0 00	
		-	Left	Ort h	Spa nis h- Eng lish	0.61 916	0.1 17 7	2 8 4	5.2 62 3	<. 00 1	<. 00 1	<. 00 1	
		-	Left	Ort h	Chi nes e- Eng lish	- 0.01 214	0.1 74 8	1 5 1	- 0.0 69 4	0.9 45	1.0 00	1.0 00	

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk</sub> ey	P <sub>hol</sub> m
-	Left	Con trol	Eng lish	-	Eng lish	0.04 144	0.1 74 8	1 5 1	- 0.2 37 1	0.8 13	1.0 00	1.0 00
-	Left	Con trol	Spa nis h- Eng lish	-	Spa nis h- Eng lish	0.14 836	0.1 17 7	2 8 4	- 1.2 60 9	0.2 08	1.0 00	1.0 00
-	Left	Con trol	Chi nes e- Eng lish	-	Chi nes e- Eng lish	0.14 931	0.1 74 8	1 5 1	0.8 54 4	0.3 94	1.0 00	1.0 00
-	Rig ht	Pho nOr th	Eng lish	-	Eng lish	0.07 792	0.1 74 8	1 5 1	0.4 45 9	0.6 56	1.0 00	1.0 00
-	Rig ht	Pho nOr th	Spa nis h- Eng lish	-	Spa nis h- Eng lish	0.13 416	0.0 99 5	1 9 6	- 1.3 48 1	0.1 79	1.0 00	1.0 00
-	Rig ht	Pho nOr th	Chi nes e- Eng lish	-	Chi nes e- Eng lish	0.05 258	0.1 74 8	1 5 1	0.3 00 9	0.7 64	1.0 00	1.0 00
-	Rig ht	Pho n	Eng lish	-	Eng lish	0.24 921	0.1 74 8	1 5 1	1.4 26 1	0.1 56	0.9 99	1.0 00
-	Rig ht	Pho n	Spa nis h- Eng lish	-	Spa nis h- Eng lish	0.07 564	0.1 27 1	2 8 3	- 0.5 95 3	0.5 52	1.0 00	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
					Chi nes e- Eng lish	- 0.07 010	0.1 74 8	1 5 1	- 0.4 01 1	0.6 89	1.0 00	1.0 00
					Eng lish	0.07 420	0.1 74 8	1 5 1	0.4 24 6	0.6 72	1.0 00	1.0 00
					Spa nis h- Eng lish	0.43 388	0.1 27 1	2 8 3	3.4 14 9	<. 00 1	0.1 09	0.1 90
					Chi nes e- Eng lish	0.06 384	0.1 74 8	1 5 1	0.3 65 3	0.7 15	1.0 00	1.0 00
					Eng lish	- 0.01 986	0.1 74 8	1 5 1	- 0.1 13 7	0.9 10	1.0 00	1.0 00
					Spa nis h- Eng lish	- 0.27 230	0.1 27 1	2 8 3	- 2.1 43 1	0.0 33	0.8 93	1.0 00
					Chi nes e- Eng lish	0.02 631	0.1 74 8	1 5 1	0.1 50 6	0.8 81	1.0 00	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptuk	ptom
		Chinese-English	-	Left	Phon	English	0.01250	0.178	15	0.0715	0.943	1.000
			-	Left	Phon	Spanish-English	-0.023032	0.178	15	-1.3180	0.190	1.000
			-	Left	Phon	Chinese-English	-0.09856	0.177	28	-0.837	0.403	1.000
			-	Left	Orth	English	-0.06635	0.178	15	-0.379	0.705	1.000
			-	Left	Orth	Spanish-English	0.49764	0.178	15	2.8476	0.005	0.411
			-	Left	Orth	Chinese-English	-0.13366	0.177	28	-1.136	0.257	1.000
			-	Left	Control	English	-0.16297	0.178	15	-0.932	0.353	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Group	Hemi sphe re	RRT diff	Group	Mean Diff erence	SE	df	t	p	ptuk ey	Phol m
		-	Left	Control	Spanish-English	-0.26988	0.1748	15	-1.5443	0.125	0.997	1.000
		-	Left	Control	Chinese-English	0.02779	0.1177	28	0.2362	0.813	1.000	1.000
		-	Right	PhonOrth	English	-0.04360	0.1748	15	-0.2495	0.803	1.000	1.000
		-	Right	PhonOrth	Spanish-English	-0.25569	0.1748	15	-1.4631	0.146	0.999	1.000
		-	Right	PhonOrth	Chinese-English	-0.06895	0.0995	19	-0.6928	0.489	1.000	1.000
		-	Right	Phon	English	0.12768	0.1748	15	0.7306	0.466	1.000	1.000
		-	Right	Phon	Spanish-English	-0.19717	0.1748	15	-1.1283	0.261	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
-			Rig ht	Pho n	Chi nes e- Eng lish	- 0.19 163	0.1 27 1	2 8 3	- 1.5 08 2	0.1 33	0.9 98	1.0 00
-			Rig ht	Ort h	Eng lish	- 0.04 732	0.1 74 8	1 5 1	- 0.2 70 8	0.7 87	1.0 00	1.0 00
-			Rig ht	Ort h	Spa nis h- Eng lish	0.31 236	0.1 74 8	1 5 1	1.7 87 4	0.0 76	0.9 82	1.0 00
-			Rig ht	Ort h	Chi nes e- Eng lish	- 0.05 768	0.1 27 1	2 8 3	- 0.4 54 0	0.6 50	1.0 00	1.0 00
-			Rig ht	Con trol	Eng lish	- 0.14 139	0.1 74 8	1 5 1	- 0.8 09 1	0.4 20	1.0 00	1.0 00
-			Rig ht	Con trol	Spa nis h- Eng lish	- 0.39 383	0.1 74 8	1 5 1	- 2.2 53 6	0.0 26	0.8 36	1.0 00
-			Rig ht	Con trol	Chi nes e- Eng lish	- 0.09 521	0.1 27 1	2 8 3	- 0.7 49 4	0.4 54	1.0 00	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
	Phon	English	-	Left	Phon	Spanish-English	-0.24282	0.1748	151	1.3895	0.167	0.9900
			-	Left	Phon	Chinese-English	-0.11107	0.1748	151	0.6355	0.526	1.0000
			-	Left	Orth	English	-0.07886	0.1274	284	0.6202	0.530	1.0000
			-	Left	Orth	Spanish-English	0.48513	0.1748	151	2.7761	0.006	0.4640
			-	Left	Orth	Chinese-English	-0.14617	0.1748	151	0.8364	0.404	1.0000
			-	Left	Control	English	-0.17547	0.1274	284	1.4913	0.137	0.9900
			-	Left	Control	Spanish-English	-0.28239	0.1748	151	1.6159	0.108	0.9950

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
			-	Left	Con trol	Chi nes e- Eng lish 0.01 528	0.1 74 8	1 5 1	0.0 87 5	0.9 30	1.0 00	1.0 00
			-	Rig ht	Pho nOr th	Eng lish - 0.05 611	0.1 27 1	2 8 3	- 0.4 41 6	0.6 59	1.0 00	1.0 00
			-	Rig ht	Pho nOr th	Spa nis h- Eng lish - 0.26 819	0.1 74 8	1 5 1	- 1.5 34 7	0.1 27	0.9 98	1.0 00
			-	Rig ht	Pho nOr th	Chi nes e- Eng lish - 0.08 145	0.1 74 8	1 5 1	- 0.4 66 1	0.6 42	1.0 00	1.0 00
			-	Rig ht	Pho n	Eng lish 0.11 518	0.0 99 5	1 9 6	1.1 57 4	0.2 49	1.0 00	1.0 00
			-	Rig ht	Pho n	Spa nis h- Eng lish - 0.20 967	0.1 74 8	1 5 1	- 1.1 99 8	0.2 32	1.0 00	1.0 00
			-	Rig ht	Pho n	Chi nes e- Eng lish - 0.20 413	0.1 74 8	1 5 1	- 1.1 68 1	0.2 45	1.0 00	1.0 00
			-	Rig ht	Ort h	Eng lish - 0.05 983	0.1 27 1	2 8 3	- 0.4 70 9	0.6 38	1.0 00	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison													
Hemi sphe re	RRT diff	Group	Hemi sphe re	RRT diff	Group	Mean Diff erence	SE	df	t	p	P <sub>tuke</sub> y	P <sub>hol</sub> m	
			-	Right	Orth	Spanish- English	0.29 985	0.174 8	15 1	1.75 8	0.088	0.989	1.000
			-	Right	Orth	Chinese- English	-0.07 019	0.174 8	5 1	-0.401 6	0.689	1.000	1.000
			-	Right	Control	English	-0.15 389	0.127 1	28 3	-1.211 2	0.227	1.000	1.000
			-	Right	Control	Spanish- English	-0.40 633	0.174 8	5 1	-2.325 1	0.021	0.794	1.000
			-	Right	Control	Chinese- English	-0.10 772	0.174 8	5 1	-0.616 4	0.539	1.000	1.000
		Spanish- English	-	Left	Phon	Chinese- English	0.13 176	0.174 8	5 1	0.754 0	0.452	1.000	1.000
			-	Left	Orth	English	0.16 397	0.174 8	5 1	0.938 3	0.350	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
-		Left	Orth	Spanish-English	Spanish-English	0.72796	0.1177	284	6.1870	<.001	<.001	<.001
-		Left	Orth	Chinese-English	Chinese-English	0.09666	0.1748	151	0.5531	0.581	1.000	1.000
-		Left	Control	English	English	0.06735	0.1748	151	0.3854	0.700	1.000	1.000
-		Left	Control	Spanish-English	Spanish-English	-0.03956	0.1177	284	-0.3362	0.737	1.000	1.000
-		Left	Control	Chinese-English	Chinese-English	0.25811	0.1748	151	1.4770	0.142	0.999	1.000
-		Right	PhonOrth	English	English	0.18672	0.1748	151	1.0684	0.287	1.000	1.000
-		Right	PhonOrth	Spanish-English	Spanish-English	-0.02537	0.1271	273	-0.1996	0.842	1.000	1.000
-		Right	PhonOrth	Chinese-English	Chinese-English	0.16137	0.1748	151	0.9234	0.357	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
-			Rig ht	Pho n	Eng lish	0.35 800	0.1 74 8	1 5 1	2.0 48 6	0.0 42	0.9 26	1.0 00
-			Rig ht	Pho n	Spa nis h- Eng lish	0.03 315	0.0 99 5	1 9 6	0.3 33 1	0.7 39	1.0 00	1.0 00
-			Rig ht	Pho n	Chi nes e- Eng lish	0.03 869	0.1 74 8	1 5 1	0.2 21 4	0.8 25	1.0 00	1.0 00
-			Rig ht	Ort h	Eng lish	0.18 300	0.1 74 8	1 5 1	1.0 47 2	0.2 97	1.0 00	1.0 00
-			Rig ht	Ort h	Spa nis h- Eng lish	0.54 268	0.1 27 1	2 8 3	4.2 71 2	< . 00 1	0.0 06	0.0 07
-			Rig ht	Ort h	Chi nes e- Eng lish	0.17 264	0.1 74 8	1 5 1	0.9 87 9	0.3 25	1.0 00	1.0 00
-			Rig ht	Con trol	Eng lish	0.08 893	0.1 74 8	1 5 1	0.5 08 9	0.6 12	1.0 00	1.0 00
-			Rig ht	Con trol	Spa nis h- Eng lish	- 0.16 351	0.1 27 1	2 8 3	- 1.2 86 9	0.1 99	1.0 00	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
			Right	Control	Chinese-English	0.13511	0.178	151	0.7731	0.441	1.000	1.000
		Chinese-English	Left	Orth	English	0.03221	0.178	151	0.1843	0.854	1.000	1.000
			Left	Orth	Spanish-English	0.59620	0.178	151	3.4116	<.001	0.117	0.215
			Left	Orth	Chinese-English	-0.03510	0.177	284	-0.2983	0.766	1.000	1.000
			Left	Control	English	-0.06440	0.178	151	-0.3685	0.713	1.000	1.000
			Left	Control	Spanish-English	-0.17132	0.178	151	-0.9803	0.328	1.000	1.000
			Left	Control	Chinese-English	0.12635	0.177	289	1.0739	0.284	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Group	Hemi sphe re	RRT diff	Group	Mea n Diff erence	SE	df	t	p	ptuk ey	Phol m
-			Rig ht	Pho nOr th	Eng lish	0.05 496	0.1 74 8	1 5 1	0.3 14 5	0.7 54	1.0 00	1.0 00
-			Rig ht	Pho nOr th	Spa nis h- Eng lish	- 0.15 712	0.1 74 8	1 5 1	- 0.8 99 1	0.3 70	1.0 00	1.0 00
-			Rig ht	Pho nOr th	Chi nes e- Eng lish	0.02 962	0.1 27 1	2 8 3	0.2 33 1	0.8 16	1.0 00	1.0 00
-			Rig ht	Pho n	Eng lish	0.22 625	0.1 74 8	1 5 1	1.2 94 6	0.1 97	1.0 00	1.0 00
-			Rig ht	Pho n	Spa nis h- Eng lish	- 0.09 861	0.1 74 8	1 5 1	- 0.5 64 2	0.5 73	1.0 00	1.0 00
-			Rig ht	Pho n	Chi nes e- Eng lish	- 0.09 306	0.0 99 5	1 9 6	- 0.9 35 1	0.3 51	1.0 00	1.0 00
-			Rig ht	Ort h	Eng lish	0.05 124	0.1 74 8	1 5 1	0.2 93 2	0.7 70	1.0 00	1.0 00
-			Rig ht	Ort h	Spa nis h- Eng lish	0.41 092	0.1 74 8	1 5 1	2.3 51 4	0.0 20	0.7 77	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
			-	Right	Orth	Chinese-English	0.04088	0.1271	283	0.3217	0.748	1.000
			-	Right	Control	English	-0.04283	0.1748	151	-0.2451	0.807	1.000
			-	Right	Control	Spanish-English	-0.29526	0.1748	151	-1.6896	0.093	0.991
			-	Right	Control	Chinese-English	0.00335	0.1271	283	0.0264	0.979	1.000
	Orth	English	-	Left	Orth	Spanish-English	0.56399	0.1748	151	3.2273	0.002	0.187
			-	Left	Orth	Chinese-English	-0.06731	0.1748	151	-0.3852	0.701	1.000
			-	Left	Control	English	-0.09661	0.1748	151	-0.5512	0.581	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Left	Control	Spanish-English	Control	Spanish-English	-0.20 353	0.174 8	15 1	-1.164 7	0.246	1.000	1.000
-	Left	Control	Chinese-English	Control	Chinese-English	0.09 414	0.174 8	15 1	0.538 7	0.591	1.000	1.000
-	Right	PhonOrth	English	PhonOrth	English	0.02 275	0.127 1	28 3	0.179 1	0.858	1.000	1.000
-	Right	PhonOrth	Spanish-English	PhonOrth	Spanish-English	-0.18 933	0.174 8	15 1	-1.083 4	0.280	1.000	1.000
-	Right	PhonOrth	Chinese-English	PhonOrth	Chinese-English	-0.00 259	0.174 8	15 1	-0.014 8	0.988	1.000	1.000
-	Right	Phon	English	Phon	English	0.19 404	0.127 1	28 3	1.527 2	0.128	0.998	1.000
-	Right	Phon	Spanish-English	Phon	Spanish-English	-0.13 081	0.174 8	15 1	-0.748 6	0.455	1.000	1.000
-	Right	Phon	Chinese-English	Phon	Chinese-English	-0.12 527	0.174 8	15 1	-0.716 8	0.475	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison													
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>	
		-	Rig ht	Ort h	Eng lish	0.01 903	0.0 99 5	1 9 6	0.1 91 2	0.8 49	1.0 00	1.0 00	
		-	Rig ht	Ort h	Spa nis h- Eng lish	0.37 871	0.1 74 8	1 5 1	2.1 67 1	0.0 32	0.8 79	1.0 00	
		-	Rig ht	Ort h	Chi nes e- Eng lish	0.00 867	0.1 74 8	1 5 1	0.0 49 6	0.9 60	1.0 00	1.0 00	
		-	Rig ht	Con trol	Eng lish	- 0.07 504	0.1 27 1	2 8 3	- 0.5 90 6	0.5 55	1.0 00	1.0 00	
		-	Rig ht	Con trol	Spa nis h- Eng lish	- 0.32 747	0.1 74 8	1 5 1	- 1.8 73 9	0.0 63	0.9 70	1.0 00	
		-	Rig ht	Con trol	Chi nes e- Eng lish	- 0.02 886	0.1 74 8	1 5 1	- 0.1 65 2	0.8 69	1.0 00	1.0 00	
		Spa nis h- Eng lish	-	Left	Ort h	Chi nes e- Eng lish	- 0.63 130	0.1 74 8	1 5 1	- 3.6 12 5	<. 00 1	0.0 66	0.1 08
		-	Left	Con trol	Eng lish	- 0.66 060	0.1 74 8	1 5 1	- 3.7 80 1	<. 00 1	0.0 40	0.0 59	

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Group	Hemi sphe re	RRT diff	Group	Mean Diff erence	SE	df	t	p	P <sub>tuke</sub> y	P <sub>hol</sub> m
		-	Left	Control	Spanish-English	-0.76752	0.1177	284	-6.5232	<.001	<.001	<.001
		-	Left	Control	Chinese-English	-0.46985	0.1748	1581	-2.6886	0.008	0.530	1.000
		-	Right	PhonOrth	English	-0.54124	0.1748	581	-3.0971	0.002	0.251	0.590
		-	Right	PhonOrth	Spanish-English	-0.75332	0.1271	283	-5.9290	<.001	<.001	<.001
		-	Right	PhonOrth	Chinese-English	-0.56658	0.1748	1658	-3.2421	0.001	0.180	0.375
		-	Right	Phon	English	-0.36995	0.1748	581	-2.1170	0.036	0.901	1.000
		-	Right	Phon	Spanish-English	-0.69480	0.1271	283	-5.4685	<.001	<.001	<.001

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
-			Rig ht	Pho n	Chi nes e- Eng lish	- 0.68 926	0.1 74 8	1 5 1	- 3.9 44 2	<. 00 1	0.0 23	0.0 32
-			Rig ht	Ort h	Eng lish	- 0.54 496	0.1 74 8	1 5 1	- 3.1 18 4	0.0 02	0.2 40	0.5 53
-			Rig ht	Ort h	Spa nis h- Eng lish	- 0.18 528	0.0 99 5	1 9 6	- 1.8 61 7	0.0 64	0.9 73	1.0 00
-			Rig ht	Ort h	Chi nes e- Eng lish	- 0.55 532	0.1 74 8	1 5 1	- 3.1 77 7	0.0 02	0.2 10	0.4 59
-			Rig ht	Con trol	Eng lish	- 0.63 903	0.1 74 8	1 5 1	- 3.6 56 7	<. 00 1	0.0 58	0.0 93
-			Rig ht	Con trol	Spa nis h- Eng lish	- 0.89 146	0.1 27 1	2 8 3	- 7.0 16 3	<. 00 1	<. 00 1	<. 00 1
-			Rig ht	Con trol	Chi nes e- Eng lish	- 0.59 285	0.1 74 8	1 5 1	- 3.3 92 5	<. 00 1	0.1 23	0.2 28

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
		Chinese-English	-	Left	Control	English	-0.02930	0.1748	157	0.167	0.867	1.000
			-	Left	Control	Spanish-English	-0.13622	0.1748	157	0.7795	0.437	1.000
			-	Left	Control	Chinese-English	0.16145	0.1774	148	1.372	0.171	1.000
			-	Right	PhonOrth	English	0.09006	0.1748	157	0.5153	0.607	1.000
			-	Right	PhonOrth	Spanish-English	-0.12202	0.1748	157	0.6983	0.486	1.000
			-	Right	PhonOrth	Chinese-English	0.06472	0.1271	283	0.5094	0.611	1.000
			-	Right	Phon	English	0.26135	0.1748	157	1.495	0.137	0.998
			-	Right	Phon	Spanish-English	-0.06351	0.1748	157	0.3634	0.717	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
		-	Rig ht	Pho n	Chi nes e- Eng lish	- 0.05 796	0.1 27 1	2 8 3	- 0.4 56 2	0.6 49	1.0 00	1.0 00
		-	Rig ht	Ort h	Eng lish	0.08 634	0.1 74 8	1 5 1	0.4 94 1	0.6 22	1.0 00	1.0 00
		-	Rig ht	Ort h	Spa nis h- Eng lish	0.44 602	0.1 74 8	1 5 1	2.5 52 2	0.0 12	0.6 35	1.0 00
		-	Rig ht	Ort h	Chi nes e- Eng lish	0.07 598	0.0 99 5	1 9 6	0.7 63 5	0.4 46	1.0 00	1.0 00
		-	Rig ht	Con trol	Eng lish	- 0.00 773	0.1 74 8	1 5 1	- 0.0 44 2	0.9 65	1.0 00	1.0 00
		-	Rig ht	Con trol	Spa nis h- Eng lish	- 0.26 016	0.1 74 8	1 5 1	- 1.4 88 7	0.1 39	0.9 98	1.0 00
		-	Rig ht	Con trol	Chi nes e- Eng lish	0.03 845	0.1 27 1	2 8 3	0.3 02 6	0.7 62	1.0 00	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
	Control	English	-	Left	Control	Spanish-English -0.10692	0.1748	151	-0.6118	0.542	1.000	1.000
			-	Left	Control	Chinese-English 0.19075	0.1748	151	1.0915	0.277	1.000	1.000
			-	Right	PhonOrth	English 0.11936	0.1271	283	0.9394	0.348	1.000	1.000
			-	Right	PhonOrth	Spanish-English -0.09272	0.1748	151	-0.5306	0.596	1.000	1.000
			-	Right	PhonOrth	Chinese-English 0.09402	0.1748	151	0.5380	0.591	1.000	1.000
			-	Right	Phon	English 0.29065	0.1271	283	2.2876	0.023	0.819	1.000
			-	Right	Phon	Spanish-English -0.03420	0.1748	151	-0.1957	0.845	1.000	1.000
			-	Right	Phon	Chinese-English -0.02866	0.1748	151	-0.1640	0.870	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
		-	Rig ht	Ort h	Eng lish	0.11 564	0.1 27 1	2 8 3	0.9 10 2	0.3 64	1.0 00	1.0 00
		-	Rig ht	Ort h	Spa nis h- Eng lish	0.47 532	0.1 74 8	1 5 1	2.7 19 9	0.0 07	0.5 06	1.0 00
		-	Rig ht	Ort h	Chi nes e- Eng lish	0.10 528	0.1 74 8	1 5 1	0.6 02 5	0.5 48	1.0 00	1.0 00
		-	Rig ht	Con trol	Eng lish	0.02 158	0.0 99 5	1 9 6	0.2 16 8	0.8 29	1.0 00	1.0 00
		-	Rig ht	Con trol	Spa nis h- Eng lish	- 0.23 086	0.1 74 8	1 5 1	- 1.3 21 1	0.1 88	1.0 00	1.0 00
		-	Rig ht	Con trol	Chi nes e- Eng lish	0.06 775	0.1 74 8	1 5 1	0.3 87 7	0.6 99	1.0 00	1.0 00
		-	Left	Con trol	Chi nes e- Eng lish	0.29 767	0.1 74 8	1 5 1	1.7 03 4	0.0 91	0.9 90	1.0 00
		-	Rig ht	Pho nOr th	Eng lish	0.22 628	0.1 74 8	1 5 1	1.2 94 8	0.1 97	1.0 00	1.0 00

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
-			Rig ht	Pho nOr th	Spa nis h- Eng lish	0.01 420	0.1 27 1	2 8 3	0.1 11 7	0.9 11	1.0 00	1.0 00
-			Rig ht	Pho nOr th	Chi nes e- Eng lish	0.20 094	0.1 74 8	1 5 1	1.1 49 8	0.2 52	1.0 00	1.0 00
-			Rig ht	Pho n	Eng lish	0.39 757	0.1 74 8	1 5 1	2.2 75 0	0.0 24	0.8 24	1.0 00
-			Rig ht	Pho n	Spa nis h- Eng lish	0.07 271	0.1 27 1	2 8 3	0.5 72 3	0.5 68	1.0 00	1.0 00
-			Rig ht	Pho n	Chi nes e- Eng lish	0.07 826	0.1 74 8	1 5 1	0.4 47 8	0.6 55	1.0 00	1.0 00
-			Rig ht	Ort h	Eng lish	0.22 256	0.1 74 8	1 5 1	1.2 73 6	0.2 05	1.0 00	1.0 00
-			Rig ht	Ort h	Spa nis h- Eng lish	0.58 224	0.1 27 1	2 8 3	4.5 82 5	<. 00 1	0.0 02	0.0 02
-			Rig ht	Ort h	Chi nes e- Eng lish	0.21 220	0.1 74 8	1 5 1	1.2 14 3	0.2 27	1.0 00	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk</sub> ey	P <sub>hol</sub> m
		-	Rig ht	Con trol	Eng lish	0.12 849	0.1 74 8	1 5 1	0.7 35 3	0.4 63	1.0 00	1.0 00
		-	Rig ht	Con trol	Spa nis h- Eng lish	- 0.12 394	0.0 99 5	1 9 6	- 1.2 45 4	0.2 14	1.0 00	1.0 00
		-	Rig ht	Con trol	Chi nes e- Eng lish	0.17 467	0.1 74 8	1 5 1	0.9 99 5	0.3 19	1.0 00	1.0 00
		Chi nes e- Eng lish	Rig ht	Pho nOr th	Eng lish	- 0.07 139	0.1 74 8	1 5 1	- 0.4 08 5	0.6 83	1.0 00	1.0 00
		-	Rig ht	Pho nOr th	Spa nis h- Eng lish	- 0.28 347	0.1 74 8	1 5 1	- 1.6 22 1	0.1 07	0.9 95	1.0 00
		-	Rig ht	Pho nOr th	Chi nes e- Eng lish	- 0.09 673	0.1 27 1	2 8 3	- 0.7 61 3	0.4 47	1.0 00	1.0 00
		-	Rig ht	Pho n	Eng lish	0.09 990	0.1 74 8	1 5 1	0.5 71 6	0.5 68	1.0 00	1.0 00
		-	Rig ht	Pho n	Spa nis h- Eng lish	- 0.22 496	0.1 74 8	1 5 1	- 1.2 87 3	0.2 00	1.0 00	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
-			Rig ht	Pho n	Chi nes e- Eng lish	- 0.21 941	0.1 27 1	2 8 3	- 1.7 26 9	0.0 85	0.9 89	1.0 00
-			Rig ht	Ort h	Eng lish	- 0.07 511	0.1 74 8	1 5 1	- 0.4 29 8	0.6 68	1.0 00	1.0 00
-			Rig ht	Ort h	Spa nis h- Eng lish	0.28 457	0.1 74 8	1 5 1	1.6 28 4	0.1 06	0.9 94	1.0 00
-			Rig ht	Ort h	Chi nes e- Eng lish	- 0.08 547	0.1 27 1	2 8 3	- 0.6 72 7	0.5 02	1.0 00	1.0 00
-			Rig ht	Con trol	Eng lish	- 0.16 918	0.1 74 8	1 5 1	- 0.9 68 1	0.3 35	1.0 00	1.0 00
-			Rig ht	Con trol	Spa nis h- Eng lish	- 0.42 161	0.1 74 8	1 5 1	- 2.4 12 6	0.0 17	0.7 37	1.0 00
-			Rig ht	Con trol	Chi nes e- Eng lish	- 0.12 300	0.0 99 5	1 9 6	- 1.2 35 9	0.2 18	1.0 00	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison																											
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m															
Right	PhonOrth	English	-	Right	PhonOrth	Spanish-English	-0.21	0.1748	151	-1.2136	0.227	1.000															
						-	Right	PhonOrth	Chinese-English	-0.02534	0.1748	151	-0.1450	0.885	1.000												
									-	Right	Phon	English	0.17129	0.1774	284	1.4558	0.147	0.999									
												-	Right	Phon	Spanish-English	-0.15356	0.1748	151	-0.8781	0.300	1.000						
															-	Right	Phon	Chinese-English	-0.14802	0.1748	151	-0.8470	0.398	1.000			
																		-	Right	Orth	English	0.00372	0.1774	284	0.0316	0.975	1.000
																					-	Right	Orth	Spanish-English	0.35596	0.1748	151

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
			-	Rig ht	Ort h	Chi nes e- Eng lish - 0.01 408	0.1 74 8	1 5 1	- 0.0 80 6	0.9 36	1.0 00	1.0 00
			-	Rig ht	Con trol	Eng lish - 0.09 779	0.1 17 7	2 8 4	- 0.8 31 1	0.4 07	1.0 00	1.0 00
			-	Rig ht	Con trol	Spa nis h- Eng lish - 0.35 022	0.1 74 8	1 5 1	- 2.0 04 1	0.0 47	0.9 40	1.0 00
			-	Rig ht	Con trol	Chi nes e- Eng lish - 0.05 161	0.1 74 8	1 5 1	- 0.2 95 3	0.7 68	1.0 00	1.0 00
		Spa nis h- Eng lish	-	Rig ht	Pho nOr th	Chi nes e- Eng lish 0.18 674	0.1 74 8	1 5 1	1.0 68 6	0.2 87	1.0 00	1.0 00
			-	Rig ht	Pho n	Eng lish 0.38 337	0.1 74 8	1 5 1	2.1 93 8	0.0 30	0.8 67	1.0 00
			-	Rig ht	Pho n	Spa nis h- Eng lish 0.05 852	0.1 17 7	2 8 4	0.4 97 4	0.6 19	1.0 00	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
			Rig ht	Pho n	Chi nes e- Eng lish	0.06 406	0.1 74 8	1 5 1	0.3 66 6	0.7 14	1.0 00	1.0 00
			Rig ht	Ort h	Eng lish	0.20 836	0.1 74 8	1 5 1	1.1 92 3	0.2 35	1.0 00	1.0 00
			Rig ht	Ort h	Spa nis h- Eng lish	0.56 804	0.1 17 7	2 8 4	4.8 27 9	<. 00 1	<. 00 1	<. 00 1
			Rig ht	Ort h	Chi nes e- Eng lish	0.19 800	0.1 74 8	1 5 1	1.1 33 0	0.2 59	1.0 00	1.0 00
			Rig ht	Con trol	Eng lish	0.11 430	0.1 74 8	1 5 1	0.6 54 0	0.5 14	1.0 00	1.0 00
			Rig ht	Con trol	Spa nis h- Eng lish	- 0.13 814	0.1 17 7	2 8 4	- 1.1 74 1	0.2 41	1.0 00	1.0 00
			Rig ht	Con trol	Chi nes e- Eng lish	0.16 047	0.1 74 8	1 5 1	0.9 18 3	0.3 60	1.0 00	1.0 00
		Chi nes e- Eng lish	Rig ht	Pho n	Eng lish	0.19 663	0.1 74 8	1 5 1	1.1 25 2	0.2 62	1.0 00	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-			Right	Phon	Spanish-English	-0.12822	0.1748	15	-0.7337	0.464	1.000	1.000
-			Right	Phon	Chinese-English	-0.12268	0.1177	28	-1.0427	0.298	1.000	1.000
-			Right	Orth	English	0.02162	0.1748	15	0.1237	0.902	1.000	1.000
-			Right	Orth	Spanish-English	0.38130	0.1748	15	2.1819	0.031	0.873	1.000
-			Right	Orth	Chinese-English	0.01126	0.1177	28	0.0957	0.924	1.000	1.000
-			Right	Control	English	-0.07245	0.1748	15	-0.4146	0.679	1.000	1.000
-			Right	Control	Spanish-English	-0.32488	0.1748	15	-1.8591	0.065	0.973	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
			Right	Control	Chinese-English	-0.02627	0.177	284	-0.223	0.823	1.000	1.000
	Phon	English	Right	Phon	Spanish-English	-0.32485	0.1748	151	-1.859	0.065	0.973	1.000
			Right	Phon	Chinese-English	-0.31931	0.1748	151	-1.827	0.070	0.977	1.000
			Right	Orth	English	-0.17501	0.177	284	-1.487	0.138	0.999	1.000
			Right	Orth	Spanish-English	-0.18467	0.1748	151	-1.057	0.292	1.000	1.000
			Right	Orth	Chinese-English	-0.18537	0.1748	151	-1.067	0.291	1.000	1.000
			Right	Control	English	-0.26907	0.177	284	-2.289	0.023	0.820	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
					Spa nis h- Eng lish	- 0.52 151	0.1 74 8	1 5 1	- 2.9 84 2	0.0 03	0.3 18	0.8 36
					Chi nes e- Eng lish	- 0.22 290	0.1 74 8	1 5 1	- 1.2 75 5	0.2 04	1.0 00	1.0 00
		Spa nis h- Eng lish			Chi nes e- Eng lish	0.00 554	0.1 74 8	1 5 1	0.0 31 7	0.9 75	1.0 00	1.0 00
					Eng lish	0.14 985	0.1 74 8	1 5 1	0.8 57 5	0.3 93	1.0 00	1.0 00
					Spa nis h- Eng lish	0.50 952	0.1 17 7	2 8 4	4.3 30 5	<. 00 1	0.0 05	0.0 06
					Chi nes e- Eng lish	0.13 949	0.1 74 8	1 5 1	0.7 98 2	0.4 26	1.0 00	1.0 00
					Eng lish	0.05 578	0.1 74 8	1 5 1	0.3 19 2	0.7 50	1.0 00	1.0 00
					Spa nis h- Eng lish	- 0.19 666	0.1 17 7	2 8 4	- 1.6 71 4	0.0 96	0.9 93	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
			-	Rig ht	Con trol	Chi nes e- Eng lish 195	0.10748	15	0.5834	0.560	1.000	1.000
		Chi nes e- Eng lish	-	Rig ht	Ort h	Eng lish 430	0.14748	15	0.8258	0.410	1.000	1.000
			-	Rig ht	Ort h	Spa nis h- Eng lish 398	0.50748	15	2.8839	0.005	0.385	1.000
			-	Rig ht	Ort h	Chi nes e- Eng lish 394	0.13177	24	1.1384	0.256	1.000	1.000
			-	Rig ht	Con trol	Eng lish 024	0.05748	15	0.2875	0.774	1.000	1.000
			-	Rig ht	Con trol	Spa nis h- Eng lish 220	0.20748	15	1.1570	0.249	1.000	1.000
			-	Rig ht	Con trol	Chi nes e- Eng lish 641	0.09177	24	0.8194	0.413	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison													
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>	
	Ort h	Eng lish	-	Rig ht	Ort h	Spa nis h- Eng lish	0.35 968	0.1 74 8	1 5 1	2.0 58 2	0.0 41	0.9 23	1.0 00
			-	Rig ht	Ort h	Chi nes e- Eng lish	- 0.01 036	0.1 74 8	1 5 1	- 0.0 59 3	0.9 53	1.0 00	1.0 00
			-	Rig ht	Con trol	Eng lish	- 0.09 407	0.1 17 7	2 8 4	- 0.7 99 5	0.4 25	1.0 00	1.0 00
			-	Rig ht	Con trol	Spa nis h- Eng lish	- 0.34 651	0.1 74 8	1 5 1	- 1.9 82 8	0.0 49	0.9 46	1.0 00
			-	Rig ht	Con trol	Chi nes e- Eng lish	- 0.04 789	0.1 74 8	1 5 1	- 0.2 74 1	0.7 84	1.0 00	1.0 00
		Spa nis h- Eng lish	-	Rig ht	Ort h	Chi nes e- Eng lish	- 0.37 004	0.1 74 8	1 5 1	- 2.1 17 5	0.0 36	0.9 01	1.0 00
			-	Rig ht	Con trol	Eng lish	- 0.45 375	0.1 74 8	1 5 1	- 2.5 96 5	0.0 10	0.6 01	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

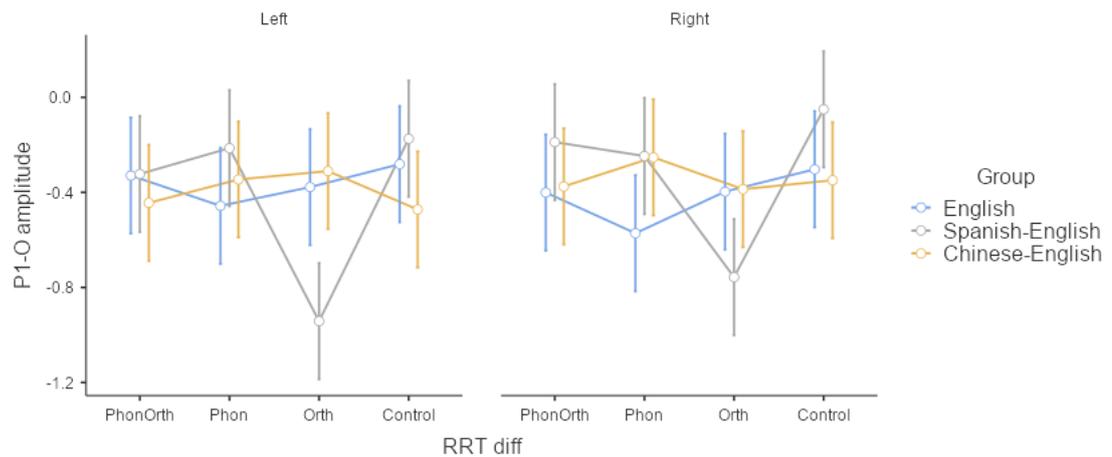
Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
			-	Rig ht	Con trol	Spa nis h- Eng lish - 0.70 618	0.1 17 7	2 8 4	- 6.0 02 0	<. 00 1	<. 00 1	<. 00 1
			-	Rig ht	Con trol	Chi nes e- Eng lish - 0.40 757	0.1 74 8	1 5 1	- 2.3 32 2	0.0 21	0.7 89	1.0 00
		Chi nes e- Eng lish	-	Rig ht	Con trol	Eng lish - 0.08 371	0.1 74 8	1 5 1	- 0.4 79 0	0.6 33	1.0 00	1.0 00
			-	Rig ht	Con trol	Spa nis h- Eng lish - 0.33 614	0.1 74 8	1 5 1	- 1.9 23 5	0.0 56	0.9 60	1.0 00
			-	Rig ht	Con trol	Chi nes e- Eng lish - 0.03 753	0.1 17 7	2 8 4	- 0.3 19 0	0.7 50	1.0 00	1.0 00
	Con trol	Eng lish	-	Rig ht	Con trol	Spa nis h- Eng lish - 0.25 244	0.1 74 8	1 5 1	- 1.4 44 5	0.1 51	0.9 99	1.0 00
			-	Rig ht	Con trol	Chi nes e- Eng lish - 0.04 618	0.1 74 8	1 5 1	0.2 64 2	0.7 92	1.0 00	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	$\eta^2_p$	Pholm
		Spanish-English	Right	Control	Chinese-English	0.29861	0.1748	15	1.708	0.090	0.990	1.000

### Estimated Marginal Means

#### RRT diff \* Group \* Hemisphere



### Repeated Measures ANOVA

#### Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Hemisphere	0.1522	1	0.15224	2.1252	0.150	0.036
Hemisphere * Group	0.0114	2	0.00569	0.0794	0.924	0.003
Residual	4.0833	57	0.07164			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Group	0.289	2	0.144	0.457	0.636	0.016
Residual	18.009	57	0.316			

Note. Type 3 Sums of Squares

### Assumptions

Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
PAA_P1.LeftO\$prime	1.55	2	57	0.221
PAA_P1.RightO\$prime	1.29	2	57	0.282

### Post Hoc Tests

Post Hoc Comparisons - Hemisphere \* Group

Comparison										
Hemisphere	Group	Hemisphere	Group	Mean Difference	SE	df	t	p	$p_{tuke}$	$p_{holm}$
Left	English	-	Left	Spanish-English	0.069	0.13	81.6	0.4970	0.621	0.996
			Left	Chinese-English	-0.0275	0.1392	81.6	-0.1979	0.844	1.000
			Right	English	0.0507	0.0846	57.0	0.5992	0.551	0.991

Post Hoc Comparisons - Hemisphere \* Group

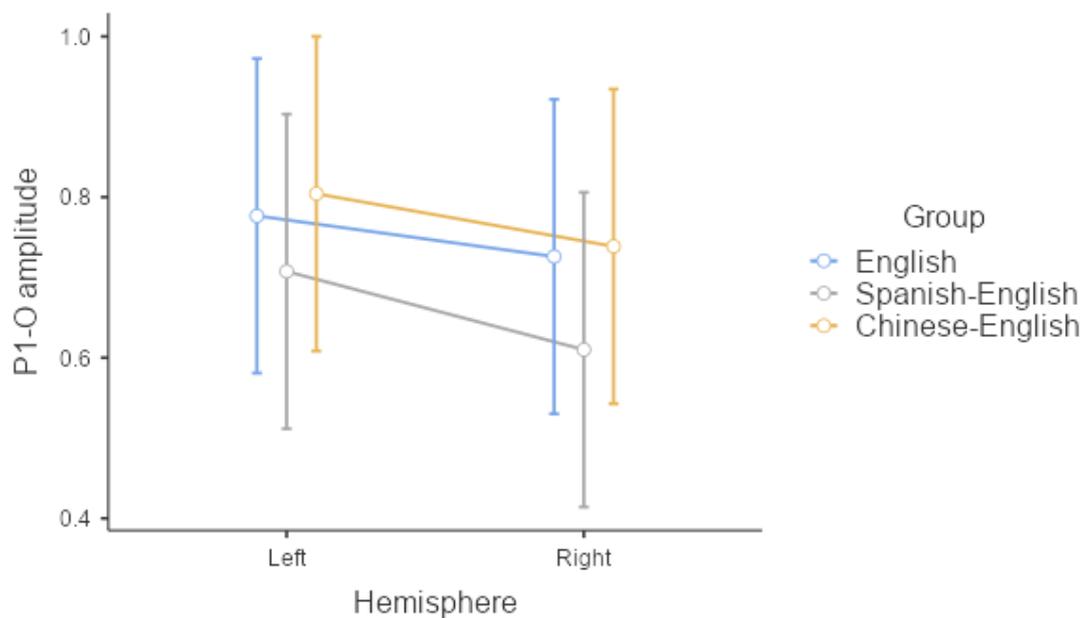
Comparison											
Hemisphere	Group	Hemisphere	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub>	P <sub>holm</sub>	
		-	Right	Spanish-English	0.1666	0.1392	81.6	1.1968	0.235	0.837	1.000
		-	Right	Chinese-English	0.0380	0.1392	81.6	0.2733	0.785	1.000	1.000
	Spanish-English	-	Left	Chinese-English	-0.0967	0.1392	81.6	-0.6949	0.489	0.982	1.000
		-	Right	English	-0.0185	0.1392	81.6	-0.1327	0.895	1.000	1.000
		-	Right	Spanish-English	0.0974	0.0846	57.0	1.1509	0.255	0.858	1.000
		-	Right	Chinese-English	-0.0311	0.1392	81.6	-0.2237	0.824	1.000	1.000
	Chinese-English	-	Right	English	0.0783	0.1392	81.6	0.5622	0.576	0.993	1.000
		-	Right	Spanish-English	0.1941	0.1392	81.6	1.3946	0.167	0.730	1.000
		-	Right	Chinese-English	0.0656	0.0846	57.0	0.7750	0.442	0.971	1.000

Post Hoc Comparisons - Hemisphere \* Group

Comparison											
Hemisphere	Group		Hemisphere	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub>	P <sub>holm</sub>
Right	English	-	Right	Spanish-English	0.1159	0.1392	81.6	0.8325	0.408	0.961	1.000
		-	Right	Chinese-English	-0.00127	0.1392	81.6	-0.0910	0.928	1.000	1.000
		Spanish-English	-	Right	Chinese-English	-0.1286	0.1392	81.6	-0.9235	0.358	0.939

Estimated Marginal Means

Hemisphere \* Group



Repeated Measures ANOVA

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p
Hemisphere	0.1522	1	0.15224	2.1252	0.150
Hemisphere * Group	0.0114	2	0.00569	0.0794	0.924
Residual	4.0833	57	0.07164		

Note. Type 3 Sums of Squares

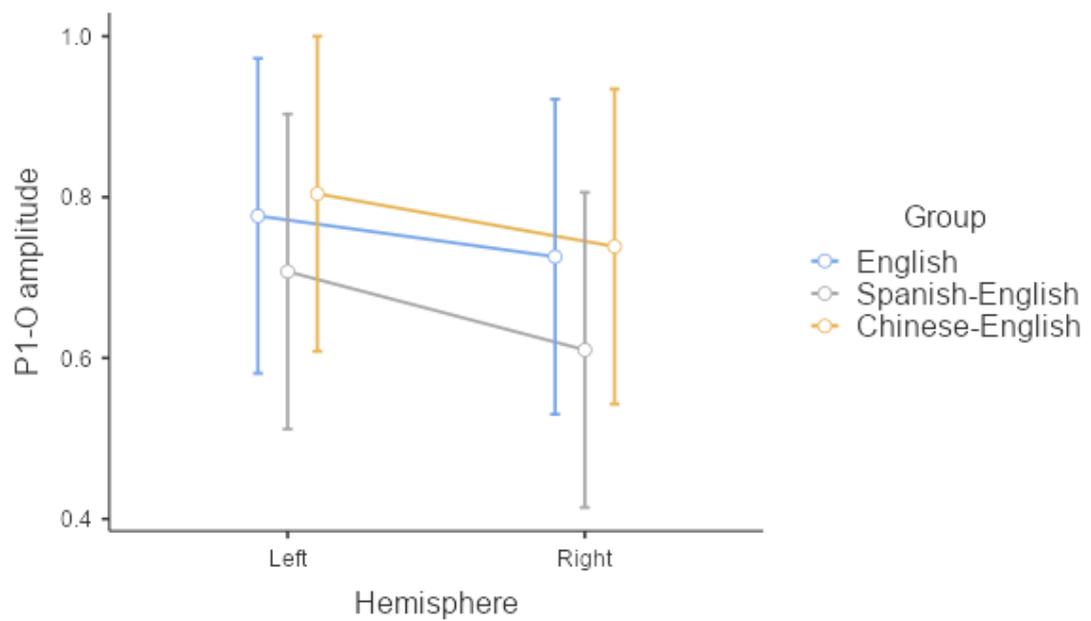
Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p
Group	0.289	2	0.144	0.457	0.636
Residual	18.009	57	0.316		

Note. Type 3 Sums of Squares

## Estimated Marginal Means

### Hemisphere \* Group



## Repeated Measures ANOVA

Within Subjects Effects

	<b>Sphericity Correction</b>	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
RRT Target	None	1.116	3	0.3721	2.745	0.045	0.046
	Greenhouse-Geisser	1.116	2.30	0.4855	2.745	0.060	0.046
	Huynh-Feldt	1.116	2.40	0.4649	2.745	0.058	0.046
RRT Target * Group	None	5.097	6	0.8496	6.268	< .001	0.180
	Greenhouse-Geisser	5.097	4.60	1.1085	6.268	< .001	0.180
	Huynh-Feldt	5.097	4.80	1.0614	6.268	< .001	0.180
Residual	None	23.176	171	0.1355			
	Greenhouse-Geisser	23.176	131.05	0.1768			
	Huynh-Feldt	23.176	136.87	0.1693			
Hemisphere	None	3.809	1	3.8095	3.870	0.054	0.064
	Greenhouse-Geisser	3.809	1.00	3.8095	3.870	0.054	0.064
	Huynh-Feldt	3.809	1.00	3.8095	3.870	0.054	0.064
Hemisphere * Group	None	0.231	2	0.1153	0.117	0.890	0.004
	Greenhouse-Geisser	0.231	2.00	0.1153	0.117	0.890	0.004
	Huynh-Feldt	0.231	2.00	0.1153	0.117	0.890	0.004
Residual	None	56.111	57	0.9844			

Within Subjects Effects

	<b>Sphericity Correction</b>	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
	Greenhouse-Geisser	56.111	57.00	0.9844			
	Huynh-Feldt	56.111	57.00	0.9844			
RRT Target * Hemisphere	None	0.668	3	0.2226	2.997	0.032	0.050
	Greenhouse-Geisser	0.668	2.81	0.2381	2.997	0.036	0.050
	Huynh-Feldt	0.668	2.97	0.2252	2.997	0.033	0.050
RRT Target * Hemisphere * Group	None	0.354	6	0.0590	0.795	0.575	0.027
	Greenhouse-Geisser	0.354	5.61	0.0631	0.795	0.568	0.027
	Huynh-Feldt	0.354	5.93	0.0597	0.795	0.574	0.027
Residual	None	12.702	171	0.0743			
	Greenhouse-Geisser	12.702	159.92	0.0794			
	Huynh-Feldt	12.702	169.05	0.0751			

Note. Type 3 Sums of Squares

Between Subjects Effects

	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
Group	3.23	2	1.61	1.37	0.264	0.046
Residual	67.35	57	1.18			

Note. Type 3 Sums of Squares

## Assumptions

### Tests of Sphericity

	Mauchly's W	p	Greenhouse-Geisser $\epsilon$	Huynh-Feldt $\epsilon$
RRT Target	0.628	< .001	0.766	0.800
Hemisphere	1.000	NaN <sup>a</sup>	1.000	1.000
RRT Target * Hemisphere	0.902	0.330	0.935	0.989

<sup>a</sup> The repeated measures has only two levels. The assumption of sphericity is always met when the repeated measures has only two levels

### Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
PAA_P1.LeftOP\$PhonOrth_TARGET	0.5492	2	57	0.580
PAA_P1.RightOP\$PhonOrth_TARGET	0.2247	2	57	0.799
PAA_P1.LeftOP\$Phon_TARGET	0.6705	2	57	0.515
PAA_P1.RightOP\$Phon_TARGET	0.0766	2	57	0.926
PAA_P1.LeftOP\$Orth_TARGET	4.8031	2	57	0.012
PAA_P1.RightOP\$Orth_TARGET	0.4749	2	57	0.624
PAA_P1.LeftOP\$Control_TARGET	0.3722	2	57	0.691
PAA_P1.RightOP\$Control_TARGET	0.3700	2	57	0.692

## Post Hoc Tests

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison													
RRT Target	Hemisphere	Group		RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Pho lm
PhonOrth	Left	English	-	PhonOrth	Left	Spanish-English	0.13297	0.187	182.8	0.7113	0.478	1.000	1.000
			-	PhonOrth	Left	Chinese-English	0.10998	0.187	182.8	-0.5883	0.557	1.000	1.000
			-	PhonOrth	Right	English	0.04755	0.174	84.3	-0.2737	0.785	1.000	1.000
			-	PhonOrth	Right	Spanish-English	0.14847	0.187	182.8	0.7943	0.428	1.000	1.000
			-	PhonOrth	Right	Chinese-English	0.26517	0.187	182.8	1.4186	0.158	0.999	1.000
			-	Phon	Left	English	0.03417	0.102	315.1	0.3336	0.739	1.000	1.000
			-	Phon	Left	Spanish-English	0.25734	0.187	182.8	1.3767	0.170	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Pho lm
-	Phon	Left	Chinese-English	0.03675	0.187	182.8	0.1966	0.844	1.000	1.000		
-	Phon	Right	English	-0.30179	0.182	101.3	-1.6552	0.101	0.992	1.000		
-	Phon	Right	Spanish-English	0.01932	0.187	182.8	0.1034	0.918	1.000	1.000		
-	Phon	Right	Chinese-English	-0.11680	0.187	182.8	-0.6248	0.533	1.000	1.000		
-	Orth	Left	English	0.01585	0.102	315.1	0.1548	0.877	1.000	1.000		
-	Orth	Left	Spanish-English	-0.15501	0.187	182.8	-0.8292	0.408	1.000	1.000		
-	Orth	Left	Chinese-English	0.10783	0.187	182.8	0.5769	0.565	1.000	1.000		
-	Orth	Right	English	-0.26984	0.182	101.3	-1.4800	0.142	0.998	1.000		

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk	Pho
-	Orth	Right	Spanish-English	-	0.33	0.18	0.18	2.8	-1.7869	0.076	0.983	1.000
-	Orth	Right	Chinese-English	-	0.21	0.18	0.18	2.8	-1.1434	0.254	1.000	1.000
-	Control	Left	English	-	0.01	0.10	0.31	5.1	0.042	0.917	1.000	1.000
-	Control	Left	Spanish-English	0.21	0.18	0.18	0.21	2.8	1.1632	0.246	1.000	1.000
-	Control	Left	Chinese-English	0.13	0.18	0.18	0.13	2.8	0.7283	0.467	1.000	1.000
-	Control	Right	English	0.30	0.18	0.18	0.30	1.1	1.6706	0.098	0.992	1.000
-	Control	Right	Spanish-English	0.14	0.18	0.18	0.14	2.8	0.7657	0.445	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk	Pho
et	re	up	et	re	up	erence					ey	lm
		-	Control	Right	Chinese-English	-0.27327	0.187	182.8	-1.4619	0.145	0.999	1.000
		-	PhonOrth	Left	Chinese-English	-0.24295	0.187	182.8	-1.2997	0.195	1.000	1.000
		-	PhonOrth	Right	English	-0.18052	0.187	182.8	-0.9657	0.335	1.000	1.000
		-	PhonOrth	Right	Spanish-English	0.01550	0.174	84.3	0.0892	0.929	1.000	1.000
		-	PhonOrth	Right	Chinese-English	-0.39814	0.187	182.8	-2.1299	0.035	0.897	1.000
		-	Phon	Left	English	-0.16714	0.187	182.8	-0.8941	0.372	1.000	1.000
		-	Phon	Left	Spanish-English	0.12437	0.102	31.51	1.2143	0.226	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk	Pho
et	re	up	et	re	up	ce					ey	lm
-	Phon	Left	Phon	Left	Chinese-English	-0.09622	0.187	182.8	-0.5147	0.607	1.000	1.000
-	Phon	Right	Phon	Right	English	-0.43476	0.187	182.8	-2.3258	0.021	0.795	1.000
-	Phon	Right	Phon	Right	Spanish-English	-0.11365	0.182	101.3	-0.6233	0.534	1.000	1.000
-	Phon	Right	Phon	Right	Chinese-English	-0.24977	0.187	182.8	-1.3362	0.183	1.000	1.000
-	Orth	Left	Orth	Left	English	-0.11712	0.187	182.8	-0.6265	0.532	1.000	1.000
-	Orth	Left	Orth	Left	Spanish-English	-0.28798	0.102	315.1	-2.8117	0.005	0.432	1.000
-	Orth	Left	Orth	Left	Chinese-English	-0.02514	0.187	182.8	-0.1345	0.893	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Pho lm
-	Orth	Right	English	-	0.40281	0.187	1828	-2.1549	0.032	0.886	1.000	
-	Orth	Right	Spanish-English	-	0.46700	0.182	1013	-2.5613	0.012	0.628	1.000	
-	Orth	Right	Chinese-English	-	0.34670	0.187	1828	-1.8547	0.065	0.974	1.000	
-	Control	Left	English	-	0.14364	0.187	1828	-0.7684	0.443	1.000	1.000	
-	Control	Left	Spanish-English	0.08446	0.102	315	0.8246	0.410	1.000	1.000		
-	Control	Left	Chinese-English	-	0.26911	0.187	1828	-1.4396	0.152	0.999	1.000	
-	Control	Right	English	-	0.43757	0.187	1828	-2.3408	0.020	0.785	1.000	

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk	Pho
et	re	up	et	re	up	ence					ey	lm
-	Control	Right	Spanish-English	0.01016	0.182	101.557	0.0	0.956	1.000	1.000		
-	Control	Right	Chinese-English	0.40624	0.187	182.732	-2.1	0.031	0.878	1.000		
-	Chinese-English	PhonOrth	Right	English	0.06243	0.187	182.340	0.3	0.739	1.000		
-	PhonOrth	Right	Spanish-English	0.25845	0.187	182.826	1.3	0.168	0.999	1.000		
-	PhonOrth	Right	Chinese-English	0.15519	0.174	84.933	0.8	0.374	1.000	1.000		
-	Phon	Left	English	0.07581	0.187	182.055	0.4	0.686	1.000	1.000		
-	Phon	Left	Spanish-English	0.36732	0.187	182.650	1.9	0.051	0.952	1.000		

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Pho lm
-	Phon	Left	Chinese-English			0.14673	0.102	315.1	1.4326	0.153	0.999	1.000
-	Phon	Right	English			-0.19181	0.187	182.8	-1.0261	0.306	1.000	1.000
-	Phon	Right	Spanish-English			0.12930	0.187	182.8	0.6917	0.490	1.000	1.000
-	Phon	Right	Chinese-English			-0.00682	0.182	101.3	-0.0374	0.970	1.000	1.000
-	Orth	Left	English			0.12583	0.187	182.8	0.6732	0.502	1.000	1.000
-	Orth	Left	Spanish-English			-0.04503	0.187	182.8	-0.2409	0.810	1.000	1.000
-	Orth	Left	Chinese-English			0.21781	0.102	315.1	2.1266	0.034	0.901	1.000
-	Orth	Right	English			-0.15986	0.187	182.8	-0.8552	0.394	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Pho lm
-	Orth	Right	Spanish-English	-	0.22	0.18	0.18	2.78	1.1986	0.232	1.000	1.000
-	Orth	Right	Chinese-English	-	0.10	0.18	0.10	1.13	0.5691	0.571	1.000	1.000
-	Control	Left	English	-	0.09	0.18	0.09	0.53	0.5313	0.596	1.000	1.000
-	Control	Left	Spanish-English	-	0.32	0.18	0.32	1.75	1.7515	0.082	0.987	1.000
-	Control	Left	Chinese-English	-	0.02	0.10	0.02	0.25	0.2554	0.799	1.000	1.000
-	Control	Right	English	-	0.19	0.18	0.19	1.04	1.0411	0.299	1.000	1.000
-	Control	Right	Spanish-English	-	0.25	0.18	0.25	1.30	1.3054	0.177	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Pho lm
		-	Control	Right	Chinese-English	-0.16329	0.182	1013	-0.8956	0.373	1.000	1.000
	Right	English	-	PhonOrth	Right	Spanish-English	0.19602	0.187	1828	1.0486	0.296	1.000
		-	PhonOrth	Right	Chinese-English	-0.21762	0.187	1828	-1.1642	0.246	1.000	1.000
		-	Phon	Left	English	0.01338	0.182	1013	0.0734	0.942	1.000	1.000
		-	Phon	Left	Spanish-English	0.30489	0.187	1828	1.6311	0.105	0.995	1.000
		-	Phon	Left	Chinese-English	0.08430	0.187	1828	0.4510	0.653	1.000	1.000
		-	Phon	Right	English	-0.25424	0.105	3112	-2.4822	0.014	0.688	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Pho lm
-	Phon	Right	Spanish-English	0.06687	0.187	182.8	0.3577	0.721	1.000	1.000		
-	Phon	Right	Chinese-English	0.06925	0.187	182.8	0.3705	0.711	1.000	1.000		
-	Orth	Left	English	0.06340	0.182	103	0.3477	0.729	1.000	1.000		
-	Orth	Left	Spanish-English	0.10746	0.187	182.8	0.5749	0.566	1.000	1.000		
-	Orth	Left	Chinese-English	0.15538	0.187	182.8	0.8312	0.407	1.000	1.000		
-	Orth	Right	English	0.22229	0.102	311	2.1703	0.031	0.882	1.000		
-	Orth	Right	Spanish-English	0.28648	0.187	182.8	1.5326	0.127	0.998	1.000		

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Pho lm
-	Orth	Right	Chinese-English			-0.16618	0.187	1828	-0.8890	0.375	1.000	1.000
-	Control	Left	English			0.03688	0.182	1013	0.2023	0.840	1.000	1.000
-	Control	Left	Spanish-English			0.26498	0.187	1828	1.4175	0.158	0.999	1.000
-	Control	Left	Chinese-English			-0.08859	0.187	1828	-0.4739	0.636	1.000	1.000
-	Control	Right	English			-0.25705	0.102	3151	-2.5097	0.013	0.668	1.000
-	Control	Right	Spanish-English			0.19068	0.187	1828	1.0200	0.309	1.000	1.000
-	Control	Right	Chinese-English			-0.22572	0.187	1828	-1.2075	0.229	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk	Pho
						Difference					ey	lm
		Spanish-English	PhonOrth	Right	Chinese-English	-0.41364	0.187	188	-2.2128	0.028	0.859	1.000
			Phon	Left	English	-0.18264	0.187	188	-0.9771	0.330	1.000	1.000
			Phon	Left	Spanish-English	0.10887	0.182	103	0.5971	0.552	1.000	1.000
			Phon	Left	Chinese-English	-0.11172	0.187	188	-0.5977	0.551	1.000	1.000
			Phon	Right	English	-0.45026	0.187	188	-2.4087	0.017	0.740	1.000
			Phon	Right	Spanish-English	-0.12915	0.102	311	-1.2609	0.208	1.000	1.000
			Phon	Right	Chinese-English	-0.26527	0.187	188	-1.4191	0.158	0.999	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Pho lm
-	Orth	Left	English			-0.13262	0.187	188	-0.7095	0.479	1.000	1.000
-	Orth	Left	Spanish-English			-0.30348	0.182	103	-1.6645	0.099	0.992	1.000
-	Orth	Left	Chinese-English			-0.04064	0.187	188	-0.2174	0.828	1.000	1.000
-	Orth	Right	English			-0.41831	0.187	188	-2.2378	0.026	0.845	1.000
-	Orth	Right	Spanish-English			-0.48250	0.102	315	-4.7109	<.001	<.001	0.001
-	Orth	Right	Chinese-English			-0.36221	0.187	188	-1.9377	0.054	0.958	1.000
-	Control	Left	English			-0.15914	0.187	188	-0.8514	0.396	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Pho lm
-	Control	Left	Spanish-English	0.06896	0.182	101.782	0.3782	0.706	1.000	1.000		
-	Control	Left	Chinese-English	0.28461	0.187	182.225	1.5225	0.130	0.998	1.000		
-	Control	Right	English	0.45307	0.187	182.237	2.4237	0.016	0.730	1.000		
-	Control	Right	Spanish-English	0.00535	0.102	315.522	0.0522	0.958	1.000	1.000		
-	Control	Right	Chinese-English	0.42174	0.187	182.561	2.2561	0.025	0.835	1.000		
-	Chinese-English	Phon	Left	English	0.23100	0.187	182.358	1.2358	0.218	1.000		
-	Phon	Left	Spanish-English	0.52251	0.187	182.953	2.7953	0.006	0.448	1.000		

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Pho lm
-	Phon	Left	Chinese-English			0.30192	0.182	101.3	1.659	0.101	0.992	1.000
-	Phon	Right	English			-0.03661	0.187	182.8	-0.1959	0.845	1.000	1.000
-	Phon	Right	Spanish-English			0.28449	0.187	182.8	1.5219	0.130	0.998	1.000
-	Phon	Right	Chinese-English			0.14837	0.102	315.1	1.4486	0.148	0.999	1.000
-	Orth	Left	English			0.28102	0.187	182.8	1.5034	0.134	0.998	1.000
-	Orth	Left	Spanish-English			0.11016	0.187	182.8	0.5893	0.556	1.000	1.000
-	Orth	Left	Chinese-English			0.37300	0.182	101.3	2.0458	0.043	0.924	1.000
-	Orth	Right	English			-0.00467	0.187	182.8	-0.0250	0.980	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Pho lm
-	Orth	Right	Spanish-English	-	0.06886	0.187	182.8	-0.3684	0.713	1.000	1.000	
-	Orth	Right	Chinese-English	0.05144	0.102	31.51	0.5022	0.616	1.000	1.000		
-	Control	Left	English	0.25450	0.187	182.8	1.3615	0.175	1.000	1.000		
-	Control	Left	Spanish-English	0.48260	0.187	182.8	2.5817	0.011	0.612	1.000		
-	Control	Left	Chinese-English	0.12904	0.182	101.3	0.7077	0.481	1.000	1.000		
-	Control	Right	English	0.03943	0.187	182.8	0.2109	0.833	1.000	1.000		
-	Control	Right	Spanish-English	0.40830	0.187	182.8	2.1842	0.030	0.873	1.000		

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk	Pho
et	re	up	et	re	up	ence					ey	lm
		-	Control	Right	Chinese-English	-0.00810	0.102	315.1	-0.0790	0.937	1.000	1.000
Phon	Left	English	-	Phon	Left	Spanish-English	0.29151	0.187	182.8	1.5595	0.121	0.997
		-	Phon	Left	Chinese-English	0.07092	0.187	182.8	0.3794	0.705	1.000	1.000
		-	Phon	Right	English	-0.26761	0.174	84.3	-1.5404	0.127	0.997	1.000
		-	Phon	Right	Spanish-English	0.05349	0.187	182.8	0.2862	0.775	1.000	1.000
		-	Phon	Right	Chinese-English	-0.08263	0.187	182.8	-0.4420	0.659	1.000	1.000
		-	Orth	Left	English	0.05003	0.102	315.1	0.4884	0.626	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Pho lm
-	Orth	Left	Spanish-English	Left	Spanish-English	0.12084	0.187	1828	-0.646	0.519	1.000	1.000
-	Orth	Left	Chinese-English	Left	Chinese-English	0.14200	0.187	1828	0.757	0.448	1.000	1.000
-	Orth	Right	English	Right	English	0.23567	0.182	1013	-1.296	0.199	1.000	1.000
-	Orth	Right	Spanish-English	Right	Spanish-English	0.29986	0.187	1828	-1.6041	0.110	0.996	1.000
-	Orth	Right	Chinese-English	Right	Chinese-English	0.17956	0.187	1828	-0.966	0.338	1.000	1.000
-	Control	Left	English	Left	English	0.02350	0.102	315	0.2294	0.819	1.000	1.000
-	Control	Left	Spanish-English	Left	Spanish-English	0.25160	0.187	1828	1.3460	0.180	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Pho lm
-	Control	Left	Chinese-English	-	0.10196	0.187	1828	-0.545	0.586	1.000	1.000	
-	Control	Right	English	-	0.27042	0.182	183	-1.483	0.141	0.998	1.000	
-	Control	Right	Spanish-English	0.17730	0.187	188	0.948	0.344	1.000	1.000		
-	Control	Right	Chinese-English	-	0.23910	0.187	188	-1.279	0.202	1.000	1.000	
-	Spanish-English	Left	Chinese-English	-	0.22059	0.187	188	-1.180	0.240	1.000	1.000	
-	Spanish-English	Right	English	-	0.55913	0.187	188	-2.991	0.003	0.312	0.849	
-	Spanish-English	Right	Spanish-English	-	0.23802	0.174	843	-1.370	0.174	0.999	1.000	

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Pho lm
-	Phon	Right	Chinese-English	-	0.37414	0.1877	1828	-2.0015	0.047	0.942	1.000	
-	Orth	Left	English	-	0.24149	0.1877	1828	1.2919	0.198	1.000	1.000	
-	Orth	Left	Spanish-English	-	0.41235	0.1052	3151	-4.0260	<.001	0.015	0.019	
-	Orth	Left	Chinese-English	-	0.14951	0.1877	1828	0.7998	0.425	1.000	1.000	
-	Orth	Right	English	-	0.52719	0.1877	1828	2.8202	0.005	0.429	1.000	
-	Orth	Right	Spanish-English	-	0.59137	0.1872	1013	3.2434	0.002	0.187	0.434	
-	Orth	Right	Chinese-English	-	0.47108	0.1877	1828	2.5201	0.013	0.659	1.000	

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Pho lm
-	Control	Left	English	-	0.26801	0.187	182.8	-1.4338	0.153	0.999	1.000	
-	Control	Left	Spanish-English	-	0.03992	0.102	315.1	-0.3897	0.697	1.000		
-	Control	Left	Chinese-English	-	0.39348	0.187	182.8	-2.1050	0.037	0.907	1.000	
-	Control	Right	English	-	0.56194	0.187	182.8	-3.0062	0.003	0.302	0.815	
-	Control	Right	Spanish-English	-	0.11422	0.182	103.3	-0.6264	0.532	1.000		
-	Control	Right	Chinese-English	-	0.53061	0.187	182.8	-2.8386	0.005	0.416	1.000	
-	Chinese-English	Phon	Right	English	-	0.33854	0.187	182.8	-1.8110	0.072	0.980	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Pho lm
-	Phon	Right	Spanish-English	-	0.01743	0.187	182.8	-0.0932	0.926	1.000	1.000	
-	Phon	Right	Chinese-English	-	0.15355	0.174	84.3	0.8839	0.379	1.000	1.000	
-	Orth	Left	English	-	0.02090	0.187	182.8	0.1118	0.911	1.000	1.000	
-	Orth	Left	Spanish-English	-	0.19176	0.187	182.8	1.0258	0.306	1.000	1.000	
-	Orth	Left	Chinese-English	0.07108	0.102	31.5	0.6940	0.488	1.000	1.000		
-	Orth	Right	English	-	0.30659	0.187	182.8	1.6402	0.103	0.994	1.000	
-	Orth	Right	Spanish-English	-	0.37078	0.187	182.8	1.9835	0.049	0.947	1.000	

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Pho lm
-	Orth	Right	Chinese-English	-	0.25049	0.182	101.3738	0.173	0.999	1.000		
-	Control	Left	English	-	0.04742	0.187	182.537	0.800	1.000	1.000		
-	Control	Left	Spanish-English	0.18067	0.187	182.665	0.335	1.000	1.000			
-	Control	Left	Chinese-English	-	0.17289	0.102	315.880	0.092	0.992	1.000		
-	Control	Right	English	-	0.34135	0.187	182.261	0.069	0.978	1.000		
-	Control	Right	Spanish-English	0.10637	0.187	182.691	0.570	1.000	1.000			
-	Control	Right	Chinese-English	-	0.31002	0.182	101.703	0.092	0.989	1.000		

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison													
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk	Pho	
et	re	up	et	re	up	ce					ey	lm	
	Right	English	-	Phon	Right	Spanish-English	0.32111	0.187	182.8	1.7178	0.088	0.989	1.000
			-	Phon	Right	Chinese-English	0.18499	0.187	182.8	0.9896	0.324	1.000	1.000
			-	Orth	Left	English	0.31764	0.182	101.3	1.7421	0.085	0.986	1.000
			-	Orth	Left	Spanish-English	0.14678	0.187	182.8	0.7852	0.433	1.000	1.000
			-	Orth	Left	Chinese-English	0.40962	0.187	182.8	2.1913	0.030	0.869	1.000
			-	Orth	Right	English	0.03194	0.102	315.1	0.3119	0.755	1.000	1.000
			-	Orth	Right	Spanish-English	0.03224	0.187	182.8	0.1725	0.863	1.000	1.000
			-	Orth	Right	Chinese-English	0.08805	0.187	182.8	0.4710	0.638	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Pho lm
-	Control	Left	English	0.29	111	0.182	101	1.596	0.113	0.995	1.000	
-	Control	Left	Spanish-English	0.51	921	0.187	182	2.776	0.006	0.461	1.000	
-	Control	Left	Chinese-English	0.16	565	0.187	182	0.882	0.377	1.000	1.000	
-	Control	Right	English	0.00	281	0.102	315	0.027	0.978	1.000	1.000	
-	Control	Right	Spanish-English	0.44	491	0.187	182	2.381	0.018	0.759	1.000	
-	Control	Right	Chinese-English	0.02	852	0.187	182	0.152	0.879	1.000	1.000	
-	Spanish-English	Phon	Right	0.13	612	0.187	182	0.728	0.467	1.000	1.000	
-	Orth	Left	English	0.00	347	0.187	182	0.018	0.985	1.000	1.000	

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk	Pho
-	Orth	Left	Spanish-English	Left	Spanish-English	0.17433	0.182	103	-0.9561	0.341	1.000	1.000
-	Orth	Left	Chinese-English	Left	Chinese-English	0.08851	0.187	1828	0.4735	0.636	1.000	1.000
-	Orth	Right	English	Right	English	0.28916	0.187	1828	1.5469	0.124	0.997	1.000
-	Orth	Right	Spanish-English	Right	Spanish-English	0.35335	0.102	315	3.4499	<.001	0.098	0.173
-	Orth	Right	Chinese-English	Right	Chinese-English	0.23306	0.187	1828	1.2468	0.214	1.000	1.000
-	Control	Left	English	Left	English	0.02999	0.187	1828	0.1605	0.873	1.000	1.000
-	Control	Left	Spanish-English	Left	Spanish-English	0.19811	0.182	103	1.0865	0.280	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Pho lm
			Control	Left	Chinese-English	-0.15546	0.187	182.8	-0.8316	0.407	1.000	1.000
			Control	Right	English	-0.32392	0.187	182.8	-1.7328	0.085	0.988	1.000
			Control	Right	Spanish-English	0.12380	0.102	315.1	1.2087	0.228	1.000	1.000
			Control	Right	Chinese-English	-0.29259	0.187	182.8	-1.5652	0.119	0.997	1.000
		Chinese-English	Orth	Left	English	0.13265	0.187	182.8	0.7096	0.479	1.000	1.000
			Orth	Left	Spanish-English	-0.03821	0.187	182.8	-0.2044	0.838	1.000	1.000
			Orth	Left	Chinese-English	0.22463	0.182	101.3	1.2320	0.221	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Pho lm
-	Orth	Right	English	-	0.15304	0.187	182.8	-0.8187	0.414	1.000	1.000	
-	Orth	Right	Spanish-English	-	0.21723	0.187	182.8	-1.1621	0.247	1.000	1.000	
-	Orth	Right	Chinese-English	-	0.09693	0.102	315.1	-0.9464	0.345	1.000	1.000	
-	Control	Left	English	-	0.10613	0.187	182.8	0.5677	0.571	1.000	1.000	
-	Control	Left	Spanish-English	-	0.33423	0.187	182.8	1.7880	0.075	0.983	1.000	
-	Control	Left	Chinese-English	-	0.01934	0.182	181.3	0.1060	0.916	1.000	1.000	
-	Control	Right	English	-	0.18780	0.187	182.8	1.0046	0.316	1.000	1.000	
-	Control	Right	Spanish-English	-	0.25993	0.187	182.8	1.3905	0.166	0.999	1.000	

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Pho lm
		-	Control	Right	Chinese-English	-0.15647	0.102	315.1	-1.527	0.128	0.998	1.000
Orth	Left	English	Orth	Left	Spanish-English	-0.17086	0.187	182.8	-0.914	0.362	1.000	1.000
		-	Orth	Left	Chinese-English	0.09198	0.187	182.8	0.492	0.623	1.000	1.000
		-	Orth	Right	English	-0.28570	0.174	84.3	-1.644	0.104	0.993	1.000
		-	Orth	Right	Spanish-English	-0.34988	0.187	182.8	-1.871	0.063	0.971	1.000
		-	Orth	Right	Chinese-English	-0.22959	0.187	182.8	-1.228	0.221	1.000	1.000
		-	Control	Left	English	-0.02653	0.102	315.1	-0.259	0.796	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Pho lm
-	Control	Left	Spanish-English	0.20	0.157	0.187	182.8	1.078	0.282	1.000	1.000	1.000
-	Control	Left	Chinese-English	0.15	0.199	0.187	182.8	-0.813	0.417	1.000	1.000	1.000
-	Control	Right	English	0.32	0.045	0.182	101.3	1.755	0.082	0.984	1.000	1.000
-	Control	Right	Spanish-English	0.12	0.727	0.187	182.8	0.689	0.497	1.000	1.000	1.000
-	Control	Right	Chinese-English	0.28	0.912	0.187	182.8	1.546	0.124	0.997	1.000	1.000
-	Orth	Left	Chinese-English	0.26	0.284	0.187	182.8	1.406	0.161	0.999	1.000	1.000
-	Orth	Right	English	0.11	0.483	0.187	182.8	0.614	0.540	1.000	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Pho lm
-	Orth	Right	Spanish-English	-	0.17902	0.174	84.3	-1.0305	0.306	1.000	1.000	
-	Orth	Right	Chinese-English	-	0.05873	0.187	182.8	-0.3142	0.754	1.000	1.000	
-	Control	Left	English	-	0.14434	0.187	182.8	0.7722	0.441	1.000	1.000	
-	Control	Left	Spanish-English	-	0.37244	0.102	315.1	3.6362	<.001	0.056	0.088	
-	Control	Left	Chinese-English	-	0.01887	0.187	182.8	0.1010	0.920	1.000	1.000	
-	Control	Right	English	-	0.14959	0.187	182.8	0.8002	0.425	1.000	1.000	
-	Control	Right	Spanish-English	-	0.29813	0.182	101.3	1.6351	0.105	0.994	1.000	

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk	Pho
-			Control	Right	Chinese-English	-0.11826	0.187	182.8	-0.6326	0.528	1.000	1.000
-		Chinese-English	Orth	Right	English	-0.37767	0.187	182.8	-2.0204	0.045	0.936	1.000
-			Orth	Right	Spanish-English	-0.44186	0.187	182.8	-2.3638	0.019	0.770	1.000
-			Orth	Right	Chinese-English	-0.32157	0.174	84.3	-1.8510	0.068	0.971	1.000
-			Control	Left	English	-0.11850	0.187	182.8	-0.6339	0.527	1.000	1.000
-			Control	Left	Spanish-English	-0.10959	0.187	182.8	-0.5863	0.558	1.000	1.000
-			Control	Left	Chinese-English	-0.24397	0.102	315.1	-2.3820	0.018	0.760	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk	Pho
		-	Control	Right	English	-0.41243	0.187	188	-2.2063	0.029	0.862	1.000
		-	Control	Right	Spanish-English	0.03529	0.187	188	0.1888	0.850	1.000	1.000
		-	Control	Right	Chinese-English	-0.38110	0.182	103	-2.0902	0.039	0.909	1.000
	Right	English	Orth	Right	Spanish-English	-0.06419	0.187	188	-0.3434	0.732	1.000	1.000
		-	Orth	Right	Chinese-English	0.05611	0.187	188	0.3002	0.764	1.000	1.000
		-	Control	Left	English	0.25917	0.182	103	1.4215	0.158	0.999	1.000
		-	Control	Left	Spanish-English	0.48727	0.187	188	2.6067	0.010	0.593	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk	Pho
-	Control	Left	Chinese-English			0.13371	0.187	182.8	0.7153	0.475	1.000	1.000
-	Control	Right	English			-0.03475	0.102	315.1	-0.3393	0.735	1.000	1.000
-	Control	Right	Spanish-English			0.41297	0.187	182.8	2.2092	0.028	0.860	1.000
-	Control	Right	Chinese-English			-0.00342	0.187	182.8	-0.0183	0.985	1.000	1.000
-	Spanish-English	Orth	Right	Chinese-English		0.12029	0.187	182.8	0.6435	0.521	1.000	1.000
-	Control	Left	English			0.32336	0.187	182.8	1.7298	0.085	0.988	1.000
-	Control	Left	Spanish-English			0.55146	0.182	101.3	3.0245	0.003	0.300	0.849

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Pho lm
			-	Control	Left	Chinese-English	0.19789	0.187	182.587	1.058	0.291	1.000
			-	Control	Right	English	0.02943	0.187	182.575	0.155	0.875	1.000
			-	Control	Right	Spanish-English	0.47715	0.102	315.587	4.651	<.001	0.001
			-	Control	Right	Chinese-English	0.06076	0.187	182.250	0.325	0.746	1.000
		Chinese-English	-	Control	Left	English	0.20306	0.187	182.863	1.079	0.279	1.000
			-	Control	Left	Spanish-English	0.43116	0.187	182.206	2.305	0.022	0.806
			-	Control	Left	Chinese-English	0.07760	0.182	101.256	0.425	0.671	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk	Pho
											ey	lm
		-	Control	Right	English	-0.09086	0.187	182.8	-0.4861	0.627	1.000	1.000
		-	Control	Right	Spanish-English	0.35686	0.187	182.8	1.9091	0.058	0.964	1.000
		-	Control	Right	Chinese-English	-0.05953	0.102	315.1	-0.5813	0.561	1.000	1.000
Control	Left	English	-	Control	Left	Spanish-English	0.22810	0.187	182.8	1.2202	0.224	1.000
		-	Control	Left	Chinese-English	-0.12546	0.187	182.8	-0.6712	0.503	1.000	1.000
		-	Control	Right	English	-0.29392	0.174	84.3	-1.6919	0.094	0.990	1.000
		-	Control	Right	Spanish-English	0.15380	0.187	182.8	0.8228	0.412	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

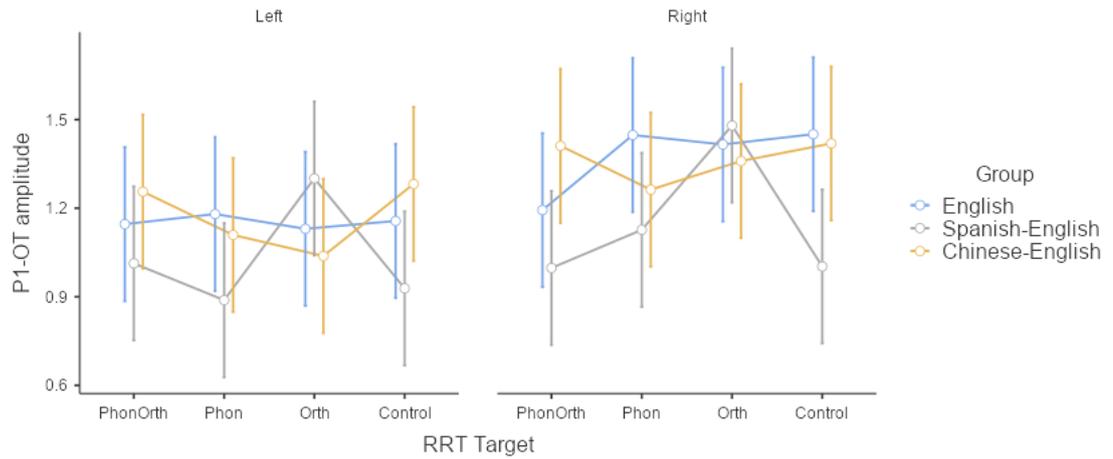
Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Pho lm
-			Control	Right	Chinese-English	-0.26260	0.187	182.8	-1.4048	0.162	0.999	1.000
-		Spanish-English	Control	Left	Chinese-English	-0.35356	0.187	182.8	-1.8914	0.060	0.968	1.000
-			Control	Right	English	-0.52202	0.187	182.8	-2.7926	0.006	0.450	1.000
-			Control	Right	Spanish-English	-0.07430	0.174	84.3	-0.4277	0.670	1.000	1.000
-			Control	Right	Chinese-English	-0.49069	0.187	182.8	-2.6250	0.009	0.579	1.000
-		Chinese-English	Control	Right	English	-0.16846	0.187	182.8	-0.9012	0.369	1.000	1.000
-			Control	Right	Spanish-English	0.27926	0.187	182.8	1.4939	0.137	0.998	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison													
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Pho lm	
		-	Control	Right	Chinese-English	-0.13713	0.174	84.3	-0.7894	0.432	1.000	1.000	
	Right	English	-	Control	Right	Spanish-English	0.44772	0.187	182.8	2.3951	0.018	0.749	1.000
		-	Control	Right	Chinese-English	0.03133	0.187	182.8	0.1676	0.867	1.000	1.000	
		Spanish-English	-	Control	Right	Chinese-English	-0.41639	0.187	182.8	-2.2275	0.027	0.851	1.000

**Estimated Marginal Means**

**RRT Target \* Group \* Hemisphere**



## Repeated Measures ANOVA

Within Subjects Effects

	Sphericity Correction	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Hemisphere	None	1.1224	1	1.1224	2.402	0.127	0.040
	Greenhouse-Geisser	1.1224	1.00	1.1224	2.402	0.127	0.040
	Huynh-Feldt	1.1224	1.00	1.1224	2.402	0.127	0.040
Hemisphere * Group	None	0.0964	2	0.0482	0.103	0.902	0.004
	Greenhouse-Geisser	0.0964	2.00	0.0482	0.103	0.902	0.004
	Huynh-Feldt	0.0964	2.00	0.0482	0.103	0.902	0.004
Residual	None	26.6378	57	0.4673			
	Greenhouse-Geisser	26.6378	57.00	0.4673			
	Huynh-Feldt	26.6378	57.00	0.4673			
RRT diff	None	1.1163	3	0.3721	2.745	0.045	0.046
	Greenhouse-Geisser	1.1163	2.30	0.4855	2.745	0.060	0.046
	Huynh-Feldt	1.1163	2.40	0.4649	2.745	0.058	0.046

Within Subjects Effects

	<b>Sphericity Correction</b>	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
RRT diff * Group	None	5.0973	6	0.8496	6.268	< .001	0.180
	Greenhouse-Geisser	5.0973	4.60	1.1085	6.268	< .001	0.180
	Huynh-Feldt	5.0973	4.80	1.0614	6.268	< .001	0.180
Residual	None	23.1758	171	0.1355			
	Greenhouse-Geisser	23.1758	131.05	0.1768			
	Huynh-Feldt	23.1758	136.87	0.1693			
Hemisphere * RRT diff	None	0.6679	3	0.2226	2.997	0.032	0.050
	Greenhouse-Geisser	0.6679	2.81	0.2381	2.997	0.036	0.050
	Huynh-Feldt	0.6679	2.97	0.2252	2.997	0.033	0.050
Hemisphere * RRT diff * Group	None	0.3543	6	0.0590	0.795	0.575	0.027
	Greenhouse-Geisser	0.3543	5.61	0.0631	0.795	0.568	0.027
	Huynh-Feldt	0.3543	5.93	0.0597	0.795	0.574	0.027
Residual	None	12.7016	171	0.0743			
	Greenhouse-Geisser	12.7016	159.92	0.0794			
	Huynh-Feldt	12.7016	169.05	0.0751			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Group	2.05	2	1.03	0.996	0.376	0.034
Residual	58.76	57	1.03			

Note. Type 3 Sums of Squares

## Assumptions

### Tests of Sphericity

	Mauchly's W	p	Greenhouse-Geisser $\epsilon$	Huynh-Feldt $\epsilon$
Hemisphere	1.000	NaN <sup>a</sup>	1.000	1.000
RRT diff	0.628	< .001	0.766	0.800
Hemisphere * RRT diff	0.902	0.330	0.935	0.989

<sup>a</sup> The repeated measures has only two levels. The assumption of sphericity is always met when the repeated measures has only two levels

### Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
PAA_P1.LeftOP\$PhonOrth_PTdiff	1.12528	2	57	0.332
PAA_P1.RightOP\$PhonOrth_PTdiff	1.35570	2	57	0.266
PAA_P1.LeftOP\$Phon_PTdiff	1.06532	2	57	0.351
PAA_P1.RightOP\$Phon_PTdiff	0.00520	2	57	0.995
PAA_P1.LeftOP\$Orth_PTdiff	1.36275	2	57	0.264
PAA_P1.RightOP\$Orth_PTdiff	0.80002	2	57	0.454
PAA_P1.LeftOP\$Control_PTdiff	1.93132	2	57	0.154
PAA_P1.RightOP\$Control_PTdiff	0.78994	2	57	0.459

## Post Hoc Tests

Post Hoc Comparisons - RRT diff \* Group

Comparison											
RRT diff	Group	RRT diff	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub> <sub>y</sub>	p <sub>holm</sub>	
Phon Orth	English	-	Phon Orth	Spanish- English	-0.14918	0.1340	105	-1.1129	0.268	0.993	1.000
				-	Phon Orth	Chinese- English	0.05746	0.1340	105	0.4287	0.669
		-	Phon			English	0.14420	0.0823	171	1.7517	0.082
				-	Phon	Spanish- English	-0.14679	0.1340	105	-1.0951	0.276
		-	Phon			Chinese- English	-0.09009	0.1340	105	-0.6721	0.503
				-	Orth	English	0.10322	0.0823	171	1.2539	0.212
		-	Orth			Spanish- English	0.23606	0.1340	105	1.7611	0.081
				-	Orth	Chinese- English	-0.07716	0.1340	105	-0.5757	0.566
		-	Control			English	0.13386	0.0823	171	1.6261	0.106

Post Hoc Comparisons - RRT diff \* Group

Comparison										
RRT diff	Group	RRT diff	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> <sub>y</sub>	P <sub>holm</sub>
-		Control	Spanish-English	-0.18874	0.1340	105	-1.4080	0.162	0.959	1.000
-		Control	Chinese-English	0.07459	0.1340	105	0.5564	0.579	1.000	1.000
-	Spanish-English	PhonOrth	Chinese-English	0.20664	0.1340	105	1.5416	0.126	0.925	1.000
-		Phon	English	0.29338	0.1340	105	2.1887	0.031	0.561	1.000
-		Phon	Spanish-English	0.00239	0.0823	171	0.0290	0.977	1.000	1.000
-		Phon	Chinese-English	0.05909	0.1340	105	0.4408	0.660	1.000	1.000
-		Orth	English	0.25240	0.1340	105	1.8830	0.062	0.767	1.000
-		Orth	Spanish-English	0.38524	0.0823	171	4.6798	<.001	<.001	<.001
-		Orth	Chinese-English	0.07202	0.1340	105	0.5373	0.592	1.000	1.000
-		Control	English	0.28304	0.1340	105	2.1115	0.037	0.616	1.000

Post Hoc Comparisons - RRT diff \* Group

Comparison										
RRT diff	Group	RRT diff	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> y	P <sub>holm</sub>
		-	Spanish-English	0.03956	0.0823	171	-0.4805	0.631	1.000	1.000
		-	Chinese-English	0.22377	0.1340	105	1.6694	0.098	0.878	1.000
	Chinese-English	-	English	0.08674	0.1340	105	0.6471	0.519	1.000	1.000
		-	Spanish-English	0.20425	0.1340	105	1.5238	0.131	0.931	1.000
		-	Chinese-English	0.14755	0.0823	171	1.7924	0.075	0.820	1.000
		-	English	0.04576	0.1340	105	0.3414	0.734	1.000	1.000
		-	Spanish-English	0.17860	0.1340	105	1.3324	0.186	0.973	1.000
		-	Chinese-English	0.13462	0.0823	171	1.6354	0.104	0.893	1.000
		-	English	0.07640	0.1340	105	0.5699	0.570	1.000	1.000
		-	Spanish-English	0.24620	0.1340	105	1.8367	0.069	0.794	1.000

Post Hoc Comparisons - RRT diff \* Group

Comparison											
RRT diff	Group	RRT diff	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub>	p <sub>holm</sub>	
Phon	English	-	Control	Chinese-English	0.01713	0.0823	171	0.2081	0.835	1.000	1.000
		-	Phon	Spanish-English	0.29099	0.1340	105	-2.1709	0.032	0.574	1.000
		-	Phon	Chinese-English	0.23429	0.1340	105	-1.7479	0.083	0.841	1.000
		-	Orth	English	0.04098	0.0823	171	-0.4979	0.619	1.000	1.000
		-	Orth	Spanish-English	0.09186	0.1340	105	0.6853	0.495	1.000	1.000
		-	Orth	Chinese-English	0.22137	0.1340	105	-1.6515	0.102	0.885	1.000
		-	Control	English	0.01034	0.0823	171	-0.1257	0.900	1.000	1.000
		-	Control	Spanish-English	0.33294	0.1340	105	-2.4838	0.015	0.362	0.918
		-	Control	Chinese-English	0.06962	0.1340	105	-0.5193	0.605	1.000	1.000

Post Hoc Comparisons - RRT diff \* Group

Comparison										
RRT diff	Group	RRT diff	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> <sub>y</sub>	P <sub>holm</sub>
Spanish-English	-	Phon	Chinese-English	0.05670	0.1340	105	0.4230	0.673	1.000	1.000
			English	0.25001	0.1340	105	1.8651	0.065	0.777	1.000
		Orth	Spanish-English	0.38285	0.0823	171	4.6508	<.001	<.001	<.001
			Chinese-English	0.06963	0.1340	105	0.5194	0.605	1.000	1.000
		Control	English	0.28065	0.1340	105	2.0937	0.039	0.628	1.000
			Spanish-English	-0.04194	0.0823	171	-0.5095	0.611	1.000	1.000
		Control	Chinese-English	0.22138	0.1340	105	1.6516	0.102	0.885	1.000
Chinese-English	-	Orth	English	0.19331	0.1340	105	1.4421	0.152	0.952	1.000
			Spanish-English	0.32615	0.1340	105	2.4332	0.017	0.394	1.000
		Orth	Chinese-English	0.01293	0.0823	171	0.1570	0.875	1.000	1.000

Post Hoc Comparisons - RRT diff \* Group

Comparison											
RRT diff	Group	RRT diff	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> y	P <sub>holm</sub>	
		-	Control	English	0.22395	0.1340	105	1.6707	0.098	0.877	1.000
		-	Control	Spanish-English	-0.09865	0.1340	105	-0.7359	0.463	1.000	1.000
		-	Control	Chinese-English	0.16468	0.0823	171	2.0005	0.047	0.693	1.000
Orth	English	-	Orth	Spanish-English	0.13284	0.1340	105	0.9910	0.324	0.998	1.000
		-	Orth	Chinese-English	-0.18038	0.1340	105	-1.3457	0.181	0.971	1.000
		-	Control	English	0.03064	0.0823	171	0.3722	0.710	1.000	1.000
		-	Control	Spanish-English	-0.29195	0.1340	105	-2.1781	0.032	0.569	1.000
		-	Control	Chinese-English	-0.02863	0.1340	105	-0.2136	0.831	1.000	1.000
	Spanish-English	-	Orth	Chinese-English	-0.31322	0.1340	105	-2.3367	0.021	0.458	1.000
		-	Control	English	-0.10220	0.1340	105	-0.7624	0.447	1.000	1.000

Post Hoc Comparisons - RRT diff \* Group

Comparison										
RRT diff	Group	RRT diff	Group	Mean Difference	SE	df	t	p	p <sub>tuke</sub>	p <sub>holm</sub>
		-	Spanish-English	0.42479	0.0823	171	-5.1603	<.001	<.001	<.001
		-	Chinese-English	0.16147	0.1340	105	-1.2046	0.231	0.988	1.000
	Chinese-English	-	English	0.21102	0.1340	105	1.5743	0.118	0.914	1.000
		-	Spanish-English	0.11157	0.1340	105	-0.8324	0.407	1.000	1.000
		-	Chinese-English	0.15175	0.0823	171	1.8434	0.067	0.792	1.000
Control	English	-	Spanish-English	0.32259	0.1340	105	-2.4066	0.018	0.411	1.000
		-	Chinese-English	0.05927	0.1340	105	-0.4422	0.659	1.000	1.000
	Spanish-English	-	Chinese-English	0.26332	0.1340	105	1.9645	0.052	0.716	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison														
Hemi spher e	RRT diff	Group		Hemi spher e	RRT diff	Group	Mean Diff erence	SE	df	t	p	ptuk ey	Pho lm	
Left	Pho nOr th	Eng lish	-	Left	Pho nOr th	Spa nis h- Eng lish	- 0.18 408	0. 16 3	1 9 1	- 1.1 28 76	0.2 60	1.0 00	1. 00 0	
						Chi nes e- Eng lish	- 0.04 679	0. 16 3	1 9 1	- 0.2 86 90	0.7 74	1.0 00	1. 00 0	
					Left	Pho n	Eng lish	0.03 417	0. 10 2	3 1 5	0.3 33 63	0.7 39	1.0 00	1. 00 0
					Left	Pho n	Spa nis h- Eng lish	- 0.30 845	0. 16 3	1 9 1	- 1.8 91 42	0.0 60	0.9 68	1. 00 0
					Left	Pho n	Chi nes e- Eng lish	- 0.19 352	0. 16 3	1 9 1	- 1.1 86 65	0.2 37	1.0 00	1. 00 0
					Left	Ort h	Eng lish	- 0.01 585	0. 10 2	3 1 5	- 0.1 54 79	0.8 77	1.0 00	1. 00 0
					Left	Ort h	Spa nis h- Eng lish	0.10 390	0. 16 3	1 9 1	0.6 37 13	0.5 25	1.0 00	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>ho lm</sub>
		-	Left	Orth	Chinese-English	-0.26460	0.163	19	-1.62252	0.106	0.995	1.000
		-	Left	Control	English	0.01067	0.102	31	0.10419	0.917	1.000	1.000
		-	Left	Control	Spanish-English	-0.26853	0.163	19	-1.64665	0.101	0.994	1.000
		-	Left	Control	Chinese-English	-0.02063	0.163	19	-0.12651	0.899	1.000	1.000
		-	Right	PhonOrth	English	-0.11181	0.131	16	-0.85120	0.396	1.000	1.000
		-	Right	PhonOrth	Spanish-English	-0.22609	0.163	19	-1.38640	0.167	0.999	1.000
		-	Right	PhonOrth	Chinese-English	0.04990	0.163	19	0.30599	0.760	1.000	1.000
		-	Right	Phon	English	0.14243	0.143	15	0.99922	0.319	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>ho lm</sub>
-			Rig ht	Pho n	Spa nis h- Eng lish	- 0.09 694	0. 16 3	1 9 1	- 0.5 94 45	0.5 53	1.0 00	1. 00 0
-			Rig ht	Pho n	Chi nes e- Eng lish	- 0.09 847	0. 16 3	1 9 1	- 0.6 03 82	0.5 47	1.0 00	1. 00 0
-			Rig ht	Ort h	Eng lish	0.11 048	0. 14 3	1 5 4	0.7 75 12	0.4 39	1.0 00	1. 00 0
-			Rig ht	Ort h	Spa nis h- Eng lish	0.25 641	0. 16 3	1 9 1	1.5 72 29	0.1 18	0.9 97	1. 00 0
-			Rig ht	Ort h	Chi nes e- Eng lish	- 0.00 154	0. 16 3	1 9 1	- 0.0 09 42	0.9 92	1.0 00	1. 00 0
-			Rig ht	Con trol	Eng lish	0.14 524	0. 14 3	1 5 4	1.0 18 94	0.3 10	1.0 00	1. 00 0
-			Rig ht	Con trol	Spa nis h- Eng lish	- 0.22 075	0. 16 3	1 9 1	- 1.3 53 61	0.1 77	1.0 00	1. 00 0
-			Rig ht	Con trol	Chi nes e- Eng lish	0.05 800	0. 16 3	1 9 1	0.3 55 64	0.7 23	1.0 00	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>ho lm</sub>
		Spa nis h- Eng lish	-	Left	Pho nOr th Eng lish	0.13 729	0. 16 3	1 9 1	0.8 41 86	0.4 01	1.0 00	1. 00 0
			-	Left	Pho n Eng lish	0.21 825	0. 16 3	1 9 1	1.3 38 30	0.1 82	1.0 00	1. 00 0
			-	Left	Pho n Spa nis h- Eng lish	- 0.12 437	0. 10 2	3 1 5	- 1.2 14 31	0.2 26	1.0 00	1. 00 0
			-	Left	Pho n Chi nes e- Eng lish	- 0.00 944	0. 16 3	1 9 1	- 0.0 57 89	0.9 54	1.0 00	1. 00 0
			-	Left	Ort h Eng lish	0.16 822	0. 16 3	1 9 1	1.0 31 55	0.3 04	1.0 00	1. 00 0
			-	Left	Ort h Spa nis h- Eng lish	0.28 798	0. 10 2	3 1 5	2.8 11 66	0.0 05	0.4 32	1. 00 0
			-	Left	Ort h Chi nes e- Eng lish	- 0.08 052	0. 16 3	1 9 1	- 0.4 93 76	0.6 22	1.0 00	1. 00 0
			-	Left	Con trol Eng lish	0.19 475	0. 16 3	1 9 1	1.1 94 20	0.2 34	1.0 00	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>ho lm</sub>
					Spa nis h- Eng lish	- 0.08 446	0. 10 2	3 1 5	- 0.8 24 59	0.4 10	1.0 00	1. 00 0
					Chi nes e- Eng lish	0.16 345	0. 16 3	1 9 1	1.0 02 25	0.3 17	1.0 00	1. 00 0
					Pho nOr th Eng lish	0.07 227	0. 16 3	1 9 1	0.4 43 14	0.6 58	1.0 00	1. 00 0
					Spa nis h- Eng lish	- 0.04 202	0. 13 1	1 1 6	- 0.3 19 86	0.7 50	1.0 00	1. 00 0
					Chi nes e- Eng lish	0.23 398	0. 16 3	1 9 1	1.4 34 75	0.1 53	0.9 99	1. 00 0
					Pho n Eng lish	0.32 650	0. 16 3	1 9 1	2.0 02 12	0.0 47	0.9 42	1. 00 0
					Spa nis h- Eng lish	0.08 713	0. 14 3	1 5 4	0.6 11 31	0.5 42	1.0 00	1. 00 0
					Chi nes e- Eng lish	0.08 561	0. 16 3	1 9 1	0.5 24 94	0.6 00	1.0 00	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison													
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>ho lm</sub>	
		-	Rig ht	Ort h	Eng lish	0.29 456	0. 16 3	1 9 1	1.8 06 24	0.0 72	0.9 81	1. 00 0	
		-	Rig ht	Ort h	Spa nis h- Eng lish	0.44 048	0. 14 3	1 5 4	3.0 90 32	0.0 02	0.2 55	0. 63 6	
		-	Rig ht	Ort h	Chi nes e- Eng lish	0.18 254	0. 16 3	1 9 1	1.1 19 34	0.2 64	1.0 00	1. 00 0	
		-	Rig ht	Con trol	Eng lish	0.32 931	0. 16 3	1 9 1	2.0 19 35	0.0 45	0.9 37	1. 00 0	
		-	Rig ht	Con trol	Spa nis h- Eng lish	- 0.03 667	0. 14 3	1 5 4	- 0.2 57 26	0.7 97	1.0 00	1. 00 0	
		-	Rig ht	Con trol	Chi nes e- Eng lish	0.24 207	0. 16 3	1 9 1	1.4 84 40	0.1 39	0.9 99	1. 00 0	
		Chi nes e- Eng lish	-	Left	Pho n	Eng lish	0.08 096	0. 16 3	1 9 1	0.4 96 44	0.6 20	1.0 00	1. 00 0
		-	Left	Pho n	Spa nis h- Eng lish	- 0.26 166	0. 16 3	1 9 1	- 1.6 04 52	0.1 10	0.9 96	1. 00 0	

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	ptuk ey	Pho lm
			-	Left	Pho n	Chi nes e- Eng lish - 0.14 673	0. 10 2	3 1 5	- 1.4 32 59	0.1 53	0.9 99	1. 00 0
			-	Left	Ort h	Eng lish 0.03 093	0. 16 3	1 9 1	0.1 89 69	0.8 50	1.0 00	1. 00 0
			-	Left	Ort h	Spa nis h- Eng lish 0.15 069	0. 16 3	1 9 1	0.9 24 03	0.3 57	1.0 00	1. 00 0
			-	Left	Ort h	Chi nes e- Eng lish - 0.21 781	0. 10 2	3 1 5	- 2.1 26 58	0.0 34	0.9 01	1. 00 0
			-	Left	Con trol	Eng lish 0.05 746	0. 16 3	1 9 1	0.3 52 34	0.7 25	1.0 00	1. 00 0
			-	Left	Con trol	Spa nis h- Eng lish - 0.22 175	0. 16 3	1 9 1	- 1.3 59 75	0.1 76	1.0 00	1. 00 0
			-	Left	Con trol	Chi nes e- Eng lish 0.02 616	0. 10 2	3 1 5	0.2 55 38	0.7 99	1.0 00	1. 00 0
			-	Rig ht	Pho nOr th	Eng lish - 0.06 502	0. 16 3	1 9 1	- 0.3 98 72	0.6 91	1.0 00	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptuk	Pho
re	diff	up	re	diff	up	erence					ey	lm
		-	Right	PhonOrth	Spanish-English	-0.17930	0.163	19	-1.099	0.273	1.000	1.000
		-	Right	PhonOrth	Chinese-English	0.09669	0.131	16	0.736	0.463	1.000	1.000
		-	Right	Phon	English	0.18921	0.163	19	1.160	0.247	1.000	1.000
		-	Right	Phon	Spanish-English	-0.05015	0.163	19	-0.307	0.759	1.000	1.000
		-	Right	Phon	Chinese-English	-0.05168	0.143	15	-0.362	0.717	1.000	1.000
		-	Right	Orth	English	0.15727	0.163	19	0.964	0.336	1.000	1.000
		-	Right	Orth	Spanish-English	0.30320	0.163	19	1.859	0.065	0.973	1.000
		-	Right	Orth	Chinese-English	0.04525	0.143	15	0.317	0.751	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison													
Hemi spher e	RRT diff	Group	Hemi spher e	RRT diff	Group	Mean Diff erence	SE	df	t	p	ptuk ey	Pho lm	
			-	Rig ht	Con trol	Eng lish	0.19 202	0. 16 3	1 9 1	1.1 77 49	0.2 40	1.0 00	1. 00 0
			-	Rig ht	Con trol	Spa nis h- Eng lish	- 0.17 396	0. 16 3	1 9 1	- 1.0 66 71	0.2 87	1.0 00	1. 00 0
			-	Rig ht	Con trol	Chi nes e- Eng lish	0.10 478	0. 14 3	1 5 4	0.7 35 14	0.4 63	1.0 00	1. 00 0
	Pho n	Eng lish	-	Left	Pho n	Spa nis h- Eng lish	- 0.34 262	0. 16 3	1 9 1	- 2.1 00 96	0.0 37	0.9 09	1. 00 0
			-	Left	Pho n	Chi nes e- Eng lish	- 0.22 769	0. 16 3	1 9 1	- 1.3 96 19	0.1 64	0.9 99	1. 00 0
			-	Left	Orth	Eng lish	- 0.05 002	0. 10 2	3 1 5	- 0.4 88 42	0.6 26	1.0 00	1. 00 0
			-	Left	Orth	Spa nis h- Eng lish	0.06 973	0. 16 3	1 9 1	0.4 27 59	0.6 69	1.0 00	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>ho lm</sub>
-		Left	Orth		Chinese-English	-0.29877	0.163	19	-1.832	0.069	0.977	1.000
-		Left	Control		English	-0.02350	0.102	35	0.229	0.819	1.000	1.000
-		Left	Control		Spanish-English	-0.30271	0.163	31	-1.856	0.065	0.974	1.000
-		Left	Control		Chinese-English	-0.05480	0.163	31	0.336	0.737	1.000	1.000
-		Right	PhonOrth		English	-0.14598	0.143	54	-1.024	0.307	1.000	1.000
-		Right	PhonOrth		Spanish-English	-0.26026	0.169	31	-1.595	0.112	0.996	1.000
-		Right	PhonOrth		Chinese-English	0.01573	0.163	31	0.096	0.923	1.000	1.000
-		Right	Phon		English	0.10825	0.131	16	0.824	0.412	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	ptuk ey	P <sub>ho</sub> lm
-			Rig ht	Pho n	Spa nis h- Eng lish	- 0.13 111	0. 16 3	1 9 1	- 0.8 03 99	0.4 22	1.0 00	1. 00 0
-			Rig ht	Pho n	Chi nes e- Eng lish	- 0.13 264	0. 16 3	1 9 1	- 0.8 13 36	0.4 17	1.0 00	1. 00 0
-			Rig ht	Ort h	Eng lish	0.07 631	0. 14 3	1 5 4	0.5 35 38	0.5 93	1.0 00	1. 00 0
-			Rig ht	Ort h	Spa nis h- Eng lish	0.22 224	0. 16 3	1 9 1	1.3 62 75	0.1 75	1.0 00	1. 00 0
-			Rig ht	Ort h	Chi nes e- Eng lish	- 0.03 571	0. 16 3	1 9 1	- 0.2 18 96	0.8 27	1.0 00	1. 00 0
-			Rig ht	Con trol	Eng lish	0.11 107	0. 14 3	1 5 4	0.7 79 20	0.4 37	1.0 00	1. 00 0
-			Rig ht	Con trol	Spa nis h- Eng lish	- 0.25 492	0. 16 3	1 9 1	- 1.5 63 15	0.1 20	0.9 97	1. 00 0
-			Rig ht	Con trol	Chi nes e- Eng lish	0.02 383	0. 16 3	1 9 1	0.1 46 10	0.8 84	1.0 00	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	ptuk ey	P <sub>ho</sub> lm
		Spa nis h- Eng lish	-	Left	Pho n	Chi nes e- Eng lish	0.11 493	0. 16 3	1 9 1	0.7 04 76	0.4 82	1. 00 0
			-	Left	Ort h	Eng lish	0.29 260	0. 16 3	1 9 1	1.7 94 20	0.0 74	0.9 82 0
			-	Left	Ort h	Spa nis h- Eng lish	0.41 235	0. 10 2	3 1 5	4.0 25 97	<. 00 1	0. 00 15 9
			-	Left	Ort h	Chi nes e- Eng lish	0.04 385	0. 16 3	1 9 1	0.2 68 90	0.7 88	1. 00 0
			-	Left	Con trol	Eng lish	0.31 912	0. 16 3	1 9 1	1.9 56 85	0.0 52	0.9 54 0
			-	Left	Con trol	Spa nis h- Eng lish	0.03 992	0. 10 2	3 1 5	0.3 89 72	0.6 97	1. 00 0
			-	Left	Con trol	Chi nes e- Eng lish	0.28 782	0. 16 3	1 9 1	1.7 64 91	0.0 79	0.9 85 0
			-	Rig ht	Pho nOr th	Eng lish	0.19 664	0. 16 3	1 9 1	1.2 05 80	0.2 29	1. 00 0

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>ho lm</sub>
		-	Rig ht	Pho nOr th	Spa nis h- Eng lish	0.08 236	0. 14 3	1 5 4	0.5 77 80	0.5 64	1.0 00	1. 00 0
		-	Rig ht	Pho nOr th	Chi nes e- Eng lish	0.35 835	0. 16 3	1 9 1	2.1 97 41	0.0 29	0.8 66	1. 00 0
		-	Rig ht	Pho n	Eng lish	0.45 088	0. 16 3	1 9 1	2.7 64 77	0.0 06	0.4 71	1. 00 0
		-	Rig ht	Pho n	Spa nis h- Eng lish	0.21 151	0. 13 1	1 1 6	1.6 10 20	0.1 10	0.9 95	1. 00 0
		-	Rig ht	Pho n	Chi nes e- Eng lish	0.20 998	0. 16 3	1 9 1	1.2 87 59	0.1 99	1.0 00	1. 00 0
		-	Rig ht	Ort h	Eng lish	0.41 893	0. 16 3	1 9 1	2.5 68 90	0.0 11	0.6 22	1. 00 0
		-	Rig ht	Ort h	Spa nis h- Eng lish	0.56 486	0. 14 3	1 5 4	3.9 62 89	<. 00 1	0.0 22	0. 03 1
		-	Rig ht	Ort h	Chi nes e- Eng lish	0.30 691	0. 16 3	1 9 1	1.8 81 99	0.0 61	0.9 69	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>ho lm</sub>
		-	Rig ht	Con trol	Eng lish	0.45 369	0. 16 3	1 9 1	2.7 82 01	0.0 06	0.4 57	1. 00 0
		-	Rig ht	Con trol	Spa nis h- Eng lish	0.08 770	0. 14 3	1 5 4	0.6 15 31	0.5 39	1.0 00	1. 00 0
		-	Rig ht	Con trol	Chi nes e- Eng lish	0.36 645	0. 16 3	1 9 1	2.2 47 06	0.0 26	0.8 41	1. 00 0
		Chi nes e- Eng lish	Left	Ort h	Eng lish	0.17 766	0. 16 3	1 9 1	1.0 89 44	0.2 77	1.0 00	1. 00 0
		-	Left	Ort h	Spa nis h- Eng lish	0.29 742	0. 16 3	1 9 1	1.8 23 78	0.0 70	0.9 78	1. 00 0
		-	Left	Ort h	Chi nes e- Eng lish	- 0.07 108	0. 10 2	3 1 5	- 0.6 93 99	0.4 88	1.0 00	1. 00 0
		-	Left	Con trol	Eng lish	0.20 419	0. 16 3	1 9 1	1.2 52 09	0.2 12	1.0 00	1. 00 0
		-	Left	Con trol	Spa nis h- Eng lish	- 0.07 502	0. 16 3	1 9 1	- 0.4 60 00	0.6 46	1.0 00	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>ho lm</sub>
		-	Left	Con trol	Chi nes e- Eng lish	0.17 289	0. 10 2	3 1 5	1.6 87 97	0.0 92	0.9 92	1. 00 0
		-	Rig ht	Pho nOr th	Eng lish	0.08 171	0. 16 3	1 9 1	0.5 01 03	0.6 17	1.0 00	1. 00 0
		-	Rig ht	Pho nOr th	Spa nis h- Eng lish	- 0.03 257	0. 16 3	1 9 1	- 0.1 99 75	0.8 42	1.0 00	1. 00 0
		-	Rig ht	Pho nOr th	Chi nes e- Eng lish	0.24 342	0. 14 3	1 5 4	1.7 07 76	0.0 90	0.9 90	1. 00 0
		-	Rig ht	Pho n	Eng lish	0.33 594	0. 16 3	1 9 1	2.0 60 01	0.0 41	0.9 24	1. 00 0
		-	Rig ht	Pho n	Spa nis h- Eng lish	0.09 658	0. 16 3	1 9 1	0.5 92 20	0.5 54	1.0 00	1. 00 0
		-	Rig ht	Pho n	Chi nes e- Eng lish	0.09 505	0. 13 1	1 1 6	0.7 23 59	0.4 71	1.0 00	1. 00 0
		-	Rig ht	Ort h	Eng lish	0.30 400	0. 16 3	1 9 1	1.8 64 13	0.0 64	0.9 72	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison													
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Dif feren ce	SE	df	t	p	ptuk ey	P <sub>ho</sub> lm	
			-	Rig ht	Ort h	Spa nis h- Eng lish	0.44 993	0. 16 3	1 9 1	2.7 58 94	0.0 06	0.4 75	1. 00 0
			-	Rig ht	Ort h	Chi nes e- Eng lish	0.19 198	0. 14 3	1 5 4	1.3 46 89	0.1 80	1.0 00	1. 00 0
			-	Rig ht	Con trol	Eng lish	0.33 875	0. 16 3	1 9 1	2.0 77 24	0.0 39	0.9 18	1. 00 0
			-	Rig ht	Con trol	Spa nis h- Eng lish	- 0.02 723	0. 16 3	1 9 1	- 0.1 66 96	0.8 68	1.0 00	1. 00 0
			-	Rig ht	Con trol	Chi nes e- Eng lish	0.25 152	0. 14 3	1 5 4	1.7 64 56	0.0 80	0.9 85	1. 00 0
	Ort h	Eng lish	-	Left	Ort h	Spa nis h- Eng lish	0.11 976	0. 16 3	1 9 1	0.7 34 34	0.4 64	1.0 00	1. 00 0
			-	Left	Ort h	Chi nes e- Eng lish	- 0.24 874	0. 16 3	1 9 1	- 1.5 25 30	0.1 29	0.9 98	1. 00 0
			-	Left	Con trol	Eng lish	0.02 652	0. 10 2	3 1 5	0.2 58 97	0.7 96	1.0 00	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Group	Hemi sphe re	RRT diff	Group	Mean Diff erence	SE	df	t	p	ptuk ey	Pho lm
-	Left	Control	Spanish-English	Control	Spanish-English	-0.25268	0.163	169	-1.549	0.123	0.997	1.000
-	Left	Control	Chinese-English	Control	Chinese-English	0.00478	0.163	169	0.029	0.977	1.000	1.000
-	Right	PhonOrth	English	PhonOrth	English	0.09596	0.143	145	0.673	0.502	1.000	1.000
-	Right	PhonOrth	Spanish-English	PhonOrth	Spanish-English	0.21024	0.163	169	1.289	0.199	1.000	1.000
-	Right	PhonOrth	Chinese-English	PhonOrth	Chinese-English	0.06575	0.163	169	0.403	0.687	1.000	1.000
-	Right	Phon	English	Phon	English	0.15828	0.143	145	1.110	0.269	1.000	1.000
-	Right	Phon	Spanish-English	Phon	Spanish-English	0.08109	0.163	169	0.497	0.620	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>ho lm</sub>
			-	Rig ht	Pho n	Chi nes e- Eng lish - 0.08 262	0. 16 3	1 9 1	- 0.5 06 61	0.6 13	1.0 00	1. 00 0
			-	Rig ht	Ort h	Eng lish 0.12 634	0. 13 1	1 1 6	0.9 61 79	0.3 38	1.0 00	1. 00 0
			-	Rig ht	Ort h	Spa nis h- Eng lish 0.27 226	0. 16 3	1 9 1	1.6 69 51	0.0 97	0.9 93	1. 00 0
			-	Rig ht	Ort h	Chi nes e- Eng lish 0.01 432	0. 16 3	1 9 1	0.0 87 79	0.9 30	1.0 00	1. 00 0
			-	Rig ht	Con trol	Eng lish 0.16 109	0. 14 3	1 5 4	1.1 30 16	0.2 60	1.0 00	1. 00 0
			-	Rig ht	Con trol	Spa nis h- Eng lish - 0.20 489	0. 16 3	1 9 1	- 1.2 56 40	0.2 11	1.0 00	1. 00 0
			-	Rig ht	Con trol	Chi nes e- Eng lish 0.07 385	0. 16 3	1 9 1	0.4 52 85	0.6 51	1.0 00	1. 00 0
		Spa nis h- Eng lish	-	Left	Ort h	Chi nes e- Eng lish - 0.36 850	0. 16 3	1 9 1	- 2.2 59 64	0.0 25	0.8 34	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk</sub> ey	P <sub>ho</sub> lm
		-	Left	Con trol	Eng lish	- 0.09 323	0. 16 3	1 9 1	- 0.5 71 69	0.5 68	1.0 00	1. 00 0
		-	Left	Con trol	Spa nis h- Eng lish	- 0.37 244	0. 10 2	3 1 5	- 3.6 36 25	<. 00 1	0.0 56	0. 08 8
		-	Left	Con trol	Chi nes e- Eng lish	- 0.12 453	0. 16 3	1 9 1	- 0.7 63 63	0.4 46	1.0 00	1. 00 0
		-	Rig ht	Pho nOr th	Eng lish	- 0.21 571	0. 16 3	1 9 1	- 1.3 22 74	0.1 88	1.0 00	1. 00 0
		-	Rig ht	Pho nOr th	Spa nis h- Eng lish	- 0.32 999	0. 14 3	1 5 4	- 2.3 15 15	0.0 22	0.8 00	1. 00 0
		-	Rig ht	Pho nOr th	Chi nes e- Eng lish	- 0.05 400	0. 16 3	1 9 1	- 0.3 31 13	0.7 41	1.0 00	1. 00 0
		-	Rig ht	Pho n	Eng lish	0.03 852	0. 16 3	1 9 1	0.2 36 23	0.8 14	1.0 00	1. 00 0
		-	Rig ht	Pho n	Spa nis h- Eng lish	- 0.20 084	0. 14 3	1 5 4	- 1.4 09 07	0.1 61	0.9 99	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>ho lm</sub>
			-	Rig ht	Pho n	Chi nes e- Eng lish - 0.20 237	0. 16 3	1 9 1	- 1.2 40 95	0.2 16	1.0 00	1. 00 0
			-	Rig ht	Ort h	Eng lish 0.00 658	0. 16 3	1 9 1	0.0 40 36	0.9 68	1.0 00	1. 00 0
			-	Rig ht	Ort h	Spa nis h- Eng lish 0.15 251	0. 13 1	1 1 6	1.1 61 02	0.2 48	1.0 00	1. 00 0
			-	Rig ht	Ort h	Chi nes e- Eng lish - 0.10 544	0. 16 3	1 9 1	- 0.6 46 55	0.5 19	1.0 00	1. 00 0
			-	Rig ht	Con trol	Eng lish 0.04 133	0. 16 3	1 9 1	0.2 53 47	0.8 00	1.0 00	1. 00 0
			-	Rig ht	Con trol	Spa nis h- Eng lish - 0.32 465	0. 14 3	1 5 4	- 2.2 77 64	0.0 24	0.8 22	1. 00 0
			-	Rig ht	Con trol	Chi nes e- Eng lish - 0.04 590	0. 16 3	1 9 1	- 0.2 81 49	0.7 79	1.0 00	1. 00 0
		Chi nes e- Eng lish	-	Left	Con trol	Eng lish 0.27 527	0. 16 3	1 9 1	1.6 87 95	0.0 93	0.9 92	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	ptuk ey	Pho lm
		-	Left	Con trol	Spa nis h- Eng lish	- 0.00 394	0. 16 3	1 9 1	- 0.0 24 13	0.9 81	1.0 00	1. 00 0
		-	Left	Con trol	Chi nes e- Eng lish	0.24 397	0. 10 2	3 1 5	2.3 81 96	0.0 18	0.7 60	1. 00 0
		-	Rig ht	Pho nOr th	Eng lish	0.15 279	0. 16 3	1 9 1	0.9 36 90	0.3 50	1.0 00	1. 00 0
		-	Rig ht	Pho nOr th	Spa nis h- Eng lish	0.03 851	0. 16 3	1 9 1	0.2 36 12	0.8 14	1.0 00	1. 00 0
		-	Rig ht	Pho nOr th	Chi nes e- Eng lish	0.31 450	0. 14 3	1 5 4	2.2 06 44	0.0 29	0.8 61	1. 00 0
		-	Rig ht	Pho n	Eng lish	0.40 702	0. 16 3	1 9 1	2.4 95 87	0.0 13	0.6 78	1. 00 0
		-	Rig ht	Pho n	Spa nis h- Eng lish	0.16 766	0. 16 3	1 9 1	1.0 28 07	0.3 05	1.0 00	1. 00 0
		-	Rig ht	Pho n	Chi nes e- Eng lish	0.16 613	0. 14 3	1 5 4	1.1 65 51	0.2 46	1.0 00	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison													
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>ho lm</sub>	
			-	Rig ht	Ort h	Eng lish	0.37 508	0. 16 3	1 9 1	2.3 00 00	0.0 23	0.8 10	1. 00 0
			-	Rig ht	Ort h	Spa nis h- Eng lish	0.52 101	0. 16 3	1 9 1	3.1 94 81	0.0 02	0.1 98	0. 44 0
			-	Rig ht	Ort h	Chi nes e- Eng lish	0.26 306	0. 13 1	1 1 6	2.0 02 68	0.0 48	0.9 39	1. 00 0
			-	Rig ht	Con trol	Eng lish	0.40 983	0. 16 3	1 9 1	2.5 13 11	0.0 13	0.6 65	1. 00 0
			-	Rig ht	Con trol	Spa nis h- Eng lish	0.04 385	0. 16 3	1 9 1	0.2 68 90	0.7 88	1.0 00	1. 00 0
			-	Rig ht	Con trol	Chi nes e- Eng lish	0.32 260	0. 14 3	1 5 4	2.2 63 24	0.0 25	0.8 31	1. 00 0
	Con trol	Eng lish	-	Left	Con trol	Spa nis h- Eng lish	- 0.27 921	0. 16 3	1 9 1	- 1.7 12 09	0.0 89	0.9 90	1. 00 0
			-	Left	Con trol	Chi nes e- Eng lish	- 0.03 130	0. 16 3	1 9 1	- 0.1 91 94	0.8 48	1.0 00	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>ho lm</sub>
-			Rig ht	Pho nOr th	Eng lish	- 0.12 248	0. 14 3	1 5 4	- 0.8 59 29	0.3 92	1.0 00	1. 00 0
-			Rig ht	Pho nOr th	Spa nis h- Eng lish	- 0.23 676	0. 16 3	1 9 1	- 1.4 51 84	0.1 48	0.9 99	1. 00 0
-			Rig ht	Pho nOr th	Chi nes e- Eng lish	0.03 923	0. 16 3	1 9 1	0.2 40 56	0.8 10	1.0 00	1. 00 0
-			Rig ht	Pho n	Eng lish	0.13 175	0. 14 3	1 5 4	0.9 24 35	0.3 57	1.0 00	1. 00 0
-			Rig ht	Pho n	Spa nis h- Eng lish	- 0.10 761	0. 16 3	1 9 1	- 0.6 59 89	0.5 10	1.0 00	1. 00 0
-			Rig ht	Pho n	Chi nes e- Eng lish	- 0.10 914	0. 16 3	1 9 1	- 0.6 69 26	0.5 04	1.0 00	1. 00 0
-			Rig ht	Ort h	Eng lish	0.09 981	0. 14 3	1 5 4	0.7 00 25	0.4 85	1.0 00	1. 00 0
-			Rig ht	Ort h	Spa nis h- Eng lish	0.24 574	0. 16 3	1 9 1	1.5 06 85	0.1 34	0.9 98	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison													
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>ho lm</sub>	
			-	Rig ht	Ort h	Chi nes e- Eng lish	- 0.01 221	0. 16 3	1 9 1	- 0.0 74 86	0.9 40	1.0 00	1. 00 0
			-	Rig ht	Con trol	Eng lish	0.13 457	0. 13 1	1 1 6	1.0 24 44	0.3 08	1.0 00	1. 00 0
			-	Rig ht	Con trol	Spa nis h- Eng lish	- 0.23 142	0. 16 3	1 9 1	- 1.4 19 05	0.1 58	0.9 99	1. 00 0
			-	Rig ht	Con trol	Chi nes e- Eng lish	0.04 733	0. 16 3	1 9 1	0.2 90 20	0.7 72	1.0 00	1. 00 0
		Spa nis h- Eng lish	-	Left	Con trol	Chi nes e- Eng lish	0.24 790	0. 16 3	1 9 1	1.5 20 15	0.1 30	0.9 98	1. 00 0
			-	Rig ht	Pho nOr th	Eng lish	0.15 672	0. 16 3	1 9 1	0.9 61 03	0.3 38	1.0 00	1. 00 0
			-	Rig ht	Pho nOr th	Spa nis h- Eng lish	0.04 244	0. 14 3	1 5 4	0.2 97 76	0.7 66	1.0 00	1. 00 0
			-	Rig ht	Pho nOr th	Chi nes e- Eng lish	0.31 843	0. 16 3	1 9 1	1.9 52 64	0.0 52	0.9 55	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>ho lm</sub>
		-	Rig ht	Pho n	Eng lish	0.41 096	0. 16 3	1 9 1	2.5 20 01	0.0 13	0.6 59	1. 00 0
		-	Rig ht	Pho n	Spa nis h- Eng lish	0.17 159	0. 14 3	1 5 4	1.2 03 84	0.2 31	1.0 00	1. 00 0
		-	Rig ht	Pho n	Chi nes e- Eng lish	0.17 006	0. 16 3	1 9 1	1.0 42 83	0.2 98	1.0 00	1. 00 0
		-	Rig ht	Ort h	Eng lish	0.37 902	0. 16 3	1 9 1	2.3 24 13	0.0 21	0.7 96	1. 00 0
		-	Rig ht	Ort h	Spa nis h- Eng lish	0.52 494	0. 14 3	1 5 4	3.6 82 85	< . 00 1	0.0 53	0. 08 7
		-	Rig ht	Ort h	Chi nes e- Eng lish	0.26 700	0. 16 3	1 9 1	1.6 37 23	0.1 03	0.9 94	1. 00 0
		-	Rig ht	Con trol	Eng lish	0.41 377	0. 16 3	1 9 1	2.5 37 24	0.0 12	0.6 46	1. 00 0
		-	Rig ht	Con trol	Spa nis h- Eng lish	0.04 779	0. 13 1	1 1 6	0.3 63 81	0.7 17	1.0 00	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison													
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	ptuk ey	Pho lm	
			-	Rig ht	Con trol	Chi nes e- Eng lish	0.32 653	0. 16 3	1 9 1	2.0 02 29	0.0 47	0.9 42	1. 00 0
		Chi nes e- Eng lish	-	Rig ht	Pho nOr th	Eng lish	- 0.09 118	0. 16 3	1 9 1	- 0.5 59 11	0.5 77	1.0 00	1. 00 0
			-	Rig ht	Pho nOr th	Spa nis h- Eng lish	- 0.20 546	0. 16 3	1 9 1	- 1.2 59 89	0.2 09	1.0 00	1. 00 0
			-	Rig ht	Pho nOr th	Chi nes e- Eng lish	0.07 053	0. 14 3	1 5 4	0.4 94 83	0.6 21	1.0 00	1. 00 0
			-	Rig ht	Pho n	Eng lish	0.16 306	0. 16 3	1 9 1	0.9 99 86	0.3 19	1.0 00	1. 00 0
			-	Rig ht	Pho n	Spa nis h- Eng lish	- 0.07 631	0. 16 3	1 9 1	- 0.4 67 95	0.6 40	1.0 00	1. 00 0
			-	Rig ht	Pho n	Chi nes e- Eng lish	- 0.07 784	0. 14 3	1 5 4	- 0.5 46 11	0.5 86	1.0 00	1. 00 0
			-	Rig ht	Ort h	Eng lish	0.13 111	0. 16 3	1 9 1	0.8 03 99	0.4 22	1.0 00	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>ho lm</sub>
			-	Rig ht	Ort h	Spa nis h- Eng lish 0.27 704	0. 16 3	1 9 1	1.6 98 80	0.0 91	0.9 91	1. 00 0
			-	Rig ht	Ort h	Chi nes e- Eng lish 0.01 909	0. 14 3	1 5 4	0.1 33 96	0.8 94	1.0 00	1. 00 0
			-	Rig ht	Con trol	Eng lish 0.16 587	0. 16 3	1 9 1	1.0 17 10	0.3 10	1.0 00	1. 00 0
			-	Rig ht	Con trol	Spa nis h- Eng lish - 0.20 012	0. 16 3	1 9 1	- 1.2 27 11	0.2 21	1.0 00	1. 00 0
			-	Rig ht	Con trol	Chi nes e- Eng lish 0.07 863	0. 13 1	1 1 6	0.5 98 59	0.5 51	1.0 00	1. 00 0
Rig ht	Pho nOr th	Eng lish	-	Rig ht	Pho nOr th	Spa nis h- Eng lish - 0.11 428	0. 16 3	1 9 1	- 0.7 00 78	0.4 84	1.0 00	1. 00 0
			-	Rig ht	Pho nOr th	Chi nes e- Eng lish 0.16 171	0. 16 3	1 9 1	0.9 91 61	0.3 23	1.0 00	1. 00 0
			-	Rig ht	Pho n	Eng lish 0.25 424	0. 10 2	3 1 5	2.4 82 21	0.0 14	0.6 88	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptuk ey	Pho lm
-	Right	Phon	Spanish-English	Phon	Spanish-English	0.01487	0.163	191	0.0917	0.927	1.000	1.000
-	Right	Phon	Chinese-English	Phon	Chinese-English	0.01334	0.163	181	0.08180	0.935	1.000	1.000
-	Right	Orth	English	Orth	English	0.22229	0.102	315	2.17034	0.031	0.882	1.000
-	Right	Orth	Spanish-English	Orth	Spanish-English	0.36822	0.163	191	2.25791	0.025	0.835	1.000
-	Right	Orth	Chinese-English	Orth	Chinese-English	0.11027	0.163	176	0.67620	0.500	1.000	1.000
-	Right	Control	English	Control	English	0.25705	0.102	315	2.50965	0.013	0.668	1.000
-	Right	Control	Spanish-English	Control	Spanish-English	0.10894	0.163	191	0.66800	0.505	1.000	1.000
-	Right	Control	Chinese-English	Control	Chinese-English	0.16981	0.163	191	1.04126	0.299	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison													
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>ho lm</sub>	
		Spa nis h- Eng lish	-	Rig ht	Pho nOr th	Chi nes e- Eng lish	0.27 599	0. 16 3	1 9 1	1.6 92 39	0.0 92	0.9 91	1. 00 0
			-	Rig ht	Pho n	Eng lish	0.36 852	0. 16 3	1 9 1	2.2 59 76	0.0 25	0.8 34	1. 00 0
			-	Rig ht	Pho n	Spa nis h- Eng lish	0.12 915	0. 10 2	3 1 5	1.2 60 95	0.2 08	1.0 00	1. 00 0
			-	Rig ht	Pho n	Chi nes e- Eng lish	0.12 762	0. 16 3	1 9 1	0.7 82 58	0.4 35	1.0 00	1. 00 0
			-	Rig ht	Ort h	Eng lish	0.33 658	0. 16 3	1 9 1	2.0 63 88	0.0 40	0.9 23	1. 00 0
			-	Rig ht	Ort h	Spa nis h- Eng lish	0.48 250	0. 10 2	3 1 5	4.7 10 85	<. 00 1	<. 00 1	0. 00 1
			-	Rig ht	Ort h	Chi nes e- Eng lish	0.22 456	0. 16 3	1 9 1	1.3 76 98	0.1 70	1.0 00	1. 00 0
			-	Rig ht	Con trol	Eng lish	0.37 133	0. 16 3	1 9 1	2.2 76 99	0.0 24	0.8 24	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>ho lm</sub>
			-	Rig ht	Con trol	Spa nis h- Eng lish 0.00 535	0. 10 2	3 1 5	0.0 52 20	0.9 58	1.0 00	1. 00 0
			-	Rig ht	Con trol	Chi nes e- Eng lish 0.28 409	0. 16 3	1 9 1	1.7 42 04	0.0 83	0.9 87	1. 00 0
		Chi nes e- Eng lish	-	Rig ht	Pho n	Eng lish 0.09 253	0. 16 3	1 9 1	0.5 67 36	0.5 71	1.0 00	1. 00 0
			-	Rig ht	Pho n	Spa nis h- Eng lish - 0.14 684	0. 16 3	1 9 1	- 0.9 00 44	0.3 69	1.0 00	1. 00 0
			-	Rig ht	Pho n	Chi nes e- Eng lish - 0.14 837	0. 10 2	3 1 5	- 1.4 48 61	0.1 48	0.9 99	1. 00 0
			-	Rig ht	Ort h	Eng lish 0.06 058	0. 16 3	1 9 1	0.3 71 49	0.7 11	1.0 00	1. 00 0
			-	Rig ht	Ort h	Spa nis h- Eng lish 0.20 651	0. 16 3	1 9 1	1.2 66 30	0.2 07	1.0 00	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison													
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>ho lm</sub>	
			-	Rig ht	Ort h	Chi nes e- Eng lish	- 0.05 144	0. 10 2	3 1 5	- 0.5 02 21	0.6 16	1.0 00	1. 00 0
			-	Rig ht	Con trol	Eng lish	0.09 534	0. 16 3	1 9 1	0.5 84 60	0.5 60	1.0 00	1. 00 0
			-	Rig ht	Con trol	Spa nis h- Eng lish	- 0.27 065	0. 16 3	1 9 1	- 1.6 59 61	0.0 99	0.9 93	1. 00 0
			-	Rig ht	Con trol	Chi nes e- Eng lish	0.00 810	0. 10 2	3 1 5	0.0 79 05	0.9 37	1.0 00	1. 00 0
	Pho n	Eng lish	-	Rig ht	Pho n	Spa nis h- Eng lish	- 0.23 937	0. 16 3	1 9 1	- 1.4 67 81	0.1 44	0.9 99	1. 00 0
			-	Rig ht	Pho n	Chi nes e- Eng lish	- 0.24 090	0. 16 3	1 9 1	- 1.4 77 18	0.1 41	0.9 99	1. 00 0
			-	Rig ht	Ort h	Eng lish	- 0.03 194	0. 10 2	3 1 5	- 0.3 11 87	0.7 55	1.0 00	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison													
Hemi sphe re	RRT diff	Group	Hemi sphe re	RRT diff	Group	Mean Diff erence	SE	df	t	p	ptuk ey	Pho lm	
			-	Rig ht	Orth	Spa nis h- Eng lish	0.11 398	0. 16 3	1 9 1	0.6 98 94	0.4 85	1.0 00	1. 00 0
			-	Rig ht	Orth	Chi nes e- Eng lish	- 0.14 396	0. 16 3	1 9 1	- 0.8 82 78	0.3 78	1.0 00	1. 00 0
			-	Rig ht	Con trol	Eng lish	0.00 281	0. 10 2	3 1 5	0.0 27 44	0.9 78	1.0 00	1. 00 0
			-	Rig ht	Con trol	Spa nis h- Eng lish	- 0.36 317	0. 16 3	1 9 1	- 2.2 26 97	0.0 27	0.8 51	1. 00 0
			-	Rig ht	Con trol	Chi nes e- Eng lish	- 0.08 443	0. 16 3	1 9 1	- 0.5 17 72	0.6 05	1.0 00	1. 00 0
		Spa nis h- Eng lish	-	Rig ht	Pho n	Chi nes e- Eng lish	- 0.00 153	0. 16 3	1 9 1	- 0.0 09 37	0.9 93	1.0 00	1. 00 0
			-	Rig ht	Orth	Eng lish	0.20 743	0. 16 3	1 9 1	1.2 71 93	0.2 05	1.0 00	1. 00 0
			-	Rig ht	Orth	Spa nis h- Eng lish	0.35 335	0. 10 2	3 1 5	3.4 49 91	<. 00 1	0.0 98	0. 17 2

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>ho lm</sub>
			-	Rig ht	Ort h	Chi nes e- Eng lish	0.09 541	0. 16 3	1 9 1	0.5 85 03	0.5 59	1. 00 0
			-	Rig ht	Con trol	Eng lish	0.24 218	0. 16 3	1 9 1	1.4 85 04	0.1 39	0.9 99 0
			-	Rig ht	Con trol	Spa nis h- Eng lish	- 0.12 380	0. 10 2	3 1 5	- 1.2 08 75	0.2 28	1. 00 0
			-	Rig ht	Con trol	Chi nes e- Eng lish	0.15 494	0. 16 3	1 9 1	0.9 50 09	0.3 43	1. 00 0
		Chi nes e- Eng lish	-	Rig ht	Ort h	Eng lish	0.20 895	0. 16 3	1 9 1	1.2 81 30	0.2 02	1. 00 0
			-	Rig ht	Ort h	Spa nis h- Eng lish	0.35 488	0. 16 3	1 9 1	2.1 76 11	0.0 31	0.8 77 0
			-	Rig ht	Ort h	Chi nes e- Eng lish	0.09 693	0. 10 2	3 1 5	0.9 46 41	0.3 45	1. 00 0
			-	Rig ht	Con trol	Eng lish	0.24 371	0. 16 3	1 9 1	1.4 94 41	0.1 37	0.9 98 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>ho lm</sub>
			-	Rig ht	Con trol	Spa nis h- Eng lish - 0.12 228	0. 16 3	1 9 1	- 0.7 49 79	0.4 54	1.0 00	1. 00 0
			-	Rig ht	Con trol	Chi nes e- Eng lish 0.15 647	0. 10 2	3 1 5	1.5 27 66	0.1 28	0.9 98	1. 00 0
	Ort h	Eng lish	-	Rig ht	Ort h	Spa nis h- Eng lish 0.14 592	0. 16 3	1 9 1	0.8 94 81	0.3 72	1.0 00	1. 00 0
			-	Rig ht	Ort h	Chi nes e- Eng lish - 0.11 202	0. 16 3	1 9 1	- 0.6 86 90	0.4 93	1.0 00	1. 00 0
			-	Rig ht	Con trol	Eng lish 0.03 475	0. 10 2	3 1 5	0.3 39 31	0.7 35	1.0 00	1. 00 0
			-	Rig ht	Con trol	Spa nis h- Eng lish - 0.33 123	0. 16 3	1 9 1	- 2.0 31 10	0.0 44	0.9 33	1. 00 0
			-	Rig ht	Con trol	Chi nes e- Eng lish - 0.05 249	0. 16 3	1 9 1	- 0.3 21 84	0.7 48	1.0 00	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

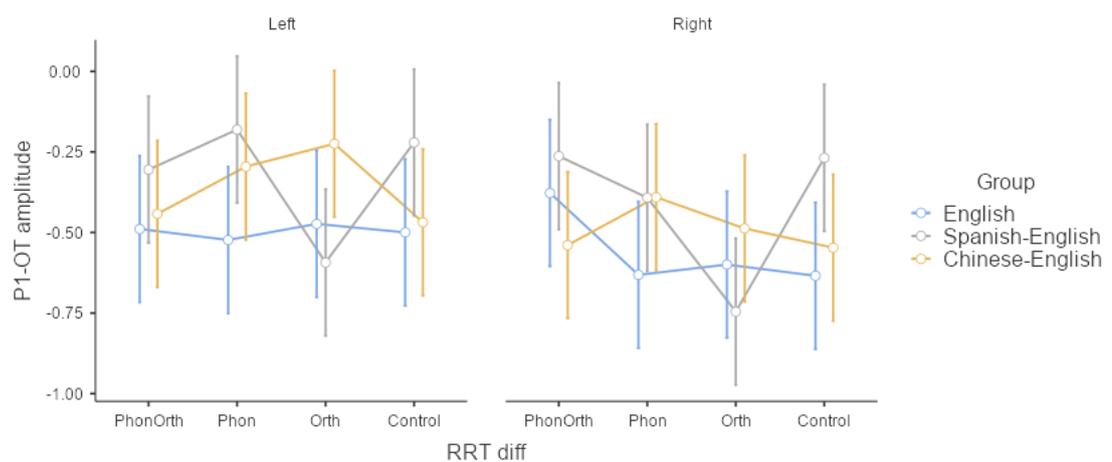
Comparison													
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>ho lm</sub>	
		Spa nis h- Eng lish	-	Rig ht	Ort h	Chi nes e- Eng lish	- 0.25 794	0. 16 3	1 9 1	- 1.5 81 71	0.1 15	0.9 96	1. 00 0
			-	Rig ht	Con trol	Eng lish	- 0.11 117	0. 16 3	1 9 1	- 0.6 81 70	0.4 96	1.0 00	1. 00 0
			-	Rig ht	Con trol	Spa nis h- Eng lish	- 0.47 715	0. 10 2	3 1 5	- 4.6 58 65	<. 00 1	0.0 01	0. 00 1
			-	Rig ht	Con trol	Chi nes e- Eng lish	- 0.19 841	0. 16 3	1 9 1	- 1.2 16 65	0.2 25	1.0 00	1. 00 0
		Chi nes e- Eng lish	-	Rig ht	Con trol	Eng lish	0.14 677	0. 16 3	1 9 1	0.9 00 01	0.3 69	1.0 00	1. 00 0
			-	Rig ht	Con trol	Spa nis h- Eng lish	- 0.21 921	0. 16 3	1 9 1	- 1.3 44 19	0.1 80	1.0 00	1. 00 0
			-	Rig ht	Con trol	Chi nes e- Eng lish	0.05 953	0. 10 2	3 1 5	0.5 81 26	0.5 61	1.0 00	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptuk	Pho
	Control	English	-	Right	Control	Spanish-English	-0.36	0.16	19	2.24	0.026	0.842
						Chinese-English	0.598	0.13	1	21		1.000
				Right	Control	Chinese-English	-0.08	0.16	9	0.534	0.593	1.000
		Spanish-English	-	Right	Control	Chinese-English	0.27	0.16	9	1.709	0.089	0.990

### Estimated Marginal Means

#### RRT diff \* Group \* Hemisphere



### Repeated Measures ANOVA

#### Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Hemisphere	0.1991	1	0.1991	2.219	0.142	0.037
Hemisphere * Group	0.0961	2	0.0481	0.536	0.588	0.018
Residual	5.1131	57	0.0897			

Note. Type 3 Sums of Squares

#### Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Group	0.351	2	0.176	1.03	0.364	0.035
Residual	9.718	57	0.170			

Note. Type 3 Sums of Squares

## Assumptions

#### Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
PAA_P1.LeftOP\$prime	2.842	2	57	0.067
PAA_P1.RightOP\$prime	0.602	2	57	0.551

## Post Hoc Tests

Post Hoc Comparisons - Hemisphere \* Group

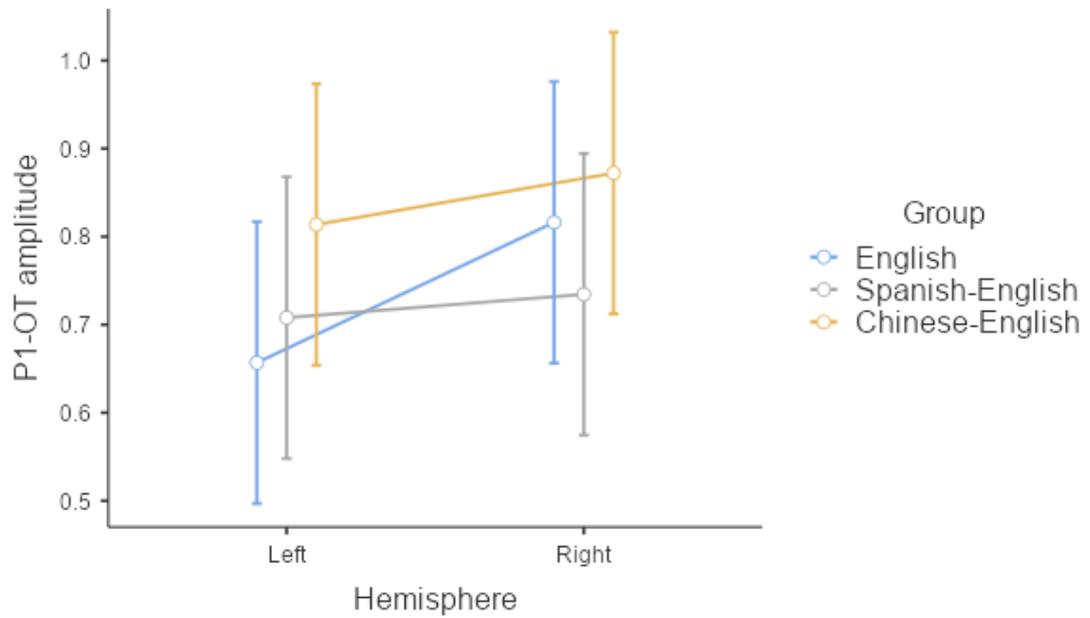
Comparison												
Hemisphere	Group		Hemisphere	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> ey	P <sub>holm</sub> m	
Left	English	-	Left	Spanish-English	-0.0511	0.1141	104.0	-0.4481	0.655	0.998	1.000	
		-		Left	Chinese-English	-0.1567	0.1141	104.0	-1.3744	0.172	0.742	1.000
		-	Right		English	-0.1593	0.0947	57.0	-1.6826	0.098	0.549	1.000
		-			Right	Spanish-English	-0.0776	0.1141	104.0	-0.6805	0.498	0.984
		-	Spanish-English	Right		Chinese-English	-0.2152	0.1141	104.0	-1.8873	0.062	0.416
	-	Left			Chinese-English	-0.1056	0.1141	104.0	-0.9263	0.356	0.939	1.000
	-			Right	English	-0.1082	0.1141	104.0	-0.9491	0.345	0.933	1.000
	-				Right	Spanish-English	-0.0265	0.0947	57.0	-0.2799	0.781	1.000
	-	Right		Chinese-English		-0.1641	0.1141	104.0	-1.4392	0.153	0.703	1.000

Post Hoc Comparisons - Hemisphere \* Group

Comparison												
Hemisphere	Group	Hemisphere	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub>	P <sub>holm</sub>		
Right	Chinese-English	-	Right	English	-0.00259	0.1141	104.0	-0.0227	0.982	1.000	1.000	
			Right	Spanish-English	0.07915	0.1141	104.0	0.6939	0.489	0.982	1.000	
		-	Right	Chinese-English	-0.05850	0.0947	57.0	-0.6177	0.539	0.989	1.000	
			Right	Spanish-English	0.08174	0.1141	104.0	0.7166	0.475	0.980	1.000	
	-	Right	Right	Chinese-English	-0.05591	0.1141	104.0	-0.4902	0.625	0.996	1.000	
			Right	Chinese-English	-0.13765	0.1141	104.0	-1.2068	0.230	0.833	1.000	
		-	Right	Spanish-English								
				Spanish-English								

**Estimated Marginal Means**

**Hemisphere \* Group**



*N100-FC amplitude*

## Repeated Measures ANOVA

Within Subjects Effects

	Sphericity Correction	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
RRT Target	None	0.8442	3	0.2814	5.176	0.002	0.083
	Greenhouse-Geisser	0.8442	2.69	0.3144	5.176	0.003	0.083
	Huynh-Feldt	0.8442	2.83	0.2983	5.176	0.002	0.083
RRT Target * Group	None	0.3346	6	0.0558	1.026	0.410	0.035
	Greenhouse-Geisser	0.3346	5.37	0.0623	1.026	0.407	0.035
	Huynh-Feldt	0.3346	5.66	0.0591	1.026	0.409	0.035
Residual	None	9.2974	171	0.0544			

Within Subjects Effects

	<b>Sphericity Correction</b>	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
	Greenhouse-Geisser	9.2974	153.06	0.0607			
	Huynh-Feldt	9.2974	161.34	0.0576			
Hemisphere	None	0.7007	1	0.7007	5.614	0.021	0.090
	Greenhouse-Geisser	0.7007	1.00	0.7007	5.614	0.021	0.090
	Huynh-Feldt	0.7007	1.00	0.7007	5.614	0.021	0.090
Hemisphere * Group	None	2.1050	2	1.0525	8.432	< .001	0.228
	Greenhouse-Geisser	2.1050	2.00	1.0525	8.432	< .001	0.228
	Huynh-Feldt	2.1050	2.00	1.0525	8.432	< .001	0.228
Residual	None	7.1149	57	0.1248			
	Greenhouse-Geisser	7.1149	57.00	0.1248			
	Huynh-Feldt	7.1149	57.00	0.1248			
RRT Target * Hemisphere	None	0.0429	3	0.0143	0.407	0.748	0.007
	Greenhouse-Geisser	0.0429	2.59	0.0166	0.407	0.718	0.007
	Huynh-Feldt	0.0429	2.72	0.0158	0.407	0.729	0.007
RRT Target * Hemisphere * Group	None	0.4821	6	0.0804	2.290	0.038	0.074
	Greenhouse-Geisser	0.4821	5.18	0.0931	2.290	0.047	0.074
	Huynh-Feldt	0.4821	5.44	0.0886	2.290	0.043	0.074
Residual	None	5.9994	171	0.0351			

Within Subjects Effects

	<b>Sphericity Correction</b>	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
	Greenhouse-Geisser	5.9994	147.52	0.0407			
	Huynh-Feldt	5.9994	155.15	0.0387			

Note. Type 3 Sums of Squares

Between Subjects Effects

	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
Group	0.971	2	0.485	0.853	0.431	0.029
Residual	32.423	57	0.569			

Note. Type 3 Sums of Squares

## Assumptions

Tests of Sphericity

	<b>Mauchly's W</b>	<b>p</b>	<b>Greenhouse-Geisser <math>\epsilon</math></b>	<b>Huynh-Feldt <math>\epsilon</math></b>
RRT Target	0.821	0.052	0.895	0.944
Hemisphere	1.000	NaN <sup>a</sup>	1.000	1.000
RRT Target * Hemisphere	0.796	0.026	0.863	0.907

<sup>a</sup> The repeated measures has only two levels. The assumption of sphericity is always met when the repeated measures has only two levels

Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
NAA_P1.LeftFC\$PhonOrth_TARGET	0.0968	2	57	0.908
NAA_P1.RightFC\$PhonOrth_TARGET	0.5856	2	57	0.560
NAA_P1.LeftFC\$Phon_TARGET	0.3567	2	57	0.702
NAA_P1.RightFC\$Phon_TARGET	1.4606	2	57	0.241
NAA_P1.LeftFC\$Orth_TARGET	0.0437	2	57	0.957
NAA_P1.RightFC\$Orth_TARGET	0.5474	2	57	0.581
NAA_P1.LeftFC\$Control_TARGET	2.2100	2	57	0.119
NAA_P1.RightFC\$Control_TARGET	0.1743	2	57	0.840

## Post Hoc Tests

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison						Mean	SE	df	t	p	Ptukey	Pholm	
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Difference							
PhonOrth	Left	English	PhonOrth	Left	Spanish	-	0.109	15	-	1.193	0.234	1.000	1.000
					English	0.13093	70	1.193	0.234	1.000	1.000		
					Chinese	-	0.109	15	-	0.814	0.417	1.000	1.000
PhonOrth	Right	English	PhonOrth	Right	English	-	0.075	15	-	2.206	0.029	0.861	1.000
					English	0.16734	87	2.206	0.029	0.861	1.000		
					English	-	0.075	15	-	2.206	0.029	0.861	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	PhonOrth		PhonOrth	Right	Spanish-English	-0.18479	0.1097	150	-1.685	0.094	0.991	1.000
-	PhonOrth		PhonOrth	Right	Chinese-English	-0.02718	0.1097	150	-0.24781	0.805	1.000	1.000
-	Phon		Phon	Left	English	0.12562	0.0669	327	1.87841	0.061	0.971	1.000
-	Phon		Phon	Left	Spanish-English	0.12772	0.1097	150	1.16471	0.246	1.000	1.000
-	Phon		Phon	Left	Chinese-English	0.01570	0.1097	150	0.14313	0.886	1.000	1.000
-	Phon		Phon	Right	English	0.15633	0.0820	206	1.90756	0.058	0.965	1.000
-	Phon		Phon	Right	Spanish-English	0.13326	0.1097	150	1.21519	0.226	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk	ptom
-	Phon	Right	Chinese-English			0.08340	0.1097	150	0.76058	0.448	1.000	1.000
-	Orth	Left	English			0.07322	0.0669	327	1.09483	0.274	1.000	1.000
-	Orth	Left	Spanish-English			0.01904	0.1097	150	0.17366	0.862	1.000	1.000
-	Orth	Left	Chinese-English			0.06352	0.1097	150	0.57930	0.563	1.000	1.000
-	Orth	Right	English			0.15699	0.0820	206	1.91565	0.057	0.963	1.000
-	Orth	Right	Spanish-English			0.03095	0.1097	150	0.28220	0.778	1.000	1.000
-	Orth	Right	Chinese-English			0.05134	0.1097	150	0.46821	0.640	1.000	1.000
-	Control	Left	English			0.13023	0.0669	327	1.94731	0.052	0.958	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk	ptom
-			Control	Left	Spanish-English	-0.22378	0.1097	150	-2.04064	0.04329	0.929	1.000
-			Control	Left	Chinese-English	-0.04214	0.1097	150	-0.38426	0.701	1.000	1.000
-			Control	Right	English	-0.24214	0.0820	256	-2.95461	0.00334	0.334	0.916
-			Control	Right	Spanish-English	-0.10500	0.1097	150	-0.95755	0.340	1.000	1.000
-			Control	Right	Chinese-English	-0.06564	0.1097	150	-0.59858	0.550	1.000	1.000
-		Spanish-English	PhonOrth	Left	Chinese-English	0.04165	0.1097	150	0.37978	0.705	1.000	1.000
-		Spanish-English	PhonOrth	Right	English	-0.03642	0.1097	150	-0.33209	0.740	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	PhonOrth	Right	Spanish-English	-	0.05387	0.0758	157	-0.71029	0.479	1.000	1.000	
-	PhonOrth	Right	Chinese-English	0.10375	0.1097	150	0.94611	0.346	1.000	1.000		
-	Phon	Left	English	0.25655	0.097	150	2.33952	0.0721	0.785	1.000		
-	Phon	Left	Spanish-English	0.00320	0.0669	327	0.04791	0.962	1.000	1.000		
-	Phon	Left	Chinese-English	0.11523	0.097	150	1.05079	0.295	1.000	1.000		
-	Phon	Right	English	-0.02540	0.097	150	-0.23166	0.817	1.000	1.000		
-	Phon	Right	Spanish-English	-0.00233	0.0820	206	-0.02845	0.977	1.000	1.000		

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Phon	Right	Chinese-English	0.21433	0.1097	150	1.95450	0.053	0.953	1.000		
-	Orth	Left	English	0.20415	0.1097	150	1.86164	0.065	0.972	1.000		
-	Orth	Left	Spanish-English	0.14997	0.0669	327	2.24241	0.026	0.845	1.000		
-	Orth	Left	Chinese-English	0.19445	0.1097	150	1.77322	0.078	0.984	1.000		
-	Orth	Right	English	0.02607	0.1097	150	0.23771	0.812	1.000	1.000		
-	Orth	Right	Spanish-English	0.09998	0.0820	206	1.21997	0.224	1.000	1.000		
-	Orth	Right	Chinese-English	0.18227	0.1097	150	1.66214	0.099	0.993	1.000		
-	Control	Left	English	0.26116	0.1097	150	2.38155	0.018	0.758	1.000		

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
			Control	Left	Spanish-English	-0.09285	0.0669	327	-1.38834	0.166	1.000	1.000
			Control	Left	Chinese-English	0.08879	0.1097	150	0.80967	0.419	1.000	1.000
			Control	Right	English	-0.11121	0.1097	150	-1.01417	0.312	1.000	1.000
			Control	Right	Spanish-English	0.02592	0.0820	206	0.31629	0.752	1.000	1.000
			Control	Right	Chinese-English	0.06529	0.1097	150	0.59535	0.553	1.000	1.000
		Chinese-English	PhonOrth	Right	English	-0.07806	0.1097	150	-0.71187	0.478	1.000	1.000
			PhonOrth	Right	Spanish-English	-0.09551	0.1097	150	-0.87101	0.385	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	PhonOrth	Right	Chinese-English			0.06210	0.0758	157	0.818	0.414	1.000	1.000
-	Phon	Left	English			0.21490	0.1097	150	1.959	0.052	0.952	1.000
-	Phon	Left	Spanish-English			-0.03844	0.1097	150	-0.350	0.726	1.000	1.000
-	Phon	Left	Chinese-English			0.07358	0.0669	327	1.100	0.272	1.000	1.000
-	Phon	Right	English			-0.06705	0.1097	150	-0.611	0.542	1.000	1.000
-	Phon	Right	Spanish-English			-0.04398	0.1097	150	-0.401	0.689	1.000	1.000
-	Phon	Right	Chinese-English			0.17268	0.0820	206	2.107	0.036	0.907	1.000
-	Orth	Left	English			0.16250	0.1097	150	1.481	0.140	0.998	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk	ptom
-	Orth	Left	Orth	Left	Spanish-English	0.10832	0.1097	150	0.98781	0.325	1.000	1.000
-	Orth	Left	Orth	Left	Chinese-English	0.15280	0.0669	327	2.28480	0.023	0.822	1.000
-	Orth	Right	Orth	Right	English	-0.06771	0.1097	150	-0.61748	0.538	1.000	1.000
-	Orth	Right	Orth	Right	Spanish-English	0.05833	0.1097	150	0.53195	0.596	1.000	1.000
-	Orth	Right	Orth	Right	Chinese-English	0.14062	0.0820	206	1.71591	0.088	0.990	1.000
-	Control	Left	Control	Left	English	0.21951	0.1097	150	2.00177	0.047	0.941	1.000
-	Control	Left	Control	Left	Spanish-English	-0.13450	0.1097	150	-1.22649	0.222	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk	ptom
-			Control	Left	Chinese-English	0.04714	0.0669	327	0.70489	0.481	1.000	1.000
-			Control	Right	English	-0.15286	0.1097	150	-1.39394	0.165	0.999	1.000
-			Control	Right	Spanish-English	-0.01572	0.1097	150	-0.14340	0.886	1.000	1.000
-			Control	Right	Chinese-English	0.02364	0.0820	206	0.28846	0.773	1.000	1.000
	Right	English	PhonOrth	Right	Spanish-English	-0.01745	0.1097	150	-0.15915	0.874	1.000	1.000
-			PhonOrth	Right	Chinese-English	0.14017	0.1097	150	1.27820	0.203	1.000	1.000
-			Phon	Left	English	0.29297	0.0820	206	3.57484	<.001	0.071	0.118

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk	ptom
-	Phon	Left	Phon	Left	Spanish-English	0.03962	0.1097	150	0.36131	0.718	1.000	1.000
-	Phon	Left	Phon	Left	Chinese-English	0.15165	0.1097	150	1.38288	0.169	0.999	1.000
-	Phon	Right	Phon	Right	English	0.01101	0.0669	327	0.16466	0.869	1.000	1.000
-	Phon	Right	Phon	Right	Spanish-English	0.03409	0.1097	150	0.31083	0.756	1.000	1.000
-	Phon	Right	Phon	Right	Chinese-English	0.25075	0.1097	150	2.28659	0.024	0.817	1.000
-	Orth	Left	Orth	Left	English	0.24056	0.0820	206	2.93540	0.004	0.347	0.968
-	Orth	Left	Orth	Left	Spanish-English	0.18639	0.1097	150	1.69968	0.091	0.990	1.000
-	Orth	Left	Orth	Left	Chinese-English	0.23087	0.1097	150	2.10531	0.037	0.906	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Orth	Rig	Eng	0.01035	0.0669	327	0.15476	0.877	1.000	1.000		
-	Orth	Rig	Spa	0.13640	0.1097	150	1.24382	0.216	1.000	1.000		
-	Orth	Rig	Chi	0.21869	0.1097	150	1.99423	0.048	0.943	1.000		
-	Control	Left	Eng	0.29757	0.0820	206	3.63107	<.001	0.060	0.096		
-	Control	Left	Spa	0.05643	0.1097	150	0.51463	0.608	1.000	1.000		
-	Control	Left	Chi	0.12520	0.1097	150	1.14176	0.255	1.000	1.000		
-	Control	Rig	Eng	0.07480	0.0669	327	1.11838	0.264	1.000	1.000		
-	Control	Rig	Spa	0.06234	0.1097	150	0.56847	0.571	1.000	1.000		

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk	ptom
-			Control	Right	Chinese-English	0.10170	0.1097	15	0.927	0.355	1.000	1.000
		Spanish-English	PhonOrth	Right	Chinese-English	0.15762	0.1097	15	1.437	0.153	0.999	1.000
			Phon	Left	English	0.31042	0.1097	15	2.830	0.005	0.423	1.000
			Phon	Left	Spanish-English	0.05707	0.0820	26	0.696	0.487	1.000	1.000
			Phon	Left	Chinese-English	0.16910	0.1097	15	1.542	0.125	0.997	1.000
			Phon	Right	English	0.02846	0.1097	15	0.259	0.796	1.000	1.000
			Phon	Right	Spanish-English	0.05154	0.0669	32	0.770	0.441	1.000	1.000
			Phon	Right	Chinese-English	0.26820	0.1097	15	2.445	0.016	0.713	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk	ptom
-	Orth	Left	English	0.25801	0.1097	15	2.35288	0.02076	0.720	0.476	1.000	
-	Orth	Left	Spanish-English	0.20384	0.0820	206	2.48727	0.01414	0.684	1.000		
-	Orth	Left	Chinese-English	0.24832	0.1097	15	2.26446	0.02530	0.825	1.000		
-	Orth	Right	English	0.02780	0.1097	15	0.25353	0.02076	0.853	1.000		
-	Orth	Right	Spanish-English	0.15385	0.0669	327	2.30041	0.02222	0.812	1.000		
-	Orth	Right	Chinese-English	0.23614	0.1097	15	2.15338	0.03333	0.886	1.000		
-	Control	Left	English	0.31503	0.1097	15	2.87278	0.02076	0.305	0.993	1.000	
-	Control	Left	Spanish-English	0.03898	0.0820	206	0.47566	0.01414	0.635	1.000	1.000	

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk	Phol
			Control	Left	Chinese-English	0.14266	0.1097	150	1.30091	0.195	1.000	1.000
			Control	Right	English	-0.05734	0.1097	150	-0.52293	0.602	1.000	1.000
			Control	Right	Spanish-English	0.07979	0.0669	327	1.19305	0.234	1.000	1.000
			Control	Right	Chinese-English	0.11915	0.1097	150	1.08659	0.279	1.000	1.000
		Chinese-English	Phon	Left	English	0.15280	0.1097	150	1.39341	0.166	0.999	1.000
			Phon	Left	Spanish-English	-0.10055	0.1097	150	-0.91689	0.361	1.000	1.000
			Phon	Left	Chinese-English	0.01148	0.0820	206	0.14007	0.889	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Phon	Right	English	-	English	0.12915	0.1097	150	1.1778	0.241	1.000	1.000
-	Phon	Right	Spanish-English	-	Spanish-English	0.10608	0.1097	150	0.96737	0.335	1.000	1.000
-	Phon	Right	Chinese-English	-	Chinese-English	0.11058	0.0669	27	1.65343	0.099	0.994	1.000
-	Orth	Left	English	-	English	0.10040	0.1097	150	0.91553	0.361	1.000	1.000
-	Orth	Left	Spanish-English	-	Spanish-English	0.04622	0.1097	150	0.42148	0.674	1.000	1.000
-	Orth	Left	Chinese-English	-	Chinese-English	0.09070	0.0820	26	1.10674	0.270	1.000	1.000
-	Orth	Right	English	-	English	0.12982	0.1097	150	1.18382	0.238	1.000	1.000
-	Orth	Right	Spanish-English	-	Spanish-English	0.00377	0.1097	150	0.03439	0.973	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> ey	P <sub>hol</sub> m
-			Orth	Right	Chinese-English	0.07852	0.0669	327	1.17405	0.241	1.000	1.000
-			Control	Left	English	0.15741	0.1097	150	1.43543	0.153	0.999	1.000
-			Control	Left	Spanish-English	0.19660	0.1097	150	1.783	0.075	0.982	1.000
-			Control	Left	Chinese-English	0.01496	0.0820	206	0.18258	0.855	1.000	1.000
-			Control	Right	English	0.21496	0.1097	150	1.96028	0.052	0.952	1.000
-			Control	Right	Spanish-English	0.07783	0.1097	150	0.70974	0.479	1.000	1.000
-			Control	Right	Chinese-English	0.03846	0.0669	327	0.57514	0.566	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison													
RRT Target	Hemisphere	Group		RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
Phon	Left	English	-	Phon	Left	Spanish-English	-0.25335	0.1097	150	-2.31030	0.022	0.803	1.000
			-			Phon	Left	Chinese-English	-0.14132	0.1097	150	-1.28873	0.199
		-	Phon	Right	English			-0.28195	0.0758	177	-3.7170	<.001	0.048
		-			Phon	Right	Spanish-English	-0.25888	0.1097	150	-2.36078	0.020	0.771
	-	Phon	Right	Chinese-English			-0.04222	0.1097	150	-0.38502	0.701	1.000	1.000
	-			Orth	Left	English	-0.05240	0.0669	240	-0.78357	0.434	1.000	1.000
	-	Orth	Left			Spanish-English	-0.10658	0.1097	150	-0.97193	0.333	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Orth	Left	Chinese-English	Left	Chinese-English	-0.06210	0.097	150	-0.56630	0.572	1.000	1.000
-	Orth	Right	English	Right	English	-0.28262	0.0820	206	-3.44855	<.001	0.102	0.182
-	Orth	Right	Spanish-English	Right	Spanish-English	-0.15657	0.097	150	-1.42780	0.155	0.999	1.000
-	Orth	Right	Chinese-English	Right	Chinese-English	-0.07428	0.097	150	-0.67738	0.499	1.000	1.000
-	Control	Left	English	Left	English	0.00461	0.069	327	0.06891	0.945	1.000	1.000
-	Control	Left	Spanish-English	Left	Spanish-English	-0.34940	0.097	150	-3.18624	0.002	0.206	0.465
-	Control	Left	Chinese-English	Left	Chinese-English	-0.16776	0.097	150	-1.52985	0.128	0.998	1.000
-	Control	Right	English	Right	English	-0.36776	0.0820	206	-4.48752	<.001	0.003	0.003

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	P <sub>tuk</sub> <sub>ey</sub>	P <sub>hol</sub> <sub>m</sub>
-			Control	Right	Spanish-English	-0.23063	0.1097	150	-2.10315	0.037	0.907	1.000
-			Control	Right	Chinese-English	-0.19126	0.1097	150	-1.74417	0.083	0.987	1.000
-		Spanish-English	Phon	Left	Chinese-English	0.11202	0.1097	157	1.02157	0.309	1.000	1.000
-			Phon	Right	English	-0.02861	0.1097	150	-0.26088	0.795	1.000	1.000
-			Phon	Right	Spanish-English	-0.00554	0.0758	157	-0.07299	0.942	1.000	1.000
-			Phon	Right	Chinese-English	0.21112	0.1097	150	1.92528	0.056	0.960	1.000
-			Orth	Left	English	0.20094	0.1097	150	1.83242	0.069	0.977	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk	ptom
-	Orth	Left	Spanish-English	Left	Spanish-English	0.14676	0.0669	327	2.19450	0.029	0.870	1.000
-	Orth	Left	Chinese-English	Left	Chinese-English	0.19125	0.097	150	1.74400	0.083	0.987	1.000
-	Orth	Right	English	Right	English	-0.02927	0.097	150	-0.26693	0.790	1.000	1.000
-	Orth	Right	Spanish-English	Right	Spanish-English	0.09677	0.0820	206	1.18087	0.239	1.000	1.000
-	Orth	Right	Chinese-English	Right	Chinese-English	0.17906	0.097	150	1.63292	0.105	0.994	1.000
-	Control	Left	English	Left	English	0.25795	0.097	150	2.35233	0.020	0.777	1.000
-	Control	Left	Spanish-English	Left	Spanish-English	-0.09605	0.0669	327	-1.43625	0.152	0.999	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk	Phol
-			Control	Left	Chinese-English	0.08558	0.1097	150	0.78045	0.436	1.000	1.000
-			Control	Right	English	-0.11442	0.1097	150	-1.04338	0.298	1.000	1.000
-			Control	Right	Spanish-English	0.02272	0.0820	206	0.27719	0.782	1.000	1.000
-			Control	Right	Chinese-English	0.06208	0.1097	150	0.56613	0.572	1.000	1.000
-	Chinese-English		Phon	Right	English	0.14063	0.1097	150	1.28246	0.202	1.000	1.000
-			Phon	Right	Spanish-English	0.11756	0.1097	150	1.07205	0.285	1.000	1.000
-			Phon	Right	Chinese-English	0.09910	0.0758	157	1.30668	0.193	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk	ptom
-	Orth	Left	English	Left	English	0.08892	0.1097	150	0.81085	0.419	1.000	1.000
-	Orth	Left	Spanish-English	Left	Spanish-English	0.03474	0.1097	150	0.31680	0.752	1.000	1.000
-	Orth	Left	Chinese-English	Left	Chinese-English	0.07922	0.0669	27	1.18455	0.237	1.000	1.000
-	Orth	Right	English	Right	English	0.14130	0.1097	150	1.28850	0.200	1.000	1.000
-	Orth	Right	Spanish-English	Right	Spanish-English	0.01525	0.1097	150	0.13907	0.890	1.000	1.000
-	Orth	Right	Chinese-English	Right	Chinese-English	0.06704	0.0820	26	0.81803	0.414	1.000	1.000
-	Control	Left	English	Left	English	0.14593	0.1097	150	1.33075	0.185	1.000	1.000
-	Control	Left	Spanish-English	Left	Spanish-English	0.20808	0.1097	150	1.89751	0.060	0.966	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison													
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk	ptom	
-			Control	Left	Chinese-English	-0.02644	0.0669	327	-0.39537	0.693	1.000	1.000	
-			Control	Right	English	-0.22644	0.1097	150	-2.06496	0.041	0.921	1.000	
-			Control	Right	Spanish-English	-0.08931	0.1097	150	-0.81442	0.417	1.000	1.000	
-			Control	Right	Chinese-English	-0.04994	0.0820	206	-0.60942	0.543	1.000	1.000	
	Right	English	-	Phon	Right	Spanish-English	0.02307	0.1097	150	0.21041	0.834	1.000	1.000
-			Phon	Right	Chinese-English	0.23973	0.1097	150	2.18617	0.030	0.870	1.000	
-			Orth	Left	English	0.22955	0.0820	206	2.80102	0.006	0.443	1.000	

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk	Phol
-	Orth	Left	Spanish-English	Left	Spanish-English	0.17537	0.1097	150	1.59926	0.112	0.996	1.000
-	Orth	Left	Chinese-English	Left	Chinese-English	0.21985	0.1097	150	2.00489	0.047	0.940	1.000
-	Orth	Right	English	Right	English	-6.63e-4	0.0669	327	-0.00991	0.992	1.000	1.000
-	Orth	Right	Spanish-English	Right	Spanish-English	0.12538	0.1097	150	1.14339	0.255	1.000	1.000
-	Orth	Right	Chinese-English	Right	Chinese-English	0.20767	0.1097	150	1.89380	0.060	0.966	1.000
-	Control	Left	English	Left	English	0.28656	0.0820	206	3.49670	<.001	0.089	0.155
-	Control	Left	Spanish-English	Left	Spanish-English	-0.06745	0.1097	150	-0.61505	0.539	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk	ptom
-			Control	Left	Chinese-English	0.11419	0.1097	150	1.04133	0.299	1.000	1.000
-			Control	Right	English	-0.08581	0.0669	327	-1.28305	0.200	1.000	1.000
-			Control	Right	Spanish-English	0.05132	0.0907	150	0.46804	0.640	1.000	1.000
-			Control	Right	Chinese-English	0.09069	0.1097	150	0.82701	0.410	1.000	1.000
-		Spanish-English	Phon	Right	Chinese-English	0.21666	0.1097	150	1.97576	0.050	0.948	1.000
-			Orth	Left	English	0.20648	0.1097	150	1.88290	0.062	0.968	1.000
-			Orth	Left	Spanish-English	0.15230	0.0820	206	1.85840	0.065	0.974	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> ey	P <sub>hol</sub> m
-	Orth	Left	Chinese-English	Left	Chinese-English	0.19678	0.1097	150	1.7948	0.075	0.982	1.000
-	Orth	Right	English	Right	English	-0.02374	0.1097	150	-0.21645	0.829	1.000	1.000
-	Orth	Right	Spanish-English	Right	Spanish-English	0.10231	0.0669	327	1.52980	0.127	0.998	1.000
-	Orth	Right	Chinese-English	Right	Chinese-English	0.18460	0.1097	150	1.68340	0.094	0.991	1.000
-	Control	Left	English	Left	English	0.26349	0.1097	150	2.40281	0.017	0.743	1.000
-	Control	Left	Spanish-English	Left	Spanish-English	-0.09052	0.0820	206	-1.10453	0.271	1.000	1.000
-	Control	Left	Chinese-English	Left	Chinese-English	0.09112	0.1097	150	0.83093	0.407	1.000	1.000
-	Control	Right	English	Right	English	-0.10888	0.1097	150	-0.99291	0.322	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk	ptom
-			Control	Right	Spanish-English	0.02825	0.0669	327	0.42244	0.673	1.000	1.000
-			Control	Right	Chinese-English	0.06762	0.097	150	0.61661	0.538	1.000	1.000
-		Chinese-English	Orth	Left	English	-0.01018	0.097	150	-0.009286	0.926	1.000	1.000
-			Orth	Left	Spanish-English	-0.06436	0.097	150	-0.58691	0.558	1.000	1.000
-			Orth	Left	Chinese-English	-0.01988	0.0820	206	-0.24257	0.809	1.000	1.000
-			Orth	Right	English	0.24040	0.097	150	2.1921	0.030	0.868	1.000
-			Orth	Right	Spanish-English	-0.11435	0.097	150	-1.04278	0.299	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk	ptom
-			Orth	Right	Chinese-English	-0.03206	0.0669	327	-0.47938	0.632	1.000	1.000
-			Control	Left	English	0.04683	0.097	150	0.42704	0.670	1.000	1.000
-			Control	Left	Spanish-English	-0.30718	0.097	150	-2.80122	0.006	0.445	1.000
-			Control	Left	Chinese-English	-0.12554	0.0820	206	-1.53189	0.127	0.998	1.000
-			Control	Right	English	-0.32554	0.097	150	-2.96867	0.003	0.328	0.916
-			Control	Right	Spanish-English	-0.18841	0.097	150	-1.71813	0.088	0.989	1.000
-			Control	Right	Chinese-English	-0.14904	0.0669	327	-2.22858	0.027	0.853	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison													
RRT Target	Hemisphere	Group		RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
Orth	Left	English	-	Orth	Left	Spanish-English	-0.05418	0.1097	150	-0.49405	0.622	1.000	1.000
			-			Orth	Left	Chinese-English	-0.00970	0.1097	150	0.08842	0.930
		-	Orth	Right	English			-0.23021	0.0758	157	-3.03546	0.003	0.286
		-			Orth	Right	Spanish-English	-0.10417	0.1097	150	-0.94991	0.344	1.000
	-	Orth	Right	Chinese-English			-0.02188	0.1097	150	-0.19950	0.842	1.000	1.000
	-			Control	Left	English	0.05701	0.0669	327	0.85248	0.395	1.000	1.000
	-	Control	Left			Spanish-English	-0.29700	0.1097	150	-2.70835	0.008	0.515	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk	ptom
-			Control	Left	Chinese-English	-0.11536	0.1097	150	-1.05197	0.295	1.000	1.000
-			Control	Right	English	-0.31536	0.0820	206	-3.84807	<.001	0.030	0.043
-			Control	Right	Spanish-English	-0.17822	0.1097	150	-1.62526	0.106	0.995	1.000
-			Control	Right	Chinese-English	-0.13886	0.1097	150	-1.26629	0.207	1.000	1.000
-	Spanish-English		Orth	Left	Chinese-English	0.04448	0.1097	150	0.40563	0.686	1.000	1.000
-	Spanish-English		Orth	Right	English	0.17604	0.1097	150	1.60530	0.111	0.995	1.000
-	Spanish-English		Orth	Right	Spanish-English	0.04999	0.0758	157	0.65914	0.511	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Orth	Right	Chinese-English			0.03230	0.1097	150	0.29455	0.769	1.000	1.000
-	Control	Left	English			0.11119	0.1097	150	1.01396	0.312	1.000	1.000
-	Control	Left	Spanish-English			-0.24282	0.0669	327	-3.63075	<.001	0.056	0.089
-	Control	Left	Chinese-English			-0.06118	0.1097	150	-0.55792	0.578	1.000	1.000
-	Control	Right	English			-0.26118	0.1097	150	-2.38176	0.018	0.757	1.000
-	Control	Right	Spanish-English			-0.12405	0.0820	206	-1.51366	0.132	0.998	1.000
-	Control	Right	Chinese-English			-0.08468	0.1097	150	-0.77224	0.441	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
		Chinese-English	Orth	Right	English	-0.22052	0.1097	150	-2.01093	0.046	0.938	1.000
			Orth	Right	Spanish-English	-0.09447	0.1097	150	-0.86150	0.390	1.000	1.000
			Orth	Right	Chinese-English	-0.01218	0.0758	157	-0.16062	0.873	1.000	1.000
			Control	Left	English	0.06671	0.1097	150	0.60832	0.544	1.000	1.000
			Control	Left	Spanish-English	0.28730	0.1097	150	2.61994	0.010	0.583	1.000
			Control	Left	Chinese-English	-0.10566	0.0669	277	-1.57992	0.115	0.997	1.000
			Control	Right	English	-0.30566	0.1097	150	-2.78739	0.006	0.455	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk	ptom
		-	Control	Right	Spanish-English	-0.16853	0.1097	150	-1.53685	0.126	0.997	1.000
		-	Control	Right	Chinese-English	-0.12916	0.0820	206	-1.57609	0.117	0.997	1.000
	Right	English	-	Orth	Right	Spanish-English	0.12605	0.1097	154	1.14943	0.252	1.000
		-	Orth	Right	Chinese-English	0.20834	0.1097	150	1.89985	0.059	0.965	1.000
		-	Control	Left	English	0.28723	0.0820	206	3.50478	<.001	0.087	0.151
		-	Control	Left	Spanish-English	-0.06678	0.1097	150	-0.60901	0.543	1.000	1.000
		-	Control	Left	Chinese-English	0.11485	0.1097	150	1.04737	0.297	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk	ptom
-	Control	Right	English	-	0.08515	0.069	3669	327	-1.27314	0.204	1.000	1.000
-	Control	Right	Spanish-English	0.05199	0.097	1570	150	0.47408	0.636	1.000	1.000	
-	Control	Right	Chinese-English	0.09135	0.097	1570	150	0.83305	0.406	1.000	1.000	
-	Spanish-English	Orth	Right	Chinese-English	0.08229	0.097	1570	150	0.75041	0.454	1.000	1.000
-	Control	Left	English	0.16118	0.097	1570	150	1.46982	0.144	0.999	1.000	
-	Control	Left	Spanish-English	-0.19283	0.0820	2860	280	-2.35294	0.02078	0.700	1.000	
-	Control	Left	Chinese-English	-0.01119	0.097	1570	150	0.10206	0.919	1.000	1.000	
-	Control	Right	English	-0.21119	0.097	1570	150	-1.92589	0.05660	0.900	1.000	

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk	ptom
-			Control	Right	Spanish-English	-0.07406	0.0669	327	-1.10736	0.269	1.000	1.000
-			Control	Right	Chinese-English	-0.03469	0.097	150	-0.35638	0.752	1.000	1.000
-		Chinese-English	Control	Left	English	0.07889	0.097	150	0.7941	0.473	1.000	1.000
-			Control	Left	Spanish-English	-0.27512	0.097	150	-2.50885	0.013	0.667	1.000
-			Control	Left	Chinese-English	-0.09348	0.0820	206	-1.14068	0.255	1.000	1.000
-			Control	Right	English	0.29348	0.097	150	2.67630	0.008	0.540	1.000
-			Control	Right	Spanish-English	-0.15635	0.097	150	-1.42576	0.156	0.999	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk	ptom
			Control	Right	Chinese-English	-0.11698	0.0669	327	-1.749	0.081	0.988	1.000
Control	Left	English	Control	Left	Spanish-English	0.35401	0.097	150	3.228	0.002	0.186	0.407
			Control	Left	Chinese-English	0.17237	0.097	150	1.571	0.118	0.997	1.000
			Control	Right	English	0.37237	0.0758	157	4.909	<.001	<.001	<.001
			Control	Right	Spanish-English	0.23524	0.097	150	2.145	0.034	0.889	1.000
			Control	Right	Chinese-English	0.19587	0.097	150	1.786	0.076	0.983	1.000
		Spanish-English	Control	Left	Chinese-English	0.18164	0.097	150	1.656	0.100	0.993	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

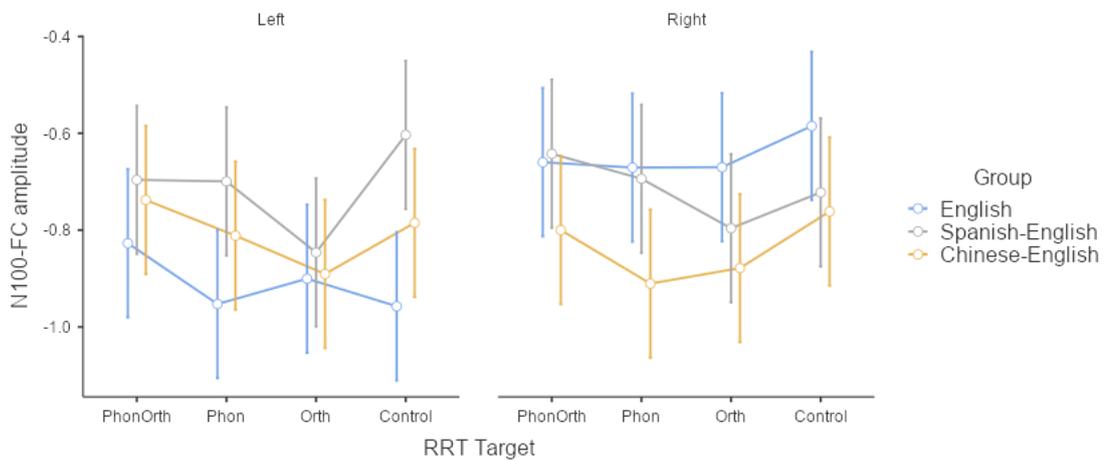
Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
			Control	Right	English	-0.01836	0.1097	150	-0.16745	0.867	1.000	1.000
			Control	Right	Spanish-English	0.11877	0.0758	157	1.56605	0.119	0.997	1.000
			Control	Right	Chinese-English	0.15814	0.1097	150	1.44206	0.151	0.999	1.000
		Chinese-English	Control	Right	English	-0.20000	0.1097	150	-1.82383	0.070	0.978	1.000
			Control	Right	Spanish-English	-0.06287	0.1097	150	-0.57329	0.567	1.000	1.000
			Control	Right	Chinese-English	-0.02350	0.0758	157	-0.30989	0.757	1.000	1.000
	Right	English	Control	Right	Spanish-English	0.13713	0.1097	150	1.25054	0.213	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	$\eta^2_{tuk}$	$\eta^2_{m}$
			Control	Right	Chinese-English	0.17650	0.1097	150	1.60951	0.110	0.995	1.000
		Spanish-English	Control	Right	Chinese-English	0.03936	0.1097	150	0.35897	0.720	1.000	1.000

Estimated Marginal Means

RRT Target \* Group \* Hemisphere



Repeated Measures ANOVA

Within Subjects Effects

	Sphericity Correction	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Hemisphere	None	0.9005	1	0.9005	5.993	0.017	0.095

Within Subjects Effects

	<b>Sphericity Correction</b>	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
	Greenhouse-Geisser	0.9005	1.00	0.9005	5.993	0.017	0.095
	Huynh-Feldt	0.9005	1.00	0.9005	5.993	0.017	0.095
Hemisphere * Group	None	0.5732	2	0.2866	1.907	0.158	0.063
	Greenhouse-Geisser	0.5732	2.00	0.2866	1.907	0.158	0.063
	Huynh-Feldt	0.5732	2.00	0.2866	1.907	0.158	0.063
Residual	None	8.5647	57	0.1503			
	Greenhouse-Geisser	8.5647	57.00	0.1503			
	Huynh-Feldt	8.5647	57.00	0.1503			
RRT diff	None	0.8442	3	0.2814	5.176	0.002	0.083
	Greenhouse-Geisser	0.8442	2.69	0.3144	5.176	0.003	0.083
	Huynh-Feldt	0.8442	2.83	0.2983	5.176	0.002	0.083
RRT diff * Group	None	0.3346	6	0.0558	1.026	0.410	0.035
	Greenhouse-Geisser	0.3346	5.37	0.0623	1.026	0.407	0.035
	Huynh-Feldt	0.3346	5.66	0.0591	1.026	0.409	0.035
Residual	None	9.2974	171	0.0544			
	Greenhouse-Geisser	9.2974	153.06	0.0607			
	Huynh-Feldt	9.2974	161.34	0.0576			
Hemisphere * RRT diff	None	0.0429	3	0.0143	0.407	0.748	0.007

Within Subjects Effects

	<b>Sphericity Correction</b>	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
	Greenhouse-Geisser	0.0429	2.59	0.0166	0.407	0.718	0.007
	Huynh-Feldt	0.0429	2.72	0.0158	0.407	0.729	0.007
Hemisphere * RRT diff * Group	None	0.4821	6	0.0804	2.290	0.038	0.074
	Greenhouse-Geisser	0.4821	5.18	0.0931	2.290	0.047	0.074
	Huynh-Feldt	0.4821	5.44	0.0886	2.290	0.043	0.074
Residual	None	5.9994	171	0.0351			
	Greenhouse-Geisser	5.9994	147.52	0.0407			
	Huynh-Feldt	5.9994	155.15	0.0387			

Note. Type 3 Sums of Squares

Between Subjects Effects

	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
Group	2.32	2	1.158	2.75	0.073	0.088
Residual	24.04	57	0.422			

Note. Type 3 Sums of Squares

## Assumptions

## Tests of Sphericity

	<b>Mauchly's W</b>	<b>p</b>	<b>Greenhouse-Geisser <math>\epsilon</math></b>	<b>Huynh-Feldt <math>\epsilon</math></b>
Hemisphere	1.000	NaN <sup>a</sup>	1.000	1.000
RRT diff	0.821	0.052	0.895	0.944
Hemisphere * RRT diff	0.796	0.026	0.863	0.907

<sup>a</sup> The repeated measures has only two levels. The assumption of sphericity is always met when the repeated measures has only two levels

## Homogeneity of Variances Test (Levene's)

	<b>F</b>	<b>df1</b>	<b>df2</b>	<b>p</b>
NAA_P1.LeftFC\$PhonOrth_PTdiff	0.0183	2	57	0.982
NAA_P1.RightFC\$PhonOrth_PTdiff	0.3871	2	57	0.681
NAA_P1.LeftFC\$Phon_PTdiff	0.5192	2	57	0.598
NAA_P1.RightFC\$Phon_PTdiff	1.0809	2	57	0.346
NAA_P1.LeftFC\$Orth_PTdiff	0.1462	2	57	0.864
NAA_P1.RightFC\$Orth_PTdiff	0.2722	2	57	0.763
NAA_P1.LeftFC\$Control_PTdiff	1.2861	2	57	0.284
NAA_P1.RightFC\$Control_PTdiff	0.0669	2	57	0.935

## Post Hoc Tests

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison													
Hemisphere	RRT diff	Group		Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	plim
Left	PhonOrth	English	-	Left	PhonOrth	Spanish-English	0.16498	0.1025	189	1.60962	0.109	0.995	1.000
						Chinese-English	0.10698	0.1025	189	1.04377	0.298	1.000	1.000
	Phon	-	Left	Phon	English	-0.12562	0.0669	327	-1.87841	0.061	0.971	1.000	
					Spanish-English	0.16178	0.1025	189	1.57836	0.116	0.997	1.000	
	-	Left	Phon	Left	Chinese-English	0.03340	0.1025	189	0.32586	0.745	1.000	1.000	
					Orth	English	-0.07322	0.0669	327	-1.09483	0.274	1.000	1.000
	-	Left	Orth	Left	Spanish-English	0.01501	0.1025	189	0.14647	0.884	1.000	1.000	

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-	Left	Orth	Chinese-English	-0.04582	0.1025	189	0.44705	0.655	1.47	0.655	1.000	1.000
-	Left	Control	English	-0.13023	0.0669	327	1.94731	0.052	0.019	0.052	0.958	1.000
-	Left	Control	Spanish-English	0.25783	0.1025	189	2.51550	0.013	0.015	0.013	0.663	1.000
-	Left	Control	Chinese-English	0.05984	0.1025	189	0.58384	0.560	0.838	0.560	1.000	1.000
-	Right	PhonOrth	English	0.08811	0.0799	142	1.10240	0.272	0.404	0.272	1.000	1.000
-	Right	PhonOrth	Spanish-English	0.26888	0.1025	189	2.62333	0.009	0.023	0.009	0.580	1.000
-	Right	PhonOrth	Chinese-English	0.10472	0.1025	189	1.02168	0.308	0.216	0.308	1.000	1.000
-	Right	Phon	English	0.07709	0.0857	83	0.89913	0.370	0.991	0.370	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-			Right	Phon	Spanish-English	0.21735	0.1025	189	2.12051	0.035	0.901	1.000
-			Right	Phon	Chinese-English	-0.00586	0.1025	189	-0.05718	0.954	1.000	1.000
-			Right	Orth	English	0.07776	0.0857	83	0.90685	0.366	1.000	1.000
-			Right	Orth	Spanish-English	0.11504	0.1025	189	1.12233	0.263	1.000	1.000
-			Right	Orth	Chinese-English	0.02620	0.1025	189	0.25562	0.799	1.000	1.000
-			Right	Control	English	0.16290	0.0857	83	1.89987	0.059	0.966	1.000
-			Right	Control	Spanish-English	0.18909	0.1025	189	1.84487	0.067	0.975	1.000
-			Right	Control	Chinese-English	0.14318	0.1025	189	1.39695	0.164	0.999	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	pholm
		Spanish-English	-	Left	PhonOrth	Chinese-English	-0.05800	0.1025	189	-0.565	0.572	1.000
			-	Left	Phon	English	-0.29061	0.1025	189	-2.835	0.005	1.000
			-	Left	Phon	Spanish-English	-0.00320	0.0669	327	0.047	0.962	1.000
			-	Left	Phon	Chinese-English	-0.13158	0.1025	189	-1.283	0.201	1.000
			-	Left	Orth	English	-0.23820	0.1025	189	-2.323	0.021	0.796
			-	Left	Orth	Spanish-English	-0.14997	0.0669	327	-2.242	0.026	0.845
			-	Left	Orth	Chinese-English	-0.21080	0.1025	189	-2.056	0.041	0.925

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-	Left	Control	English	-	English	0.29521	0.1025	189	2.88023	0.004	0.386	1.000
-	Left	Control	Spanish-English	-	Spanish-English	0.09285	0.069	327	1.38834	0.166	1.000	1.000
-	Left	Control	Chinese-English	-	Chinese-English	0.10514	0.1025	189	1.02578	0.306	1.000	1.000
-	Right	PhonOrth	English	-	English	0.07687	0.1025	189	0.75001	0.454	1.000	1.000
-	Right	PhonOrth	Spanish-English	-	Spanish-English	0.10390	0.0799	142	1.30002	0.196	1.000	1.000
-	Right	PhonOrth	Chinese-English	-	Chinese-English	0.06026	0.1025	189	0.58794	0.557	1.000	1.000
-	Right	Phon	English	-	English	0.08789	0.1025	189	0.85746	0.392	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-			Right	Phon	Spanish-English	0.05236	0.0857	183	0.61071	0.542	1.000	1.000
-			Right	Phon	Chinese-English	-0.17084	0.1025	189	-1.66680	0.097	0.993	1.000
-			Right	Orth	English	-0.08722	0.1025	189	-0.85099	0.396	1.000	1.000
-			Right	Orth	Spanish-English	-0.04995	0.0857	183	-0.58250	0.561	1.000	1.000
-			Right	Orth	Chinese-English	-0.13878	0.1025	189	-1.35400	0.177	1.000	1.000
-			Right	Control	English	0.00208	0.1025	189	0.02028	0.984	1.000	1.000
-			Right	Control	Spanish-English	0.02411	0.0857	183	0.28121	0.779	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	plim
			Right	Control	Chinese-English	-0.02180	0.1025	18	-0.21267	0.832	1.000	1.000
		Chinese-English	Left	Phon	English	-0.23261	0.1025	18	-2.26942	0.024	0.828	1.000
			Left	Phon	Spanish-English	0.05479	0.1025	18	0.53459	0.594	1.000	1.000
			Left	Phon	Chinese-English	-0.07358	0.0669	27	-1.10025	0.272	1.000	1.000
			Left	Orth	English	-0.18020	0.1025	18	-1.75814	0.080	0.986	1.000
			Left	Orth	Spanish-English	-0.09197	0.1025	18	-0.89730	0.371	1.000	1.000
			Left	Orth	Chinese-English	-0.15280	0.0669	27	-2.28480	0.023	0.822	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-	Left	Control	English	-	English	0.23722	0.1025	18	-2.31438	0.022	0.802	1.000
-	Left	Control	Spanish-English	-	Spanish-English	0.15085	0.1025	18	1.47173	0.143	0.999	1.000
-	Left	Control	Chinese-English	-	Chinese-English	0.04714	0.0669	32	0.70489	0.481	1.000	1.000
-	Right	PhonOrth	English	-	English	0.01888	0.1025	18	0.18416	0.854	1.000	1.000
-	Right	PhonOrth	Spanish-English	-	Spanish-English	0.16190	0.1025	18	1.57956	0.116	0.996	1.000
-	Right	PhonOrth	Chinese-English	-	Chinese-English	0.00226	0.0799	42	0.02833	0.977	1.000	1.000
-	Right	Phon	English	-	English	0.02989	0.1025	18	0.29160	0.771	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-			Right	Phon	Spanish-English	0.11036	0.1025	189	1.07674	0.283	1.000	1.000
-			Right	Phon	Chinese-English	-0.11284	0.0857	113	-1.31605	0.190	1.000	1.000
-			Right	Orth	English	-0.02923	0.1025	189	-0.28514	0.776	1.000	1.000
-			Right	Orth	Spanish-English	0.00805	0.1025	189	0.07856	0.937	1.000	1.000
-			Right	Orth	Chinese-English	-0.08078	0.0857	113	-0.94214	0.347	1.000	1.000
-			Right	Control	English	0.05592	0.1025	189	0.54558	0.586	1.000	1.000
-			Right	Control	Spanish-English	0.08211	0.1025	189	0.80110	0.424	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	pholm
			Right	Control	Chinese-English	0.03620	0.087	18	0.422	0.673	1.000	1.000
	Phon	English	Left	Phon	Spanish-English	0.28740	0.1025	18	2.801	0.006	0.441	1.000
			Left	Phon	Chinese-English	0.15903	0.1025	18	1.551	0.122	0.997	1.000
			Left	Orth	English	0.05240	0.0669	32	0.783	0.434	1.000	1.000
			Left	Orth	Spanish-English	0.14064	0.1025	18	1.372	0.172	1.000	1.000
			Left	Orth	Chinese-English	0.07980	0.1025	18	0.778	0.437	1.000	1.000
			Left	Control	English	-0.00461	0.0669	32	-0.068	0.945	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	plim
		-	Left	Control	Spanish-English	0.38346	0.1025	18	3.7415	<.001	0.043	0.066
		-	Left	Control	Chinese-English	0.18547	0.1025	18	1.80949	0.072	0.980	1.000
		-	Right	PhonOrth	English	0.21373	0.0857	83	2.49267	0.014	0.680	1.000
		-	Right	PhonOrth	Spanish-English	0.39451	0.1025	18	3.84898	<.001	0.030	0.045
		-	Right	PhonOrth	Chinese-English	0.23034	0.1025	18	2.24732	0.026	0.841	1.000
		-	Right	Phon	English	0.20272	0.0799	42	2.53643	0.012	0.647	1.000
		-	Right	Phon	Spanish-English	0.34297	0.1025	18	3.34616	<.001	0.136	0.265
		-	Right	Phon	Chinese-English	0.11976	0.1025	18	1.16847	0.244	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	plim
		-	Right	Orth	English	0.20338	0.0857	18	2.37197	0.019	0.765	1.000
		-	Right	Orth	Spanish-English	0.24066	0.1025	18	2.34798	0.020	0.781	1.000
		-	Right	Orth	Chinese-English	0.15183	0.1025	18	1.48126	0.140	0.999	1.000
		-	Right	Control	English	0.28853	0.0857	18	3.36499	<.001	0.129	0.251
		-	Right	Control	Spanish-English	0.31472	0.1025	18	3.07052	0.002	0.263	0.647
		-	Right	Control	Chinese-English	0.26881	0.1025	18	2.62260	0.009	0.581	1.000
		-	Left	Phon	Chinese-English	0.12838	0.1025	18	1.25250	0.212	1.000	1.000
		-	Left	Orth	English	0.23500	0.1025	18	2.29273	0.023	0.815	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	pholm
		-	Left	Orth	Spanish-English	-0.14676	0.0669	327	-2.19450	0.029	0.870	1.000
		-	Left	Orth	Chinese-English	-0.20760	0.1025	189	-2.02541	0.044	0.935	1.000
		-	Left	Control	English	-0.29201	0.1025	189	-2.84897	0.005	0.408	1.000
		-	Left	Control	Spanish-English	0.09605	0.0669	327	1.43625	0.152	0.999	1.000
		-	Left	Control	Chinese-English	-0.10194	0.1025	189	-0.99452	0.321	1.000	1.000
		-	Right	PhonOrth	English	-0.07367	0.1025	189	-0.71875	0.473	1.000	1.000
		-	Right	PhonOrth	Spanish-English	0.10711	0.0857	137	1.24914	0.213	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	plim
-			Right	PhonOrth	Chinese-English	-0.05706	0.1025	189	-0.5568	0.578	1.000	1.000
-			Right	Phon	English	-0.08468	0.1025	189	-0.82619	0.410	1.000	1.000
-			Right	Phon	Spanish-English	0.05557	0.0799	428	0.69528	0.488	1.000	1.000
-			Right	Phon	Chinese-English	-0.16764	0.1025	189	-1.6354	0.104	0.994	1.000
-			Right	Orth	English	-0.08402	0.1025	189	-0.81973	0.413	1.000	1.000
-			Right	Orth	Spanish-English	-0.04674	0.0857	83	-0.54513	0.586	1.000	1.000
-			Right	Orth	Chinese-English	-0.13558	0.1025	189	-1.32274	0.188	1.000	1.000
-			Right	Control	English	0.00113	0.1025	189	0.01099	0.991	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	pholm
			Right	Control	Spanish-English	0.02732	0.0857	183	0.31858	0.750	1.000	1.000
			Right	Control	Chinese-English	-0.01859	0.1025	89	-0.18141	0.856	1.000	1.000
		Chinese-English	Left	Orth	English	-0.10662	0.1025	89	-1.04024	0.300	1.000	1.000
			Left	Orth	Spanish-English	-0.01839	0.1025	89	-0.17940	0.858	1.000	1.000
			Left	Orth	Chinese-English	-0.07922	0.0669	327	-1.18455	0.237	1.000	1.000
			Left	Control	English	0.16363	0.1025	89	1.59647	0.112	0.996	1.000
			Left	Control	Spanish-English	0.22443	0.1025	89	2.18964	0.030	0.870	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hem isph ere	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tu</sub> key	P <sub>ho</sub> lm
		-	Left	Con trol	Chi nes e- Eng lish	0.02 644	0.0 66 9	3 2 7	0.3 95 37	0.6 93	1. 00 0	1. 00 0
		-	Rig ht	Pho nOr th	Eng lish	0.05 471	0.1 02 5	1 8 9	0.5 33 75	0.5 94	1. 00 0	1. 00 0
		-	Rig ht	Pho nOr th	Spa nis h- Eng lish	0.23 548	0.1 02 5	1 8 9	2.2 97 47	0.0 23	0. 81 2	1. 00 0
		-	Rig ht	Pho nOr th	Chi nes e- Eng lish	0.07 132	0.0 85 7	1 8 3	0.8 31 76	0.4 07	1. 00 0	1. 00 0
		-	Rig ht	Pho n	Eng lish	0.04 369	0.1 02 5	1 8 9	0.4 26 30	0.6 70	1. 00 0	1. 00 0
		-	Rig ht	Pho n	Spa nis h- Eng lish	0.18 395	0.1 02 5	1 8 9	1.7 94 65	0.0 74	0. 98 2	1. 00 0
		-	Rig ht	Pho n	Chi nes e- Eng lish	- 0.03 926	0.0 79 9	1 4 2	- 0.4 91 23	0.6 24	1. 00 0	1. 00 0
		-	Rig ht	Ort h	Eng lish	0.04 436	0.1 02 5	1 8 9	0.4 32 77	0.6 66	1. 00 0	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison													
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	pholm	
			-	Right	Orth	Spanish-English	0.08164	0.1025	189	0.79647	0.427	1.000	1.000
			-	Right	Orth	Chinese-English	-0.00720	0.0857	183	-0.08397	0.933	1.000	1.000
			-	Right	Control	English	0.12950	0.1025	163	1.248	0.208	1.000	1.000
			-	Right	Control	Spanish-English	0.15569	0.1025	189	1.51901	0.130	0.998	1.000
			-	Right	Control	Chinese-English	0.10978	0.0857	180	1.28036	0.202	1.000	1.000
	Orth	English	-	Left	Orth	Spanish-English	0.08823	0.1025	184	0.86084	0.390	1.000	1.000
			-	Left	Orth	Chinese-English	0.02740	0.1025	167	0.26733	0.790	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-	Left	Control	English	-	English	0.05701	0.069	327	-0.852	0.395	1.000	1.000
-	Left	Control	Spanish-English	-	Spanish-English	0.33105	0.105	189	3.229	0.001	0.182	0.389
-	Left	Control	Chinese-English	-	Chinese-English	0.13306	0.105	189	1.298	0.196	1.000	1.000
-	Right	PhonOrth	English	-	English	0.16133	0.087	113	1.881	0.061	0.969	1.000
-	Right	PhonOrth	Spanish-English	-	Spanish-English	0.34210	0.105	189	3.337	0.001	0.139	0.272
-	Right	PhonOrth	Chinese-English	-	Chinese-English	0.17794	0.105	189	1.736	0.084	0.988	1.000
-	Right	Phon	English	-	English	0.15032	0.087	113	1.753	0.081	0.986	1.000
-	Right	Phon	Spanish-English	-	Spanish-English	0.29057	0.105	189	2.834	0.005	0.418	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison													
Hemi sphe re	RRT diff	Gro up	Hem isph ere	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tu key</sub>	P <sub>ho lm</sub>	
		-	Rig ht	Pho n	Chi nes e- Eng lish	0.06 736	0.1 02 5	1 8 9	0.6 57 19	0.5 12	1. 00 0	1. 00 0	
		-	Rig ht	Ort h	Eng lish	0.15 098	0.0 79 9	1 4 2	1.8 89 04	0.0 61	0. 96 7	1. 00 0	
		-	Rig ht	Ort h	Spa nis h- Eng lish	0.18 826	0.1 02 5	1 8 9	1.8 36 70	0.0 68	0. 97 7	1. 00 0	
		-	Rig ht	Ort h	Chi nes e- Eng lish	0.09 942	0.1 02 5	1 8 9	0.9 69 99	0.3 33	1. 00 0	1. 00 0	
		-	Rig ht	Con trol	Eng lish	0.23 612	0.0 85 7	1 8 3	2.7 53 82	0.0 06	0. 47 9	1. 00 0	
		-	Rig ht	Con trol	Spa nis h- Eng lish	0.26 231	0.1 02 5	1 8 9	2.5 59 24	0.0 11	0. 63 0	1. 00 0	
		-	Rig ht	Con trol	Chi nes e- Eng lish	0.21 640	0.1 02 5	1 8 9	2.1 11 32	0.0 36	0. 90 5	1. 00 0	
		-	Spa nis h- Eng lish	Left	Ort h	Chi nes e- Eng lish	- 0.06 083	0.1 02 5	1 8 9	- 0.5 93 51	0.5 54	1. 00 0	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	plim
-	Left	Control	English		English	0.14525	0.1025	189	-1.41708	0.158	0.999	1.000
-	Left	Control	Spanish-English		Spanish-English	0.24282	0.0669	327	3.63075	<.001	0.056	0.089
-	Left	Control	Chinese-English		Chinese-English	0.04483	0.1025	189	0.43737	0.662	1.000	1.000
-	Right	PhonOrth	English		English	0.07309	0.1025	189	0.71314	0.477	1.000	1.000
-	Right	PhonOrth	Spanish-English		Spanish-English	0.25387	0.0857	183	2.96079	0.003	0.331	0.907
-	Right	PhonOrth	Chinese-English		Chinese-English	0.08971	0.1025	189	0.87521	0.383	1.000	1.000
-	Right	Phon	English		English	0.06208	0.1025	189	0.60570	0.545	1.000	1.000
-	Right	Phon	Spanish-English		Spanish-English	0.20233	0.0857	183	2.35973	0.019	0.773	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	pholm
		-	Right	Phon	Chinese-English	-0.02087	0.1025	189	-0.20364	0.839	1.000	1.000
		-	Right	Orth	English	0.06274	0.1025	189	0.61216	0.541	1.000	1.000
		-	Right	Orth	Spanish-English	0.10002	0.0799	429	1.25149	0.213	1.000	1.000
		-	Right	Orth	Chinese-English	0.01119	0.1025	189	0.10915	0.913	1.000	1.000
		-	Right	Control	English	0.14789	0.1025	189	1.44288	0.151	0.999	1.000
		-	Right	Control	Spanish-English	0.17408	0.0857	83	2.03024	0.044	0.933	1.000
		-	Right	Control	Chinese-English	0.12817	0.1025	189	1.25049	0.213	1.000	1.000
		-	Left	Control	English	-0.08441	0.1025	189	-0.82356	0.411	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	plim
-	Left	Control	Spanish-English	Control	Spanish-English	0.30365	0.1025	18	2.962	0.003	0.330	0.902
-	Left	Control	Chinese-English	Control	Chinese-English	0.10566	0.0669	32	1.579	0.115	0.997	1.000
-	Right	PhonOrth	English	PhonOrth	English	0.13393	0.1025	18	1.306	0.193	1.000	1.000
-	Right	PhonOrth	Spanish-English	PhonOrth	Spanish-English	0.31470	0.1025	18	3.070	0.002	0.263	0.647
-	Right	PhonOrth	Chinese-English	PhonOrth	Chinese-English	0.15054	0.0857	13	1.755	0.081	0.986	1.000
-	Right	Phon	English	Phon	English	0.12292	0.1025	18	1.199	0.232	1.000	1.000
-	Right	Phon	Spanish-English	Phon	Spanish-English	0.26317	0.1025	18	2.567	0.011	0.623	1.000
-	Right	Phon	Chinese-English	Phon	Chinese-English	0.03996	0.0857	13	0.466	0.642	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	plim
		-	Right	Orth	English	0.12358	0.1025	189	1.20568	0.229	1.000	1.000
		-	Right	Orth	Spanish-English	0.16086	0.1025	189	1.56938	0.118	0.997	1.000
		-	Right	Orth	Chinese-English	0.07202	0.0799	42	0.90112	0.369	1.000	1.000
		-	Right	Control	English	0.20872	0.1025	189	2.03639	0.043	0.932	1.000
		-	Right	Control	Spanish-English	0.23491	0.1025	189	2.29192	0.023	0.815	1.000
		-	Right	Control	Chinese-English	0.18900	0.0857	83	2.20428	0.029	0.863	1.000
Control	English	-	Left	Control	Spanish-English	0.38806	0.1025	189	3.78611	<.001	0.037	0.056
		-	Left	Control	Chinese-English	0.19008	0.1025	189	1.85445	0.065	0.974	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hem isph ere	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tu key</sub>	P <sub>ho lm</sub>
		-	Rig ht	Pho nOr th	Eng lish	0.21 834	0.0 85 7	1 8 3	2.5 46 42	0.0 12	0. 63 9	1. 00 0
		-	Rig ht	Pho nOr th	Spa nis h- Eng lish	0.39 912	0.1 02 5	1 8 9	3.8 93 94	< . 00 1	0. 02 6	0. 03 8
		-	Rig ht	Pho nOr th	Chi nes e- Eng lish	0.23 495	0.1 02 5	1 8 9	2.2 92 29	0.0 23	0. 81 5	1. 00 0
		-	Rig ht	Pho n	Eng lish	0.20 733	0.0 85 7	1 8 3	2.4 17 98	0.0 17	0. 73 4	1. 00 0
		-	Rig ht	Pho n	Spa nis h- Eng lish	0.34 758	0.1 02 5	1 8 9	3.3 91 12	< . 00 1	0. 12 0	0. 22 9
		-	Rig ht	Pho n	Chi nes e- Eng lish	0.12 437	0.1 02 5	1 8 9	1.2 13 43	0.2 26	1. 00 0	1. 00 0
		-	Rig ht	Ort h	Eng lish	0.20 799	0.0 85 7	1 8 3	2.4 25 71	0.0 16	0. 72 8	1. 00 0
		-	Rig ht	Ort h	Spa nis h- Eng lish	0.24 527	0.1 02 5	1 8 9	2.3 92 94	0.0 18	0. 75 1	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	plim
		-	Right	Orth	Chinese-English	0.15643	0.1025	189	1.526	0.129	0.998	1.000
		-	Right	Control	English	0.29314	0.0799	142	3.667	<.001	0.057	0.094
		-	Right	Control	Spanish-English	0.31933	0.1025	189	3.115	0.002	0.238	0.563
		-	Right	Control	Chinese-English	0.27342	0.1025	189	2.667	0.008	0.546	1.000
		-	Left	Control	Chinese-English	0.19799	0.1025	189	1.931	0.055	0.960	1.000
		-	Right	PhonOrth	English	0.16972	0.1025	189	1.655	0.099	0.993	1.000
		-	Right	PhonOrth	Spanish-English	0.01105	0.0857	139	0.128	0.898	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	plim
-			Right	PhonOrth	Chinese-English	-0.15311	0.1025	189	-1.493	0.137	0.998	1.000
-			Right	Phon	English	-0.18074	0.1025	189	-1.763	0.079	0.985	1.000
-			Right	Phon	Spanish-English	-0.04049	0.0857	83	-0.472	0.637	1.000	1.000
-			Right	Phon	Chinese-English	-0.26369	0.1025	189	-2.572	0.011	0.619	1.000
-			Right	Orth	English	-0.18007	0.1025	189	-1.756	0.081	0.986	1.000
-			Right	Orth	Spanish-English	-0.14280	0.0857	83	-1.665	0.098	0.993	1.000
-			Right	Orth	Chinese-English	-0.23163	0.1025	189	-2.259	0.025	0.834	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	plim
		-	Right	Control	English	-0.09493	0.1025	189	-0.926	0.356	1.000	1.000
		-	Right	Control	Spanish-English	-0.06874	0.0799	142	-0.8604	0.391	1.000	1.000
		-	Right	Control	Chinese-English	-0.11465	0.1025	189	-1.11855	0.265	1.000	1.000
		-	Right	PhonOrth	English	0.02827	0.1025	189	0.27577	0.783	1.000	1.000
		-	Right	PhonOrth	Spanish-English	0.20904	0.1025	189	2.03949	0.043	0.931	1.000
		-	Right	PhonOrth	Chinese-English	0.04488	0.0857	138	0.52338	0.601	1.000	1.000
		-	Right	Phon	English	0.01725	0.1025	189	0.16833	0.867	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	plim
-			Right	Phon	Spanish-English	0.15750	0.1025	18	1.5367	0.126	0.998	1.000
-			Right	Phon	Chinese-English	-0.06570	0.0857	13	-0.76626	0.445	1.000	1.000
-			Right	Orth	English	0.01792	0.1025	18	0.17479	0.861	1.000	1.000
-			Right	Orth	Spanish-English	0.05519	0.1025	18	0.53849	0.591	1.000	1.000
-			Right	Orth	Chinese-English	-0.03364	0.0857	13	-0.39235	0.695	1.000	1.000
-			Right	Control	English	0.10306	0.1025	18	1.00551	0.316	1.000	1.000
-			Right	Control	Spanish-English	0.12925	0.1025	18	1.26103	0.209	1.000	1.000
-			Right	Control	Chinese-English	0.08334	0.0799	14	1.04277	0.299	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison														
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	plim		
Right	PhonOrth	English	-	Right	PhonOrth	Spanish-English	0.18078	0.1025	189	1.763	0.079	0.985	1.000	
						Chinese-English	0.01661	0.1025	189	0.162	0.871	1.000	1.000	
			-	Right	Phon	English	English	-0.01101	0.0669	327	-0.164	0.869	1.000	1.000
							Spanish-English	0.12924	0.1025	189	1.260	0.209	1.000	1.000
			-	Right	Phon	English	Chinese-English	-0.09397	0.1025	189	-0.916	0.360	1.000	1.000
							Orth	English	-0.01035	0.0669	327	-0.154	0.877	1.000
			-	Right	Orth	English	Spanish-English	0.02693	0.1025	189	0.262	0.793	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	plim
			Right	Orth	Chinese-English	-0.06191	0.1025	189	-0.60399	0.547	1.000	1.000
			Right	Control	English	0.07480	0.0669	327	1.11838	0.264	1.000	1.000
			Right	Control	Spanish-English	0.10099	0.1025	189	0.98526	0.326	1.000	1.000
			Right	Control	Chinese-English	0.05508	0.1025	189	0.53734	0.592	1.000	1.000
		Spanish-English	Right	PhonOrth	Chinese-English	-0.16416	0.1025	189	-1.60165	0.111	0.996	1.000
			Right	Phon	English	-0.19179	0.1025	189	-1.87116	0.063	0.971	1.000
			Right	Phon	Spanish-English	-0.05154	0.0669	327	-0.77061	0.441	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-			Right	Phon	Chinese-English	-0.27474	0.1025	189	-2.68051	0.008	0.535	1.000
-			Right	Orth	English	-0.19113	0.1025	189	-1.86470	0.064	0.972	1.000
-			Right	Orth	Spanish-English	-0.15385	0.0669	327	-2.30041	0.022	0.812	1.000
-			Right	Orth	Chinese-English	-0.24268	0.1025	189	-2.36771	0.019	0.768	1.000
-			Right	Control	English	-0.10598	0.1025	189	-1.03398	0.302	1.000	1.000
-			Right	Control	Spanish-English	-0.07979	0.0669	327	-1.19305	0.234	1.000	1.000
-			Right	Control	Chinese-English	-0.12570	0.1025	189	-1.22638	0.222	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	plim
		Chinese-English	Right	Phon	English	-0.02762	0.1025	189	-0.269	0.788	1.000	1.000
			Right	Phon	Spanish-English	0.11263	0.1025	189	1.098	0.273	1.000	1.000
			Right	Phon	Chinese-English	-0.11058	0.0669	327	-1.653	0.099	0.994	1.000
			Right	Orth	English	-0.02696	0.1025	189	-0.263	0.793	1.000	1.000
			Right	Orth	Spanish-English	0.01032	0.1025	189	0.100	0.920	1.000	1.000
			Right	Orth	Chinese-English	-0.07852	0.0669	327	-1.174	0.241	1.000	1.000
			Right	Control	English	0.05818	0.1025	189	0.567	0.571	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
			Right	Control	Spanish-English	0.08438	0.1025	18	0.823	0.411	1.000	1.000
			Right	Control	Chinese-English	0.03846	0.0669	32	0.575	0.566	1.000	1.000
	Phon	English	Right	Phon	Spanish-English	0.14025	0.1025	18	1.368	0.173	1.000	1.000
			Right	Phon	Chinese-English	-0.08296	0.1025	18	-0.809	0.419	1.000	1.000
			Right	Orth	English	6.62e-4	0.0669	32	0.009	0.992	1.000	1.000
			Right	Orth	Spanish-English	0.03794	0.1025	18	0.370	0.712	1.000	1.000
			Right	Orth	Chinese-English	-0.05089	0.1025	18	-0.496	0.620	1.000	1.000
			Right	Control	English	0.08581	0.0669	32	1.283	0.200	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
			Right	Control	Spanish-English	0.11200	0.1025	189	1.09271	0.276	1.000	1.000
			Right	Control	Chinese-English	0.06609	0.1025	189	0.64479	0.520	1.000	1.000
		Spanish-English	Right	Phon	Chinese-English	-0.22321	0.1025	189	-2.17769	0.031	0.876	1.000
			Right	Orth	English	-0.13959	0.1025	189	-1.36188	0.175	1.000	1.000
			Right	Orth	Spanish-English	-0.10231	0.0669	327	-1.52980	0.127	0.998	1.000
			Right	Orth	Chinese-English	-0.19115	0.1025	189	-1.86489	0.064	0.972	1.000
			Right	Control	English	-0.05444	0.1025	189	-0.5316	0.596	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	pholm
		-	Right	Control	Spanish-English	-0.02825	0.069	327	-0.422	0.673	1.000	1.000
		-	Right	Control	Chinese-English	-0.07416	0.1025	89	-0.72356	0.470	1.000	1.000
		Chinese-English	Right	Orth	English	0.08362	0.1025	89	0.81581	0.416	1.000	1.000
		-	Right	Orth	Spanish-English	0.12090	0.1025	89	1.17951	0.240	1.000	1.000
		-	Right	Orth	Chinese-English	0.03206	0.0669	327	0.47938	0.632	1.000	1.000
		-	Right	Control	English	0.16876	0.1025	89	1.64652	0.101	0.994	1.000
		-	Right	Control	Spanish-English	0.19495	0.1025	89	1.90505	0.059	0.966	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison													
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	pholm	
			-	Right	Control	Chinese-English	0.14904	0.0669	3287	2.258	0.027	0.853	1.000
	Orth	English	-	Right	Orth	Spanish-English	0.03728	0.1025	189	0.36370	0.716	1.000	1.000
			-	Right	Orth	Chinese-English	-0.05156	0.1025	189	-0.50301	0.616	1.000	1.000
			-	Right	Control	English	0.08515	0.0669	3287	1.27314	0.204	1.000	1.000
			-	Right	Control	Spanish-English	0.11134	0.1025	189	1.08624	0.279	1.000	1.000
			-	Right	Control	Chinese-English	0.06543	0.1025	189	0.63832	0.524	1.000	1.000
		Spanish-English	-	Right	Orth	Chinese-English	-0.08884	0.1025	189	-0.86671	0.387	1.000	1.000
			-	Right	Control	English	0.04787	0.1025	189	0.46702	0.641	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

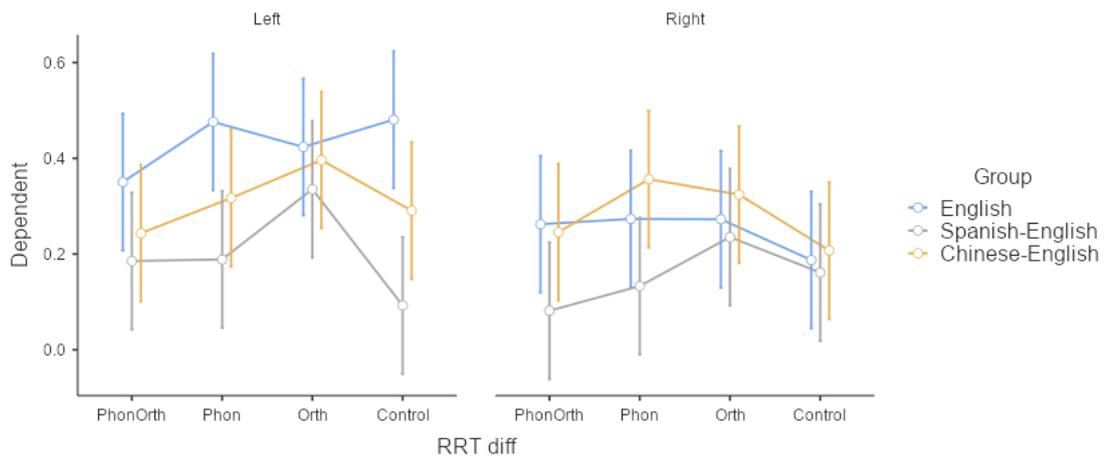
Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	pholm
			-	Right	Control	Spanish-English	0.07406	0.0669	327	1.10736	0.269	1.000
			-	Right	Control	Chinese-English	0.02815	0.1025	189	0.27462	0.784	1.000
		Chinese-English	-	Right	Control	English	0.13670	0.1025	189	1.33373	0.184	1.000
			-	Right	Control	Spanish-English	0.16289	0.1025	189	1.58926	0.114	0.996
			-	Right	Control	Chinese-English	0.11698	0.0669	327	1.74919	0.081	0.988
	Control	English	-	Right	Control	Spanish-English	0.02619	0.1025	189	0.25553	0.799	1.000
			-	Right	Control	Chinese-English	-0.01972	0.1025	189	-0.19239	0.848	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	p <sub>tukey</sub>	p <sub>holm</sub>
		Spanish-English	Right	Control	Chinese-English	-0.04	0.102	18	-0.4	0.655	1.00	1.00
		Spanish-English	Right	Control	Chinese-English	0.591	0.055	9	9.2			

### Estimated Marginal Means

#### RRT diff \* Group \* Hemisphere



### Repeated Measures ANOVA

#### Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Hemisphere	0.00313	1	0.00313	0.220	0.641	0.004
Hemisphere * Group	0.12049	2	0.06025	4.243	0.019	0.130
Residual	0.80934	57	0.01420			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Group	0.233	2	0.1165	1.83	0.170	0.060
Residual	3.632	57	0.0637			

Note. Type 3 Sums of Squares

### Assumptions

Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
NAA_P1.LeftFC\$prime	1.0596	2	57	0.353
NAA_P1.RightFC\$prime	0.0291	2	57	0.971

### Post Hoc Tests

Post Hoc Comparisons - Hemisphere \* Group

Comparison											
Hemisphere	Group	Hemisphere	Group	Mean Difference	SE	df	t	p	$p_{Tukey}$	$p_{Holm}$	
Left	English	-	Left	Spanish-English	0.03406	0.0624	81.2	0.546	0.587	0.994	1.000
			Left	Chinese-English	0.01770	0.0624	81.2	0.284	0.777	1.000	1.000
			Right	English	-0.07923	0.0377	57.0	-2.103	0.040	0.301	0.519

Post Hoc Comparisons - Hemisphere \* Group

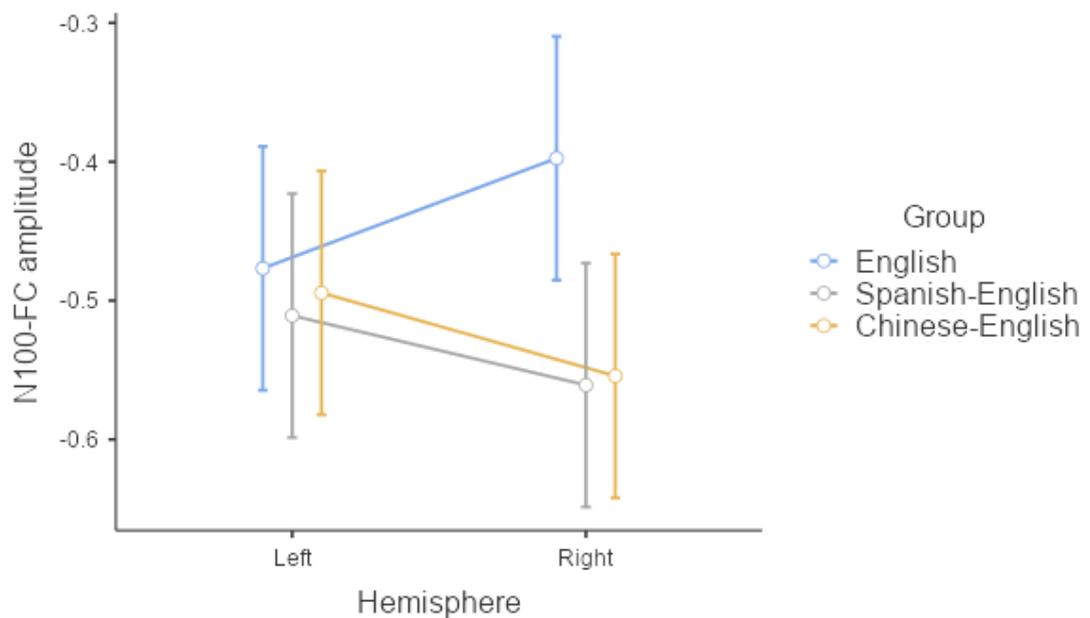
Comparison											
Hemisphere	Group	Hemisphere	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> y	P <sub>holm</sub> m	
		-	Right	Spanish-English	0.08409	0.0624	81.2	1.347	0.182	0.758	1.000
		-	Right	Chinese-English	0.07754	0.0624	81.2	1.242	0.218	0.815	1.000
	Spanish-English	-	Left	Chinese-English	-0.01635	0.0624	81.2	-0.262	0.794	1.000	1.000
		-	Right	English	-0.11329	0.0624	81.2	-1.815	0.073	0.462	0.879
		-	Right	Spanish-English	0.05003	0.0377	57.0	1.328	0.190	0.768	1.000
		-	Right	Chinese-English	0.04349	0.0624	81.2	0.697	0.488	0.982	1.000
	Chinese-English	-	Right	English	-0.09694	0.0624	81.2	-1.553	0.124	0.631	1.000
		-	Right	Spanish-English	0.06639	0.0624	81.2	1.064	0.291	0.894	1.000
		-	Right	Chinese-English	0.05984	0.0377	57.0	1.588	0.118	0.610	1.000

Post Hoc Comparisons - Hemisphere \* Group

Comparison											
Hemisphere	Group	Hemisphere	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> y	P <sub>holm</sub> m	
Right	English	-	Right	Spanish-English	0.163	0.06	81.2	2.6	0.011	0.105	0.159
			Right	Chinese-English	0.156	0.06	81.2	2.5	0.014	0.133	0.196
	Spanish-English	-	Right	Chinese-English	-0.006	0.06	81.2	-0.1	0.917	1.000	1.000

Estimated Marginal Means

Hemisphere \* Group



## Repeated Measures ANOVA

Within Subjects Effects

	<b>Sphericity Correction</b>	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
RRT Target	None	3.0752	3	1.0251	7.267	< .001	0.113
	Greenhouse-Geisser	3.0752	2.40	1.2795	7.267	< .001	0.113
	Huynh-Feldt	3.0752	2.52	1.2219	7.267	< .001	0.113
RRT Target * Group	None	1.3085	6	0.2181	1.546	0.166	0.051
	Greenhouse-Geisser	1.3085	4.81	0.2722	1.546	0.182	0.051
	Huynh-Feldt	1.3085	5.03	0.2600	1.546	0.179	0.051
Residual	None	24.1227	171	0.1411			
	Greenhouse-Geisser	24.1227	137.00	0.1761			
	Huynh-Feldt	24.1227	143.45	0.1682			
Hemisphere	None	1.3625	1	1.3625	2.248	0.139	0.038
	Greenhouse-Geisser	1.3625	1.00	1.3625	2.248	0.139	0.038
	Huynh-Feldt	1.3625	1.00	1.3625	2.248	0.139	0.038
Hemisphere * Group	None	0.6529	2	0.3264	0.539	0.587	0.019
	Greenhouse-Geisser	0.6529	2.00	0.3264	0.539	0.587	0.019
	Huynh-Feldt	0.6529	2.00	0.3264	0.539	0.587	0.019
Residual	None	34.5490	57	0.6061			

Within Subjects Effects

	<b>Sphericity Correction</b>	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
	Greenhouse-Geisser	34.5490	57.00	0.6061			
	Huynh-Feldt	34.5490	57.00	0.6061			
RRT Target * Hemisphere	None	0.0836	3	0.0279	0.377	0.770	0.007
	Greenhouse-Geisser	0.0836	2.68	0.0313	0.377	0.747	0.007
	Huynh-Feldt	0.0836	2.82	0.0297	0.377	0.757	0.007
RRT Target * Hemisphere * Group	None	0.3241	6	0.0540	0.731	0.625	0.025
	Greenhouse-Geisser	0.3241	5.35	0.0606	0.731	0.610	0.025
	Huynh-Feldt	0.3241	5.64	0.0575	0.731	0.617	0.025
Residual	None	12.6416	171	0.0739			
	Greenhouse-Geisser	12.6416	152.48	0.0829			
	Huynh-Feldt	12.6416	160.70	0.0787			

Note. Type 3 Sums of Squares

Between Subjects Effects

	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
Group	6.01	2	3.00	1.74	0.185	0.058
Residual	98.38	57	1.73			

Note. Type 3 Sums of Squares

## Assumptions

### Tests of Sphericity

	Mauchly's W	p	Greenhouse-Geisser $\epsilon$	Huynh-Feldt $\epsilon$
RRT Target	0.671	< .001	0.801	0.839
Hemisphere	1.000	NaN <sup>a</sup>	1.000	1.000
RRT Target * Hemisphere	0.823	0.055	0.892	0.940

<sup>a</sup> The repeated measures has only two levels. The assumption of sphericity is always met when the repeated measures has only two levels

### Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
NAA_N170.LeftOP\$PhonOrth_TARGET	1.25321	2	57	0.293
NAA_N170.RightOP\$PhonOrth_TARGET	3.08112	2	57	0.054
NAA_N170.LeftOP\$Phon_TARGET	0.61936	2	57	0.542
NAA_N170.RightOP\$Phon_TARGET	0.00758	2	57	0.992
NAA_N170.LeftOP\$Orth_TARGET	3.77581	2	57	0.029
NAA_N170.RightOP\$Orth_TARGET	1.23835	2	57	0.298
NAA_N170.LeftOP\$Control_TARGET	3.05471	2	57	0.055
NAA_N170.RightOP\$Control_TARGET	4.75721	2	57	0.012

## Post Hoc Tests

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison													
RRT Target	Hemisphere	Group		RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
PhonOrth	Left	English	-	PhonOrth	Left	Spanish-English	0.15663	0.193	148	0.81194	0.418	1.000	1.000
			-			PhonOrth	Left	Chinese-English	-0.20036	0.193	148	-1.03866	0.301
			-	PhonOrth	Right			English	-0.14054	0.144	176	-0.97685	0.331
			-			PhonOrth	Right	Spanish-English	0.01619	0.193	148	0.08390	0.933
			-	PhonOrth	Right			Chinese-English	-0.21898	0.193	148	-1.13513	0.258
			-			Phon	Left	English	0.15506	0.104	152	1.49552	0.136
			-	Phon	Left			Spanish-English	0.28638	0.193	148	1.48456	0.140

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-	Phon	Left	Phon	Left	Chinese-English	-0.08863	0.193	14	-0.45946	0.647	1.000	1.000
-	Phon	Right	Phon	Right	English	-0.00836	0.155	15	0.05388	0.957	1.000	1.000
-	Phon	Right	Phon	Right	Spanish-English	0.07947	0.193	14	0.41197	0.681	1.000	1.000
-	Phon	Right	Phon	Right	Chinese-English	-0.04109	0.193	14	-0.21302	0.832	1.000	1.000
-	Orth	Left	Orth	Left	English	0.03065	0.104	10	0.2958	0.768	1.000	1.000
-	Orth	Left	Orth	Left	Spanish-English	-0.14234	0.193	14	-0.73788	0.462	1.000	1.000
-	Orth	Left	Orth	Left	Chinese-English	-0.26525	0.193	14	-1.37501	0.171	1.000	1.000
-	Orth	Right	Orth	Right	English	-0.21182	0.155	15	-1.36575	0.174	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-	Orth	Right	Spanish-English	-	0.14	0.1944	0.1944	1944	14	0.7748	0.440	1.000
-	Orth	Right	Chinese-English	-	0.23	0.3093	0.3093	3093	1938	1.20828	0.229	1.000
-	Control	Left	English	-	0.11	0.4724	0.4724	4724	1042	1.10645	0.269	1.000
-	Control	Left	Spanish-English	-	0.18	0.8423	0.8423	8423	1938	0.97674	0.330	1.000
-	Control	Left	Chinese-English	-	0.24	0.5603	0.5603	5603	1938	1.27317	0.205	1.000
-	Control	Right	English	-	0.09	0.6745	0.6745	6745	1533	0.62372	0.534	1.000
-	Control	Right	Spanish-English	-	0.06	0.3173	0.3173	3173	1938	0.32745	0.744	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-	Control	Right	Chinese-English			-0.34781	0.193	148	-1.80302	0.073	0.980	1.000
-	Spanish-English	Left	Chinese-English			-0.35699	0.193	148	-1.85060	0.066	0.974	1.000
-	Spanish-English	Right	English			-0.29716	0.193	148	-1.54046	0.126	0.997	1.000
-	Spanish-English	Right	Spanish-English			-0.14044	0.144	202	-0.97620	0.331	1.000	1.000
-	Spanish-English	Right	Chinese-English			-0.37560	0.193	148	-1.94707	0.053	0.955	1.000
-	Spanish-English	Left	English			-0.00157	0.193	148	0.00815	0.994	1.000	1.000
-	Spanish-English	Left	Spanish-English			0.12975	0.104	312	1.25147	0.212	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-	Phon	Left	Phon	Left	Chinese-English	-0.24526	0.193	148	-1.27140	0.206	1.000	1.000
-	Phon	Right	Phon	Right	English	-0.16499	0.193	148	-0.85526	0.394	1.000	1.000
-	Phon	Right	Phon	Right	Spanish-English	-0.07716	0.155	153	-0.49748	0.620	1.000	1.000
-	Phon	Right	Phon	Right	Chinese-English	-0.19772	0.193	148	-1.02496	0.307	1.000	1.000
-	Orth	Left	Orth	Left	English	-0.12598	0.193	148	-0.65307	0.515	1.000	1.000
-	Orth	Left	Orth	Left	Spanish-English	-0.29897	0.104	112	-2.88356	0.004	0.380	1.000
-	Orth	Left	Orth	Left	Chinese-English	-0.42188	0.193	148	-2.18695	0.030	0.870	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-	Orth	Right	English	-	0.36845	0.193	14	1.909	0.058	0.0963	1.000	1.000
-	Orth	Right	Spanish-English	-	0.30607	0.155	15	1.97342	0.051	0.0948	1.000	1.000
-	Orth	Right	Chinese-English	-	0.38971	0.193	14	2.02022	0.045	0.0935	1.000	1.000
-	Control	Left	English	-	0.04191	0.043	17	0.21726	0.828	1.000	1.000	1.000
-	Control	Left	Spanish-English	0.03179	0.104	10	0.30662	0.759	1.000	1.000	1.000	1.000
-	Control	Left	Chinese-English	0.40223	0.193	14	2.08511	0.039	0.0913	1.000	1.000	1.000
-	Control	Right	English	0.25336	0.193	14	1.31340	0.191	1.000	1.000	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
			-	Control	Right	Spanish-English	-0.09346	0.155	13	-0.60260	0.548	1.000
			-	Control	Right	Chinese-English	-0.50444	0.193	48	-2.61496	0.010	0.587
		Chinese-English	-	PhonOrth	Right	English	0.05983	0.193	48	0.31014	0.757	1.000
			-	PhonOrth	Right	Spanish-English	0.21655	0.193	48	1.12256	0.263	1.000
			-	PhonOrth	Right	Chinese-English	-0.01861	0.144	29	-0.12936	0.897	1.000
			-	Phon	Left	English	0.35542	0.193	42	1.84245	0.067	0.975
			-	Phon	Left	Spanish-English	0.48675	0.193	23	2.52322	0.013	0.657

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-	Phon	Left	Phon	Left	Chinese-English	0.11173	0.104	312	1.077	0.282	1.000	1.000
-	Phon	Right	Phon	Right	English	0.19201	0.193	148	0.934	0.321	1.000	1.000
-	Phon	Right	Phon	Right	Spanish-English	0.27984	0.193	148	1.450	0.149	0.999	1.000
-	Phon	Right	Phon	Right	Chinese-English	0.15927	0.155	153	1.026	0.306	1.000	1.000
-	Orth	Left	Orth	Left	English	0.23101	0.193	148	1.197	0.233	1.000	1.000
-	Orth	Left	Orth	Left	Spanish-English	0.05802	0.193	148	0.300	0.764	1.000	1.000
-	Orth	Left	Orth	Left	Chinese-English	0.06488	0.104	312	0.625	0.532	1.000	1.000
-	Orth	Right	Orth	Right	English	0.01146	0.193	148	0.059	0.953	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-	Orth	Right	Spanish-English	0.05092	0.193	148	0.263	0.792	1.6398	0.100	1.000	1.000
-	Orth	Right	Chinese-English	-0.03272	0.155	153	-0.210	0.833	-0.2598	0.800	1.000	1.000
-	Control	Left	English	0.31508	0.193	148	1.633	0.105	15.334	0.000	0.994	1.000
-	Control	Left	Spanish-English	0.38878	0.193	148	2.015	0.046	20.40	0.000	0.937	1.000
-	Control	Left	Chinese-English	-0.04524	0.104	102	-0.436	0.633	-0.6833	0.500	1.000	1.000
-	Control	Right	English	0.10363	0.193	148	0.537	0.592	0.9020	0.360	1.000	1.000
-	Control	Right	Spanish-English	0.26353	0.193	148	1.366	0.174	7.7711	0.000	1.000	1.000
-	Control	Right	Chinese-English	-0.14745	0.155	153	-0.950	0.343	-2.770	0.007	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
	Right	English	PhonOrth	Right	Spanish-English	0.15672	0.193	148	0.81242	0.418	1.000	1.000
			PhonOrth	Right	Chinese-English	-0.07844	0.193	148	-0.40662	0.685	1.000	1.000
			Phon	Left	English	0.29559	0.155	153	1.90587	0.059	0.964	1.000
			Phon	Left	Spanish-English	0.42692	0.193	148	2.21308	0.028	0.857	1.000
			Phon	Left	Chinese-English	0.05190	0.193	148	0.26906	0.788	1.000	1.000
			Phon	Right	English	0.13218	0.104	312	1.27486	0.203	1.000	1.000
			Phon	Right	Spanish-English	0.22001	0.193	148	1.14049	0.256	1.000	1.000
			Phon	Right	Chinese-English	0.09944	0.193	148	0.51550	0.607	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-	Orth	Left	English	0.17118	0.155	1.10372	0.272	1.10372	0.272	1.000	1.000	
-	Orth	Left	Spanish-English	0.00181	0.193	-0.00937	0.993	1.000	0.993	1.000	1.000	
-	Orth	Left	Chinese-English	0.12471	0.193	0.64649	0.519	1.000	0.519	1.000	1.000	
-	Orth	Right	English	0.07129	0.104	0.68755	0.492	1.000	0.492	1.000	1.000	
-	Orth	Right	Spanish-English	0.00891	0.193	0.04616	0.963	1.000	0.963	1.000	1.000	
-	Orth	Right	Chinese-English	0.09255	0.193	0.47977	0.632	1.000	0.632	1.000	1.000	
-	Control	Left	English	0.25525	0.155	1.64578	0.102	0.993	0.102	0.993	1.000	
-	Control	Left	Spanish-English	0.32896	0.193	1.70526	0.090	0.990	0.090	0.990	1.000	

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-	Control	Left	Control	Left	Chinese-English	-0.10507	0.193	14	-0.544	0.587	1.000	1.000
-	Control	Right	Control	Right	English	0.04380	0.104	11	0.422	0.673	1.000	1.000
-	Control	Right	Control	Right	Spanish-English	0.20370	0.193	14	1.055	0.293	1.000	1.000
-	Control	Right	Control	Right	Chinese-English	-0.20728	0.193	14	-1.074	0.284	1.000	1.000
-	Spanish-English	Right	PhonOrth	Right	Chinese-English	-0.23516	0.193	14	-1.219	0.225	1.000	1.000
-	Spanish-English	Left	Phon	Left	English	0.13887	0.193	14	0.719	0.473	1.000	1.000
-	Spanish-English	Left	Phon	Left	Spanish-English	0.27020	0.155	13	1.742	0.084	0.987	1.000
-	Spanish-English	Left	Phon	Left	Chinese-English	-0.10482	0.193	14	-0.543	0.588	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-	Phon	Right	English	-	0.02454	0.193	14	0.278	-0.123	0.899	1.000	1.000
-	Phon	Right	Spanish-English	-	0.06329	0.104	31	0.610	-0.392	0.542	1.000	1.000
-	Phon	Right	Chinese-English	-	0.05728	0.193	48	0.296	-0.922	0.767	1.000	1.000
-	Orth	Left	English	-	0.01446	0.193	43	0.074	-0.966	0.940	1.000	1.000
-	Orth	Left	Spanish-English	-	0.15853	0.155	33	1.022	-1.133	0.309	1.000	1.000
-	Orth	Left	Chinese-English	-	0.28143	0.193	48	1.458	-1.919	0.147	0.999	1.000
-	Orth	Right	English	-	0.22801	0.193	48	1.181	-1.966	0.239	1.000	1.000
-	Orth	Right	Spanish-English	-	0.16563	0.104	32	1.597	-1.466	0.111	0.996	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-	Orth	Right	Chinese-English			-0.24927	0.193	14	-1.292	0.198	1.000	1.000
-	Control	Left	English			0.09853	0.193	14	0.510	0.610	1.000	1.000
-	Control	Left	Spanish-English			0.17223	0.155	15	1.110	0.269	1.000	1.000
-	Control	Left	Chinese-English			-0.26179	0.193	14	-1.357	0.177	1.000	1.000
-	Control	Right	English			-0.11292	0.193	14	-0.585	0.559	1.000	1.000
-	Control	Right	Spanish-English			0.04698	0.104	11	0.453	0.651	1.000	1.000
-	Control	Right	Chinese-English			-0.36400	0.193	14	-1.886	0.061	0.998	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
		Chinese-English	Phon	Left	English	0.37403	0.193	148	1.938	0.054	0.957	1.000
			Phon	Left	Spanish-English	0.50536	0.193	148	2.619	0.010	0.583	1.000
			Phon	Left	Chinese-English	0.13034	0.155	140	0.840	0.402	1.000	1.000
			Phon	Right	English	0.21062	0.193	148	1.091	0.277	1.000	1.000
			Phon	Right	Spanish-English	0.29845	0.193	148	1.547	0.124	0.997	1.000
			Phon	Right	Chinese-English	0.17788	0.104	152	1.715	0.087	0.990	1.000
			Orth	Left	English	0.24962	0.193	148	1.294	0.198	1.000	1.000
			Orth	Left	Spanish-English	0.07663	0.193	148	0.397	0.692	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-	Orth	Left	Chinese-English	Left	Chinese-English	-0.04627	0.155	13	-0.29835	0.766	1.000	1.000
-	Orth	Right	English	Right	English	0.00715	0.193	14	0.03708	0.970	1.000	1.000
-	Orth	Right	Spanish-English	Right	Spanish-English	0.06953	0.193	14	0.36045	0.719	1.000	1.000
-	Orth	Right	Chinese-English	Right	Chinese-English	-0.01411	0.104	11	-0.13610	0.892	1.000	1.000
-	Control	Left	English	Left	English	0.33369	0.193	14	1.72982	0.086	0.998	1.000
-	Control	Left	Spanish-English	Left	Spanish-English	0.40739	0.193	14	2.11187	0.036	0.990	1.000
-	Control	Left	Chinese-English	Left	Chinese-English	-0.02663	0.155	13	-0.17169	0.864	1.000	1.000
-	Control	Right	English	Right	English	0.12224	0.193	14	0.63367	0.527	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptu key	Pho lm
			-	Control	Right	Spanish-English	0.28214	0.193	148	1.462	0.146	1.009
			-	Control	Right	Chinese-English	-0.12884	0.104	312	-1.242	0.215	1.000
Phon	Left	English	-	Phon	Left	Spanish-English	0.13132	0.193	48	0.680	0.497	1.000
			-	Phon	Left	Chinese-English	-0.24369	0.193	48	-1.263	0.208	1.000
			-	Phon	Right	English	-0.16341	0.144	20	-1.135	0.259	1.000
			-	Phon	Right	Spanish-English	-0.07559	0.193	48	-0.391	0.696	1.000
			-	Phon	Right	Chinese-English	-0.19615	0.193	48	-1.016	0.311	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-	Orth	Left	English			-0.12441	0.104	31	-1.1993	0.231	1.000	1.000
-	Orth	Left	Spanish-English			-0.29740	0.193	48	-1.54168	0.125	0.997	1.000
-	Orth	Left	Chinese-English			-0.42031	0.193	48	-2.17880	0.031	0.874	1.000
-	Orth	Right	English			-0.36688	0.155	33	-2.36550	0.019	0.768	1.000
-	Orth	Right	Spanish-English			-0.30450	0.193	48	-1.57847	0.117	0.996	1.000
-	Orth	Right	Chinese-English			-0.38814	0.193	48	-2.01208	0.046	0.938	1.000
-	Control	Left	English			-0.04034	0.104	31	-0.38907	0.697	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-	Control	Left	Spanish-English	0.03336	0.193	148	0.17295	0.863	1.72	0.095	1.000	1.000
-	Control	Left	Chinese-English	0.40066	0.193	148	2.07697	0.040	2.076	0.040	0.916	1.000
-	Control	Right	English	0.25179	0.155	153	1.62347	0.107	1.623	0.107	0.995	1.000
-	Control	Right	Spanish-English	0.09189	0.193	148	0.47634	0.635	0.476	0.635	1.000	1.000
-	Control	Right	Chinese-English	0.50287	0.193	148	2.60681	0.010	2.606	0.010	0.593	1.000
-	Phon	Left	Chinese-English	0.37501	0.193	148	1.94402	0.054	1.944	0.054	0.956	1.000
-	Phon	Right	English	0.29474	0.193	148	1.52789	0.129	1.527	0.129	0.998	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-	Phon	Right	Spanish-English	-	0.20691	0.144	1402	1.438	0.153	0.999	1.000	
-	Phon	Right	Chinese-English	-	0.32747	0.193	1948	1.69758	0.092	0.991	1.000	
-	Orth	Left	English	-	0.25574	0.193	1948	1.32570	0.187	1.000	1.000	
-	Orth	Left	Spanish-English	-	0.42873	0.104	1042	4.13503	<.001	0.010	0.013	
-	Orth	Left	Chinese-English	-	0.55163	0.193	1948	2.85957	0.005	0.403	1.000	
-	Orth	Right	English	-	0.49820	0.193	1948	2.58262	0.011	0.612	1.000	
-	Orth	Right	Spanish-English	-	0.43582	0.153	1533	2.81003	0.006	0.439	1.000	

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-	Orth	Right	Chinese-English			-0.51947	0.193	14	-2.69285	0.008	0.527	1.000
-	Control	Left	English			-0.17166	0.193	14	-0.88988	0.375	1.000	1.000
-	Control	Left	Spanish-English			-0.09796	0.104	12	-0.94484	0.345	1.000	1.000
-	Control	Left	Chinese-English			-0.53199	0.193	14	-2.75774	0.007	0.477	1.000
-	Control	Right	English			-0.38312	0.193	14	-1.98603	0.049	0.945	1.000
-	Control	Right	Spanish-English			-0.22321	0.155	13	-1.43920	0.152	0.999	1.000
-	Control	Right	Chinese-English			-0.63420	0.193	14	-3.28758	0.001	0.161	0.347

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
		Chinese-English	Phon	Right	English	0.08028	0.193	148	0.41613	0.678	1.000	1.000
			Phon	Right	Spanish-English	0.16810	0.193	148	0.87142	0.385	1.000	1.000
			Phon	Right	Chinese-English	0.04754	0.144	102	0.33044	0.742	1.000	1.000
			Orth	Left	English	0.11928	0.193	148	0.61832	0.537	1.000	1.000
			Orth	Left	Spanish-English	-0.05371	0.193	148	-0.27843	0.781	1.000	1.000
			Orth	Left	Chinese-English	-0.17662	0.110	104	-1.70345	0.089	0.991	1.000
			Orth	Right	English	-0.12319	0.193	148	-0.63860	0.524	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-	Orth	Right	Spanish-English	-	0.06081	0.193	14	0.31522	0.753	1.000	1.000	
-	Orth	Right	Chinese-English	-	0.14445	0.155	15	0.93138	0.353	1.000	1.000	
-	Control	Left	English	-	0.20335	0.193	19	1.05414	0.294	1.000	1.000	
-	Control	Left	Spanish-English	-	0.27705	0.193	19	1.43620	0.153	0.999	1.000	
-	Control	Left	Chinese-English	-	0.15697	0.104	10	1.51398	0.131	0.998	1.000	
-	Control	Right	English	-	0.00810	0.193	19	0.04201	0.967	1.000	1.000	
-	Control	Right	Spanish-English	-	0.15180	0.193	19	0.78691	0.433	1.000	1.000	

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
		-	Control	Right	Chinese-English	-0.25918	0.155	13	-1.671	0.097	0.2	1.000
	Right	English	-	Phon	Right	Spanish-English	0.08783	0.193	429	0.455	0.650	1.000
		-	Phon	Right	Chinese-English	-0.03274	0.193	48	-0.169	0.865	1.000	1.000
		-	Orth	Left	English	0.03900	0.155	348	0.251	0.802	1.000	1.000
		-	Orth	Left	Spanish-English	-0.13399	0.193	856	-0.694	0.488	1.000	1.000
		-	Orth	Left	Chinese-English	-0.25689	0.193	869	-1.331	0.185	1.000	1.000
		-	Orth	Right	English	-0.20346	0.104	124	-1.962	0.051	0.954	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-	Orth	Right	Spanish-English	-	0.14	0.19	19	4	0.731	0.466	1.000	1.000
-	Orth	Right	Spanish-English	-	0.14	0.19	19	4	0.731	0.466	1.000	1.000
-	Orth	Right	Chinese-English	-	0.22	0.19	19	4	1.164	0.246	1.000	1.000
-	Orth	Right	Chinese-English	-	0.22	0.19	19	4	1.164	0.246	1.000	1.000
-	Control	Left	English	-	0.12	0.15	15	3	0.793	0.429	1.000	1.000
-	Control	Left	English	-	0.12	0.15	15	3	0.793	0.429	1.000	1.000
-	Control	Left	Spanish-English	-	0.19	0.19	19	4	1.020	0.309	1.000	1.000
-	Control	Left	Spanish-English	-	0.19	0.19	19	4	1.020	0.309	1.000	1.000
-	Control	Left	Chinese-English	-	0.23	0.19	19	4	1.229	0.221	1.000	1.000
-	Control	Left	Chinese-English	-	0.23	0.19	19	4	1.229	0.221	1.000	1.000
-	Control	Right	English	-	0.08	0.10	10	1	0.852	0.395	1.000	1.000
-	Control	Right	English	-	0.08	0.10	10	1	0.852	0.395	1.000	1.000
-	Control	Right	Spanish-English	-	0.07	0.19	19	4	0.370	0.711	1.000	1.000
-	Control	Right	Spanish-English	-	0.07	0.19	19	4	0.370	0.711	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-		Control	Right	Chinese-English	Chinese-English	-0.33946	0.193	148	-1.75970	0.081	0.985	1.000
-		Spanish-English	Right	Chinese-English	Chinese-English	-0.12056	0.193	148	-0.62499	0.533	1.000	1.000
-		Orth	Left	English	English	-0.04882	0.193	148	-0.25310	0.801	1.000	1.000
-		Orth	Left	Spanish-English	Spanish-English	-0.22181	0.155	33	-1.43018	0.155	0.999	1.000
-		Orth	Left	Chinese-English	Chinese-English	-0.34472	0.193	148	-1.78698	0.076	0.982	1.000
-		Orth	Right	English	English	-0.29129	0.193	148	-1.51002	0.133	0.998	1.000
-		Orth	Right	Spanish-English	Spanish-English	-0.22891	0.104	32	-2.20785	0.028	0.863	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-	Orth	Right	Chinese-English			-0.31256	0.193	148	-1.62025	0.107	0.995	1.000
-	Control	Left	English			0.03525	0.193	148	0.18271	0.855	1.000	1.000
-	Control	Left	Spanish-English			0.10895	0.155	153	0.70246	0.484	1.000	1.000
-	Control	Left	Chinese-English			-0.32507	0.193	148	-1.68514	0.094	0.991	1.000
-	Control	Right	English			-0.17621	0.193	148	-0.91343	0.363	1.000	1.000
-	Control	Right	Spanish-English			-0.01630	0.104	102	-0.15725	0.875	1.000	1.000
-	Control	Right	Chinese-English			-0.42729	0.193	148	-2.21499	0.028	0.856	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	pholm
		Chinese-English	Orth	Left	English	0.07174	0.193	148	0.37189	0.711	1.000	1.000
			Orth	Left	Spanish-English	-0.10125	0.193	148	-0.52487	0.600	1.000	1.000
			Orth	Left	Chinese-English	-0.22416	0.155	153	-1.44527	0.151	0.999	1.000
			Orth	Right	English	-0.17073	0.193	148	-0.88503	0.378	1.000	1.000
			Orth	Right	Spanish-English	-0.10835	0.193	148	-0.56166	0.575	1.000	1.000
			Orth	Right	Chinese-English	-0.19199	0.104	192	-1.85176	0.065	0.976	1.000
			Control	Left	English	0.15581	0.193	148	0.80770	0.421	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptu key	Pho lm
		-	Control	Left	Spanish-English	0.22951	0.193	148	1.18976	0.236	1.000	1.000
		-	Control	Left	Chinese-English	0.20451	0.155	153	-1.31861	0.190	1.000	1.000
		-	Control	Right	English	0.05564	0.193	148	0.28844	0.773	1.000	1.000
		-	Control	Right	Spanish-English	0.10426	0.193	148	0.54047	0.590	1.000	1.000
		-	Control	Right	Chinese-English	0.30672	0.104	312	-2.95831	0.003	0.328	0.909
Orth	Left	English	Orth	Left	Spanish-English	0.17299	0.193	148	0.89675	0.371	1.000	1.000
		-	Orth	Left	Chinese-English	0.29589	0.193	148	1.53387	0.127	0.998	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-	Orth	Right	English	-	0.24247	0.144	142	1.68537	0.095	0.991	1.000	
-	Orth	Right	Spanish-English	-	0.18009	0.193	1948	0.93355	0.352	1.000	1.000	
-	Orth	Right	Chinese-English	-	0.26373	0.193	1948	1.36715	0.174	1.000	1.000	
-	Control	Left	English	-	0.08407	0.104	102	0.81086	0.418	1.000	1.000	
-	Control	Left	Spanish-English	-	0.15777	0.193	1948	0.81787	0.415	1.000	1.000	
-	Control	Left	Chinese-English	-	0.27625	0.193	1948	1.43204	0.154	0.999	1.000	
-	Control	Right	English	-	0.12738	0.155	153	0.82131	0.413	1.000	1.000	
-	Control	Right	Spanish-English	-	0.03252	0.193	1948	0.16859	0.866	1.000	1.000	

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-	Control	Right	Chinese-English	-	0.37846	0.193	148	-1.961	0.052	0.0951	1.000	1.000
-	Spanish-English	Orth	Left	Chinese-English	-	0.12291	0.193	48	0.63712	0.525	1.000	1.000
-	Orth	Right	English	-	0.06948	0.193	48	0.36017	0.719	1.000	1.000	
-	Orth	Right	Spanish-English	-	0.00710	0.144	24	0.04934	0.961	1.000	1.000	
-	Orth	Right	Chinese-English	-	0.09074	0.193	48	0.47040	0.639	1.000	1.000	
-	Control	Left	English	-	0.25706	0.193	48	1.33257	0.185	1.000	1.000	
-	Control	Left	Spanish-English	-	0.33076	0.104	12	3.19019	0.002	0.0195	0.429	

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptu key	Pho lm
-	Control	Left	Chinese-English			-0.10326	0.193	148	-0.53529	0.593	1.000	1.000
-	Control	Right	English			0.04561	0.193	148	0.23642	0.813	1.000	1.000
-	Control	Right	Spanish-English			0.20551	0.155	153	1.32506	0.187	1.000	1.000
-	Control	Right	Chinese-English			-0.20547	0.193	148	-1.06513	0.289	1.000	1.000
-	Orth	Right	English	Chinese-English		0.05343	0.193	148	0.27696	0.782	1.000	1.000
-	Orth	Right	Spanish-English			0.11581	0.193	148	0.60033	0.549	1.000	1.000
-	Orth	Right	Chinese-English			0.03216	0.144	102	0.22356	0.824	1.000	1.000
-	Control	Left	English			0.37997	0.193	148	1.96969	0.051	0.949	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison													
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm	
-			Control	Left	Spanish-English	0.45367	0.193	148	2.35175	0.020	0.777	1.000	
-			Control	Left	Chinese-English	0.01964	0.104	312	0.18947	0.850	1.000	1.000	
-			Control	Right	English	0.16851	0.193	148	0.87354	0.384	1.000	1.000	
-			Control	Right	Spanish-English	0.32842	0.193	148	1.70246	0.091	0.990	1.000	
-			Control	Right	Chinese-English	-0.08257	0.155	153	-0.53236	0.595	1.000	1.000	
	Right	English	-	Orth	Right	Spanish-English	0.06238	0.193	148	0.32337	0.747	1.000	1.000
			-	Orth	Right	Chinese-English	-0.02126	0.193	148	-0.11023	0.912	1.000	1.000
			-	Control	Left	English	0.32654	0.155	153	2.10541	0.037	0.905	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-	Control	Left	Spanish-English	0.40024	0.193	148	2.074	0.040	0.040	0.97	1.00	
-	Control	Left	Chinese-English	-0.03378	0.193	148	-0.175	0.0861	1.975	0.08	1.00	
-	Control	Right	English	0.11509	0.104	312	1.110	0.268	1.100	0.268	1.00	
-	Control	Right	Spanish-English	0.27499	0.193	148	1.425	0.156	0.999	0.99	1.00	
-	Control	Right	Chinese-English	-0.13599	0.193	148	-0.704	0.482	1.497	0.14	1.00	
-	Spanish-English	Orth	Right	Chinese-English	-0.08364	0.193	148	-0.433	0.665	1.00	1.00	
-	Control	Left	English	0.26416	0.193	148	1.369	0.173	1.00	1.00		
-	Control	Left	Spanish-English	0.33786	0.155	153	2.178	0.031	0.087	0.03	1.00	

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-	Control	Left	Chinese-English			-0.09616	0.193	148	-0.498	0.619	1.000	1.000
-	Control	Right	English			0.05271	0.193	148	0.27322	0.785	1.000	1.000
-	Control	Right	Spanish-English			0.21261	0.104	250	2.05060	0.041	0.929	1.000
-	Control	Right	Chinese-English			-0.19837	0.193	148	-1.02834	0.305	1.000	1.000
-	Chinese-English	Control	Left	English		0.34780	0.193	148	1.80296	0.073	0.980	1.000
-	Chinese-English	Control	Left	Spanish-English		0.42151	0.193	148	2.18502	0.030	0.871	1.000
-	Chinese-English	Control	Left	Chinese-English		-0.01252	0.155	303	-0.08071	0.936	1.000	1.000
-	Chinese-English	Control	Right	English		0.13635	0.193	148	0.70682	0.481	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
			-	Control	Right	Spanish-English	0.29625	0.193	148	1.53574	0.127	1.0070
			-	Control	Right	Chinese-English	-0.11473	0.104	312	-1.10655	0.269	1.0000
Control	Left	English	-	Control	Left	Spanish-English	0.07370	0.193	148	0.38206	0.703	1.0000
			-	Control	Left	Chinese-English	-0.36032	0.193	148	-1.86785	0.064	1.0000
			-	Control	Right	English	-0.21145	0.144	140	-1.46979	0.145	1.0000
			-	Control	Right	Spanish-English	-0.05155	0.193	148	-0.26723	0.790	1.0000
			-	Control	Right	Chinese-English	-0.46253	0.193	148	-2.39770	0.018	1.0000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

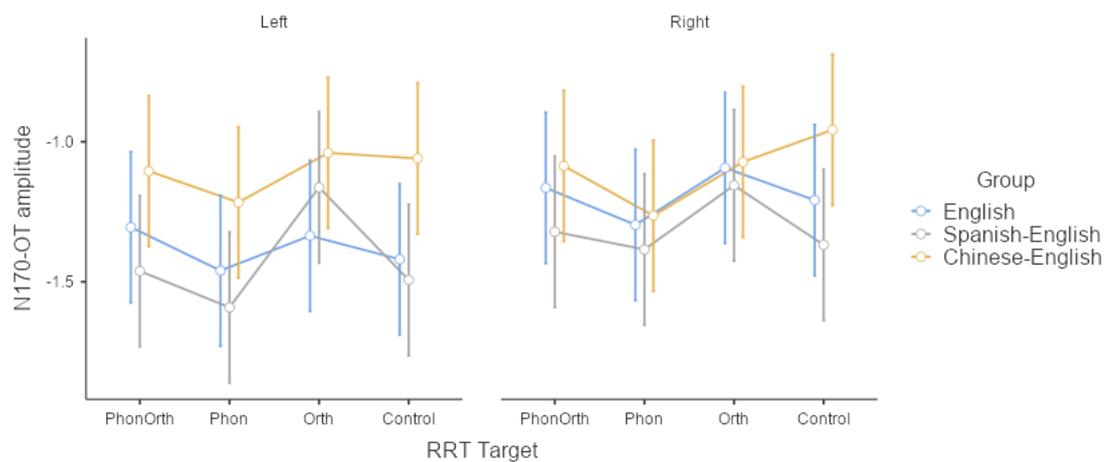
Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	pholm
		Spanish-English	-	Control	Left	Chinese-English	-0.43	0.19	14	2.2491	0.026	0.838
			-	Control	Right	English	0.28	0.19	14	1.47820	0.141	0.999
			-	Control	Right	Spanish-English	0.12	0.14	14	0.87061	0.386	1.000
			-	Control	Right	Chinese-English	0.53	0.19	14	2.77976	0.006	0.461
		Chinese-English	-	Control	Right	English	0.14	0.19	14	0.77171	0.442	1.000
			-	Control	Right	Spanish-English	0.30	0.19	14	1.60063	0.112	0.996
			-	Control	Right	Chinese-English	0.10	0.14	14	0.71045	0.479	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	plim
	Right	English	-	Control	Right	Spanish-English	0.15990	0.193	148	0.828	0.408	1.000
			-	Control	Right	Chinese-English	-0.25108	0.193	148	-1.301	0.195	1.000
		Spanish-English	-	Control	Right	Chinese-English	-0.41098	0.193	148	-2.130	0.035	0.895

### Estimated Marginal Means

#### RRT Target \* Group \* Hemisphere



### Repeated Measures ANOVA

Within Subjects Effects

	<b>Sphericity Correction</b>	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
Hemisphere	None	0.8195	1	0.8195	0.828	0.367	0.014
	Greenhouse-Geisser	0.8195	1.00	0.8195	0.828	0.367	0.014
	Huynh-Feldt	0.8195	1.00	0.8195	0.828	0.367	0.014
Hemisphere * Group	None	4.6230	2	2.3115	2.335	0.106	0.076
	Greenhouse-Geisser	4.6230	2.00	2.3115	2.335	0.106	0.076
	Huynh-Feldt	4.6230	2.00	2.3115	2.335	0.106	0.076
Residual	None	56.4289	57	0.9900			
	Greenhouse-Geisser	56.4289	57.00	0.9900			
	Huynh-Feldt	56.4289	57.00	0.9900			
RRT diff	None	3.0752	3	1.0251	7.267	< .001	0.113
	Greenhouse-Geisser	3.0752	2.40	1.2795	7.267	< .001	0.113
	Huynh-Feldt	3.0752	2.52	1.2219	7.267	< .001	0.113
RRT diff * Group	None	1.3085	6	0.2181	1.546	0.166	0.051
	Greenhouse-Geisser	1.3085	4.81	0.2722	1.546	0.182	0.051
	Huynh-Feldt	1.3085	5.03	0.2600	1.546	0.179	0.051
Residual	None	24.1227	171	0.1411			
	Greenhouse-Geisser	24.1227	137.00	0.1761			
	Huynh-Feldt	24.1227	143.45	0.1682			
Hemisphere * RRT diff	None	0.0836	3	0.0279	0.377	0.770	0.007

Within Subjects Effects

	<b>Sphericity Correction</b>	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
	Greenhouse-Geisser	0.0836	2.68	0.0313	0.377	0.747	0.007
	Huynh-Feldt	0.0836	2.82	0.0297	0.377	0.757	0.007
Hemisphere * RRT diff * Group	None	0.3241	6	0.0540	0.731	0.625	0.025
	Greenhouse-Geisser	0.3241	5.35	0.0606	0.731	0.610	0.025
	Huynh-Feldt	0.3241	5.64	0.0575	0.731	0.617	0.025
Residual	None	12.6416	171	0.0739			
	Greenhouse-Geisser	12.6416	152.48	0.0829			
	Huynh-Feldt	12.6416	160.70	0.0787			

Note. Type 3 Sums of Squares

Between Subjects Effects

	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
Group	4.84	2	2.42	0.894	0.415	0.030
Residual	154.27	57	2.71			

Note. Type 3 Sums of Squares

## Assumptions

## Tests of Sphericity

	<b>Mauchly's W</b>	<b>p</b>	<b>Greenhouse-Geisser <math>\epsilon</math></b>	<b>Huynh-Feldt <math>\epsilon</math></b>
Hemisphere	1.000	NaN <sup>a</sup>	1.000	1.000
RRT diff	0.671	< .001	0.801	0.839
Hemisphere * RRT diff	0.823	0.055	0.892	0.940

<sup>a</sup> The repeated measures has only two levels. The assumption of sphericity is always met when the repeated measures has only two levels

## Homogeneity of Variances Test (Levene's)

	<b>F</b>	<b>df1</b>	<b>df2</b>	<b>p</b>
NAA_N170.LeftOP\$PhonOrth_PTdiff	1.836	2	57	0.169
NAA_N170.RightOP\$PhonOrth_PTdiff	0.105	2	57	0.900
NAA_N170.LeftOP\$Phon_PTdiff	4.805	2	57	0.012
NAA_N170.RightOP\$Phon_PTdiff	0.565	2	57	0.572
NAA_N170.LeftOP\$Orth_PTdiff	2.919	2	57	0.062
NAA_N170.RightOP\$Orth_PTdiff	1.174	2	57	0.317
NAA_N170.LeftOP\$Control_PTdiff	5.617	2	57	0.006
NAA_N170.RightOP\$Control_PTdiff	0.870	2	57	0.424

## Post Hoc Tests

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison														
Hemisphere	RRT diff	Group		Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	plim	
Left	PhonOrth	English	-	Left	PhonOrth	Spanish-English	-0.38080	0.233	128.2	-1.634	0.105	0.994	1.000	
						Chinese-English	-0.27784	0.233	128.2	-1.192	0.235	1.000	1.000	
				Left	Phon	English	Spanish-English	-0.15506	0.104	311.6	-1.495	0.136	0.998	1.000
							Chinese-English	-0.38957	0.233	128.2	-1.672	0.097	0.992	1.000
				Left	Phon	English	Spanish-English	-0.51056	0.233	128.2	-2.191	0.030	0.867	1.000
							Chinese-English	-0.38957	0.233	128.2	-1.672	0.097	0.992	1.000
				Left	Orth	English	Spanish-English	-0.03065	0.104	311.6	-0.295	0.768	1.000	1.000
							Spanish-English	-0.08183	0.233	128.2	-0.351	0.726	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	pholm
		-	Left	Orth	Chinese-English	-0.21295	0.233	128.2	-0.91413	0.362	1.000	1.000
		-	Left	Control	English	-0.11472	0.104	311.6	-1.10645	0.269	1.000	1.000
		-	Left	Control	Spanish-English	-0.41259	0.233	128.2	-1.77113	0.079	0.984	1.000
		-	Left	Control	Chinese-English	-0.23260	0.233	128.2	-0.99846	0.320	1.000	1.000
		-	Right	PhonOrth	English	-0.33960	0.174	84.0	-1.95117	0.054	0.950	1.000
		-	Right	PhonOrth	Spanish-English	-0.49806	0.233	128.2	-2.13799	0.034	0.891	1.000
		-	Right	PhonOrth	Chinese-English	-0.08898	0.233	128.2	-0.38194	0.703	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	plim
-			Right	Phon	English	0.47178	0.183	102.4	-2.57183	0.012	0.620	1.000
-			Right	Phon	Spanish-English	0.56134	0.233	128.2	-2.40965	0.017	0.738	1.000
-			Right	Phon	Chinese-English	0.26686	0.233	128.2	-1.14553	0.254	1.000	1.000
-			Right	Orth	English	0.26832	0.183	102.4	-1.46269	0.147	0.999	1.000
-			Right	Orth	Spanish-English	0.33243	0.233	128.2	-1.42701	0.156	0.999	1.000
-			Right	Orth	Chinese-English	0.07486	0.233	128.2	-0.32137	0.748	1.000	1.000
-			Right	Control	English	0.38340	0.183	102.4	-2.09005	0.039	0.909	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	pholm
			Right	Control	Spanish-English	-0.54504	0.233	128.2	-2.33967	0.021	0.784	1.000
			Right	Control	Chinese-English	0.03986	0.233	128.2	0.17112	0.864	1.000	1.000
		Spanish-English	Left	PhonOrth	Chinese-English	0.10297	0.233	128.2	0.44200	0.659	1.000	1.000
			Left	Phon	English	0.22574	0.233	128.2	0.96905	0.334	1.000	1.000
			Left	Phon	Spanish-English	-0.12975	0.1104	31.6	-1.25147	0.212	1.000	1.000
			Left	Phon	Chinese-English	-0.00877	0.233	128.2	-0.03763	0.970	1.000	1.000
			Left	Orth	English	0.35016	0.233	128.2	1.50310	0.135	0.998	1.000
			Left	Orth	Spanish-English	0.29897	0.1104	31.6	2.88356	0.004	0.380	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	plim
-	Left	Orth	Chinese-English	0.16785	0.233	128.2	0.72052	0.473	1.000	1.000	1.000	1.000
-	Left	Control	English	0.26608	0.233	128.2	1.14221	0.255	1.000	1.000	1.000	1.000
-	Left	Control	Spanish-English	-0.03179	0.104	311.6	-0.30662	0.759	1.000	1.000	1.000	1.000
-	Left	Control	Chinese-English	0.14820	0.233	128.2	0.63620	0.526	1.000	1.000	1.000	1.000
-	Right	PhonOrth	English	0.04120	0.233	128.2	0.17685	0.860	1.000	1.000	1.000	1.000
-	Right	PhonOrth	Spanish-English	-0.11725	0.174	84.0	-0.67367	0.502	1.000	1.000	1.000	1.000
-	Right	PhonOrth	Chinese-English	0.29183	0.233	128.2	1.25272	0.213	1.000	1.000	1.000	1.000
-	Right	Phon	English	-0.09098	0.233	128.2	-0.39055	0.697	1.000	1.000	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-			Right	Phon	Spanish-English	-0.18054	0.183	102.4	-0.98417	0.327	1.000	1.000
-			Right	Phon	Chinese-English	0.11394	0.233	128.2	0.48913	0.626	1.000	1.000
-			Right	Orth	English	0.11248	0.233	128.2	0.48285	0.630	1.000	1.000
-			Right	Orth	Spanish-English	0.04837	0.183	102.4	0.26370	0.793	1.000	1.000
-			Right	Orth	Chinese-English	0.30594	0.233	128.2	1.31329	0.191	1.000	1.000
-			Right	Control	English	-0.00260	0.233	128.2	-0.01117	0.991	1.000	1.000
-			Right	Control	Spanish-English	-0.16424	0.183	102.4	-0.89530	0.373	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	plim
			Right	Control	Chinese-English	0.42067	0.233	128.2	1.80578	0.073	0.980	1.000
		Chinese-English	Left	Phon	English	0.12278	0.233	128.2	0.52705	0.599	1.000	1.000
			Left	Phon	Spanish-English	-0.23272	0.233	128.2	-0.99899	0.320	1.000	1.000
			Left	Phon	Chinese-English	-0.11173	0.104	316.4	-1.07765	0.282	1.000	1.000
			Left	Orth	English	0.24719	0.233	128.2	1.06111	0.291	1.000	1.000
			Left	Orth	Spanish-English	0.19601	0.233	128.2	0.84139	0.402	1.000	1.000
			Left	Orth	Chinese-English	0.06488	0.104	316.4	0.62580	0.532	1.000	1.000
			Left	Control	English	0.16312	0.233	128.2	0.70021	0.485	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-		Left	Control	Spanish-English	Spanish-English	-0.13476	0.233	128.2	-0.57847	0.564	1.000	1.000
-		Left	Control	Chinese-English	Chinese-English	0.04524	0.1104	31.6	0.413633	0.663	1.000	1.000
-		Right	PhonOrth	English	English	-0.06177	0.233	128.2	-0.26515	0.791	1.000	1.000
-		Right	PhonOrth	Spanish-English	Spanish-English	-0.22022	0.233	128.2	-0.94533	0.346	1.000	1.000
-		Right	PhonOrth	Chinese-English	Chinese-English	0.18886	0.174	84.0	1.08509	0.281	1.000	1.000
-		Right	Phon	English	English	-0.19395	0.233	128.2	-0.83255	0.407	1.000	1.000
-		Right	Phon	Spanish-English	Spanish-English	-0.28350	0.233	128.2	-1.21699	0.226	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hem isph ere	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tu key</sub>	P <sub>ho lm</sub>
-			Rig ht	Pho n	Chi nes e- Eng lish	0.01 098	0. 18 3	10 2. 4	0.0 59 85	0.9 52	1. 00 0	1. 00 0
-			Rig ht	Ort h	Eng lish	0.00 952	0. 23 3	12 8. 2	0.0 40 86	0.9 67	1. 00 0	1. 00 0
-			Rig ht	Ort h	Spa nis h- Eng lish	- 0.05 459	0. 23 3	12 8. 2	- 0.2 34 35	0.8 15	1. 00 0	1. 00 0
-			Rig ht	Ort h	Chi nes e- Eng lish	0.20 297	0. 18 3	10 2. 4	1.1 06 46	0.2 71	1. 00 0	1. 00 0
-			Rig ht	Con trol	Eng lish	- 0.10 557	0. 23 3	12 8. 2	- 0.4 53 17	0.6 51	1. 00 0	1. 00 0
-			Rig ht	Con trol	Spa nis h- Eng lish	- 0.26 720	0. 23 3	12 8. 2	- 1.1 47 01	0.2 54	1. 00 0	1. 00 0
-			Rig ht	Con trol	Chi nes e- Eng lish	0.31 770	0. 18 3	10 2. 4	1.7 31 88	0.0 86	0. 98 7	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	pholm
	Phon	English	-	Left	Phon	Spanish-English	-0.35550	0.233	128.2604	1.526	0.129	1.008
			-	Left	Phon	Chinese-English	-0.23451	0.233	128.2668	1.006	0.316	1.000
			-	Left	Orth	English	0.12441	0.104	311.9993	1.199	0.231	1.000
			-	Left	Orth	Spanish-English	0.07323	0.233	128.34	0.314	0.754	1.000
			-	Left	Orth	Chinese-English	-0.05790	0.233	128.4852	0.248	0.804	1.000
			-	Left	Control	English	0.04034	0.104	311.8907	0.389	0.697	1.000
			-	Left	Control	Spanish-English	-0.25754	0.233	128.0552	1.105	0.271	1.000
			-	Left	Control	Chinese-English	-0.07754	0.233	128.3285	0.332	0.740	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	plim
-			Right	PhonOrth	English	-0.18455	0.183	102.4	-1.006	0.317	1.000	1.000
-			Right	PhonOrth	Spanish-English	-0.34300	0.233	128.2	-1.472	0.143	0.999	1.000
-			Right	PhonOrth	Chinese-English	0.06608	0.233	128.2	0.283	0.777	1.000	1.000
-			Right	Phon	English	-0.31673	0.174	84.0	-1.819	0.072	0.976	1.000
-			Right	Phon	Spanish-English	-0.40628	0.233	128.2	-1.744	0.084	0.986	1.000
-			Right	Phon	Chinese-English	-0.11180	0.233	128.2	-0.479	0.632	1.000	1.000
-			Right	Orth	English	-0.11326	0.183	102.4	-0.617	0.538	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	pholm
			Right	Orth	Spanish-English	-0.17737	0.233	128.2	-0.76140	0.448	1.000	1.000
			Right	Orth	Chinese-English	0.08019	0.233	128.2	0.34424	0.731	1.000	1.000
			Right	Control	English	-0.22835	0.183	102.4	-1.24479	0.216	1.000	1.000
			Right	Control	Spanish-English	-0.38998	0.233	128.2	-1.67406	0.097	0.992	1.000
			Right	Control	Chinese-English	0.19492	0.233	128.2	0.83673	0.404	1.000	1.000
		Spanish-English	Left	Phon	Chinese-English	0.12099	0.233	128.2	0.51936	0.604	1.000	1.000
			Left	Orth	English	0.47991	0.233	128.2	2.06009	0.041	0.921	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-	Left	Orth	Spanish-English	Orth	Spanish-English	0.42872	0.104	311.6	4.135	<.001	0.010	0.013
-	Left	Orth	Chinese-English	Orth	Chinese-English	0.29760	0.233	128.2	1.277	0.204	1.000	1.000
-	Left	Control	English	Control	English	0.39584	0.233	128.2	1.699	0.092	0.990	1.000
-	Left	Control	Spanish-English	Control	Spanish-English	0.09796	0.104	311.6	0.944	0.345	1.000	1.000
-	Left	Control	Chinese-English	Control	Chinese-English	0.27796	0.233	128.2	1.193	0.235	1.000	1.000
-	Right	PhonOrth	English	PhonOrth	English	0.17095	0.233	128.2	0.733	0.464	1.000	1.000
-	Right	PhonOrth	Spanish-English	PhonOrth	Spanish-English	0.01250	0.183	102.4	0.068	0.946	1.000	1.000
-	Right	PhonOrth	Chinese-English	PhonOrth	Chinese-English	0.42158	0.233	128.2	1.809	0.073	0.979	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	plim
-			Right	Phon	English	0.03877	0.233	128.2	0.16644	0.868	1.000	1.000
-			Right	Phon	Spanish-English	-0.05079	0.174	84.0	-0.29178	0.771	1.000	1.000
-			Right	Phon	Chinese-English	0.24370	0.233	128.2	1.04612	0.297	1.000	1.000
-			Right	Orth	English	0.24224	0.233	128.2	1.03984	0.300	1.000	1.000
-			Right	Orth	Spanish-English	0.17813	0.183	102.4	0.97102	0.334	1.000	1.000
-			Right	Orth	Chinese-English	0.43569	0.233	128.2	1.87028	0.064	0.997	1.000
-			Right	Control	English	0.12715	0.233	128.2	0.54582	0.586	1.000	1.000
-			Right	Control	Spanish-English	-0.03448	0.183	102.4	-0.18797	0.851	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
			Right	Control	Chinese-English	0.55042	0.233	128.2	2.36277	0.020	0.769	1.000
		Chinese-English	Left	Orth	English	0.35892	0.233	128.2	1.54073	0.126	0.997	1.000
			Left	Orth	Spanish-English	0.30774	0.233	128.2	1.32102	0.189	1.000	1.000
			Left	Orth	Chinese-English	0.17662	0.104	316.4	1.70345	0.089	0.991	1.000
			Left	Control	English	0.27485	0.233	128.2	1.17984	0.240	1.000	1.000
			Left	Control	Spanish-English	0.02302	0.233	128.2	0.09884	0.921	1.000	1.000
			Left	Control	Chinese-English	0.15697	0.104	316.4	1.51398	0.131	0.998	1.000
			Right	PhonOrth	English	0.04996	0.233	128.2	0.21448	0.831	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	plim
		-	Right	PhonOrth	Spanish-English	-0.10849	0.233	128.2	-0.46570	0.642	1.000	1.000
		-	Right	PhonOrth	Chinese-English	0.30059	0.183	102.4	1.63862	0.104	0.993	1.000
		-	Right	Phon	English	0.08221	0.233	128.2	0.35292	0.725	1.000	1.000
		-	Right	Phon	Spanish-English	0.17177	0.233	128.2	0.73736	0.462	1.000	1.000
		-	Right	Phon	Chinese-English	0.12271	0.174	84.0	0.70503	0.483	1.000	1.000
		-	Right	Orth	English	0.12125	0.233	128.2	0.52048	0.604	1.000	1.000
		-	Right	Orth	Spanish-English	0.05714	0.233	128.2	0.24528	0.807	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	pholm
			-	Right	Orth	Chinese-English	0.31470	0.183	102.4	1.7155	0.089	1.988
			-	Right	Control	English	0.00616	0.233	128.2	0.02646	0.979	1.000
			-	Right	Control	Spanish-English	-0.15547	0.233	128.2	-0.66738	0.506	1.000
			-	Right	Control	Chinese-English	0.42943	0.183	102.4	2.34097	0.021	0.781
	Orth	English	-	Left	Orth	Spanish-English	-0.05118	0.233	128.2	-0.21972	0.826	1.000
			-	Left	Orth	Chinese-English	-0.18231	0.233	128.2	-0.78258	0.435	1.000
			-	Left	Control	English	-0.08407	0.104	311.6	-0.81086	0.418	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	plim
-	Left	Control	Spanish-English	-	0.38	0.23	0.195	12	1.639	0.104	0.994	1.000
-	Left	Control	Chinese-English	-	0.20	0.23	0.195	12	0.866	0.388	1.000	1.000
-	Right	PhonOrth	English	-	0.30	0.18	0.896	10	1.628	0.095	0.991	1.000
-	Right	PhonOrth	Spanish-English	-	0.46	0.23	0.741	12	2.006	0.047	0.939	1.000
-	Right	PhonOrth	Chinese-English	-	0.05	0.23	0.833	12	0.250	0.803	1.000	1.000
-	Right	Phon	English	-	0.44	0.18	0.114	10	2.404	0.018	0.074	1.000
-	Right	Phon	Spanish-English	-	0.53	0.23	0.069	12	2.278	0.024	0.082	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-			Right	Phon	Chinese-English	-0.23621	0.233	128.2	-1.01398	0.313	1.000	1.000
-			Right	Orth	English	-0.23767	0.174	84.0	-1.36553	0.176	0.999	1.000
-			Right	Orth	Spanish-English	-0.30178	0.233	128.2	-1.29545	0.197	1.000	1.000
-			Right	Orth	Chinese-English	-0.04422	0.233	128.2	-0.18981	0.850	1.000	1.000
-			Right	Control	English	-0.35276	0.183	102.4	-1.92299	0.057	0.958	1.000
-			Right	Control	Spanish-English	-0.51439	0.233	128.2	-2.20811	0.029	0.859	1.000
-			Right	Control	Chinese-English	0.07051	0.233	128.2	0.30268	0.763	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	pholm
		Spanish-English	-	Left	Orth	-0.13112	0.233	128.2	-0.56286	0.575	1.000	1.000
			-	Left	Control	-0.03289	0.233	128.2	-0.14118	0.888	1.000	1.000
			-	Left	Control	-0.33076	0.104	311.6	-3.19019	0.002	0.195	0.431
			-	Left	Control	-0.15077	0.233	128.2	-0.64719	0.519	1.000	1.000
			-	Right	PhonOrth	-0.25777	0.233	128.2	-1.10654	0.271	1.000	1.000
			-	Right	PhonOrth	-0.41622	0.183	102.4	-2.26897	0.025	0.824	1.000
			-	Right	PhonOrth	-0.00714	0.233	128.2	-0.3067	0.976	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	plim
-			Right	Phon	English	-0.38995	0.233	128.2	-1.67394	0.097	0.992	1.000
-			Right	Phon	Spanish-English	-0.47951	0.183	102.4	-2.61396	0.010	0.589	1.000
-			Right	Phon	Chinese-English	-0.18503	0.233	128.2	-0.79426	0.429	1.000	1.000
-			Right	Orth	English	-0.18649	0.233	128.2	-0.80053	0.425	1.000	1.000
-			Right	Orth	Spanish-English	-0.25060	0.174	84.0	-1.43979	0.154	0.999	1.000
-			Right	Orth	Chinese-English	0.00697	0.233	128.2	0.02990	0.976	1.000	1.000
-			Right	Control	English	-0.30157	0.233	128.2	-1.29456	0.198	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
		-	Right	Control	Spanish-English	-0.46321	0.183	102.4	-2.5258	0.013	0.655	1.000
		-	Right	Control	Chinese-English	0.12169	0.233	128.2	0.52240	0.602	1.000	1.000
		Chinese-English	Left	Control	English	0.09823	0.233	128.2	0.42169	0.674	1.000	1.000
		-	Left	Control	Spanish-English	-0.19964	0.233	128.2	-0.85699	0.393	1.000	1.000
		-	Left	Control	Chinese-English	-0.01964	0.104	311.6	-0.18947	0.850	1.000	1.000
		-	Right	PhonOrth	English	-0.12665	0.233	128.2	-0.54368	0.588	1.000	1.000
		-	Right	PhonOrth	Spanish-English	-0.28510	0.233	128.2	-1.22386	0.223	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	plim
-			Right	PhonOrth	Chinese-English	0.12398	0.183	102.4	0.67584	0.501	1.000	1.000
-			Right	Phon	English	0.25883	0.233	128.2	-1.11108	0.269	1.000	1.000
-			Right	Phon	Spanish-English	0.34839	0.233	128.2	-1.49552	0.137	0.998	1.000
-			Right	Phon	Chinese-English	0.05390	0.183	102.4	0.29385	0.769	1.000	1.000
-			Right	Orth	English	0.05537	0.233	128.2	0.23767	0.813	1.000	1.000
-			Right	Orth	Spanish-English	0.11948	0.233	128.2	0.51287	0.609	1.000	1.000
-			Right	Orth	Chinese-English	0.13809	0.174	84.0	0.79337	0.430	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	plim
			-	Right	Control	English	-0.17045	0.233	128.2	-0.73170	0.466	1.000
			-	Right	Control	Spanish-English	-0.33209	0.233	128.2	-1.42553	0.156	0.999
			-	Right	Control	Chinese-English	0.25282	0.183	102.4	1.37818	0.171	0.999
	Control	English	-	Left	Control	Spanish-English	-0.29787	0.233	128.2	-1.27868	0.203	1.000
			-	Left	Control	Chinese-English	-0.11788	0.233	128.2	-0.50602	0.614	1.000
			-	Right	PhonOrth	English	-0.22489	0.183	102.4	-1.22592	0.223	1.000
			-	Right	PhonOrth	Spanish-English	-0.38334	0.233	128.2	-1.64554	0.102	0.993

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-			Right	PhonOrth	Chinese-English	0.02574	0.233	128.2	0.11051	0.912	1.000	1.000
-			Right	Phon	English	-0.35707	0.183	102.4	-1.94647	0.054	0.953	1.000
-			Right	Phon	Spanish-English	-0.44662	0.233	128.2	-1.91721	0.057	0.961	1.000
-			Right	Phon	Chinese-English	-0.15214	0.233	128.2	-0.65308	0.515	1.000	1.000
-			Right	Orth	English	-0.15360	0.183	102.4	-0.83732	0.404	1.000	1.000
-			Right	Orth	Spanish-English	-0.21771	0.233	128.2	-0.93456	0.352	1.000	1.000
-			Right	Orth	Chinese-English	0.03985	0.233	128.2	0.17108	0.864	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	plim
		-	Right	Control	English	-0.26869	0.174	84.0	-1.54372	0.126	0.997	1.000
		-	Right	Control	Spanish-English	-0.43032	0.233	128.2	-1.84722	0.067	0.974	1.000
		-	Right	Control	Chinese-English	0.15458	0.233	128.2	0.66357	0.508	1.000	1.000
		Spanish-English	Left	Control	Chinese-English	0.18000	0.233	128.2	0.77266	0.441	1.000	1.000
		-	Right	PhonOrth	English	0.07299	0.233	128.2	0.31332	0.755	1.000	1.000
		-	Right	PhonOrth	Spanish-English	-0.08546	0.183	102.4	-0.46588	0.642	1.000	1.000
		-	Right	PhonOrth	Chinese-English	0.32362	0.233	128.2	1.38919	0.167	0.999	1.000
		-	Right	Phon	English	-0.05919	0.233	128.2	-0.25408	0.800	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	plim
-			Right	Phon	Spanish-English	-0.14875	0.183	102	-0.810	0.419	1.000	1.000
-			Right	Phon	Chinese-English	0.14574	0.233	128	0.625	0.533	1.000	1.000
-			Right	Orth	English	0.14427	0.233	128	0.619	0.537	1.000	1.000
-			Right	Orth	Spanish-English	0.08016	0.183	102	0.437	0.663	1.000	1.000
-			Right	Orth	Chinese-English	0.33773	0.233	128	1.449	0.150	0.999	1.000
-			Right	Control	English	0.02919	0.233	128	0.125	0.900	1.000	1.000
-			Right	Control	Spanish-English	-0.13244	0.174	84	-0.760	0.449	1.000	1.000
-			Right	Control	Chinese-English	0.45246	0.233	128	1.942	0.054	0.995	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	plim
		Chinese-English	Right	PhonOrth	English	-0.10701	0.233	128.2	-0.45935	0.647	1.000	1.000
			Right	PhonOrth	Spanish-English	-0.26546	0.233	128.2	-1.13953	0.257	1.000	1.000
			Right	PhonOrth	Chinese-English	0.14362	0.183	102.4	0.78293	0.435	1.000	1.000
			Right	Phon	English	-0.23919	0.233	128.2	-1.02675	0.306	1.000	1.000
			Right	Phon	Spanish-English	-0.32874	0.233	128.2	-1.41119	0.161	0.999	1.000
			Right	Phon	Chinese-English	-0.03426	0.183	102.4	-0.18676	0.852	1.000	1.000
			Right	Orth	English	-0.03572	0.233	128.2	-0.15334	0.878	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
					Spanish-English	-0.09983	0.233	128.2	-0.42855	0.669	1.000	1.000
					Chinese-English	0.15773	0.183	102.4	0.85985	0.392	1.000	1.000
					English	-0.15081	0.233	128.2	-0.64737	0.519	1.000	1.000
					Spanish-English	-0.31244	0.233	128.2	-1.34121	0.182	1.000	1.000
					Chinese-English	0.27246	0.174	84.0	1.56540	0.121	0.996	1.000
Right	PhonOrth	English			Spanish-English	-0.15845	0.233	128.2	-0.68018	0.498	1.000	1.000
					Chinese-English	0.25063	0.233	128.2	1.07587	0.284	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-	Right	Phon	English	Phon	English	-0.13218	0.104	316	-1.27486	0.203	1.000	1.000
-	Right	Phon	Spanish-English	Phon	Spanish-English	-0.22174	0.233	128	-0.95184	0.343	1.000	1.000
-	Right	Phon	Chinese-English	Phon	Chinese-English	0.07275	0.233	128	0.31228	0.755	1.000	1.000
-	Right	Orth	English	Orth	English	0.07129	0.104	316	0.68755	0.492	1.000	1.000
-	Right	Orth	Spanish-English	Orth	Spanish-English	0.00718	0.233	128	0.03080	0.975	1.000	1.000
-	Right	Orth	Chinese-English	Orth	Chinese-English	0.26474	0.233	128	1.13644	0.258	1.000	1.000
-	Right	Control	English	Control	English	-0.04380	0.104	316	-0.42245	0.673	1.000	1.000
-	Right	Control	Spanish-English	Control	Spanish-English	-0.20543	0.233	128	-0.88186	0.380	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	plim
		-	Right	Control	Chinese-English	0.37947	0.233	128.2	1.62894	0.106	0.994	1.000
		-	Right	PhonOrth	Chinese-English	0.40908	0.233	128.2	1.75605	0.081	0.985	1.000
		-	Right	Phon	English	0.02627	0.233	128.2	0.11278	0.910	1.000	1.000
		-	Right	Phon	Spanish-English	-0.06329	0.1104	31.6	-0.61039	0.542	1.000	1.000
		-	Right	Phon	Chinese-English	0.23120	0.233	128.2	0.99246	0.323	1.000	1.000
		-	Right	Orth	English	0.22974	0.233	128.2	0.98618	0.326	1.000	1.000
		-	Right	Orth	Spanish-English	0.16563	0.1104	31.6	1.51946	0.111	0.996	1.000
		-	Right	Orth	Chinese-English	0.42319	0.233	128.2	1.81662	0.072	0.978	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hem isph ere	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tu</sub> key	P <sub>ho</sub> lm
		-	Rig ht	Con trol	Eng lish	0.11 465	0. 23 3	12 8. 2	0.4 92 16	0.6 23	1. 00 0	1. 00 0
		-	Rig ht	Con trol	Spa nis h- Eng lish	- 0.04 698	0. 10 4	31 1. 6	- 0.4 53 14	0.6 51	1. 00 0	1. 00 0
		-	Rig ht	Con trol	Chi nes e- Eng lish	0.53 792	0. 23 3	12 8. 2	2.3 09 11	0.0 23	0. 80 3	1. 00 0
		-	Rig ht	Pho n	Eng lish	- 0.38 281	0. 23 3	12 8. 2	- 1.6 43 27	0.1 03	0. 99 4	1. 00 0
		-	Rig ht	Pho n	Spa nis h- Eng lish	- 0.47 237	0. 23 3	12 8. 2	- 2.0 27 71	0.0 45	0. 93 2	1. 00 0
		-	Rig ht	Pho n	Chi nes e- Eng lish	- 0.17 788	0. 10 4	31 1. 6	- 1.7 15 66	0.0 87	0. 99 0	1. 00 0
		-	Rig ht	Ort h	Eng lish	- 0.17 934	0. 23 3	12 8. 2	- 0.7 69 86	0.4 43	1. 00 0	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
					Spanish-English	-0.24345	0.233	128.2	-1.04507	0.298	1.000	1.000
					Chinese-English	0.01411	0.1104	31.6	0.13610	0.892	1.000	1.000
					English	-0.29443	0.233	128.2	-1.26389	0.209	1.000	1.000
					Spanish-English	-0.45606	0.233	128.2	-1.95773	0.052	0.952	1.000
					Chinese-English	0.12884	0.1104	31.6	1.24265	0.215	1.000	1.000
	Phon	English			Spanish-English	-0.08956	0.233	128.2	-0.38444	0.701	1.000	1.000
					Chinese-English	0.20493	0.233	128.2	0.87968	0.381	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
		-	Right	Orth	English	0.20346	0.104	311.6	1.96240	0.051	0.954	1.000
		-	Right	Orth	Spanish-English	0.13935	0.233	128.2	0.59820	0.551	1.000	1.000
		-	Right	Orth	Chinese-English	0.39692	0.233	128.2	1.70384	0.091	0.990	1.000
		-	Right	Control	English	0.08838	0.104	311.6	0.85241	0.395	1.000	1.000
		-	Right	Control	Spanish-English	-0.07325	0.233	128.2	-0.31446	0.754	1.000	1.000
		-	Right	Control	Chinese-English	0.51165	0.233	128.2	2.19634	0.030	0.864	1.000
		-	Right	Phon	Chinese-English	0.29448	0.233	128.2	1.26412	0.208	1.000	1.000
		-	Right	Orth	English	0.29302	0.233	128.2	1.25785	0.211	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	pholm
		-	Right	Orth	Spanish-English	0.22891	0.104	311.6	2.20785	0.028	0.863	1.000
		-	Right	Orth	Chinese-English	0.48648	0.233	128.2	2.08829	0.039	0.911	1.000
		-	Right	Control	English	0.17794	0.233	128.2	0.76382	0.446	1.000	1.000
		-	Right	Control	Spanish-English	0.01630	0.104	311.6	0.15725	0.875	1.000	1.000
		-	Right	Control	Chinese-English	0.60121	0.233	128.2	2.58078	0.011	0.613	1.000
		-	Chinese-English	Right	Orth	English	-0.00146	0.233	128.2	-0.00627	0.995	1.000
		-	Right	Orth	Spanish-English	-0.06557	0.233	128.2	-0.28148	0.779	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	pholm
			-	Right	Orth	Chinese-English	0.19199	0.104	311.5176	1.851	0.065	1.976
			-	Right	Control	English	-0.11655	0.233	128.532	-0.500	0.618	1.000
			-	Right	Control	Spanish-English	-0.27818	0.233	128.892	-1.194	0.235	1.000
			-	Right	Control	Chinese-English	0.30672	0.104	311.5831	2.903	0.003	0.328
	Orth	English	-	Right	Orth	Spanish-English	0.06411	0.233	128.7520	0.275	0.784	1.000
			-	Right	Orth	Chinese-English	0.19345	0.233	128.8344	0.830	0.408	1.000
			-	Right	Control	English	-0.11509	0.104	311.106	-1.100	0.268	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

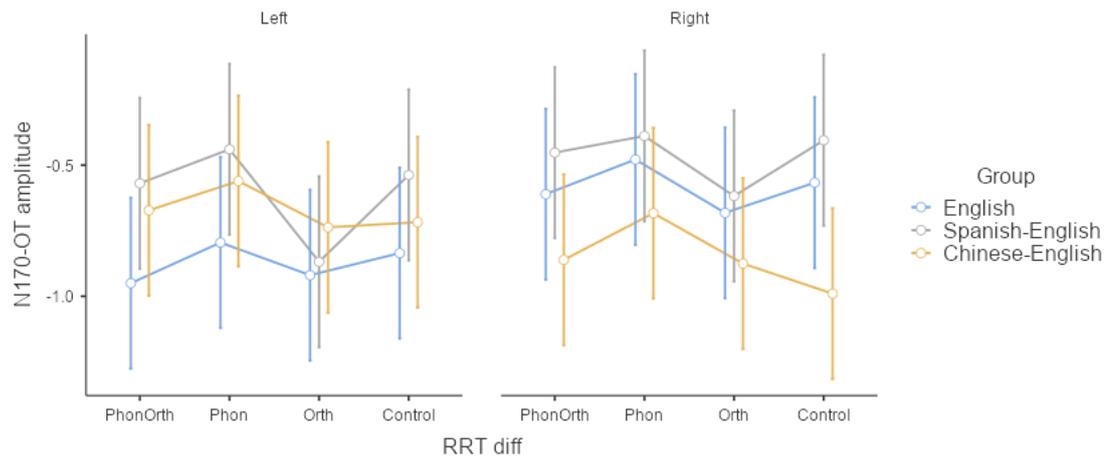
Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	pholm
			Right	Control	Spanish-English	-0.27672	0.233	128.2	-1.187	0.237	1.000	1.000
			Right	Control	Chinese-English	0.30818	0.233	128.2	1.322	0.188	1.000	1.000
		Spanish-English	Right	Orth	Chinese-English	0.25756	0.233	128.2	1.105	0.271	1.000	1.000
			Right	Control	English	-0.05098	0.233	128.2	-0.218	0.827	1.000	1.000
			Right	Control	Spanish-English	-0.21261	0.110	31.6	-2.050	0.041	0.929	1.000
			Right	Control	Chinese-English	0.37229	0.233	128.2	1.598	0.112	0.995	1.000
		Chinese-English	Right	Control	English	-0.30854	0.233	128.2	-1.324	0.188	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	pholm
					Spanish-English	-0.47017	0.233	128.2	-2.01830	0.046	0.935	1.000
					Chinese-English	0.11473	0.1104	31.6	1.10655	0.269	1.000	1.000
	Control	English			Spanish-English	-0.16163	0.233	128.2	0.69384	0.489	1.000	1.000
					Chinese-English	0.42327	0.233	128.2	1.81696	0.072	0.978	1.000
		Spanish-English			Chinese-English	0.58490	0.233	128.2	2.51079	0.013	0.666	1.000

**Estimated Marginal Means**

RRT diff \* Group \* Hemisphere



## Repeated Measures ANOVA

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Hemisphere	1.07	1	1.074	2.20	0.144	0.037
Hemisphere * Group	2.19	2	1.093	2.24	0.116	0.073
Residual	27.84	57	0.488			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Group	0.504	2	0.252	0.239	0.788	0.008
Residual	60.110	57	1.055			

Note. Type 3 Sums of Squares

## Assumptions

Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
NAA_N170.LeftOP\$prime	3.59	2	57	0.034
NAA_N170.RightOP\$prime	2.56	2	57	0.086

## Post Hoc Tests

Post Hoc Comparisons - Hemisphere \* Group

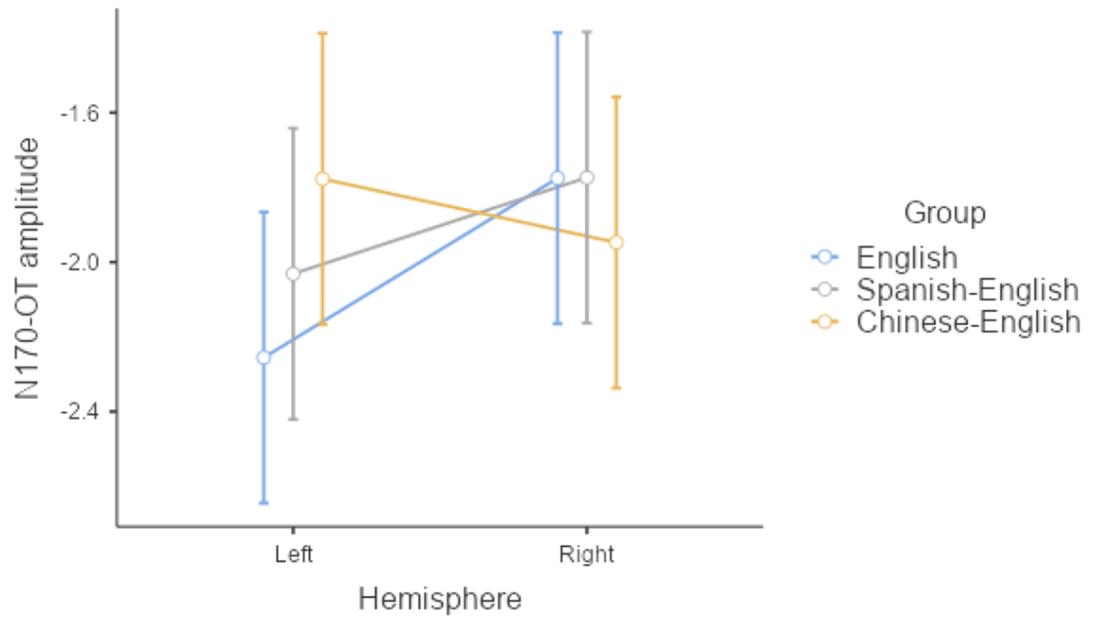
Comparison											
Hemisphere	Group		Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	pholm
Left	English	-	Left	Spanish-English	-0.22417	0.278	100.5	-0.80710	0.422	0.966	1.000
				Chinese-English	-0.47820	0.278	100.5	-1.72169	0.088	0.521	1.000
	-	Right	English	-0.48014	0.221	57.0	-2.17274	0.034	0.266	0.510	
			Spanish-English	-0.48187	0.278	100.5	-1.73490	0.086	0.512	1.000	
	-	Right	Chinese-English	-0.30795	0.278	100.5	-1.10873	0.270	0.877	1.000	
			Spanish-English	-0.25403	0.278	100.5	-0.91459	0.363	0.942	1.000	

Post Hoc Comparisons - Hemisphere \* Group

Comparison											
Hemisphere	Group	Hemisphere	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> ey	P <sub>holm</sub> m	
		-	Right	English	-0.25597	0.278	100.5	-0.92157	0.359	0.940	1.000
		-	Right	Spanish-English	-0.25770	0.221	57.0	-1.16613	0.248	0.851	1.000
		-	Right	Chinese-English	-0.08378	0.278	100.5	-0.30163	0.764	1.000	1.000
	Chinese-English	-	Right	English	-0.00194	0.278	100.5	-0.00698	0.994	1.000	1.000
		-	Right	Spanish-English	-0.00367	0.278	100.5	-0.01321	0.989	1.000	1.000
		-	Right	Chinese-English	0.17025	0.221	57.0	0.77042	0.444	0.971	1.000
Right	English	-	Right	Spanish-English	-0.00173	0.278	100.5	-0.00623	0.995	1.000	1.000
		-	Right	Chinese-English	0.17219	0.278	100.5	0.61995	0.537	0.989	1.000
	Spanish-English	-	Right	Chinese-English	0.17392	0.278	100.5	0.62617	0.533	0.989	1.000

## Estimated Marginal Means

Hemisphere \* Group



## Appendix P: Study 2 statistical outputs – P1 and N170 latencies

### *P1-O latency*

## Repeated Measures ANOVA

Within Subjects Effects

	<b>Sphericity Correction</b>	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
RRT Target	None	8.153	3	2.718	0.1860	0.906	0.003
	Greenhouse-Geisser	8.153	2.59	3.146	0.1860	0.881	0.003
	Huynh-Feldt	8.153	2.73	2.991	0.1860	0.890	0.003
RRT Target * Group	None	250.610	6	41.768	2.8587	0.011	0.091
	Greenhouse-Geisser	250.610	5.18	48.354	2.8587	0.016	0.091
	Huynh-Feldt	250.610	5.45	45.971	2.8587	0.014	0.091
Residual	None	2498.502	171	14.611			
	Greenhouse-Geisser	2498.502	147.71	16.915			
	Huynh-Feldt	2498.502	155.37	16.081			
Hemisphere	None	56.411	1	56.411	3.6348	0.062	0.060
	Greenhouse-Geisser	56.411	1.00	56.411	3.6348	0.062	0.060
	Huynh-Feldt	56.411	1.00	56.411	3.6348	0.062	0.060
Hemisphere * Group	None	0.587	2	0.293	0.0189	0.981	0.001
	Greenhouse-Geisser	0.587	2.00	0.293	0.0189	0.981	0.001
	Huynh-Feldt	0.587	2.00	0.293	0.0189	0.981	0.001

Within Subjects Effects

	<b>Sphericity Correction</b>	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
Residual	None	884.636	57	15.520			
	Greenhouse-Geisser	884.636	57.00	15.520			
	Huynh-Feldt	884.636	57.00	15.520			
RRT Target * Hemisphere	None	15.641	3	5.214	1.2912	0.279	0.022
	Greenhouse-Geisser	15.641	2.76	5.665	1.2912	0.280	0.022
	Huynh-Feldt	15.641	2.92	5.365	1.2912	0.279	0.022
RRT Target * Hemisphere * Group	None	21.708	6	3.618	0.8960	0.499	0.030
	Greenhouse-Geisser	21.708	5.52	3.931	0.8960	0.493	0.030
	Huynh-Feldt	21.708	5.83	3.723	0.8960	0.497	0.030
Residual	None	690.469	171	4.038			
	Greenhouse-Geisser	690.469	157.37	4.387			
	Huynh-Feldt	690.469	166.18	4.155			

Note. Type 3 Sums of Squares

Between Subjects Effects

	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
Group	1733	2	867	5.71	0.005	0.167
Residual	8647	57	152			

Note. Type 3 Sums of Squares

## Assumptions

### Tests of Sphericity

	Mauchly's W	p	Greenhouse-Geisser $\epsilon$	Huynh-Feldt $\epsilon$
RRT Target	0.787	0.021	0.864	0.909
Hemisphere	1.000	NaN <sup>a</sup>	1.000	1.000
RRT Target * Hemisphere	0.875	0.191	0.920	0.972

<sup>a</sup> The repeated measures has only two levels. The assumption of sphericity is always met when the repeated measures has only two levels

### Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
PAL50_P1.LeftO\$PhonOrth_TARGET	2.459	2	57	0.095
PAL50_P1.RightO\$PhonOrth_TARGET	0.218	2	57	0.805
PAL50_P1.LeftO\$Phon_TARGET	0.833	2	57	0.440
PAL50_P1.RightO\$Phon_TARGET	3.497	2	57	0.037
PAL50_P1.LeftO\$Orth_TARGET	0.709	2	57	0.497
PAL50_P1.RightO\$Orth_TARGET	3.889	2	57	0.026
PAL50_P1.LeftO\$Control_TARGET	2.103	2	57	0.131
PAL50_P1.RightO\$Control_TARGET	0.459	2	57	0.634

## Post Hoc Tests

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison													
RRT Target	Hemisphere	Group		RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
PhonOrth	Left	English	-	PhonOrth	Left	Spanish-English	3.7109	1.670	119	2.218	0.028	0.851	1.000
			-	PhonOrth	Left	Chinese-English	-1.2573	1.670	119	-0.758	0.453	1.000	1.000
		-	PhonOrth	Right	English	0.2075	0.831	150	0.2497	0.803	1.000	1.000	
		-	PhonOrth	Right	Spanish-English	3.9001	1.670	119	2.3351	0.021	0.786	1.000	1.000
	-	PhonOrth	Right	Chinese-English	-0.9400	1.670	119	-0.5628	0.575	1.000	1.000		
	-	Phon	Left	English	-0.4395	0.966	259	-0.4551	0.649	1.000	1.000		
	-	Phon	Left	Spanish-English	2.8808	1.670	119	1.7248	0.087	0.988	1.000		

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-	Phon	Left	Chinese-English			-1.3550	1.670	119	-0.8112	0.419	1.000	1.000
-	Phon	Right	English			0.3052	1.104	255	0.2763	0.783	1.000	1.000
-	Phon	Right	Spanish-English			4.5533	1.670	119	2.7261	0.007	0.503	1.000
-	Phon	Right	Chinese-English			-1.3794	1.670	119	-0.8259	0.411	1.000	1.000
-	Orth	Left	English			-1.2330	0.966	259	-1.2769	0.203	1.000	1.000
-	Orth	Left	Spanish-English			3.1921	1.670	119	1.9112	0.058	0.962	1.000
-	Orth	Left	Chinese-English			0.6653	1.670	119	0.3983	0.691	1.000	1.000
-	Orth	Right	English			-0.4640	1.104	255	-0.4201	0.675	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-	Orth	Right	Spanish-English	Right	Spanish-English	3.2532	1.670	119	1.947	0.054	0.954	1.000
-	Orth	Right	Chinese-English	Right	Chinese-English	1.3305	1.670	119	0.796	0.427	1.000	1.000
-	Control	Left	English	Left	English	0.2319	0.966	259	0.240	0.810	1.000	1.000
-	Control	Left	Spanish-English	Left	Spanish-English	3.2104	1.670	119	1.922	0.057	0.960	1.000
-	Control	Left	Chinese-English	Left	Chinese-English	-2.5881	1.670	119	-1.549	0.124	0.997	1.000
-	Control	Right	English	Right	English	1.6479	1.104	255	1.492	0.137	0.999	1.000
-	Control	Right	Spanish-English	Right	Spanish-English	3.8574	1.670	119	2.309	0.023	0.802	1.000
-	Control	Right	Chinese-English	Right	Chinese-English	-1.0255	1.670	119	-0.614	0.540	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
		Spanish-English	PhonOrth	Left	Chinese-English	-4.9683	1.670	119	-2.9746	0.004	0.328	0.882
			PhonOrth	Right	English	-3.5034	1.670	119	-2.0976	0.038	0.907	1.000
			PhonOrth	Right	Spanish-English	0.1892	0.831	50	0.2276	0.820	1.000	1.000
			PhonOrth	Right	Chinese-English	-4.6509	1.670	119	-2.7846	0.006	0.459	1.000
			Phon	Left	English	-4.1504	1.670	119	-2.4850	0.014	0.684	1.000
			Phon	Left	Spanish-English	-0.8301	0.966	259	-0.8596	0.391	1.000	1.000
			Phon	Left	Chinese-English	-5.0659	1.670	119	-3.0331	0.003	0.292	0.747

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-	Phon	Right	English	-	3.4058	1.670	119	-2.039	0.044	0.0928	1.000	
-	Phon	Right	Spanish-English	-	0.8423	1.104	255	0.7628	0.446	1.000	1.000	
-	Phon	Right	Chinese-English	-	5.0904	1.670	119	-3.047	0.003	0.0283	0.0719	
-	Orth	Left	English	-	4.9439	1.670	119	-2.960	0.004	0.0337	0.0918	
-	Orth	Left	Spanish-English	-	0.5188	0.966	259	-0.5373	0.592	1.000	1.000	
-	Orth	Left	Chinese-English	-	3.0457	1.670	119	-1.8235	0.071	0.0977	1.000	
-	Orth	Right	English	-	4.1749	1.670	119	-2.4996	0.014	0.0674	1.000	

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-	Orth	Right	Spanish-English	Right	Spanish-English	-0.4578	1.104	25	-0.4145	0.679	1.000	1.000
-	Orth	Right	Chinese-English	Right	Chinese-English	-2.3804	1.670	19	-1.4252	0.157	0.999	1.000
-	Control	Left	English	Left	English	-3.4790	1.670	19	-2.0830	0.039	0.913	1.000
-	Control	Left	Spanish-English	Left	Spanish-English	-0.5006	0.966	29	-0.5184	0.605	1.000	1.000
-	Control	Left	Chinese-English	Left	Chinese-English	-6.2990	1.670	19	-3.7713	<.001	0.043	0.070
-	Control	Right	English	Right	English	-2.0630	1.670	19	-1.2352	0.219	1.000	1.000
-	Control	Right	Spanish-English	Right	Spanish-English	0.1465	1.104	25	0.1326	0.895	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-			Control	Right	Chinese-English	-4.7364	1.670	119	-2.8358	0.005	0.422	1.000
-		Chinese-English	PhonOrth	Right	English	1.4648	1.670	119	0.8770	0.382	1.000	1.000
-			PhonOrth	Right	Spanish-English	5.1575	1.670	119	3.0879	0.003	0.261	0.643
-			PhonOrth	Right	Chinese-English	0.3174	0.831	508	0.3818	0.703	1.000	1.000
-			Phon	Left	English	0.8178	1.670	119	0.4897	0.625	1.000	1.000
-			Phon	Left	Spanish-English	4.1382	1.670	119	2.4776	0.015	0.690	1.000
-			Phon	Left	Chinese-English	-0.0976	0.966	259	-0.1011	0.920	1.000	1.000
-			Phon	Right	English	1.5625	1.670	119	0.9355	0.351	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-	Phon	Right	Spanish-English	Right	Spanish-English	5.8106	1.670	119	3.4789	<.001	0.101	0.189
-	Phon	Right	Chinese-English	Right	Chinese-English	-0.1221	1.104	255	-0.1105	0.912	1.000	1.000
-	Orth	Left	English	Left	English	0.0244	1.670	119	0.0146	0.988	1.000	1.000
-	Orth	Left	Spanish-English	Left	Spanish-English	4.4494	1.670	119	2.6640	0.009	0.055	1.000
-	Orth	Left	Chinese-English	Left	Chinese-English	1.9226	0.966	295	1.9910	0.048	0.094	1.000
-	Orth	Right	English	Right	English	0.7934	1.670	119	0.4750	0.636	1.000	1.000
-	Orth	Right	Spanish-English	Right	Spanish-English	4.5105	1.670	119	2.7005	0.008	0.052	1.000
-	Orth	Right	Chinese-English	Right	Chinese-English	2.5878	1.104	255	2.3434	0.020	0.078	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
		-	Control	Left	English	1.4893	1.670	119	0.8917	0.374	1.000	1.000
		-	Control	Left	Spanish-English	4.4677	1.670	119	2.679	0.009	0.542	1.000
		-	Control	Left	Chinese-English	-1.3307	0.966	259	-1.3781	0.169	1.000	1.000
		-	Control	Right	English	2.9053	1.670	119	1.7394	0.085	0.987	1.000
		-	Control	Right	Spanish-English	5.1148	1.670	119	3.0623	0.003	0.275	0.690
		-	Control	Right	Chinese-English	0.2319	1.104	255	0.210	0.834	1.000	1.000
	Right	English	PhonOrth	Right	Spanish-English	3.6926	1.670	119	2.2109	0.029	0.857	1.000
	Right	English	PhonOrth	Right	Chinese-English	-1.1475	1.670	119	-0.6870	0.493	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-	Phon	Left	English	-	English	0.6470	1.104	25	-0.5859	0.558	1.000	1.000
-	Phon	Left	Spanish-English	-	Spanish-English	2.6733	1.670	19	1.6006	0.112	0.995	1.000
-	Phon	Left	Chinese-English	-	Chinese-English	1.5625	1.670	19	-0.935	0.351	1.000	1.000
-	Phon	Right	English	-	English	0.0976	0.966	25	0.1011	0.920	1.000	1.000
-	Phon	Right	Spanish-English	-	Spanish-English	4.3458	1.670	19	2.6019	0.010	0.597	1.000
-	Phon	Right	Chinese-English	-	Chinese-English	1.5869	1.670	19	-0.9501	0.344	1.000	1.000
-	Orth	Left	English	-	English	1.4405	1.104	25	1.3044	0.193	1.000	1.000
-	Orth	Left	Spanish-English	-	Spanish-English	2.9846	1.670	19	1.7869	0.077	0.982	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-	Orth	Left	Chinese-English	Left	Chinese-English	0.4578	1.670	119	0.2741	0.785	1.000	1.000
-	Orth	Right	English	Right	English	-0.6715	0.966	259	-0.6954	0.487	1.000	1.000
-	Orth	Right	Spanish-English	Right	Spanish-English	3.0457	1.670	119	1.8235	0.071	0.997	1.000
-	Orth	Right	Chinese-English	Right	Chinese-English	1.1230	1.670	119	0.6724	0.503	1.000	1.000
-	Control	Left	English	Left	English	0.0244	1.104	255	0.0221	0.982	1.000	1.000
-	Control	Left	Spanish-English	Left	Spanish-English	3.0029	1.670	119	1.7979	0.075	0.998	1.000
-	Control	Left	Chinese-English	Left	Chinese-English	-2.7956	1.670	119	-1.6738	0.097	0.992	1.000
-	Control	Right	English	Right	English	1.4404	0.966	259	1.4917	0.137	0.999	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-			Control	Right	Spanish-English	3.6499	1.670	119	2.1853	0.031	0.869	1.000
-			Control	Right	Chinese-English	1.2330	1.670	119	0.7382	0.462	1.000	1.000
-	Spanish-English		PhonOrth	Right	Chinese-English	4.8401	1.670	119	2.8979	0.004	0.379	1.000
-			Phon	Left	English	4.3396	1.670	119	2.5982	0.011	0.600	1.000
-			Phon	Left	Spanish-English	1.0193	1.1045	255	0.9230	0.357	1.000	1.000
-			Phon	Left	Chinese-English	5.2551	1.670	119	3.1463	0.002	0.230	0.542
-			Phon	Right	English	3.5950	1.670	119	2.1524	0.033	0.884	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-	Phon	Right	Spanish-English	0.6531	0.966	259	0.6764	0.499	1.76	0.08	1.000	1.000
-	Phon	Right	Chinese-English	-5.2795	1.670	119	-3.1610	0.002	-3.16	0.002	0.022	0.0519
-	Orth	Left	English	-5.1331	1.670	119	-3.0733	0.003	-3.07	0.003	0.026	0.0670
-	Orth	Left	Spanish-English	-0.7080	1.104	255	-0.6412	0.522	-0.64	0.522	1.000	1.000
-	Orth	Left	Chinese-English	-3.2349	1.670	119	-1.9368	0.055	-1.94	0.055	0.095	0.100
-	Orth	Right	English	-4.3641	1.670	119	-2.6129	0.010	-2.61	0.010	0.058	0.100
-	Orth	Right	Spanish-English	-0.6470	0.966	259	-0.6700	0.503	-0.67	0.503	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-	Orth	Right	Chinese-English	-	2.5696	1.670	1.199	-1.5385	0.127	0.997	1.000	
-	Control	Left	English	-	3.6682	1.670	1.199	-2.1962	0.030	0.864	1.000	
-	Control	Left	Spanish-English	-	0.6897	1.104	2.555	-0.6246	0.533	1.000	1.000	
-	Control	Left	Chinese-English	-	6.4882	1.670	1.199	-3.8846	<.001	0.030	0.047	
-	Control	Right	English	-	2.2522	1.670	1.199	-1.3484	0.180	1.000	1.000	
-	Control	Right	Spanish-English	-	0.0427	0.966	2.559	0.0442	0.965	1.000	1.000	
-	Control	Right	Chinese-English	-	4.9256	1.670	1.199	-2.9491	0.004	0.344	0.945	

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
		Chinese-English	-	Phon	Left	English	0.5005	1.670	119	0.2996	0.765	1.000
			-	Phon	Left	Spanish-English	3.8208	1.670	119	2.2876	0.024	0.815
			-	Phon	Left	Chinese-English	-0.4150	1.104	255	-0.3758	0.707	1.000
			-	Phon	Right	English	1.2451	1.670	119	0.7455	0.457	1.000
			-	Phon	Right	Spanish-English	5.4932	1.670	119	3.2899	0.001	0.165
			-	Phon	Right	Chinese-English	-0.4394	0.966	259	-0.4551	0.649	1.000
			-	Orth	Left	English	-0.2930	1.670	119	-0.1754	0.861	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-	Orth	Left	Spanish-English	Left	Spanish-English	4.1321	1.670	119	2.474	0.015	0.692	1.000
-	Orth	Left	Chinese-English	Left	Chinese-English	1.6052	1.104	255	1.453	0.147	0.999	1.000
-	Orth	Right	English	Right	English	0.4760	1.670	119	0.285	0.776	1.000	1.000
-	Orth	Right	Spanish-English	Right	Spanish-English	4.1931	1.670	119	2.510	0.013	0.666	1.000
-	Orth	Right	Chinese-English	Right	Chinese-English	2.2705	0.966	259	2.351	0.019	0.780	1.000
-	Control	Left	English	Left	English	1.1719	1.670	119	0.701	0.484	1.000	1.000
-	Control	Left	Spanish-English	Left	Spanish-English	4.1504	1.670	119	2.489	0.014	0.685	1.000
-	Control	Left	Chinese-English	Left	Chinese-English	1.6481	1.104	255	1.492	0.137	0.999	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
		-	Control	Right	English	2.5879	1.670	119	1.549	0.124	0.997	1.000
		-	Control	Right	Spanish-English	4.7974	1.670	119	2.873	0.005	0.396	1.000
		-	Control	Right	Chinese-English	-0.0855	0.966	259	-0.0885	0.930	1.000	1.000
Phon	Left	English	Phon	Left	Spanish-English	3.3203	1.670	119	1.988	0.049	0.943	1.000
		-	Phon	Left	Chinese-English	-0.9155	1.670	119	-0.5481	0.585	1.000	1.000
		-	Phon	Right	English	0.7446	0.831	150	0.895	0.372	1.000	1.000
		-	Phon	Right	Spanish-English	4.9928	1.670	119	2.983	0.003	0.319	0.847
		-	Phon	Right	Chinese-English	-0.9399	1.670	119	-0.5627	0.575	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-	Orth	Left	English	Left	English	0.7935	0.966	259	-0.8217	0.412	1.000	1.000
-	Orth	Left	Spanish-English	Left	Spanish-English	3.6316	1.670	119	2.1743	0.032	0.874	1.000
-	Orth	Left	Chinese-English	Left	Chinese-English	1.1048	1.670	119	0.6614	0.510	1.000	1.000
-	Orth	Right	English	Right	English	0.0245	1.104	255	0.0222	0.982	1.000	1.000
-	Orth	Right	Spanish-English	Right	Spanish-English	3.6927	1.670	119	2.2109	0.029	0.857	1.000
-	Orth	Right	Chinese-English	Right	Chinese-English	1.7700	1.670	119	1.0597	0.291	1.000	1.000
-	Control	Left	English	Left	English	0.6714	0.966	259	0.6953	0.487	1.000	1.000
-	Control	Left	Spanish-English	Left	Spanish-English	3.6499	1.670	119	2.1853	0.031	0.869	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-	Control	Left	Chinese-English			-2.1486	1.670	109	-1.2864	0.201	1.000	1.000
-	Control	Right	English			2.0874	1.404	205	1.8902	0.060	0.969	1.000
-	Control	Right	Spanish-English			4.2969	1.670	109	2.5727	0.011	0.619	1.000
-	Control	Right	Chinese-English			-0.5860	1.670	109	-0.3508	0.726	1.000	1.000
-	Phon	Left	Chinese-English			-4.2358	1.670	109	-2.5361	0.013	0.647	1.000
-	Phon	Right	English			-2.5757	1.670	109	-1.5421	0.126	0.997	1.000
-	Phon	Right	Spanish-English			1.6724	0.831	105	2.0122	0.046	0.938	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-	Phon	Right	Chinese-English	-	4.2603	1.670	119	-2.507	0.012	0.636	1.000	
-	Orth	Left	English	-	4.1138	1.670	119	-2.4630	0.015	0.700	1.000	
-	Orth	Left	Spanish-English	0.3113	0.966	259	0.3223	0.747	1.000	1.000		
-	Orth	Left	Chinese-English	-	2.2156	1.670	119	-1.3265	0.187	1.000	1.000	
-	Orth	Right	English	-	3.3448	1.670	119	-2.0026	0.048	0.939	1.000	
-	Orth	Right	Spanish-English	0.3723	1.104	255	0.3371	0.736	1.000	1.000		
-	Orth	Right	Chinese-English	-	1.5503	1.670	119	-0.9282	0.355	1.000	1.000	

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-	Control	Left	English	-	English	2.6489	1.670	119	-1.5860	0.115	0.996	1.000
-	Control	Left	Spanish-English	-	Spanish-English	0.3295	0.966	259	0.3413	0.733	1.000	1.000
-	Control	Left	Chinese-English	-	Chinese-English	5.4689	1.670	119	-3.2743	0.001	0.171	0.362
-	Control	Right	English	-	English	1.2329	1.670	119	0.7382	0.462	1.000	1.000
-	Control	Right	Spanish-English	-	Spanish-English	0.9766	1.104	255	0.8843	0.377	1.000	1.000
-	Control	Right	Chinese-English	-	Chinese-English	3.9063	1.670	119	-2.3388	0.021	0.784	1.000
-	Chinese-English	Phon	Right	English	English	1.6601	1.670	119	0.9940	0.322	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-	Phon	Right	Spanish-English	5.9082	1.670	11374	3.5374	<.001	0.086	0.156		
-	Phon	Right	Chinese-English	-0.0244	0.831	1504	-0.0294	0.977	1.000	1.000		
-	Orth	Left	English	0.1220	1.670	11374	0.0730	0.942	1.000	1.000		
-	Orth	Left	Spanish-English	4.5471	1.670	11374	2.7224	0.007	0.506	1.000		
-	Orth	Left	Chinese-English	2.0202	0.966	2591	2.0921	0.037	0.914	1.000		
-	Orth	Right	English	0.8910	1.670	11374	0.5335	0.595	1.000	1.000		
-	Orth	Right	Spanish-English	4.6081	1.670	11374	2.7590	0.007	0.478	1.000		
-	Orth	Right	Chinese-English	2.6855	1.104	2558	2.4318	0.016	0.725	1.000		

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-			Control	Left	English	1.5869	1.670	119	0.9501	0.344	1.000	1.000
-			Control	Left	Spanish-English	4.5654	1.670	119	2.7334	0.007	0.497	1.000
-			Control	Left	Chinese-English	-1.2331	0.966	259	-1.2770	0.203	1.000	1.000
-			Control	Right	English	3.0029	1.670	119	1.7979	0.075	0.980	1.000
-			Control	Right	Spanish-English	5.2124	1.670	119	3.1208	0.002	0.243	0.582
-			Control	Right	Chinese-English	0.3295	1.104	255	0.2984	0.766	1.000	1.000
	Right	English	-	Phon	Right	4.2481	1.670	119	2.5434	0.012	0.641	1.000
			-	Phon	Right	-1.6846	1.670	119	-1.0086	0.315	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-	Orth	Left	English	Left	English	-1.5381	1.104	25	-1.3928	0.165	0.999	1.000
-	Orth	Left	Spanish-English	Left	Spanish-English	2.8869	1.670	19	1.7285	0.087	0.988	1.000
-	Orth	Left	Chinese-English	Left	Chinese-English	0.3601	1.670	19	0.2156	0.830	1.000	1.000
-	Orth	Right	English	Right	English	-0.7691	0.966	29	-0.7965	0.426	1.000	1.000
-	Orth	Right	Spanish-English	Right	Spanish-English	2.9480	1.670	19	1.7500	0.080	0.984	1.000
-	Orth	Right	Chinese-English	Right	Chinese-English	1.0254	1.670	19	0.6139	0.540	1.000	1.000
-	Control	Left	English	Left	English	-0.0732	1.104	25	-0.0663	0.947	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-	Control	Left	Spanish-English	Left	Spanish-English	2.9052	1.670	1139	1.7394	0.085	0.987	1.000
-	Control	Left	Chinese-English	Left	Chinese-English	-2.8932	1.670	1139	-1.7322	0.086	0.987	1.000
-	Control	Right	English	Right	English	1.3428	0.966	259	1.3906	0.166	0.999	1.000
-	Control	Right	Spanish-English	Right	Spanish-English	3.5523	1.670	1139	2.1268	0.036	0.895	1.000
-	Control	Right	Chinese-English	Right	Chinese-English	-1.3306	1.670	1139	-0.7967	0.427	1.000	1.000
-	Spanish-English	Phon	Chinese-English	Right	Chinese-English	-5.9327	1.670	1139	-3.5520	<.001	0.083	0.149
-	Orth	Left	English	Left	English	-5.7863	1.670	1139	-3.4644	<.001	0.105	0.197

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-	Orth	Left	Spanish-English	Left	Spanish-English	-1.3612	1.104	25	-1.2326	0.219	1.000	1.000
-	Orth	Left	Chinese-English	Left	Chinese-English	-3.8880	1.670	19	-2.3278	0.022	0.791	1.000
-	Orth	Right	English	Right	English	-5.0172	1.670	19	-3.0039	0.003	0.310	0.813
-	Orth	Right	Spanish-English	Right	Spanish-English	-1.3001	0.966	29	-1.3464	0.179	1.000	1.000
-	Orth	Right	Chinese-English	Right	Chinese-English	-3.2228	1.670	19	-1.9295	0.056	0.958	1.000
-	Control	Left	English	Left	English	-4.3213	1.670	19	-2.5873	0.011	0.608	1.000
-	Control	Left	Spanish-English	Left	Spanish-English	-1.3429	1.104	25	-1.2160	0.225	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
			Control	Left	Chinese-English	-7.1413	1.670	119	-4.2757	<.001	0.008	0.011
			Control	Right	English	-2.9054	1.670	119	-1.7395	0.085	0.0987	1.000
			Control	Right	Spanish-English	-0.6959	0.966	259	-0.7206	0.472	1.000	1.000
			Control	Right	Chinese-English	-5.5787	1.670	119	-3.3401	0.001	0.0145	0.0295
		Chinese-English	Orth	Left	English	0.1464	1.670	119	0.0877	0.930	1.000	1.000
			Orth	Left	Spanish-English	4.5715	1.670	119	2.7371	0.007	0.0495	1.000
			Orth	Left	Chinese-English	2.0447	1.104	255	1.8515	0.065	0.0975	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-	Orth	Right	English	0.9154	1.670	1.1	0.5481	0.585	1.1	0.585	1.000	1.000
-	Orth	Right	Spanish-English	4.6326	1.670	1.1	2.7736	0.006	0.4467	0.000	0.467	1.000
-	Orth	Right	Chinese-English	2.7099	0.966	2.5	2.8064	0.005	0.004	0.000	0.437	1.000
-	Control	Left	English	1.6114	1.670	1.1	0.9647	0.337	1.1	0.337	1.000	1.000
-	Control	Left	Spanish-English	4.5898	1.670	1.1	2.7480	0.007	0.4467	0.000	0.486	1.000
-	Control	Left	Chinese-English	1.2086	1.104	2.5	1.0945	0.275	1.000	0.275	1.000	1.000
-	Control	Right	English	3.0273	1.670	1.1	1.8125	0.072	0.9978	0.000	0.978	1.000
-	Control	Right	Spanish-English	5.2368	1.670	1.1	3.1354	0.002	0.4467	0.000	0.235	0.558

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
		-	Control	Right	Chinese-English	0.3540	0.966	259	0.366	0.714	1.000	1.000
Orth	Left	English	Orth	Left	Spanish-English	4.4251	1.670	1194	2.649	0.009	0.561	1.000
		-	Orth	Left	Chinese-English	1.8982	1.670	119	1.136	0.258	1.000	1.000
		-	Orth	Right	English	0.7690	0.831	150	0.925	0.356	1.000	1.000
		-	Orth	Right	Spanish-English	4.4861	1.670	119	2.685	0.008	0.533	1.000
		-	Orth	Right	Chinese-English	2.5635	1.670	119	1.534	0.127	0.997	1.000
		-	Control	Left	English	1.4649	0.966	259	1.517	0.130	0.998	1.000
		-	Control	Left	Spanish-English	4.4434	1.670	119	2.663	0.009	0.553	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-	Control	Left	Chinese-English			-1.3551	1.670	119	-0.8113	0.419	1.000	1.000
-	Control	Right	English			2.8809	1.104	255	2.6088	0.010	0.591	1.000
-	Control	Right	Spanish-English			5.0904	1.670	119	3.0477	0.003	0.283	0.0719
-	Control	Right	Chinese-English			0.2075	1.670	119	0.1242	0.901	1.000	1.000
-	Orth	Left	Chinese-English			2.5268	1.670	119	1.5129	0.133	0.998	1.000
-	Orth	Right	English			3.6561	1.670	119	2.1890	0.031	0.867	1.000
-	Orth	Right	Spanish-English			0.0611	0.831	505	0.0735	0.942	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-	Orth	Right	Chinese-English			-1.8616	1.670	119	-1.1146	0.267	1.000	1.000
-	Control	Left	English			-2.9602	1.670	119	-1.7723	0.079	0.983	1.000
-	Control	Left	Spanish-English			0.0183	0.966	259	0.0189	0.985	1.000	1.000
-	Control	Left	Chinese-English			-5.7802	1.670	119	-3.4607	<.001	0.106	0.199
-	Control	Right	English			-1.5442	1.670	119	-0.9245	0.357	1.000	1.000
-	Control	Right	Spanish-English			0.6653	1.104	255	0.6025	0.547	1.000	1.000
-	Control	Right	Chinese-English			-4.2176	1.670	119	-2.5251	0.013	0.655	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	pholm
		Chinese-English	Orth	Right	English	-1.1292	1.670	119	-0.6761	0.500	1.000	1.000
			Orth	Right	Spanish-English	2.5879	1.670	119	1.5494	0.124	0.997	1.000
			Orth	Right	Chinese-English	0.6653	0.831	150	0.8004	0.425	1.000	1.000
			Control	Left	English	-0.4333	1.670	119	-0.2594	0.796	1.000	1.000
			Control	Left	Spanish-English	2.5451	1.670	119	1.5238	0.130	0.998	1.000
			Control	Left	Chinese-English	-3.2533	0.966	259	-3.3691	<.001	0.124	0.0229
			Control	Right	English	0.9827	1.670	119	0.5883	0.557	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison													
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm	
			-	Control	Right	Spanish-English	3.1922	1.670	1129	1.9112	0.058	0.962	1.000
			-	Control	Right	Chinese-English	-1.6907	1.104	255	-1.5310	0.127	0.998	1.000
	Right	English	-	Orth	Right	Spanish-English	3.7171	1.670	1259	2.255	0.028	0.849	1.000
			-	Orth	Right	Chinese-English	1.7945	1.670	1749	1.074	0.285	1.000	1.000
			-	Control	Left	English	0.6959	1.104	2302	0.630	0.529	1.000	1.000
			-	Control	Left	Spanish-English	3.6744	1.670	1999	2.199	0.030	0.862	1.000
			-	Control	Left	Chinese-English	-2.1241	1.670	1717	-1.271	0.206	1.000	1.000
			-	Control	Right	English	2.1119	0.966	2591	2.187	0.030	0.873	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	Pholm
-	Control	Right	Spanish-English	4.3214	1.670	119	2.5873	0.011	0.008	1.000	1.000	
-	Control	Right	Chinese-English	0.5615	1.670	119	-0.3362	0.737	1.000	1.000		
-	Orth	Right	Chinese-English	1.9226	1.670	119	-1.151	0.252	1.000	1.000		
-	Control	Left	English	3.0212	1.670	119	-1.8089	0.073	0.979	1.000		
-	Control	Left	Spanish-English	0.0428	1.104	255	0.0387	0.969	1.000	1.000		
-	Control	Left	Chinese-English	5.8412	1.670	119	-3.4973	<.001	0.096	0.0178		
-	Control	Right	English	1.6052	1.670	119	-0.961	0.338	1.000	1.000		

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-	Control	Right	Spanish-English	0.6043	0.966	258	0.625	0.532	1.000	1.000	1.000	1.000
-	Control	Right	Chinese-English	4.2786	1.670	119	-2.5617	0.012	0.008	0.628	1.000	1.000
-	Control	Left	English	1.0986	1.670	119	0.6577	0.512	1.000	1.000	1.000	1.000
-	Control	Left	Spanish-English	1.8799	1.670	119	1.1255	0.263	1.000	1.000	1.000	1.000
-	Control	Left	Chinese-English	3.9186	1.410	105	-3.5484	<.001	0.005	0.075	0.125	0.125
-	Control	Right	English	0.3174	1.670	119	0.1900	0.850	1.000	1.000	1.000	1.000
-	Control	Right	Spanish-English	2.5269	1.670	119	1.5129	0.133	0.008	0.998	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison													
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm	
Control	Left	English	-	Control	Right	Chinese-English	-2.3560	0.966	259	-2.4398	0.015	0.719	1.000
			-	Control	Left	Spanish-English	2.9784	1.670	119	1.783	0.077	0.982	1.000
		-	Control	Left	Chinese-English	-2.8200	1.670	119	-1.6884	0.094	0.991	1.000	
		-	Control	Right	English	1.4160	0.831	150	1.7036	0.091	0.990	1.000	
	-	Control	Right	Spanish-English	3.6255	1.670	119	2.170	0.032	0.876	1.000		
	-	Control	Right	Chinese-English	-1.2574	1.670	119	-0.7528	0.453	1.000	1.000		
	-	Control	Left	Spanish-English	-5.7984	1.670	119	-3.4716	<.001	0.103	0.193		

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

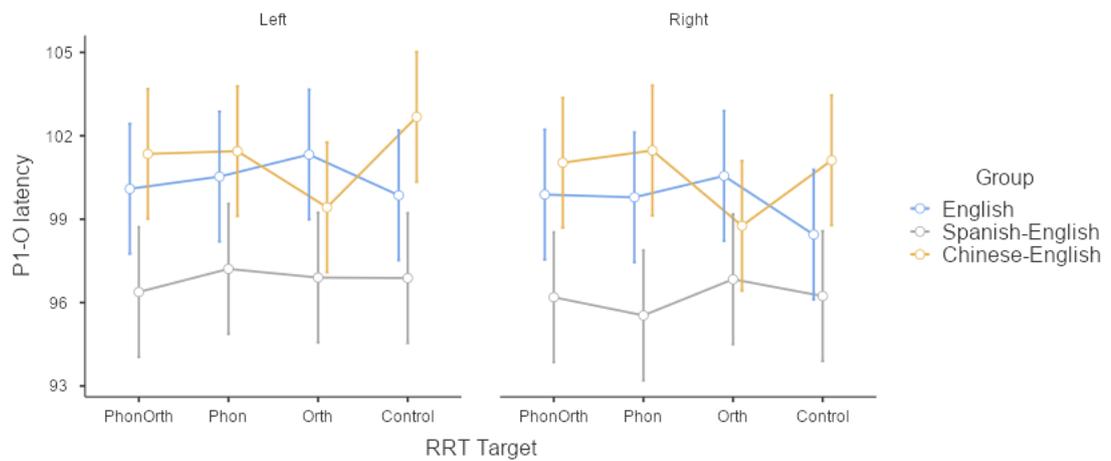
Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-	Control	Right	English	-	1.5625	1.670	1	1	-0.935	0.351	1.000	1.000
-	Control	Right	Spanish-English	-	0.6470	0.831	1	5	0.7785	0.438	1.000	1.000
-	Control	Right	Chinese-English	-	4.2358	1.670	1	9	-2.5361	0.013	0.647	1.000
-	Control	Right	English	Chinese-English	-	4.2360	1.670	1	2.5362	0.013	0.647	1.000
-	Control	Right	Spanish-English	-	6.4455	1.670	1	9	3.8590	<.001	0.033	0.051
-	Control	Right	Chinese-English	-	1.5626	0.831	1	5	1.8800	0.062	0.969	1.000
-	Control	Right	Spanish-English	Right	English	2.2095	1.670	1	1.3229	0.188	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-	Control	Right	Chinese-English	-	2.6734	1.670	1.670	1.670	1.006	0.112	0.995	1.000
-	Control	Right	Chinese-English	-	4.8829	1.670	1.670	2.9235	0.041	0.361	0.000	1.000

Estimated Marginal Means

RRT Target \* Group \* Hemisphere



Repeated Measures ANOVA

Within Subjects Effects

	Sphericity Correction	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Hemisphere	None	166.23	1	166.23	6.660	0.012	0.105

Within Subjects Effects

	<b>Sphericity Correction</b>	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
	Greenhouse-Geisser	166.23	1.00	166.23	6.660	0.012	0.105
	Huynh-Feldt	166.23	1.00	166.23	6.660	0.012	0.105
Hemisphere * Group	None	11.07	2	5.53	0.222	0.802	0.008
	Greenhouse-Geisser	11.07	2.00	5.53	0.222	0.802	0.008
	Huynh-Feldt	11.07	2.00	5.53	0.222	0.802	0.008
Residual	None	1422.74	57	24.96			
	Greenhouse-Geisser	1422.74	57.00	24.96			
	Huynh-Feldt	1422.74	57.00	24.96			
RRT diff	None	8.15	3	2.72	0.186	0.906	0.003
	Greenhouse-Geisser	8.15	2.59	3.15	0.186	0.881	0.003
	Huynh-Feldt	8.15	2.73	2.99	0.186	0.890	0.003
RRT diff * Group	None	250.61	6	41.77	2.859	0.011	0.091
	Greenhouse-Geisser	250.61	5.18	48.35	2.859	0.016	0.091
	Huynh-Feldt	250.61	5.45	45.97	2.859	0.014	0.091
Residual	None	2498.50	171	14.61			
	Greenhouse-Geisser	2498.50	147.71	16.91			
	Huynh-Feldt	2498.50	155.37	16.08			
Hemisphere * RRT diff	None	15.64	3	5.21	1.291	0.279	0.022

Within Subjects Effects

	<b>Sphericity Correction</b>	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
	Greenhouse-Geisser	15.64	2.76	5.66	1.291	0.280	0.022
	Huynh-Feldt	15.64	2.92	5.36	1.291	0.279	0.022
Hemisphere * RRT diff * Group	None	21.71	6	3.62	0.896	0.499	0.030
	Greenhouse-Geisser	21.71	5.52	3.93	0.896	0.493	0.030
	Huynh-Feldt	21.71	5.83	3.72	0.896	0.497	0.030
Residual	None	690.47	171	4.04			
	Greenhouse-Geisser	690.47	157.37	4.39			
	Huynh-Feldt	690.47	166.18	4.15			

Note. Type 3 Sums of Squares

Between Subjects Effects

	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
Group	748	2	374.2	6.04	0.004	0.175
Residual	3530	57	61.9			

Note. Type 3 Sums of Squares

## Assumptions

## Tests of Sphericity

	<b>Mauchly's W</b>	<b>p</b>	<b>Greenhouse-Geisser <math>\epsilon</math></b>	<b>Huynh-Feldt <math>\epsilon</math></b>
Hemisphere	1.000	NaN <sup>a</sup>	1.000	1.000
RRT diff	0.787	0.021	0.864	0.909
Hemisphere * RRT diff	0.875	0.191	0.920	0.972

<sup>a</sup> The repeated measures has only two levels. The assumption of sphericity is always met when the repeated measures has only two levels

## Homogeneity of Variances Test (Levene's)

	<b>F</b>	<b>df1</b>	<b>df2</b>	<b>p</b>
PAL50_P1.LeftO\$PhonOrth_PTdiff	0.0853	2	57	0.918
PAL50_P1.RightO\$PhonOrth_PTdiff	0.9028	2	57	0.411
PAL50_P1.LeftO\$Phon_PTdiff	2.3984	2	57	0.100
PAL50_P1.RightO\$Phon_PTdiff	0.2988	2	57	0.743
PAL50_P1.LeftO\$Orth_PTdiff	0.4049	2	57	0.669
PAL50_P1.RightO\$Orth_PTdiff	0.8902	2	57	0.416
PAL50_P1.LeftO\$Control_PTdiff	0.2755	2	57	0.760
PAL50_P1.RightO\$Control_PTdiff	0.0624	2	57	0.940

## Post Hoc Tests

Post Hoc Comparisons - RRT diff \* Group

Comparison											
RRT diff	Group		RRT diff	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> <sub>y</sub>	P <sub>hol</sub> <sub>m</sub>
Phon Orth	Englis h	-	Phon Orth	Spani sh- Englis h	2.6337	1.1 50	14 2	2.29 05	0.02 3	0.4 88	1.0 00
		-	Phon Orth	Chine se- Englis h	2.8214	1.1 50	14 2	2.45 37	0.01 5	0.3 78	0.7 59
	-	Phon	Englis h	0.1709	0.8 55	17 1	0.20 00	0.84 2	1.0 00	1.0 00	
	-	Phon	Spani sh- Englis h	2.7221	1.1 50	14 2	2.36 74	0.01 9	0.4 35	0.9 05	
	-	Phon	Chine se- Englis h	3.0899	1.1 50	14 2	2.68 73	0.00 8	0.2 44	0.4 35	
	-	Orth	Englis h	0.9522	0.8 55	17 1	1.11 41	0.26 7	0.9 94	1.0 00	
	-	Orth	Spani sh- Englis h	3.2166	1.1 50	14 2	2.79 74	0.00 6	0.1 93	0.3 28	
	-	Orth	Chine se- Englis h	0.7249	1.1 50	14 2	0.63 04	0.52 9	1.0 00	1.0 00	
	-	Contr ol	Englis h	0.8362	0.8 55	17 1	- 0.97 83	0.32 9	0.9 98	1.0 00	
	-	Contr ol	Spani sh- Englis h	2.9053	1.1 50	14 2	2.52 67	0.01 3	0.3 32	0.6 43	

Post Hoc Comparisons - RRT diff \* Group

Comparison										
RRT diff	Group	RRT diff	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> <sub>y</sub>	P <sub>hol</sub> <sub>m</sub>
		-	Chinese-English	3.5295	1.150	142	3.0696	0.003	0.100	0.151
	Spanish-English	-	Chinese-English	0.1878	1.150	142	0.1633	0.871	1.000	1.000
		-	English	-2.4627	1.150	142	-2.1418	0.034	0.594	1.000
		-	Spanish-English	0.0885	0.855	171	0.1035	0.918	1.000	1.000
		-	Chinese-English	0.4563	1.150	142	0.3968	0.692	1.000	1.000
		-	English	-1.6814	1.150	142	-1.4623	0.146	0.948	1.000
		-	Spanish-English	0.5829	0.855	171	0.6820	0.496	1.000	1.000
		-	Chinese-English	-1.9088	1.150	142	-1.6600	0.099	0.883	1.000
		-	English	-3.4698	1.150	142	-3.0177	0.003	0.114	0.175

Post Hoc Comparisons - RRT diff \* Group

Comparison										
RRT diff	Group	RRT diff	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> <sub>y</sub>	P <sub>hol</sub> <sub>m</sub>
-		Control	Spanish-English	0.2716	0.855	171	0.3178	0.751	1.000	1.000
-		Control	Chinese-English	0.8959	1.150	142	0.7791	0.437	1.000	1.000
-	Chinese-English	Phon	English	-2.6505	1.150	142	-2.3051	0.023	0.478	1.000
-		Phon	Spanish-English	-0.0993	1.150	142	-0.0863	0.931	1.000	1.000
-		Phon	Chinese-English	0.2685	0.855	171	0.3142	0.754	1.000	1.000
-		Orth	English	-1.8692	1.150	142	-1.6256	0.106	0.897	1.000
-		Orth	Spanish-English	0.3952	1.150	142	0.3437	0.732	1.000	1.000
-		Orth	Chinese-English	-2.0965	0.855	171	-2.4529	0.015	0.377	0.759
-		Control	English	-3.6576	1.150	142	-3.1810	0.002	0.075	0.110

Post Hoc Comparisons - RRT diff \* Group

Comparison											
RRT diff	Group	RRT diff	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> <sub>y</sub>	P <sub>hol</sub> <sub>m</sub>	
		-	Control	Spanish-English	0.0839	1.150	142	0.0730	0.942	1.000	1.000
		-	Control	Chinese-English	0.7081	0.855	171	0.8285	0.409	1.000	1.000
Phon	English	-	Phon	Spanish-English	2.5512	1.150	142	2.2188	0.028	0.539	1.000
		-	Phon	Chinese-English	2.9190	1.150	142	2.5386	0.012	0.325	0.635
		-	Orth	English	0.7813	0.855	171	0.9141	0.362	0.999	1.000
		-	Orth	Spanish-English	3.0456	1.150	142	2.6488	0.009	0.263	0.476
		-	Orth	Chinese-English	0.5539	1.150	142	0.4818	0.631	1.000	1.000
		-	Control	English	1.0071	0.855	171	1.1783	0.240	0.990	1.000
		-	Control	Spanish-English	2.7344	1.150	142	2.3781	0.019	0.428	0.899

Post Hoc Comparisons - RRT diff \* Group

Comparison										
RRT diff	Group	RRT diff	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> <sub>y</sub>	P <sub>hol</sub> <sub>m</sub>
		-	Chinese-English	3.3586	1.150	142	2.9209	0.004	0.145	0.231
	Spanish-English	-	Chinese-English	0.3678	1.150	142	0.3199	0.750	1.000	1.000
		-	English	-1.7699	1.150	142	-1.5393	0.126	0.927	1.000
		-	Spanish-English	0.4944	0.855	171	0.5785	0.564	1.000	1.000
		-	Chinese-English	-1.9973	1.150	142	-1.7370	0.085	0.848	1.000
		-	English	-3.5583	1.150	142	-3.0946	0.002	0.094	0.142
		-	Spanish-English	0.1832	0.855	171	0.2143	0.831	1.000	1.000
		-	Chinese-English	0.8074	1.150	142	0.7022	0.484	1.000	1.000
	Chinese-English	-	English	-2.1377	1.150	142	-1.8591	0.065	0.782	1.000

Post Hoc Comparisons - RRT diff \* Group

Comparison											
RRT diff	Group	RRT diff	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> <sub>y</sub>	P <sub>hol</sub> <sub>m</sub>	
		-	Orth	Spanish-English	0.1266	1.150	142	0.1101	0.912	1.000	1.000
		-	Orth	Chinese-English	-2.3651	0.855	171	-2.7671	0.006	0.204	0.345
		-	Control	English	-3.9261	1.150	142	-3.4145	<.001	0.038	0.053
		-	Control	Spanish-English	-0.1847	1.150	142	-0.1606	0.873	1.000	1.000
		-	Control	Chinese-English	0.4396	0.855	171	0.5143	0.608	1.000	1.000
Orth	English	-	Orth	Spanish-English	2.2643	1.150	142	1.9693	0.051	0.713	1.000
		-	Orth	Chinese-English	-0.2274	1.150	142	-0.1977	0.844	1.000	1.000
		-	Control	English	-1.7884	0.855	171	-2.0924	0.038	0.629	1.000
		-	Control	Spanish-English	1.9531	1.150	142	1.6986	0.092	0.866	1.000

Post Hoc Comparisons - RRT diff \* Group

Comparison										
RRT diff	Group	RRT diff	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> <sub>y</sub>	P <sub>hol</sub> <sub>m</sub>
		-	Chinese-English	2.5773	1.150	142	2.2414	0.027	0.523	1.000
	Spanish-English	-	Chinese-English	2.4917	1.150	142	2.1670	0.032	0.576	1.000
		-	English	4.0527	1.150	142	3.5246	<.001	0.027	0.037
		-	Spanish-English	0.3113	0.855	171	0.3642	0.716	1.000	1.000
		-	Chinese-English	0.3129	1.150	142	0.2722	0.786	1.000	1.000
	Chinese-English	-	English	1.5610	1.150	142	1.3576	0.177	0.969	1.000
		-	Spanish-English	2.1804	1.150	142	1.8963	0.060	0.760	1.000
		-	Chinese-English	2.8046	0.855	171	3.2813	0.001	0.055	0.079
Control	English	-	Spanish-English	3.7415	1.150	142	3.2539	0.001	0.061	0.088

Post Hoc Comparisons - RRT diff \* Group

Comparison											
RRT diff	Group	RRT diff	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> <sub>y</sub>	P <sub>holm</sub>	
		-	Control	Chinese-English	4.3657	1.150	142	3.7968	<.001	0.011	0.014
	Spanish-English	-	Control	Chinese-English	0.6242	1.150	142	0.5429	0.588	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison													
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> <sub>key</sub>	P <sub>holm</sub>	
Left	PhonOrth	English	-	Left	PhonOrth	Spanish-English	2.58338	1.336	22	1.932	0.054	0.960	1.000
						Chinese-English	3.20449	1.336	22	2.398	0.017	0.748	1.000
	Phon	English	-	Left	Phon	English	0.43949	0.966	25	0.455	0.649	1.000	1.000
						Spanish-English	3.41349	1.336	22	2.554	0.011	0.633	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	p <sub>tu key</sub>	p <sub>ho lm</sub>
-		Left	Pho n		Chi nes e- Eng lish	3.30 213	1. 33 6	2 2 6	2.4 71 20	0.0 14	0. 69 6	1. 00 0
-		Left	Ort h		Eng lish	1.23 298	0. 96 6	2 5 9	1.2 76 86	0.2 03	1. 00 0	1. 00 0
-		Left	Ort h		Spa nis h- Eng lish	3.10 223	1. 33 6	2 2 6	2.3 21 61	0.0 21	0. 79 8	1. 00 0
-		Left	Ort h		Chi nes e- Eng lish	1.28 190	1. 33 6	2 2 6	0.9 59 33	0.3 38	1. 00 0	1. 00 0
-		Left	Con trol		Eng lish	- 0.23 194	0. 96 6	2 5 9	- 0.2 40 19	0.8 10	1. 00 0	1. 00 0
-		Left	Con trol		Spa nis h- Eng lish	3.08 395	1. 33 6	2 2 6	2.3 07 92	0.0 22	0. 80 6	1. 00 0
-		Left	Con trol		Chi nes e- Eng lish	4.53 521	1. 33 6	2 2 6	3.3 94 00	< . 00 1	0. 11 7	0. 21 6
-		Rig ht	Pho nOr th		Eng lish	1.84 647	0. 96 3	1 1 7	1.9 17 96	0.0 58	0. 96 0	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff erence	SE	df	t	p	P <sub>tu</sub> key	P <sub>ho</sub> lm
					Spa							
		-	Rig ht	Pho nOr th	Pho nis h- Eng lish	4.53 039	1. 33	2 2 6	3.3 90 40	< . 00 1	0. 11 9	0. 21 7
					Chi							
		-	Rig ht	Pho nOr th	Pho nes e- Eng lish	4.28 479	1. 33	2 2 6	3.2 06 60	0.0 02	0. 19 1	0. 39 8
					Eng							
		-	Rig ht	Pho n	Eng lish	1.74 882	1. 20	2 1 2	1.4 49 57	0.1 49	0. 99 9	1. 00 0
					Spa							
		-	Rig ht	Pho n	Pho nis h- Eng lish	3.87 725	1. 33	2 2 6	2.9 01 61	0.0 04	0. 36 9	1. 00 0
					Chi							
		-	Rig ht	Pho n	Pho nes e- Eng lish	4.72 424	1. 33	2 2 6	3.5 35 47	< . 00 1	0. 07 8	0. 13 2
					Eng							
		-	Rig ht	Ort h	Eng lish	2.51 795	1. 20	2 1 2	2.0 87 09	0.0 38	0. 91 5	1. 00 0
					Spa							
		-	Rig ht	Ort h	Pho nis h- Eng lish	5.17 737	1. 33	2 2 6	3.8 74 57	< . 00 1	0. 02 7	0. 03 8
					Chi							
		-	Rig ht	Ort h	Pho nes e- Eng lish	2.01 431	1. 33	2 2 6	1.5 07 45	0.1 33	0. 99 8	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tu key</sub>	P <sub>ho lm</sub>
		-	Rig ht	Con trol	Eng lish	0.40 606	1. 20 6	2 1 2	0.3 36 58	0.7 37	1. 00 0	1. 00 0
		-	Rig ht	Con trol	Spa nis h- Eng lish	4.57 311	1. 33 6	2 2 6	3.4 22 37	< . 00 1	0. 10 9	0. 19 6
		-	Rig ht	Con trol	Chi nes e- Eng lish	4.37 028	1. 33 6	2 2 6	3.2 70 58	0.0 01	0. 16 3	0. 32 4
		-	Left	Pho nOr th	Chi nes e- Eng lish	0.62 111	1. 33 6	2 2 6	0.4 64 82	0.6 43	1. 00 0	1. 00 0
		-	Left	Pho n	Eng lish	- 2.14 389	1. 33 6	2 2 6	- 1.6 04 42	0.1 10	0. 99 6	1. 00 0
		-	Left	Pho n	Spa nis h- Eng lish	0.83 011	0. 96 6	2 5 9	0.8 59 65	0.3 91	1. 00 0	1. 00 0
		-	Left	Pho n	Chi nes e- Eng lish	0.71 874	1. 33 6	2 2 6	0.5 37 88	0.5 91	1. 00 0	1. 00 0
		-	Left	Ort h	Eng lish	- 1.35 040	1. 33 6	2 2 6	- 1.0 10 60	0.3 13	1. 00 0	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	ptu key	Pho Im
		-	Left	Orth	Spanish-English	0.51885	0.966	259	0.53731	0.592	1.000	1.000
		-	Left	Orth	Chinese-English	-1.30149	1.336	226	-0.97399	0.331	1.000	1.000
		-	Left	Control	English	-2.81532	1.336	226	-2.10689	0.036	0.907	1.000
		-	Left	Control	Spanish-English	0.50056	0.966	259	0.51838	0.605	1.000	1.000
		-	Left	Control	Chinese-English	1.95182	1.336	226	1.46068	0.145	0.999	1.000
		-	Right	PhonOrth	English	-0.73691	1.336	226	-0.55148	0.582	1.000	1.000
		-	Right	PhonOrth	Spanish-English	1.94701	0.966	137	2.02239	0.045	0.933	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	ptu key	Pho lm
					Chi nes e- Eng lish	1.70 141	1. 33 6	2 2 6	1.2 73 28	0.2 04	1. 00 0	1. 00 0
			Rig ht	Pho n	Eng lish	- 0.83 456	1. 33 6	2 2 6	- 0.6 24 56	0.5 33	1. 00 0	1. 00 0
			Rig ht	Pho n	Spa nis h- Eng lish	1.29 387	1. 20 6	2 1 2	1.0 72 47	0.2 85	1. 00 0	1. 00 0
			Rig ht	Pho n	Chi nes e- Eng lish	2.14 085	1. 33 6	2 2 6	1.6 02 15	0.1 11	0. 99 6	1. 00 0
			Rig ht	Ort h	Eng lish	- 0.06 543	1. 33 6	2 2 6	- 0.0 48 97	0.9 61	1. 00 0	1. 00 0
			Rig ht	Ort h	Spa nis h- Eng lish	2.59 399	1. 20 6	2 1 2	2.1 50 11	0.0 33	0. 88 9	1. 00 0
			Rig ht	Ort h	Chi nes e- Eng lish	- 0.56 907	1. 33 6	2 2 6	- 0.4 25 87	0.6 71	1. 00 0	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison													
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	p <sub>tu key</sub>	p <sub>ho lm</sub>	
			-	Rig ht	Con trol	Eng lish	- 2.17 732	1. 33 6	2 2 6	- 1.6 29 44	0.1 05	0. 99 5	1. 00 0
			-	Rig ht	Con trol	Spa nis h- Eng lish	1.98 973	1. 20 6	2 1 2	1.6 49 25	0.1 01	0. 99 4	1. 00 0
			-	Rig ht	Con trol	Chi nes e- Eng lish	1.78 690	1. 33 6	2 2 6	1.3 37 26	0.1 82	1. 00 0	1. 00 0
		Chi nes e- Eng lish	-	Left	Pho n	Eng lish	- 2.76 500	1. 33 6	2 2 6	- 2.0 69 23	0.0 40	0. 92 1	1. 00 0
			-	Left	Pho n	Spa nis h- Eng lish	0.20 900	1. 33 6	2 2 6	0.1 56 41	0.8 76	1. 00 0	1. 00 0
			-	Left	Pho n	Chi nes e- Eng lish	0.09 764	0. 96 6	2 5 9	0.1 01 11	0.9 20	1. 00 0	1. 00 0
			-	Left	Ort h	Eng lish	- 1.97 151	1. 33 6	2 2 6	- 1.4 75 41	0.1 41	0. 99 9	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	p <sub>tu key</sub>	p <sub>ho lm</sub>
					Spa nis h- Eng lish	- 0.10 226	1. 33 6	2 2 6	- 0.0 76 53	0.9 39	1. 00 0	1. 00 0
					Chi nes e- Eng lish	- 1.92 259	0. 96 6	2 5 9	- 1.9 91 02	0.0 48	0. 94 6	1. 00 0
					Eng lish	- 3.43 643	1. 33 6	2 2 6	- 2.5 71 71	0.0 11	0. 62 0	1. 00 0
					Spa nis h- Eng lish	- 0.12 054	1. 33 6	2 2 6	- 0.0 90 21	0.9 28	1. 00 0	1. 00 0
					Chi nes e- Eng lish	1.33 072	0. 96 6	2 5 9	1.3 78 08	0.1 69	1. 00 0	1. 00 0
					Pho nOr th Eng lish	- 1.35 802	1. 33 6	2 2 6	- 1.0 16 30	0.3 11	1. 00 0	1. 00 0
					Spa nis h- Eng lish	1.32 591	1. 33 6	2 2 6	0.9 92 26	0.3 22	1. 00 0	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	ptu key	Pho lm
					Chi nes e- Eng lish	1.08 030	0. 96 3	1 1 7	1.1 22 13	0.2 64	1. 00 0	1. 00 0
			Rig ht	Pho n Or th								
					Eng lish	- 1.45 567	1. 33 6	2 2 6	- 1.0 89 37	0.2 77	1. 00 0	1. 00 0
			Rig ht	Pho n								
					Spa nis h- Eng lish	0.67 276	1. 33 6	2 2 6	0.5 03 48	0.6 15	1. 00 0	1. 00 0
			Rig ht	Pho n								
					Chi nes e- Eng lish	1.51 975	1. 20 6	2 1 2	1.2 59 69	0.2 09	1. 00 0	1. 00 0
			Rig ht	Pho n								
					Eng lish	- 0.68 654	1. 33 6	2 2 6	- 0.5 13 78	0.6 08	1. 00 0	1. 00 0
			Rig ht	Ort h								
					Spa nis h- Eng lish	1.97 288	1. 33 6	2 2 6	1.4 76 44	0.1 41	0. 99 9	1. 00 0
			Rig ht	Ort h								
					Chi nes e- Eng lish	- 1.19 018	1. 20 6	2 1 2	- 0.9 86 52	0.3 25	1. 00 0	1. 00 0
			Rig ht	Ort h								

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison													
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	ptu key	Pho lm	
			-	Rig ht	Con trol	Eng lish	- 2.79 843	1. 33 6	2 2 6	- 2.0 94 25	0.0 37	0. 91 2	1. 00 0
			-	Rig ht	Con trol	Spa nis h- Eng lish	1.36 862	1. 33 6	2 2 6	1.0 24 23	0.3 07	1. 00 0	1. 00 0
			-	Rig ht	Con trol	Chi nes e- Eng lish	1.16 579	1. 20 6	2 1 2	0.9 66 30	0.3 35	1. 00 0	1. 00 0
	Pho n	Eng lish	-	Left	Pho n	Spa nis h- Eng lish	2.97 400	1. 33 6	2 2 6	2.2 25 64	0.0 27	0. 85 3	1. 00 0
			-	Left	Pho n	Chi nes e- Eng lish	2.86 263	1. 33 6	2 2 6	2.1 42 30	0.0 33	0. 89 3	1. 00 0
			-	Left	Ort h	Eng lish	0.79 349	0. 96 6	2 5 9	0.8 21 73	0.4 12	1. 00 0	1. 00 0
			-	Left	Ort h	Spa nis h- Eng lish	2.66 274	1. 33 6	2 2 6	1.9 92 71	0.0 47	0. 94 5	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	plim
-	Left	Orth	Chinese-English	0.84240	1.336	223043	0.629	0.529	1.30	1.000	1.000	
-	Left	Control	English	0.67143	0.966	25933	0.693	0.487	1.000	1.000	1.000	
-	Left	Control	Spanish-English	2.64445	1.336	227902	1.902	0.049	0.994	0.000	1.000	
-	Left	Control	Chinese-English	4.09571	1.336	226510	3.065	0.002	0.026	0.615	0.000	
-	Right	PhonOrth	English	1.40698	1.206	216622	1.166	0.245	1.000	1.000	1.000	
-	Right	PhonOrth	Spanish-English	4.09090	1.336	226150	3.061	0.002	0.026	0.620	0.000	
-	Right	PhonOrth	Chinese-English	3.84530	1.336	227770	2.870	0.004	0.038	0.600	1.000	
-	Right	Phon	English	1.30933	0.963	116002	1.360	0.176	1.000	1.000	1.000	

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff erence	SE	df	t	p	p <sub>tu key</sub>	p <sub>ho lm</sub>
		-	Rig ht	Pho n	Spa nis h- Eng lish	3.43 776	1. 33 6	2 2 6	2.5 72 71	0.0 11	0. 61 9	1. 00 0
		-	Rig ht	Pho n	Chi nes e- Eng lish	4.28 474	1. 33 6	2 2 6	3.2 06 56	0.0 02	0. 19 1	0. 39 8
		-	Rig ht	Ort h	Eng lish	2.07 846	1. 20 6	2 1 2	1.7 22 80	0.0 86	0. 98 9	1. 00 0
		-	Rig ht	Ort h	Spa nis h- Eng lish	4.73 788	1. 33 6	2 2 6	3.5 45 67	<. 00 1	0. 07 6	0. 12 8
		-	Rig ht	Ort h	Chi nes e- Eng lish	1.57 482	1. 33 6	2 2 6	1.1 78 54	0.2 40	1. 00 0	1. 00 0
		-	Rig ht	Con trol	Eng lish	- 0.03 343	1. 20 6	2 1 2	- 0.0 27 71	0.9 78	1. 00 0	1. 00 0
		-	Rig ht	Con trol	Spa nis h- Eng lish	4.13 362	1. 33 6	2 2 6	3.0 93 46	0.0 02	0. 24 8	0. 57 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff erence	SE	df	t	p	p <sub>tu key</sub>	p <sub>ho lm</sub>
					Chi nes e- Eng lish	3.93 079	1. 33 6	2 2 6	2.9 41 67	0.0 04	0. 34 2	0. 89 4
		Spa nis h- Eng lish			Chi nes e- Eng lish	- 0.11 136	1. 33 6	2 2 6	- 0.0 83 34	0.9 34	1. 00 0	1. 00 0
					Eng lish	- 2.18 051	1. 33 6	2 2 6	- 1.6 31 82	0.1 04	0. 99 5	1. 00 0
					Spa nis h- Eng lish	- 0.31 126	0. 96 6	2 5 9	- 0.3 22 34	0.7 47	1. 00 0	1. 00 0
					Chi nes e- Eng lish	- 2.13 159	1. 33 6	2 2 6	- 1.5 95 21	0.1 12	0. 99 6	1. 00 0
					Eng lish	- 3.64 543	1. 33 6	2 2 6	- 2.7 28 12	0.0 07	0. 49 8	1. 00 0
					Spa nis h- Eng lish	- 0.32 954	0. 96 6	2 5 9	- 0.3 41 27	0.7 33	1. 00 0	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tu</sub> key	P <sub>ho</sub> lm
		-	Left	Con trol	Chi nes e- Eng lish	1.12 172	1. 33 6	2 2 6	0.8 39 46	0.4 02	1. 00 0	1. 00 0
		-	Rig ht	Pho nOr th	Eng lish	- 1.56 702	1. 33 6	2 2 6	- 1.1 72 71	0.2 42	1. 00 0	1. 00 0
		-	Rig ht	Pho nOr th	Spa nis h- Eng lish	1.11 690	1. 20 6	2 1 2	0.9 25 78	0.3 56	1. 00 0	1. 00 0
		-	Rig ht	Pho nOr th	Chi nes e- Eng lish	0.87 130	1. 33 6	2 2 6	0.6 52 06	0.5 15	1. 00 0	1. 00 0
		-	Rig ht	Pho n	Eng lish	- 1.66 467	1. 33 6	2 2 6	- 1.2 45 78	0.2 14	1. 00 0	1. 00 0
		-	Rig ht	Pho n	Spa nis h- Eng lish	0.46 376	0. 96 3	1 1 7	0.4 81 72	0.6 31	1. 00 0	1. 00 0
		-	Rig ht	Pho n	Chi nes e- Eng lish	1.31 075	1. 33 6	2 2 6	0.9 80 92	0.3 28	1. 00 0	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison													
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tu</sub> key	P <sub>ho</sub> lm	
		-	Rig ht	Ort h	Eng lish	- 0.89 554	1. 33 6	2 2 6	- 0.6 70 19	0.5 03	1. 00 0	1. 00 0	
		-	Rig ht	Ort h	Spa nis h- Eng lish	1.76 388	1. 20 6	2 1 2	1.4 62 05	0.1 45	0. 99 9	1. 00 0	
		-	Rig ht	Ort h	Chi nes e- Eng lish	- 1.39 918	1. 33 6	2 2 6	- 1.0 47 10	0.2 96	1. 00 0	1. 00 0	
		-	Rig ht	Con trol	Eng lish	- 3.00 743	1. 33 6	2 2 6	- 2.2 50 66	0.0 25	0. 84 0	1. 00 0	
		-	Rig ht	Con trol	Spa nis h- Eng lish	1.15 962	1. 20 6	2 1 2	0.9 61 19	0.3 38	1. 00 0	1. 00 0	
		-	Rig ht	Con trol	Chi nes e- Eng lish	0.95 679	1. 33 6	2 2 6	0.7 16 03	0.4 75	1. 00 0	1. 00 0	
		-	Chi nes e- Eng lish	Left	Ort h	Eng lish	- 2.06 915	1. 33 6	2 2 6	- 1.5 48 48	0.1 23	0. 99 7	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	p <sub>tu key</sub>	p <sub>ho lm</sub>
		-	Left	Orth	Spanish-English	-0.19990	1.336	226	-0.149	0.881	1.000	1.000
		-	Left	Orth	Chinese-English	-2.02023	0.966	259	-2.09213	0.037	0.914	1.000
		-	Left	Control	English	-3.53406	1.336	226	-2.64478	0.009	0.563	1.000
		-	Left	Control	Spanish-English	-0.21818	1.336	226	-0.16328	0.870	1.000	1.000
		-	Left	Control	Chinese-English	1.23308	0.966	259	1.27697	0.203	1.000	1.000
		-	Right	PhonOrth	English	-1.45565	1.336	226	-1.08936	0.277	1.000	1.000
		-	Right	PhonOrth	Spanish-English	1.22827	1.336	226	0.91920	0.359	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	ptu key	Pho lm
					Chi nes e- Eng lish	0.98 267	1. 20 6	2 1 2	0.8 14 51	0.4 16	1. 00 0	1. 00 0
			Rig ht	Pho n	Eng lish	- 1.55 330	1. 33 6	2 2 6	- 1.1 62 44	0.2 46	1. 00 0	1. 00 0
			Rig ht	Pho n	Spa nis h- Eng lish	0.57 513	1. 33 6	2 2 6	0.4 30 41	0.6 67	1. 00 0	1. 00 0
			Rig ht	Pho n	Chi nes e- Eng lish	1.42 211	0. 96 3	1 1 7	1.4 77 17	0.1 42	0. 99 8	1. 00 0
			Rig ht	Ort h	Eng lish	- 0.78 417	1. 33 6	2 2 6	- 0.5 86 85	0.5 58	1. 00 0	1. 00 0
			Rig ht	Ort h	Spa nis h- Eng lish	1.87 524	1. 33 6	2 2 6	1.4 03 37	0.1 62	0. 99 9	1. 00 0
			Rig ht	Ort h	Chi nes e- Eng lish	- 1.28 781	1. 20 6	2 1 2	- 1.0 67 45	0.2 87	1. 00 0	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison													
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	ptu key	P <sup>ho</sup> lm	
			-	Rig ht	Con trol	Eng lish	- 2.89 607	1. 33 6	2 2 6	- 2.1 67 32	0.0 31	0. 88 2	1. 00 0
			-	Rig ht	Con trol	Spa nis h- Eng lish	1.27 098	1. 33 6	2 2 6	0.9 51 16	0.3 43	1. 00 0	1. 00 0
			-	Rig ht	Con trol	Chi nes e- Eng lish	1.06 815	1. 20 6	2 1 2	0.8 85 37	0.3 77	1. 00 0	1. 00 0
	Ort h	Eng lish	-	Left	Ort h	Spa nis h- Eng lish	1.86 925	1. 33 6	2 2 6	1.3 98 89	0.1 63	0. 99 9	1. 00 0
			-	Left	Ort h	Chi nes e- Eng lish	0.04 892	1. 33 6	2 2 6	0.0 36 61	0.9 71	1. 00 0	1. 00 0
			-	Left	Con trol	Eng lish	- 1.46 492	0. 96 6	2 5 9	- 1.5 17 06	0.1 30	0. 99 8	1. 00 0
			-	Left	Con trol	Spa nis h- Eng lish	1.85 096	1. 33 6	2 2 6	1.3 85 20	0.1 67	1. 00 0	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff erence	SE	df	t	p	p <sub>tu key</sub>	p <sub>ho lm</sub>
					Chi nes e- Eng lish	3.30 223	1. 33 6	2 2 6	2.4 71 28	0.0 14	0. 69 6	1. 00 0
			Left	Control								
					Eng lish	0.61 349	1. 20 6	2 1 2	0.5 08 51	0.6 12	1. 00 0	1. 00 0
			Right	PhonOrth								
					Spa nis h- Eng lish	3.29 741	1. 33 6	2 2 6	2.4 67 68	0.0 14	0. 69 9	1. 00 0
			Right	PhonOrth								
					Chi nes e- Eng lish	3.05 181	1. 33 6	2 2 6	2.2 83 88	0.0 23	0. 82 1	1. 00 0
			Right	PhonOrth								
					Eng lish	0.51 584	1. 20 6	2 1 2	0.4 27 57	0.6 69	1. 00 0	1. 00 0
			Right	Phon								
					Spa nis h- Eng lish	2.64 427	1. 33 6	2 2 6	1.9 78 89	0.0 49	0. 94 9	1. 00 0
			Right	Phon								
					Chi nes e- Eng lish	3.49 126	1. 33 6	2 2 6	2.6 12 74	0.0 10	0. 58 8	1. 00 0
			Right	Phon								
					Eng lish	1.28 497	0. 96 3	1 1 7	1.3 34 72	0.1 85	1. 00 0	1. 00 0
			Right	Orth								

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	p <sub>tu key</sub>	p <sub>ho lm</sub>
			-	Rig ht	Ort h	Spa nis h- Eng lish 3.94 439	1. 33 6	2 2 6	2.9 51 85	0.0 03	0. 33 5	0. 87 0
			-	Rig ht	Ort h	Chi nes e- Eng lish 0.78 133	1. 33 6	2 2 6	0.5 84 72	0.5 59	1. 00 0	1. 00 0
			-	Rig ht	Con trol	Eng lish - 0.82 692	1. 20 6	2 1 2	- 0.6 85 42	0.4 94	1. 00 0	1. 00 0
			-	Rig ht	Con trol	Spa nis h- Eng lish 3.34 013	1. 33 6	2 2 6	2.4 99 64	0.0 13	0. 67 5	1. 00 0
			-	Rig ht	Con trol	Chi nes e- Eng lish 3.13 730	1. 33 6	2 2 6	2.3 47 85	0.0 20	0. 78 1	1. 00 0
		Spa nis h- Eng lish	-	Left	Ort h	Chi nes e- Eng lish - 1.82 033	1. 33 6	2 2 6	- 1.3 62 28	0.1 74	1. 00 0	1. 00 0
			-	Left	Con trol	Eng lish - 3.33 417	1. 33 6	2 2 6	- 2.4 95 18	0.0 13	0. 67 8	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	p <sub>tu key</sub>	p <sub>ho lm</sub>
		-	Left	Con trol	Spa nis h- Eng lish	- 0.01 828	0. 96 6	2 5 9	- 0.0 18 94	0.9 85	1. 00 0	1. 00 0
		-	Left	Con trol	Chi nes e- Eng lish	1.43 298	1. 33 6	2 2 6	1.0 72 39	0.2 85	1. 00 0	1. 00 0
		-	Rig ht	Pho nOr th	Eng lish	- 1.25 576	1. 33 6	2 2 6	- 0.9 39 77	0.3 48	1. 00 0	1. 00 0
		-	Rig ht	Pho nOr th	Spa nis h- Eng lish	1.42 816	1. 20 6	2 1 2	1.1 83 78	0.2 38	1. 00 0	1. 00 0
		-	Rig ht	Pho nOr th	Chi nes e- Eng lish	1.18 256	1. 33 6	2 2 6	0.8 84 99	0.3 77	1. 00 0	1. 00 0
		-	Rig ht	Pho n	Eng lish	- 1.35 341	1. 33 6	2 2 6	- 1.0 12 85	0.3 12	1. 00 0	1. 00 0
		-	Rig ht	Pho n	Spa nis h- Eng lish	0.77 502	1. 20 6	2 1 2	0.6 42 40	0.5 21	1. 00 0	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	ptu key	P <sub>ho</sub> lm
		-	Rig ht	Pho n	Chi nes e- Eng lish	1.62 201	1. 33 6	2 2 6	1.2 13 86	0.2 26	1. 00 0	1. 00 0
		-	Rig ht	Ort h	Eng lish	- 0.58 428	1. 33 6	2 2 6	- 0.4 37 25	0.6 62	1. 00 0	1. 00 0
		-	Rig ht	Ort h	Spa nis h- Eng lish	2.07 514	0. 96 3	1 1 7	2.1 55 48	0.0 33	0. 88 3	1. 00 0
		-	Rig ht	Ort h	Chi nes e- Eng lish	- 1.08 792	1. 33 6	2 2 6	- 0.8 14 16	0.4 16	1. 00 0	1. 00 0
		-	Rig ht	Con trol	Eng lish	- 2.69 617	1. 33 6	2 2 6	- 2.0 17 73	0.0 45	0. 93 8	1. 00 0
		-	Rig ht	Con trol	Spa nis h- Eng lish	1.47 088	1. 20 6	2 1 2	1.2 19 19	0.2 24	1. 00 0	1. 00 0
		-	Rig ht	Con trol	Chi nes e- Eng lish	1.26 805	1. 33 6	2 2 6	0.9 48 97	0.3 44	1. 00 0	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison													
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff erence	SE	df	t	p	ptu key	P <sub>ho</sub> Im	
		Chi nes e- Eng lish	-	Left	Con trol	English	- 1.51 384	1. 33 6	2 2 6	- 1.1 32 91	0.2 58	1. 00 0	1. 00 0
			-	Left	Con trol	Spa nis h- Eng lish	1.80 205	1. 33 6	2 2 6	1.3 48 59	0.1 79	1. 00 0	1. 00 0
			-	Left	Con trol	Chi nes e- Eng lish	3.25 331	0. 96 6	2 5 9	3.3 69 09	< . 00 1	0. 12 4	0. 22 8
			-	Rig ht	Pho nOr th	Eng lish	0.56 457	1. 33 6	2 2 6	0.4 22 51	0.6 73	1. 00 0	1. 00 0
			-	Rig ht	Pho nOr th	Spa nis h- Eng lish	3.24 850	1. 33 6	2 2 6	2.4 31 07	0.0 16	0. 72 5	1. 00 0
			-	Rig ht	Pho nOr th	Chi nes e- Eng lish	3.00 290	1. 20 6	2 1 2	2.4 89 05	0.0 14	0. 68 3	1. 00 0
			-	Rig ht	Pho n	Eng lish	0.46 692	1. 33 6	2 2 6	0.3 49 43	0.7 27	1. 00 0	1. 00 0
			-	Rig ht	Pho n	Spa nis h- Eng lish	2.59 536	1. 33 6	2 2 6	1.9 42 28	0.0 53	0. 95 8	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	p <sub>tu key</sub>	p <sub>ho lm</sub>
-			Rig ht	Pho n	Chi nes e- Eng lish	3.44 234	1. 20 6	2 1 2	2.8 53 29	0.0 05	0. 40 4	1. 00 0
-			Rig ht	Ort h	Eng lish	1.23 605	1. 33 6	2 2 6	0.9 25 02	0.3 56	1. 00 0	1. 00 0
-			Rig ht	Ort h	Spa nis h- Eng lish	3.89 547	1. 33 6	2 2 6	2.9 15 24	0.0 04	0. 36 0	0. 96 6
-			Rig ht	Ort h	Chi nes e- Eng lish	0.73 241	0. 96 3	1 1 7	0.7 60 77	0.4 48	1. 00 0	1. 00 0
-			Rig ht	Con trol	Eng lish	- 0.87 584	1. 33 6	2 2 6	- 0.6 55 45	0.5 13	1. 00 0	1. 00 0
-			Rig ht	Con trol	Spa nis h- Eng lish	3.29 121	1. 33 6	2 2 6	2.4 63 04	0.0 15	0. 70 2	1. 00 0
-			Rig ht	Con trol	Chi nes e- Eng lish	3.08 838	1. 20 6	2 1 2	2.5 59 90	0.0 11	0. 62 9	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	p <sub>tu key</sub>	p <sub>ho lm</sub>
	Con trol	Eng lish	-	Left	Con trol	Spa nis h- Eng lish 3.31 588	1. 33 6	2 2 6	2.4 81 50	0.0 14	0. 68 8	1. 00 0
			-	Left	Con trol	Chi nes e- Eng lish 4.76 715	1. 33 6	2 2 6	3.5 67 58	< . 00 1	0. 07 1	0. 11 9
			-	Rig ht	Pho nOr th	Eng lish 2.07 841	1. 20 6	2 1 2	1.7 22 76	0.0 86	0. 98 9	1. 00 0
			-	Rig ht	Pho nOr th	Spa nis h- Eng lish 4.76 233	1. 33 6	2 2 6	3.5 63 97	< . 00 1	0. 07 2	0. 12 0
			-	Rig ht	Pho nOr th	Chi nes e- Eng lish 4.51 673	1. 33 6	2 2 6	3.3 80 17	< . 00 1	0. 12 2	0. 22 4
			-	Rig ht	Pho n	Eng lish 1.98 076	1. 20 6	2 1 2	1.6 41 82	0.1 02	0. 99 4	1. 00 0
			-	Rig ht	Pho n	Spa nis h- Eng lish 4.10 919	1. 33 6	2 2 6	3.0 75 18	0.0 02	0. 25 9	0. 59 8
			-	Rig ht	Pho n	Chi nes e- Eng lish 4.95 618	1. 33 6	2 2 6	3.7 09 04	< . 00 1	0. 04 6	0. 07 2

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tu</sub> key	P <sub>ho</sub> lm
		-	Rig ht	Ort h	Eng lish	2.74 989	1. 20 6	2 1 2	2.2 79 33	0.0 24	0. 82 3	1. 00 0
		-	Rig ht	Ort h	Spa nis h- Eng lish	5.40 931	1. 33 6	2 2 6	4.0 48 15	< . 00 1	0. 01 4	0. 02 0
		-	Rig ht	Ort h	Chi nes e- Eng lish	2.24 625	1. 33 6	2 2 6	1.6 81 02	0.0 94	0. 99 2	1. 00 0
		-	Rig ht	Con trol	Eng lish	0.63 800	0. 96 3	1 1 7	0.6 62 70	0.5 09	1. 00 0	1. 00 0
		-	Rig ht	Con trol	Spa nis h- Eng lish	4.80 505	1. 33 6	2 2 6	3.5 95 94	< . 00 1	0. 06 5	0. 10 8
		-	Rig ht	Con trol	Chi nes e- Eng lish	4.60 222	1. 33 6	2 2 6	3.4 44 15	< . 00 1	0. 10 2	0. 18 2
		-	Left	Con trol	Chi nes e- Eng lish	1.45 126	1. 33 6	2 2 6	1.0 86 08	0.2 79	1. 00 0	1. 00 0
		-	Rig ht	Pho nOr th	Eng lish	- 1.23 747	1. 33 6	2 2 6	- 0.9 26 09	0.3 55	1. 00 0	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	ptu key	Pho lm
		-	Rig ht	Pho nOr th	Spa nis h- Eng lish	1.44 645	1. 20 6	2 1 2	1.1 98 93	0.2 32	1. 00 0	1. 00 0
		-	Rig ht	Pho nOr th	Chi nes e- Eng lish	1.20 085	1. 33 6	2 2 6	0.8 98 68	0.3 70	1. 00 0	1. 00 0
		-	Rig ht	Pho n	Eng lish	- 1.33 512	1. 33 6	2 2 6	- 0.9 99 16	0.3 19	1. 00 0	1. 00 0
		-	Rig ht	Pho n	Spa nis h- Eng lish	0.79 331	1. 20 6	2 1 2	0.6 57 56	0.5 12	1. 00 0	1. 00 0
		-	Rig ht	Pho n	Chi nes e- Eng lish	1.64 029	1. 33 6	2 2 6	1.2 27 54	0.2 21	1. 00 0	1. 00 0
		-	Rig ht	Ort h	Eng lish	- 0.56 599	1. 33 6	2 2 6	- 0.4 23 57	0.6 72	1. 00 0	1. 00 0
		-	Rig ht	Ort h	Spa nis h- Eng lish	2.09 342	1. 20 6	2 1 2	1.7 35 20	0.0 84	0. 98 8	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	ptu key	Pho Im
					Chi nes e- Eng lish	- 1.06 963	1. 33 6	2 2 6	- 0.8 00 48	0.4 24	1. 00 0	1. 00 0
					Eng lish	- 2.67 789	1. 33 6	2 2 6	- 2.0 04 04	0.0 46	0. 94 2	1. 00 0
					Spa nis h- Eng lish	1.48 916	0. 96 3	1 1 7	1.5 46 82	0.1 25	0. 99 7	1. 00 0
					Chi nes e- Eng lish	1.28 634	1. 33 6	2 2 6	0.9 62 65	0.3 37	1. 00 0	1. 00 0
		Chi nes e- Eng lish			Pho nOr th Eng lish	- 2.68 874	1. 33 6	2 2 6	- 2.0 12 16	0.0 45	0. 94 0	1. 00 0
					Spa nis h- Eng lish	- 0.00 481	1. 33 6	2 2 6	- 0.0 03 60	0.9 97	1. 00 0	1. 00 0
					Chi nes e- Eng lish	- 0.25 041	1. 20 6	2 1 2	- 0.2 07 56	0.8 36	1. 00 0	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	p <sub>tu key</sub>	p <sub>ho lm</sub>
-			Rig ht	Pho n	Eng lish	- 2.78 639	1. 33 6	2 2 6	- 2.0 85 24	0.0 38	0. 91 6	1. 00 0
-			Rig ht	Pho n	Spa nis h- Eng lish	- 0.65 795	1. 33 6	2 2 6	- 0.4 92 39	0.6 23	1. 00 0	1. 00 0
-			Rig ht	Pho n	Chi nes e- Eng lish	0.18 903	1. 20 6	2 1 2	0.1 56 68	0.8 76	1. 00 0	1. 00 0
-			Rig ht	Ort h	Eng lish	- 2.01 725	1. 33 6	2 2 6	- 1.5 09 65	0.1 33	0. 99 8	1. 00 0
-			Rig ht	Ort h	Spa nis h- Eng lish	0.64 216	1. 33 6	2 2 6	0.4 80 57	0.6 31	1. 00 0	1. 00 0
-			Rig ht	Ort h	Chi nes e- Eng lish	- 2.52 090	1. 20 6	2 1 2	- 2.0 89 52	0.0 38	0. 91 4	1. 00 0
-			Rig ht	Con trol	Eng lish	- 4.12 915	1. 33 6	2 2 6	- 3.0 90 12	0.0 02	0. 25 0	0. 57 4

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	ptu key	P <sub>ho</sub> lm
			-	Rig ht	Con trol	Spa nis h- Eng lish 0.03 790	1. 33 6	2 2 6	0.0 28 36	0.9 77	1. 00 0	1. 00 0
			-	Rig ht	Con trol	Chi nes e- Eng lish - 0.16 493	0. 96 3	1 1 7	- 0.1 71 31	0.8 64	1. 00 0	1. 00 0
Rig ht	Pho nOr th	Eng lish	-	Rig ht	Pho nOr th	Spa nis h- Eng lish 2.68 392	1. 33 6	2 2 6	2.0 08 56	0.0 46	0. 94 1	1. 00 0
			-	Rig ht	Pho nOr th	Chi nes e- Eng lish 2.43 832	1. 33 6	2 2 6	1.8 24 76	0.0 69	0. 97 9	1. 00 0
			-	Rig ht	Pho n	Eng lish - 0.09 765	0. 96 6	2 5 9	- 0.1 01 13	0.9 20	1. 00 0	1. 00 0
			-	Rig ht	Pho n	Spa nis h- Eng lish 2.03 078	1. 33 6	2 2 6	1.5 19 77	0.1 30	0. 99 8	1. 00 0
			-	Rig ht	Pho n	Chi nes e- Eng lish 2.87 777	1. 33 6	2 2 6	2.1 53 63	0.0 32	0. 88 8	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	ptu key	Pho lm
		-	Rig ht	Ort h	Eng lish	0.67 148	0. 96 6	2 5 9	0.6 95 38	0.4 87	1. 00 0	1. 00 0
		-	Rig ht	Ort h	Spa nis h- Eng lish	3.33 090	1. 33 6	2 2 6	2.4 92 74	0.0 13	0. 68 0	1. 00 0
		-	Rig ht	Ort h	Chi nes e- Eng lish	0.16 784	1. 33 6	2 2 6	0.1 25 61	0.9 00	1. 00 0	1. 00 0
		-	Rig ht	Con trol	Eng lish	- 1.44 041	0. 96 6	2 5 9	- 1.4 91 68	0.1 37	0. 99 9	1. 00 0
		-	Rig ht	Con trol	Spa nis h- Eng lish	2.72 664	1. 33 6	2 2 6	2.0 40 53	0.0 42	0. 93 1	1. 00 0
		-	Rig ht	Con trol	Chi nes e- Eng lish	2.52 381	1. 33 6	2 2 6	1.8 88 74	0.0 60	0. 96 9	1. 00 0
		Spa nis h- Eng lish	Rig ht	Pho nOr th	Chi nes e- Eng lish	- 0.24 560	1. 33 6	2 2 6	- 0.1 83 80	0.8 54	1. 00 0	1. 00 0
		-	Rig ht	Pho n	Eng lish	- 2.78 157	1. 33 6	2 2 6	- 2.0 81 64	0.0 39	0. 91 7	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff erence	SE	df	t	p	p <sub>tu key</sub>	p <sub>ho lm</sub>
					Spa nis h- Eng lish	- 0.65 314	0. 96 6	2 5 9	- 0.6 76 39	0.4 99	1. 00 0	1. 00 0
					Chi nes e- Eng lish	0.19 384	1. 33 6	2 2 6	0.1 45 07	0.8 85	1. 00 0	1. 00 0
					Eng lish	- 2.01 244	1. 33 6	2 2 6	- 1.5 06 05	0.1 33	0. 99 8	1. 00 0
					Spa nis h- Eng lish	0.64 698	0. 96 6	2 5 9	0.6 70 00	0.5 03	1. 00 0	1. 00 0
					Chi nes e- Eng lish	- 2.51 608	1. 33 6	2 2 6	- 1.8 82 95	0.0 61	0. 97 0	1. 00 0
					Eng lish	- 4.12 434	1. 33 6	2 2 6	- 3.0 86 52	0.0 02	0. 25 2	0. 57 9
					Spa nis h- Eng lish	0.04 272	0. 96 6	2 5 9	0.0 44 24	0.9 65	1. 00 0	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff erence	SE	df	t	p	p <sub>tu key</sub>	p <sub>ho lm</sub>
					Chi nes e- Eng lish	- 0.16 011	1. 33 6	2 2 6	- 0.1 19 82	0.9 05	1. 00 0	1. 00 0
		Chi nes e- Eng lish			Right Pho n Eng lish	- 2.53 597	1. 33 6	2 2 6	- 1.8 97 84	0.0 59	0. 96 7	1. 00 0
					Right Pho n Spa nis h- Eng lish	- 0.40 754	1. 33 6	2 2 6	- 0.3 04 99	0.7 61	1. 00 0	1. 00 0
					Right Pho n Chi nes e- Eng lish	0.43 944	0. 96 6	2 5 9	0.4 55 08	0.6 49	1. 00 0	1. 00 0
					Right Ort h Eng lish	- 1.76 684	1. 33 6	2 2 6	- 1.3 22 25	0.1 87	1. 00 0	1. 00 0
					Right Ort h Spa nis h- Eng lish	0.89 258	1. 33 6	2 2 6	0.6 67 97	0.5 05	1. 00 0	1. 00 0
					Right Ort h Chi nes e- Eng lish	- 2.27 048	0. 96 6	2 5 9	- 2.3 51 29	0.0 19	0. 78 0	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison													
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	ptu key	P <sup>ho</sup> Im	
			-	Rig ht	Con trol	Eng lish	- 3.87 873	1. 33 6	2 2 6	- 2.9 02 72	0.0 04	0. 36 8	1. 00 0
			-	Rig ht	Con trol	Spa nis h- Eng lish	0.28 832	1. 33 6	2 2 6	0.2 15 77	0.8 29	1. 00 0	1. 00 0
			-	Rig ht	Con trol	Chi nes e- Eng lish	0.08 549	0. 96 6	2 5 9	0.0 88 53	0.9 30	1. 00 0	1. 00 0
	Pho n	Eng lish	-	Rig ht	Pho n	Spa nis h- Eng lish	2.12 843	1. 33 6	2 2 6	1.5 92 85	0.1 13	0. 99 6	1. 00 0
			-	Rig ht	Pho n	Chi nes e- Eng lish	2.97 542	1. 33 6	2 2 6	2.2 26 70	0.0 27	0. 85 2	1. 00 0
			-	Rig ht	Ort h	Eng lish	0.76 913	0. 96 6	2 5 9	0.7 96 50	0.4 26	1. 00 0	1. 00 0
			-	Rig ht	Ort h	Spa nis h- Eng lish	3.42 855	1. 33 6	2 2 6	2.5 65 81	0.0 11	0. 62 5	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison													
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	p <sub>tu key</sub>	p <sub>ho lm</sub>	
			-	Rig ht	Ort h	Chi nes e- Eng lish	0.26 549	1. 33 6	2 2 6	0.1 98 68	0.8 43	1. 00 0	1. 00 0
			-	Rig ht	Con trol	Eng lish	- 1.34 276	0. 96 6	2 5 9	- 1.3 90 55	0.1 66	0. 99 9	1. 00 0
			-	Rig ht	Con trol	Spa nis h- Eng lish	2.82 429	1. 33 6	2 2 6	2.1 13 61	0.0 36	0. 90 5	1. 00 0
			-	Rig ht	Con trol	Chi nes e- Eng lish	2.62 146	1. 33 6	2 2 6	1.9 61 81	0.0 51	0. 95 3	1. 00 0
		Spa nis h- Eng lish	-	Rig ht	Pho n	Chi nes e- Eng lish	0.84 698	1. 33 6	2 2 6	0.6 33 85	0.5 27	1. 00 0	1. 00 0
			-	Rig ht	Ort h	Eng lish	- 1.35 930	1. 33 6	2 2 6	- 1.0 17 26	0.3 10	1. 00 0	1. 00 0
			-	Rig ht	Ort h	Spa nis h- Eng lish	1.30 012	0. 96 6	2 5 9	1.3 46 39	0.1 79	1. 00 0	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tu</sub> key	P <sub>ho</sub> lm
					Chi nes e- Eng lish	- 1.86 294	1. 33 6	2 2 6	- 1.3 94 16	0.1 65	0. 99 9	1. 00 0
					Eng lish	- 3.47 119	1. 33 6	2 2 6	- 2.5 97 73	0.0 10	0. 60 0	1. 00 0
					Spa nis h- Eng lish	0.69 586	0. 96 6	2 5 9	0.7 20 62	0.4 72	1. 00 0	1. 00 0
					Chi nes e- Eng lish	0.49 303	1. 33 6	2 2 6	0.3 68 97	0.7 12	1. 00 0	1. 00 0
		Chi nes e- Eng lish			Eng lish	- 2.20 628	1. 33 6	2 2 6	- 1.6 51 11	0.1 00	0. 99 4	1. 00 0
					Spa nis h- Eng lish	0.45 313	1. 33 6	2 2 6	0.3 39 11	0.7 35	1. 00 0	1. 00 0
					Chi nes e- Eng lish	- 2.70 993	0. 96 6	2 5 9	- 2.8 06 37	0.0 05	0. 43 7	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison													
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	p <sub>tu key</sub>	p <sub>ho lm</sub>	
			-	Rig ht	Con trol	Eng lish	- 4.31 818	1. 33 6	2 2 6	- 3.2 31 58	0.0 01	0. 17 9	0. 36 8
			-	Rig ht	Con trol	Spa nis h- Eng lish	- 0.15 113	1. 33 6	2 2 6	- 0.1 13 10	0.9 10	1. 00 0	1. 00 0
			-	Rig ht	Con trol	Chi nes e- Eng lish	- 0.35 396	0. 96 6	2 5 9	- 0.3 66 55	0.7 14	1. 00 0	1. 00 0
	Ort h	Eng lish	-	Rig ht	Ort h	Spa nis h- Eng lish	2.65 942	1. 33 6	2 2 6	1.9 90 22	0.0 48	0. 94 6	1. 00 0
			-	Rig ht	Ort h	Chi nes e- Eng lish	- 0.50 364	1. 33 6	2 2 6	- 0.3 76 91	0.7 07	1. 00 0	1. 00 0
			-	Rig ht	Con trol	Eng lish	- 2.11 189	0. 96 6	2 5 9	- 2.1 87 06	0.0 30	0. 87 3	1. 00 0
			-	Rig ht	Con trol	Spa nis h- Eng lish	2.05 516	1. 33 6	2 2 6	1.5 38 01	0.1 25	0. 99 8	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

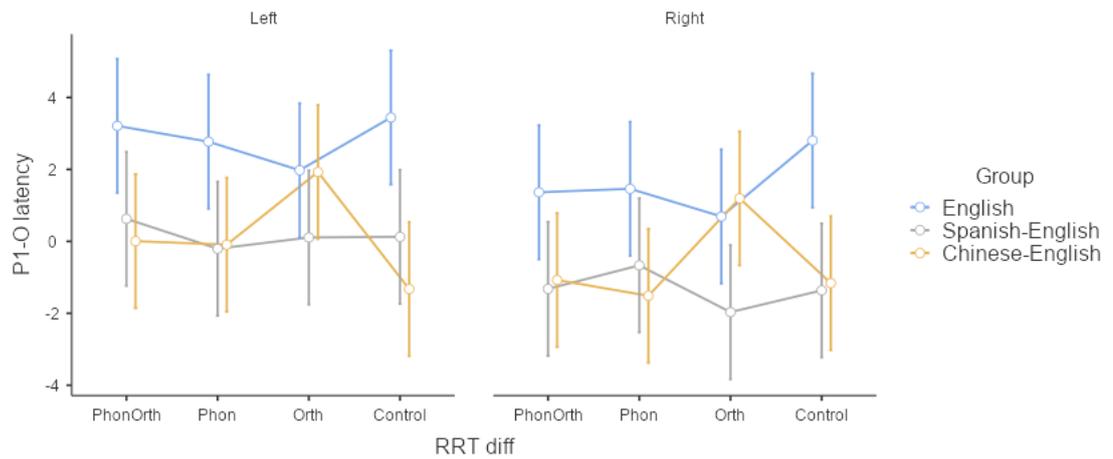
Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	p <sub>tu key</sub>	p <sub>ho lm</sub>
					Chi nes e- Eng lish	1.85 233	1. 33 6	2 2 6	1.3 86 22	0.1 67	0. 99 9	1. 00 0
		Spa nis h- Eng lish			Chi nes e- Eng lish	- 3.16 306	1. 33 6	2 2 6	- 2.3 67 13	0.0 19	0. 76 9	1. 00 0
					Eng lish	- 4.77 131	1. 33 6	2 2 6	- 3.5 70 69	<. 00 1	0. 07 1	0. 11 8
					Spa nis h- Eng lish	- 0.60 426	0. 96 6	2 5 9	- 0.6 25 76	0.5 32	1. 00 0	1. 00 0
					Chi nes e- Eng lish	- 0.80 709	1. 33 6	2 2 6	- 0.6 04 00	0.5 46	1. 00 0	1. 00 0
		Chi nes e- Eng lish			Eng lish	- 1.60 825	1. 33 6	2 2 6	- 1.2 03 56	0.2 30	1. 00 0	1. 00 0
					Spa nis h- Eng lish	2.55 880	1. 33 6	2 2 6	1.9 14 92	0.0 57	0. 96 4	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff erence	SE	df	t	p	ptu key	Pho lm
			-	Rig ht	Con trol	Chi nes e- Eng lish 2.35 597	0. 96 6	2 5 9	2.4 39 82	0.0 15	0. 71 9	1. 00 0
	Con trol	Eng lish	-	Rig ht	Con trol	Spa nis h- Eng lish 4.16 705	1. 33 6	2 2 6	3.1 18 49	0.0 02	0. 23 5	0. 52 8
			-	Rig ht	Con trol	Chi nes e- Eng lish 3.96 422	1. 33 6	2 2 6	2.9 66 69	0.0 03	0. 32 5	0. 83 3
		Spa nis h- Eng lish	-	Rig ht	Con trol	Chi nes e- Eng lish - 0.20 283	1. 33 6	2 2 6	- 0.1 51 79	0.8 79	1. 00 0	1. 00 0

### Estimated Marginal Means

RRT diff \* Group \* Hemisphere



## Repeated Measures ANOVA

Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Hemisphere	104.08	1	104.08	12.945	< .001	0.185
Hemisphere * Group	3.28	2	1.64	0.204	0.816	0.007
Residual	458.30	57	8.04			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Group	867	2	433.4	9.05	< .001	0.241
Residual	2730	57	47.9			

Note. Type 3 Sums of Squares

## Assumptions

Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
PAL50_P1.LeftO\$prime	0.206	2	57	0.814
PAL50_P1.RightO\$prime	2.022	2	57	0.142

## Post Hoc Tests

Post Hoc Comparisons - Hemisphere \* Group

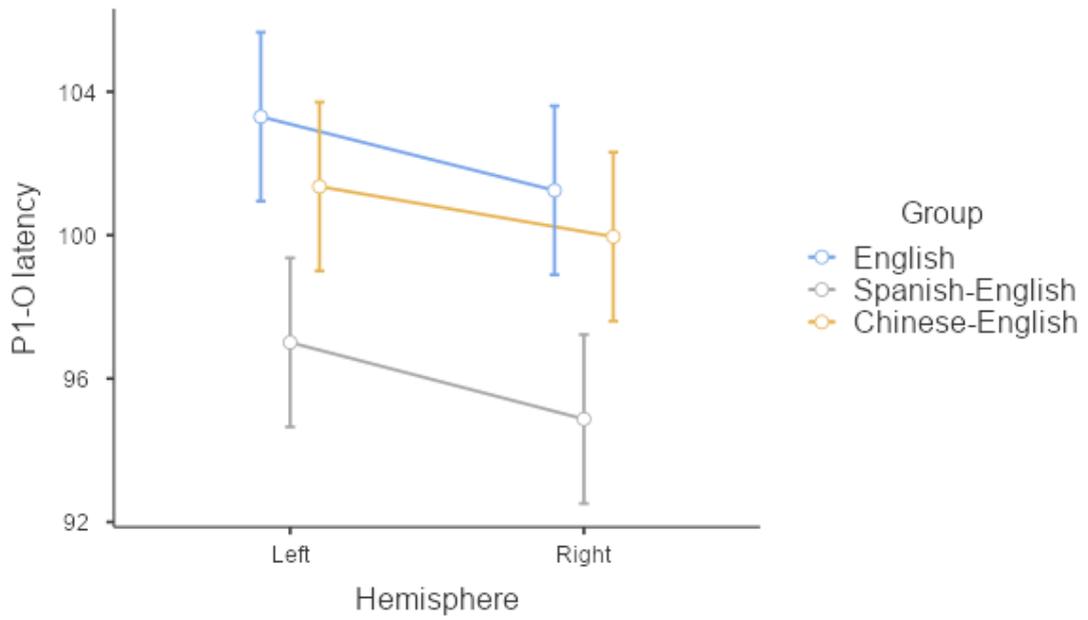
Comparison											
Hemisphere	Group		Hemisphere	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub>	P <sub>holm</sub>
Left	English	-	Left	Spanish-English	6.294	1.672	75.6	3.7639	<.001	0.004	0.004
				Chinese-English	1.947	1.672	75.6	1.1644	0.248	0.852	0.744
		-	Right	English	2.054	0.897	57.0	2.2906	0.026	0.215	0.180
				Spanish-English	8.431	1.672	75.6	5.0414	<.001	<.001	<.001
	-	Right	Chinese-English	3.345	1.672	75.6	2.0002	0.049	0.352	0.294	
			Spanish-English	-	1.672	75.6	-2.5996	0.011	0.110	0.112	
			Chinese-English	4.347	1.672	75.6	2.5996	0.011	0.110	0.112	
			English	4.240	1.672	75.6	2.5357	0.013	0.127	0.205	

Post Hoc Comparisons - Hemisphere \* Group

Comparison											
Hemisphere	Group	Hemisphere	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> <sub>y</sub>	P <sub>holm</sub>	
		-	Right	Spanish-English	2.136	0.897	57.23	2.38	0.021	0.180	0.164
		-	Right	Chinese-English	-2.950	1.672	75.6	-1.7638	0.082	0.495	0.409
	Chinese-English	-	Right	English	0.107	1.672	75.6	0.0639	0.949	1.000	0.949
		-	Right	Spanish-English	6.483	1.672	75.6	3.8770	<.001	0.003	0.003
		-	Right	Chinese-English	1.398	0.897	57.87	1.55	0.125	0.628	0.498
Right	English	-	Right	Spanish-English	6.377	1.672	75.6	3.8131	<.001	0.004	0.004
		-	Right	Chinese-English	1.291	1.672	75.6	0.7719	0.443	0.971	0.885
	Spanish-English	-	Right	Chinese-English	-5.086	1.672	75.6	-3.0412	0.003	0.037	0.036

**Estimated Marginal Means**

**Hemisphere \* Group**



*P1-OT latency*

## Repeated Measures ANOVA

Within Subjects Effects

	Sphericity Correction	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
RRT Target	None	1.56	3	0.519	0.0979	0.961	0.002
	Greenhouse-Geisser	1.56	2.16	0.721	0.0979	0.919	0.002
	Huynh-Feldt	1.56	2.25	0.693	0.0979	0.925	0.002
RRT Target * Group	None	94.27	6	15.712	2.9660	0.009	0.094
	Greenhouse-Geisser	94.27	4.32	21.834	2.9660	0.019	0.094
	Huynh-Feldt	94.27	4.49	20.980	2.9660	0.018	0.094
Residual	None	905.85	171	5.297			

Within Subjects Effects

	<b>Sphericity Correction</b>	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
	Greenhouse-Geisser	905.85	123.05	7.361			
	Huynh-Feldt	905.85	128.06	7.074			
Hemisphere	None	48.40	1	48.402	1.5763	0.214	0.027
	Greenhouse-Geisser	48.40	1.00	48.402	1.5763	0.214	0.027
	Huynh-Feldt	48.40	1.00	48.402	1.5763	0.214	0.027
Hemisphere * Group	None	57.56	2	28.778	0.9372	0.398	0.032
	Greenhouse-Geisser	57.56	2.00	28.778	0.9372	0.398	0.032
	Huynh-Feldt	57.56	2.00	28.778	0.9372	0.398	0.032
Residual	None	1750.28	57	30.707			
	Greenhouse-Geisser	1750.28	57.00	30.707			
	Huynh-Feldt	1750.28	57.00	30.707			
RRT Target * Hemisphere	None	2.51	3	0.836	0.1719	0.915	0.003
	Greenhouse-Geisser	2.51	2.47	1.015	0.1719	0.883	0.003
	Huynh-Feldt	2.51	2.59	0.967	0.1719	0.892	0.003
RRT Target * Hemisphere * Group	None	40.34	6	6.723	1.3826	0.224	0.046
	Greenhouse-Geisser	40.34	4.94	8.160	1.3826	0.235	0.046
	Huynh-Feldt	40.34	5.18	7.780	1.3826	0.232	0.046
Residual	None	831.50	171	4.863			

Within Subjects Effects

	<b>Sphericity Correction</b>	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
	Greenhouse-Geisser	831.50	140.89	5.902			
	Huynh-Feldt	831.50	147.77	5.627			

Note. Type 3 Sums of Squares

Between Subjects Effects

	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
Group	1123	2	561.5	10.7	< .001	0.274
Residual	2983	57	52.3			

Note. Type 3 Sums of Squares

## Assumptions

Tests of Sphericity

	<b>Mauchly's W</b>	<b>p</b>	<b>Greenhouse-Geisser <math>\epsilon</math></b>	<b>Huynh-Feldt <math>\epsilon</math></b>
RRT Target	0.576	< .001	0.720	0.749
Hemisphere	1.000	NaN <sup>a</sup>	1.000	1.000
RRT Target * Hemisphere	0.744	0.006	0.824	0.864

<sup>a</sup> The repeated measures has only two levels. The assumption of sphericity is always met when the repeated measures has only two levels

Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
PAL50_P1.LeftOP\$PhonOrth_TARGET	4.888	2	57	0.011
PAL50_P1.RightOP\$PhonOrth_TARGET	3.303	2	57	0.044
PAL50_P1.LeftOP\$Phon_TARGET	3.719	2	57	0.030
PAL50_P1.RightOP\$Phon_TARGET	1.651	2	57	0.201
PAL50_P1.LeftOP\$Orth_TARGET	1.780	2	57	0.178
PAL50_P1.RightOP\$Orth_TARGET	0.396	2	57	0.675
PAL50_P1.LeftOP\$Control_TARGET	7.359	2	57	0.001
PAL50_P1.RightOP\$Control_TARGET	2.420	2	57	0.098

## Post Hoc Tests

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison														
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m		
PhonOrth	Left	English	PhonOrth	Left	Spanish-English	2.49731	1.191	199	2.09643	0.037	0.911	1.000		
					PhonOrth	Left	Chinese-English	-1.35322	1.191	199	-1.13599	0.257	1.000	1.000
							PhonOrth	Right	English	0.43258	1.064	115	0.40651	0.685

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	PhonOrth		PhonOrth	Right	Spanish-English	3.26457	1.191	19	2.74053	0.007	0.489	1.000
-	PhonOrth		PhonOrth	Right	Chinese-English	0.65568	1.191	19	-0.55043	0.583	1.000	1.000
-	Phon		Phon	Left	English	0.07669	0.073	71	0.10760	0.914	1.000	1.000
-	Phon		Phon	Left	Spanish-English	3.14601	1.191	19	2.64100	0.009	0.566	1.000
-	Phon		Phon	Left	Chinese-English	1.63226	1.191	19	1.37024	0.172	1.000	1.000
-	Phon		Phon	Right	English	0.66274	1.074	19	0.61691	0.538	1.000	1.000
-	Phon		Phon	Right	Spanish-English	2.34387	1.191	19	1.96763	0.051	0.951	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk	ptom
-	Phon	Right	Chinese-English			-0.02787	1.191	19	-0.0239	0.981	1.000	1.000
-	Orth	Left	English			-0.42542	0.713	34	-0.59688	0.551	1.000	1.000
-	Orth	Left	Spanish-English			2.23922	1.191	19	1.87977	0.062	0.970	1.000
-	Orth	Left	Chinese-English			-0.70457	1.191	19	-0.59147	0.555	1.000	1.000
-	Orth	Right	English			0.66979	1.074	23	0.62347	0.534	1.000	1.000
-	Orth	Right	Spanish-English			1.60443	1.191	19	1.34688	0.180	1.000	1.000
-	Orth	Right	Chinese-English			0.40114	1.191	19	0.33675	0.737	1.000	1.000
-	Control	Left	English			-0.50914	0.713	34	-0.71434	0.476	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Control	Left	Spanish-English	3.55751	1.191	1.99	2.98645	0.003	0.314	0.737		
-	Control	Left	Chinese-English	2.58802	1.191	1.99	2.17258	0.031	0.878	1.000		
-	Control	Right	English	0.50216	1.074	1.23	0.46743	0.641	1.000	1.000		
-	Control	Right	Spanish-English	3.51571	1.191	1.99	2.95136	0.004	0.337	0.815		
-	Control	Right	Chinese-English	0.06280	1.191	1.99	0.05272	0.958	1.000	1.000		
-	Spanish-English	PhonOrth	Left	Chinese-English	3.85053	1.191	1.99	3.23243	0.001	0.181	0.354	
-	Spanish-English	PhonOrth	Right	English	2.06473	1.191	1.99	1.73329	0.085	0.988	1.000	

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	PhonOrth		PhonOrth	Right	Spanish-English	0.76726	1.064	115	0.72103	0.472	1.000	1.000
-	PhonOrth		PhonOrth	Right	Chinese-English	-3.15299	1.191	91	-2.64686	0.009	0.562	1.000
-	Phon		Phon	Left	English	-2.57400	1.191	91	-2.16082	0.032	0.884	1.000
-	Phon		Phon	Left	Spanish-English	0.64870	0.713	34	0.91015	0.363	1.000	1.000
-	Phon		Phon	Left	Chinese-English	-4.12957	1.191	91	-3.46667	<.001	0.098	0.167
-	Phon		Phon	Right	English	-1.83458	1.191	91	-1.54008	0.125	0.998	1.000
-	Phon		Phon	Right	Spanish-English	-0.15344	1.074	23	-0.14283	0.887	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Phon	Right	Chinese-English	-	2.52518	1.191	191	2.1983	0.035	0.901	1.000	
-	Orth	Left	English	-	2.92273	1.191	191	2.45356	0.015	0.709	1.000	
-	Orth	Left	Spanish-English	-	0.25809	0.713	341	0.36211	0.717	1.000	1.000	
-	Orth	Left	Chinese-English	-	3.20188	1.191	191	2.68790	0.008	0.530	1.000	
-	Orth	Right	English	-	1.82752	1.191	191	1.53416	0.127	0.998	1.000	
-	Orth	Right	Spanish-English	-	0.89288	1.074	203	0.83113	0.408	1.000	1.000	
-	Orth	Right	Chinese-English	-	2.09617	1.191	191	1.75969	0.080	0.986	1.000	

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Control	Left	English	-	English	3.00645	1.191	19	2.52384	0.012	0.657	1.000
-	Control	Left	Spanish-English	-	Spanish-English	1.06020	0.713	34	1.48750	0.138	0.999	1.000
-	Control	Left	Chinese-English	-	Chinese-English	5.08533	1.191	19	4.26901	<.001	0.007	0.008
-	Control	Right	English	-	English	2.99947	1.191	19	2.51799	0.013	0.661	1.000
-	Control	Right	Spanish-English	-	Spanish-English	1.01840	1.074	12	0.94797	0.345	1.000	1.000
-	Control	Right	Chinese-English	-	Chinese-English	2.43451	1.191	19	2.04372	0.042	0.929	1.000
-	Chinese-English	PhonOrth	Right	English	English	1.78580	1.191	19	1.49913	0.135	0.998	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	PhonOrth		PhonOrth	Right	Spanish-English	4.61779	1.191	19	3.87653	<.001	0.027	0.038
-	PhonOrth		PhonOrth	Right	Chinese-English	0.69754	1.064	115	0.65550	0.513	1.000	1.000
-	Phon		Phon	Left	English	1.27653	1.191	91	1.07161	0.285	1.000	1.000
-	Phon		Phon	Left	Spanish-English	4.49923	1.191	9	3.77700	<.001	0.038	0.055
-	Phon		Phon	Left	Chinese-English	0.27904	0.713	34	0.39150	0.696	1.000	1.000
-	Phon		Phon	Right	English	2.01595	1.191	9	1.69235	0.092	0.991	1.000
-	Phon		Phon	Right	Spanish-English	3.69709	1.191	9	3.10362	0.002	0.245	0.528
-	Phon		Phon	Right	Chinese-English	1.32535	1.074	23	1.23370	0.220	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Orth	Left	Orth	Left	English	0.92780	1.191	19	0.778	0.437	1.000	1.000
-	Orth	Left	Orth	Left	Spanish-English	3.59244	1.191	19	3.015	0.003	0.296	0.684
-	Orth	Left	Orth	Left	Chinese-English	0.64865	0.713	34	0.910	0.363	1.000	1.000
-	Orth	Right	Orth	Right	English	2.02300	1.191	19	1.698	0.091	0.991	1.000
-	Orth	Right	Orth	Right	Spanish-English	2.95765	1.191	19	2.482	0.014	0.687	1.000
-	Orth	Right	Orth	Right	Chinese-English	1.75436	1.074	23	1.633	0.105	0.994	1.000
-	Control	Left	Control	Left	English	0.84408	1.191	19	0.708	0.479	1.000	1.000
-	Control	Left	Control	Left	Spanish-English	4.91073	1.191	19	4.122	<.001	0.012	0.015

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
		-	Control	Left	Chinese-English	-1.23480	0.713	341	-1.73247	0.084	0.989	1.000
		-	Control	Right	English	0.85106	1.191	191	0.71444	0.476	1.000	1.000
		-	Control	Right	Spanish-English	4.86893	1.191	191	4.08735	<.001	0.013	0.017
		-	Control	Right	Chinese-English	1.41601	1.074	123	1.31809	0.190	1.000	1.000
	Right	English	-	Right	Spanish-English	2.83200	1.191	191	2.37739	0.018	0.761	1.000
		-	PhonOrth	Right	Chinese-English	-1.08826	1.191	191	-0.91357	0.362	1.000	1.000
		-	Phon	Left	English	-0.50927	1.074	123	-0.47405	0.636	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Phon	Left	Phon	Left	Spanish-English	2.71343	1.191	19	2.27786	0.024	0.823	1.000
-	Phon	Left	Phon	Left	Chinese-English	2.06484	1.191	19	1.73338	0.085	0.988	1.000
-	Phon	Right	Phon	Right	English	0.23016	0.713	34	0.32292	0.747	1.000	1.000
-	Phon	Right	Phon	Right	Spanish-English	1.91130	1.191	19	1.60449	0.110	0.996	1.000
-	Phon	Right	Phon	Right	Chinese-English	0.46045	1.191	19	0.38653	0.700	1.000	1.000
-	Orth	Left	Orth	Left	English	0.85800	1.074	23	0.79866	0.426	1.000	1.000
-	Orth	Left	Orth	Left	Spanish-English	1.80664	1.191	19	1.51663	0.131	0.998	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Orth	Left	Chinese-English			-1.13715	1.191	19	-0.95461	0.341	1.000	1.000
-	Orth	Right	English			0.23721	0.713	34	0.33281	0.739	1.000	1.000
-	Orth	Right	Spanish-English			1.17185	1.191	19	0.98374	0.326	1.000	1.000
-	Orth	Right	Chinese-English			-0.03144	1.191	19	-0.02639	0.979	1.000	1.000
-	Control	Left	English			-0.94172	1.074	23	-0.87660	0.382	1.000	1.000
-	Control	Left	Spanish-English			3.12493	1.191	19	2.62331	0.009	0.580	1.000
-	Control	Left	Chinese-English			-3.02060	1.191	19	-2.53572	0.012	0.648	1.000
-	Control	Right	English			-0.93474	0.713	34	-1.31148	0.191	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-			Control	Right	Spanish-English	3.08313	1.191	19	2.58822	0.010	0.607	1.000
-			Control	Right	Chinese-English	0.36978	1.191	19	0.31042	0.757	1.000	1.000
-		Spanish-English	PhonOrth	Right	Chinese-English	3.92026	1.191	19	3.29096	0.001	0.156	0.294
-			Phon	Left	English	3.34127	1.191	19	2.80492	0.006	0.440	1.000
-			Phon	Left	Spanish-English	0.11856	1.074	23	0.11037	0.912	1.000	1.000
-			Phon	Left	Chinese-English	4.89683	1.191	19	4.11078	<.001	0.012	0.016
-			Phon	Right	English	2.60184	1.191	19	2.18418	0.030	0.873	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Phon	Right	Spanish-English	-	0.92070	0.713	341	-1.291	0.197	1.000	1.000	1.000
-	Phon	Right	Chinese-English	-	3.29244	1.191	911	-2.76393	0.0671	0.400	1.000	1.000
-	Orth	Left	English	-	3.68999	1.191	976	-3.09766	0.0248	0.200	0.536	0.536
-	Orth	Left	Spanish-English	-	1.02536	1.074	253	-0.95445	0.342	1.000	1.000	1.000
-	Orth	Left	Chinese-English	-	3.96915	1.191	915	-3.33200	0.0141	0.100	0.258	0.258
-	Orth	Right	English	-	2.59479	1.191	979	-2.17826	0.031	0.876	1.000	1.000
-	Orth	Right	Spanish-English	-	1.66014	0.713	431	-2.32924	0.020	0.795	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Orth	Right	Chinese-English	-	2.86344	1.191	191	19	2.40379	0.017	0.744	1.000
-	Control	Left	English	-	3.77371	1.191	191	9	3.16794	0.002	0.211	0.432
-	Control	Left	Spanish-English	0.29294	1.074	123	23	0.27268	0.786	1.000	1.000	
-	Control	Left	Chinese-English	-	5.85259	1.191	191	9	4.91311	<.001	<.001	<.001
-	Control	Right	English	-	3.76674	1.191	191	9	3.16209	0.002	0.214	0.439
-	Control	Right	Spanish-English	0.25114	0.713	34	4	0.35235	0.725	1.000	1.000	
-	Control	Right	Chinese-English	-	3.20178	1.191	191	9	2.68782	0.008	0.530	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk	Phol
		Chinese-English	Phon	Left	English	0.57899	1.191	19	0.48605	0.627	1.000	1.000
			Phon	Left	Spanish-English	3.80169	1.191	19	3.19143	0.002	0.200	0.402
			Phon	Left	Chinese-English	-0.97658	1.074	23	-0.90904	0.365	1.000	1.000
			Phon	Right	English	1.31842	1.191	19	1.10678	0.270	1.000	1.000
			Phon	Right	Spanish-English	2.99956	1.191	19	2.51806	0.013	0.661	1.000
			Phon	Right	Chinese-English	0.62781	0.713	34	0.88085	0.379	1.000	1.000
			Orth	Left	English	0.23026	1.191	19	0.19330	0.847	1.000	1.000
			Orth	Left	Spanish-English	2.89490	1.191	19	2.43020	0.016	0.725	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Orth	Left	Chinese-English	Left	Chinese-English	-0.04889	1.074	123	-0.0451	0.964	1.000	1.000
-	Orth	Right	English	Right	English	1.32547	1.191	91	1.11270	0.267	1.000	1.000
-	Orth	Right	Spanish-English	Right	Spanish-English	2.26011	1.191	91	1.89731	0.059	0.967	1.000
-	Orth	Right	Chinese-English	Right	Chinese-English	1.05682	0.713	34	1.48276	0.139	0.999	1.000
-	Control	Left	English	Left	English	0.14654	1.191	91	0.12302	0.902	1.000	1.000
-	Control	Left	Spanish-English	Left	Spanish-English	4.21319	1.191	91	3.53688	<.001	0.080	0.132
-	Control	Left	Chinese-English	Left	Chinese-English	-1.93234	1.074	123	-1.79871	0.075	0.980	1.000
-	Control	Right	English	Right	English	0.15352	1.191	91	0.12888	0.898	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk	Phol
et	re	up	et	re	up	ence					ey	m
			Control	Right	Spanish-English	4.17139	1.191	19	3.50179	<.001	0.088	0.148
			Control	Right	Chinese-English	0.71848	0.713	34	1.00805	0.314	1.000	1.000
Phon	Left	English	Phon	Left	Spanish-English	3.22270	1.191	9	2.70538	0.007	0.516	1.000
			Phon	Left	Chinese-English	1.55556	1.191	9	1.30586	0.193	1.000	1.000
			Phon	Right	English	0.73943	1.064	15	0.69487	0.489	1.000	1.000
			Phon	Right	Spanish-English	2.42057	1.191	9	2.03201	0.044	0.933	1.000
			Phon	Right	Chinese-English	0.04883	1.191	9	0.04099	0.967	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Orth	Left	English			0.34873	0.713	34	-0.48927	0.625	1.000	1.000
-	Orth	Left	Spanish-English			2.31591	1.191	191	1.94415	0.053	0.957	1.000
-	Orth	Left	Chinese-English			0.62788	1.191	191	-0.52709	0.599	1.000	1.000
-	Orth	Right	English			0.74648	1.074	123	0.69486	0.488	1.000	1.000
-	Orth	Right	Spanish-English			1.68112	1.191	191	1.41126	0.160	0.999	1.000
-	Orth	Right	Chinese-English			0.47783	1.191	191	0.40113	0.689	1.000	1.000
-	Control	Left	English			0.43245	0.713	34	0.60674	0.544	1.000	1.000
-	Control	Left	Spanish-English			3.63420	1.191	191	3.05083	0.003	0.275	0.615

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk	Phol
-	Control	Left	Chinese-English	-	2.51132	1.191	191	91	2.10820	0.036	0.906	1.000
-	Control	Right	English	-	0.42547	1.074	194	23	0.39605	0.693	1.000	1.000
-	Control	Right	Spanish-English	3.59240	1.191	191	91	3.01574	0.003	0.296	0.684	
-	Control	Right	Chinese-English	0.13949	1.191	191	91	0.11710	0.907	1.000	1.000	
-	Spanish-English	Phon	Left	Chinese-English	4.77827	1.191	191	91	4.01124	<.001	0.017	0.023
-	Spanish-English	Phon	Right	English	2.48328	1.191	191	91	2.08465	0.038	0.915	1.000
-	Spanish-English	Phon	Right	Spanish-English	0.80214	1.064	194	55	0.75380	0.453	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Phon	Right	Chinese-English	-	3.17388	1.191	191	19	2.66440	0.008	0.548	1.000
-	Orth	Left	English	-	3.57143	1.191	191	9	2.99813	0.003	0.307	0.714
-	Orth	Left	Spanish-English	-	0.90679	0.713	713	34	1.27227	0.204	1.000	1.000
-	Orth	Left	Chinese-English	-	3.85058	1.191	191	9	3.23247	0.001	0.181	0.354
-	Orth	Right	English	-	2.47622	1.191	191	9	2.07873	0.039	0.917	1.000
-	Orth	Right	Spanish-English	-	1.54158	1.074	1074	23	1.43497	0.154	0.999	1.000
-	Orth	Right	Chinese-English	-	2.74487	1.191	191	9	2.30425	0.022	0.808	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Control	Left	English			-3.65515	1.191	19	-3.06841	0.002	0.264	0.586
-	Control	Left	Spanish-English			0.41150	0.713	34	0.57735	0.564	1.000	1.000
-	Control	Left	Chinese-English			-5.73403	1.191	19	-4.81358	<.001	<.001	<.001
-	Control	Right	English			-3.64817	1.191	19	-3.06255	0.003	0.268	0.595
-	Control	Right	Spanish-English			0.36970	1.074	12	0.34413	0.731	1.000	1.000
-	Control	Right	Chinese-English			-3.08321	1.191	19	-2.58829	0.010	0.607	1.000
-	Chinese-English	Phon	Right	English		2.29499	1.191	19	1.92659	0.056	0.961	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Phon	Right	Spanish-English	3.97613	1.191	199	3.3787	0.001	0.138	0.254		
-	Phon	Right	Chinese-English	1.60439	1.064	115	1.5071	0.134	0.998	1.000		
-	Orth	Left	English	1.20684	1.191	91	1.01311	0.312	1.000	1.000		
-	Orth	Left	Spanish-English	3.87147	1.191	91	3.25001	0.001	0.173	0.335		
-	Orth	Left	Chinese-English	0.92769	0.713	34	1.30158	0.194	1.000	1.000		
-	Orth	Right	English	2.30204	1.191	91	1.93251	0.055	0.959	1.000		
-	Orth	Right	Spanish-English	3.23669	1.191	91	2.71712	0.007	0.507	1.000		
-	Orth	Right	Chinese-English	2.03340	1.074	123	1.89278	0.061	0.966	1.000		

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-			Control	Left	English	1.12312	1.191	19	0.94283	0.347	1.000	1.000
-			Control	Left	Spanish-English	5.18977	1.191	19	4.35669	<.001	0.005	0.006
-			Control	Left	Chinese-English	-0.95576	0.713	71	-1.34097	0.181	1.000	1.000
-			Control	Right	English	1.13010	1.191	19	0.94869	0.344	1.000	1.000
-			Control	Right	Spanish-English	5.14797	1.191	19	4.32160	<.001	0.005	0.007
-			Control	Right	Chinese-English	1.69505	1.074	72	1.57784	0.117	0.996	1.000
	Right	English	-	Phon	Right	1.68114	1.191	19	1.41128	0.160	0.999	1.000
-			-	Phon	Right	-0.69060	1.191	19	-0.57975	0.563	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Orth	Left	English			1.08815	1.074	123	-1.012	0.313	1.000	1.000
-	Orth	Left	Spanish-English			1.57648	1.191	91	1.323	0.187	1.000	1.000
-	Orth	Left	Chinese-English			1.36731	1.191	91	1.147	0.252	1.000	1.000
-	Orth	Right	English			0.00705	0.073	34	0.009	0.992	1.000	1.000
-	Orth	Right	Spanish-English			0.94170	1.191	91	0.790	0.430	1.000	1.000
-	Orth	Right	Chinese-English			0.26160	1.191	91	0.219	0.826	1.000	1.000
-	Control	Left	English			1.17187	1.074	23	1.090	0.277	1.000	1.000
-	Control	Left	Spanish-English			2.89478	1.191	91	2.430	0.016	0.725	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Control	Left	Chinese-English	-	3.25075	1.191	191	91	-2.72893	0.007	0.498	1.000
-	Control	Right	English	-	1.16490	0.713	713	341	1.63439	0.103	0.995	1.000
-	Control	Right	Spanish-English	2.85298	1.191	191	91	11	2.39501	0.018	0.750	1.000
-	Control	Right	Chinese-English	-	0.59994	1.191	191	91	0.50363	0.615	1.000	1.000
-	Spanish-English	Phon	Right	Chinese-English	-	2.37174	1.191	91	1.99102	0.048	0.945	1.000
-	Orth	Left	English	-	2.76929	1.191	191	91	2.32476	0.021	0.795	1.000
-	Orth	Left	Spanish-English	-	0.10466	1.074	204	233	0.09742	0.923	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Orth	Left	Chinese-English	Left	Chinese-English	-3.04845	1.191	19	-2.55910	0.011	0.630	1.000
-	Orth	Right	English	Right	English	-1.67409	1.191	19	-1.40536	0.162	0.999	1.000
-	Orth	Right	Spanish-English	Right	Spanish-English	-0.73944	0.713	34	-1.03747	0.300	1.000	1.000
-	Orth	Right	Chinese-English	Right	Chinese-English	-1.94274	1.191	19	-1.63088	0.105	0.995	1.000
-	Control	Left	English	Left	English	-2.85301	1.191	19	-2.39504	0.018	0.750	1.000
-	Control	Left	Spanish-English	Left	Spanish-English	1.21364	1.074	23	1.12971	0.261	1.000	1.000
-	Control	Left	Chinese-English	Left	Chinese-English	-4.93189	1.191	19	-4.14021	<.001	0.011	0.014

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Control	Right	English	-	2.84604	1.191	191	2.389	0.018	0.754	1.000	
-	Control	Right	Spanish-English	1.17184	0.713	341	1.644	0.101	0.994	1.000		
-	Control	Right	Chinese-English	-2.28108	1.191	191	1.914	0.057	0.963	1.000		
-	Orth	Left	English	-0.39755	1.191	191	0.333	0.739	1.000	1.000		
-	Orth	Left	Spanish-English	2.26709	1.191	191	1.903	0.059	0.966	1.000		
-	Orth	Left	Chinese-English	-0.67670	1.074	243	0.629	0.530	1.000	1.000		
-	Orth	Right	English	0.69765	1.191	191	0.585	0.566	1.000	1.000		

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Orth	Rig	Spa nis h- Eng lish	1.63 230	1. 19 1	1 9 1	1.3 70 28	0.1 72	1.0 00	1.0 00		
-	Orth	Rig	Chi nes e- Eng lish	0.42 901	0. 71 3	3 4 1	0.6 01 91	0.5 48	1.0 00	1.0 00		
-	Con trol	Left	Eng lish	- 0.48 127	1. 19 1	1 9 1	- 0.4 04 02	0.6 87	1.0 00	1.0 00		
-	Con trol	Left	Spa nis h- Eng lish	3.58 538	1. 19 1	1 9 1	3.0 09 84	0.0 03	0.2 99	0.6 91		
-	Con trol	Left	Chi nes e- Eng lish	- 2.56 015	1. 07 4	1 2 3	- 2.3 83 11	0.0 19	0.7 55	1.0 00		
-	Con trol	Rig	Eng lish	- 0.47 429	1. 19 1	1 9 1	- 0.3 98 16	0.6 91	1.0 00	1.0 00		
-	Con trol	Rig	Spa nis h- Eng lish	3.54 358	1. 19 1	1 9 1	2.9 74 75	0.0 03	0.3 22	0.7 61		

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
		-	Control	Right	Chinese-English	0.09066	0.713	34	0.127	0.899	1.000	1.000
Orth	Left	English	Orth	Left	Spanish-English	2.66464	1.191	19	2.236	0.026	0.846	1.000
		-	Orth	Left	Chinese-English	0.27915	1.191	19	0.234	0.815	1.000	1.000
		-	Orth	Right	English	1.09520	1.064	15	1.029	0.306	1.000	1.000
		-	Orth	Right	Spanish-English	2.02985	1.191	19	1.704	0.090	0.990	1.000
		-	Orth	Right	Chinese-English	0.82656	1.191	19	0.693	0.489	1.000	1.000
		-	Control	Left	English	0.08372	0.713	34	0.117	0.907	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk	ptom
-	Control	Left	Spanish-English	3.98	293	1.191	1.191	9	3.343	<.001	0.136	0.250
-	Control	Left	Chinese-English	2.16	260	1.191	1.191	9	1.815	0.071	0.980	1.000
-	Control	Right	English	0.07	674	1.074	1.074	23	0.071	0.943	1.000	1.000
-	Control	Right	Spanish-English	3.94	113	1.191	1.191	9	3.308	0.001	0.149	0.278
-	Control	Right	Chinese-English	0.48	821	1.191	1.191	9	0.409	0.682	1.000	1.000
-	Orth	Left	Chinese-English	2.94	379	1.191	1.191	9	2.471	0.014	0.696	1.000
-	Orth	Right	English	1.56	943	1.191	1.191	9	1.317	0.189	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Orth	Right	Spanish-English	-	0.63479	1.064	115	-0.59653	0.552	1.000	1.000	1.000
-	Orth	Right	Chinese-English	-	1.83808	1.191	91	-1.54302	0.124	0.997	1.000	1.000
-	Control	Left	English	-	2.74836	1.191	91	-2.30718	0.022	0.806	1.000	1.000
-	Control	Left	Spanish-English	1.31829	0.073	34	1.84962	0.065	0.976	1.000	1.000	1.000
-	Control	Left	Chinese-English	-	4.82724	1.191	91	-4.05235	<.001	0.015	0.020	0.020
-	Control	Right	English	-	2.74138	1.191	91	-2.30132	0.022	0.810	1.000	1.000
-	Control	Right	Spanish-English	1.27649	1.074	123	1.18822	0.237	1.000	1.000	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-			Control	Right	Chinese-English	-2.17642	1.191	19	-1.82705	0.069	0.978	1.000
		Chinese-English	Orth	Right	English	1.37436	1.191	19	1.15374	0.250	1.000	1.000
			Orth	Right	Spanish-English	2.30900	1.191	19	1.93835	0.054	0.958	1.000
			Orth	Right	Chinese-English	1.10571	1.064	15	1.03908	0.301	1.000	1.000
			Control	Left	English	0.19543	1.191	19	0.16406	0.870	1.000	1.000
			Control	Left	Spanish-English	4.26208	1.191	19	3.57792	<.001	0.071	0.115
			Control	Left	Chinese-English	-1.88345	0.713	34	-2.64255	0.009	0.564	1.000
			Control	Right	English	0.20241	1.191	19	0.16992	0.865	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
		-	Control	Right	Spanish-English	4.22028	1.191	19	3.54283	<.001	0.078	0.129
		-	Control	Right	Chinese-English	0.76737	1.074	19	0.71430	0.476	1.000	1.000
	Right	English	-	Orth	Right	Spanish-English	0.93465	1.191	9	0.78461	0.434	1.000
		-	Orth	Right	Chinese-English	-0.26865	1.191	9	-0.22552	0.822	1.000	1.000
		-	Control	Left	English	-1.17892	1.074	19	-1.09740	0.275	1.000	1.000
		-	Control	Left	Spanish-English	2.88772	1.191	9	2.42418	0.016	0.729	1.000
		-	Control	Left	Chinese-English	-3.25780	1.191	9	-2.73485	0.007	0.493	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Control	Right	English	-	English	1.17195	0.713	341	-1.644	0.101	0.994	1.000
-	Control	Right	Spanish-English	-	Spanish-English	2.84592	1.191	191	2.389	0.018	0.754	1.000
-	Control	Right	Chinese-English	-	Chinese-English	0.60699	1.191	191	0.509	0.611	1.000	1.000
-	Orth	Right	Chinese-English	-	Chinese-English	1.20329	1.191	191	1.010	0.314	1.000	1.000
-	Control	Left	English	-	English	2.11357	1.191	191	1.774	0.078	0.984	1.000
-	Control	Left	Spanish-English	-	Spanish-English	1.95308	1.074	123	1.818	0.071	0.978	1.000
-	Control	Left	Chinese-English	-	Chinese-English	4.19245	1.191	191	3.519	<.001	0.084	0.139

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Control	Right	English	-	2.10659	1.191	191	1.76844	0.079	0.985	1.000	
-	Control	Right	Spanish-English	1.91128	0.713	341	2.68160	0.083	0.533	1.000		
-	Control	Right	Chinese-English	-1.54164	1.191	191	-1.29417	0.197	1.000	1.000		
-	Chinese-English	Control	Left	English	-0.91028	1.191	191	-0.76416	0.446	1.000	1.000	
-	Control	Left	Spanish-English	3.15637	1.191	191	2.64970	0.099	0.559	1.000		
-	Control	Left	Chinese-English	-2.98916	1.074	123	-2.78245	0.066	0.461	1.000		
-	Control	Right	English	-0.90330	1.191	191	-0.75830	0.449	1.000	1.000		

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk	Phol
			Control	Right	Spanish-English	3.11457	1.191	19	2.61461	0.010	0.587	1.000
			Control	Right	Chinese-English	-0.33834	0.713	34	-0.47471	0.635	1.000	1.000
Control	Left	English	Control	Left	Spanish-English	4.06665	1.191	19	3.41386	<.001	0.113	0.199
			Control	Left	Chinese-English	-2.07888	1.191	19	-1.74517	0.083	0.987	1.000
			Control	Right	English	0.00698	1.064	15	0.06056	0.995	1.000	1.000
			Control	Right	Spanish-English	4.02485	1.191	19	3.37877	<.001	0.124	0.223
			Control	Right	Chinese-English	0.57194	1.191	19	0.48013	0.632	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

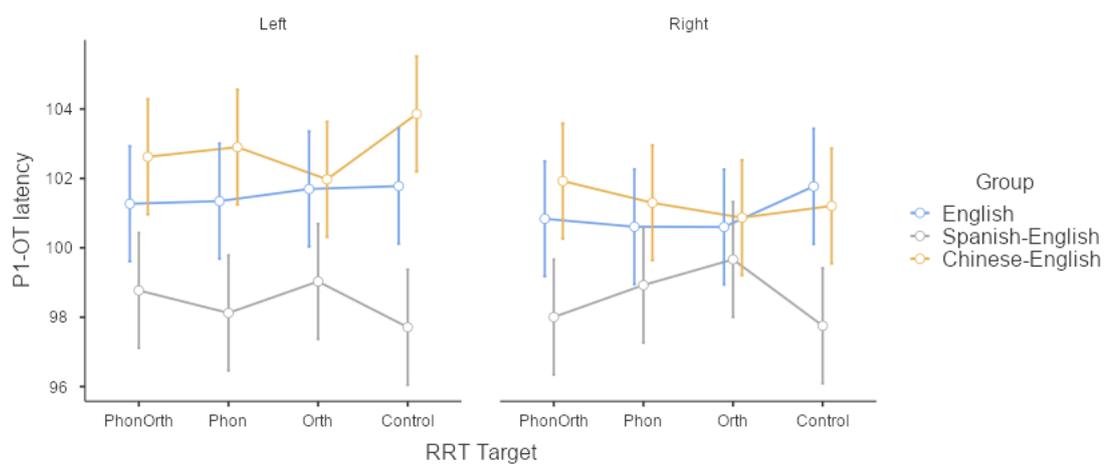
Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
		Spanish-English	Control	Left	Chinese-English	-6.14553	1.191	19	-5.15903	<.001	<.001	<.001
			Control	Right	English	-4.05967	1.191	19	-3.40800	<.001	0.15	0.203
			Control	Right	Spanish-English	-0.04180	1.064	15	0.03928	0.969	1.000	1.000
			Control	Right	Chinese-English	-3.49471	1.191	19	-2.93373	0.004	0.349	0.857
		Chinese-English	Control	Right	English	2.08586	1.191	19	1.75103	0.082	0.987	1.000
			Control	Right	Spanish-English	6.10373	1.191	19	5.12394	<.001	<.001	<.001
			Control	Right	Chinese-English	2.65081	1.064	15	2.49108	0.014	0.680	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk	Phol
	Right	English	-	Control	Right	Spanish-English	4.01787	1.191	3.37291	<.001	0.126	0.227
			-	Control	Right	Chinese-English	0.56496	1.191	0.47427	0.636	1.000	1.000
		Spanish-English	-	Control	Right	Chinese-English	-3.45291	1.191	-2.89864	0.004	0.373	0.950

### Estimated Marginal Means

#### RRT Target \* Group \* Hemisphere



### Repeated Measures ANOVA

Within Subjects Effects

	<b>Sphericity Correction</b>	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
Hemisphere	None	42.64	1	42.642	2.4072	0.126	0.041
	Greenhouse-Geisser	42.64	1.00	42.642	2.4072	0.126	0.041
	Huynh-Feldt	42.64	1.00	42.642	2.4072	0.126	0.041
Hemisphere * Group	None	15.28	2	7.638	0.4311	0.652	0.015
	Greenhouse-Geisser	15.28	2.00	7.638	0.4311	0.652	0.015
	Huynh-Feldt	15.28	2.00	7.638	0.4311	0.652	0.015
Residual	None	1009.74	57	17.715			
	Greenhouse-Geisser	1009.74	57.00	17.715			
	Huynh-Feldt	1009.74	57.00	17.715			
RRT diff	None	1.56	3	0.519	0.0979	0.961	0.002
	Greenhouse-Geisser	1.56	2.16	0.721	0.0979	0.919	0.002
	Huynh-Feldt	1.56	2.25	0.693	0.0979	0.925	0.002
RRT diff * Group	None	94.27	6	15.712	2.9660	0.009	0.094
	Greenhouse-Geisser	94.27	4.32	21.834	2.9660	0.019	0.094
	Huynh-Feldt	94.27	4.49	20.980	2.9660	0.018	0.094
Residual	None	905.85	171	5.297			
	Greenhouse-Geisser	905.85	123.05	7.361			
	Huynh-Feldt	905.85	128.06	7.074			
Hemisphere * RRT diff	None	2.51	3	0.836	0.1719	0.915	0.003

Within Subjects Effects

	<b>Sphericity Correction</b>	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
	Greenhouse-Geisser	2.51	2.47	1.015	0.1719	0.883	0.003
	Huynh-Feldt	2.51	2.59	0.967	0.1719	0.892	0.003
Hemisphere * RRT diff * Group	None	40.34	6	6.723	1.3826	0.224	0.046
	Greenhouse-Geisser	40.34	4.94	8.160	1.3826	0.235	0.046
	Huynh-Feldt	40.34	5.18	7.780	1.3826	0.232	0.046
Residual	None	831.50	171	4.863			
	Greenhouse-Geisser	831.50	140.89	5.902			
	Huynh-Feldt	831.50	147.77	5.627			

Note. Type 3 Sums of Squares

Between Subjects Effects

	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
Group	179	2	89.7	4.28	0.018	0.131
Residual	1194	57	20.9			

Note. Type 3 Sums of Squares

## Assumptions

## Tests of Sphericity

	<b>Mauchly's W</b>	<b>p</b>	<b>Greenhouse-Geisser <math>\epsilon</math></b>	<b>Huynh-Feldt <math>\epsilon</math></b>
Hemisphere	1.000	NaN <sup>a</sup>	1.000	1.000
RRT diff	0.576	< .001	0.720	0.749
Hemisphere * RRT diff	0.744	0.006	0.824	0.864

<sup>a</sup> The repeated measures has only two levels. The assumption of sphericity is always met when the repeated measures has only two levels

## Homogeneity of Variances Test (Levene's)

	<b>F</b>	<b>df1</b>	<b>df2</b>	<b>p</b>
PAL50_P1.LeftOP\$PhonOrth_PTdiff	0.5252	2	57	0.594
PAL50_P1.RightOP\$PhonOrth_PTdiff	1.0998	2	57	0.340
PAL50_P1.LeftOP\$Phon_PTdiff	1.0891	2	57	0.343
PAL50_P1.RightOP\$Phon_PTdiff	3.7815	2	57	0.029
PAL50_P1.LeftOP\$Orth_PTdiff	0.3411	2	57	0.712
PAL50_P1.RightOP\$Orth_PTdiff	2.4600	2	57	0.094
PAL50_P1.LeftOP\$Control_PTdiff	0.4482	2	57	0.641
PAL50_P1.RightOP\$Control_PTdiff	0.0622	2	57	0.940

## Post Hoc Tests

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison																															
Hemi sphe re	RRT diff	Gro up		Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	ptu key	Pho lm																		
Left	Pho nOr th	Eng lish	-	Left	Pho nOr th	Spa nis h- Eng lish	1.42 824	0. 93 0	3 0 0	1.5 362 8	0.1 26	0. 99 8	1. 00 0																		
						-	Left	Pho nOr th	Chi nes e- Eng lish	1.28 694	0. 93 0	3 0 0	1.3 843 0	0.1 67	1. 00 0	1. 00 0															
									-	Left	Pho n	Eng lish	0.07 669	0. 71 3	3 4 1	0.1 076 0	0.9 14	1. 00 0	1. 00 0												
												-	Left	Pho n	Spa nis h- Eng lish	0.77 954	0. 93 0	3 0 0	0.8 385 1	0.4 02	1. 00 0	1. 00 0									
															-	Left	Pho n	Chi nes e- Eng lish	1.56 598	0. 93 0	3 0 0	1.6 844 5	0.0 93	0. 99 2	1. 00 0						
																		-	Left	Ort h	Eng lish	0.42 542	0. 71 3	3 4 1	0.5 968 8	0.5 51	1. 00 0	1. 00 0			
																					-	Left	Ort h	Spa nis h- Eng lish	1.68 633	0. 93 0	3 0 0	1.8 139 0	0.0 71	0. 98 1	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tu</sub> key	P <sub>ho</sub> lm
-		Left	Orth	Chinese-English	0.63829	0.930	300	0.6865	0.493	1.000	1.000	
-		Left	Control	English	0.50914	0.713	341	0.7143	0.476	1.000	1.000	
-		Left	Control	Spanish-English	0.36804	0.930	300	0.3958	0.692	1.000	1.000	
-		Left	Control	Chinese-English	2.52174	0.930	300	2.7125	0.007	0.509	1.000	
-		Right	PhonOrth	English	0.38367	0.899	155	0.4269	0.670	1.000	1.000	
-		Right	PhonOrth	Spanish-English	1.56950	0.930	300	1.6882	0.092	0.992	1.000	
-		Right	PhonOrth	Chinese-English	2.55826	0.930	300	2.7518	0.006	0.478	1.000	
-		Right	Phon	English	0.15352	0.911	175	0.1685	0.866	1.000	1.000	

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Group	Hemi sphe re	RRT diff	Group	Mean Diff erence	SE	df	t	p	ptu key	Pho lim
-			Rig ht	Pho n	Spa nis h- Eng lish	2.49 020	0. 93 0	3 0 0	2.6 785 8	0.0 08	0. 53 6	1. 00 0
-			Rig ht	Pho n	Chi nes e- Eng lish	1.93 045	0. 93 0	3 0 0	2.0 764 9	0.0 39	0. 92 0	1. 00 0
-			Rig ht	Ort h	Eng lish	0.14 647	0. 91 1	1 7 5	0.1 608 4	0.8 72	1. 00 0	1. 00 0
-			Rig ht	Ort h	Spa nis h- Eng lish	3.22 964	0. 93 0	3 0 0	3.4 739 7	<. 00 1	0. 09 1	0. 16 2
-			Rig ht	Ort h	Chi nes e- Eng lish	1.50 144	0. 93 0	3 0 0	1.6 150 3	0.1 07	0. 99 6	1. 00 0
-			Rig ht	Con trol	Eng lish	1.31 841	0. 91 1	1 7 5	1.4 477 6	0.1 49	0. 99 9	1. 00 0
-			Rig ht	Con trol	Spa nis h- Eng lish	1.31 836	0. 93 0	3 0 0	1.4 181 0	0.1 57	0. 99 9	1. 00 0
-			Rig ht	Con trol	Chi nes e- Eng lish	1.83 978	0. 93 0	3 0 0	1.9 789 6	0.0 49	0. 95 0	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	p <sub>tu key</sub>	p <sub>ho lm</sub>
		Spa nis h- Eng lish	-	Left	Pho nOr th Eng lish	- 0.14 130	0. 93 0	3 0 0	- 0.1 519 9	0.8 79	1. 00 0	1. 00 0
			-	Left	Pho n Eng lish	- 1.35 155	0. 93 0	3 0 0	- 1.4 537 9	0.1 47	0. 99 9	1. 00 0
			-	Left	Pho n Spa nis h- Eng lish	- 0.64 870	0. 71 3	3 4 1	- 0.9 101 5	0.3 63	1. 00 0	1. 00 0
			-	Left	Pho n Chi nes e- Eng lish	0.13 774	0. 93 0	3 0 0	0.1 481 6	0.8 82	1. 00 0	1. 00 0
			-	Left	Ort h Eng lish	- 1.00 282	0. 93 0	3 0 0	- 1.0 786 8	0.2 82	1. 00 0	1. 00 0
			-	Left	Ort h Spa nis h- Eng lish	0.25 809	0. 71 3	3 4 1	0.3 621 1	0.7 17	1. 00 0	1. 00 0
			-	Left	Ort h Chi nes e- Eng lish	- 0.78 994	0. 93 0	3 0 0	- 0.8 497 0	0.3 96	1. 00 0	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	ptu key	Pho lm
		-	Left	Con trol	Eng lish	- 0.91 910	0. 93 0	3 0 0	- 0.9 886 3	0.3 24	1. 00 0	1. 00 0
		-	Left	Con trol	Spa nis h- Eng lish	- 1.06 020	0. 71 3	3 4 1	- 1.4 875 0	0.1 38	0. 99 9	1. 00 0
		-	Left	Con trol	Chi nes e- Eng lish	1.09 350	0. 93 0	3 0 0	1.1 762 3	0.2 40	1. 00 0	1. 00 0
		-	Rig ht	Pho nOr th	Eng lish	- 1.04 456	0. 93 0	3 0 0	- 1.1 235 9	0.2 62	1. 00 0	1. 00 0
		-	Rig ht	Pho nOr th	Spa nis h- Eng lish	0.14 126	0. 89 9	1 5 5	0.1 571 9	0.8 75	1. 00 0	1. 00 0
		-	Rig ht	Pho nOr th	Chi nes e- Eng lish	1.13 002	0. 93 0	3 0 0	1.2 155 1	0.2 25	1. 00 0	1. 00 0
		-	Rig ht	Pho n	Eng lish	- 1.27 472	0. 93 0	3 0 0	- 1.3 711 5	0.1 71	1. 00 0	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-	Right	Phon	Right	Phon	Spanish-English	1.06196	0.911	175	1.16614	0.245	1.000	1.000
-	Right	Phon	Right	Phon	Chinese-English	0.50221	0.930	300	0.54020	0.589	1.000	1.000
-	Right	Orth	Right	Orth	English	-1.28177	0.930	300	-1.37874	0.169	1.000	1.000
-	Right	Orth	Right	Orth	Spanish-English	1.80140	0.911	175	1.97813	0.049	0.948	1.000
-	Right	Orth	Right	Orth	Chinese-English	0.07320	0.930	300	0.07874	0.937	1.000	1.000
-	Right	Control	Right	Control	English	-0.10983	0.930	300	-0.11813	0.906	1.000	1.000
-	Right	Control	Right	Control	Spanish-English	-0.10987	0.911	175	-0.12065	0.904	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison													
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	ptu key	P <sub>ho</sub> lm	
			-	Right	Control	Chinese-English	0.41155	0.930	300	0.4268	0.658	1.000	1.000
		Chinese-English	-	Left	Phon	English	-1.21025	0.930	300	-1.30180	0.194	1.000	1.000
			-	Left	Phon	Spanish-English	-0.50740	0.930	300	-0.54579	0.586	1.000	1.000
			-	Left	Phon	Chinese-English	0.27904	0.713	341	0.39150	0.696	1.000	1.000
			-	Left	Orth	English	-0.86152	0.930	300	-0.92670	0.355	1.000	1.000
			-	Left	Orth	Spanish-English	0.39939	0.930	300	0.42961	0.668	1.000	1.000
			-	Left	Orth	Chinese-English	-0.64865	0.713	341	-0.91008	0.363	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	ptu key	Pho lm
		-	Left	Con trol	Eng lish	- 0.77 780	0. 93 0	3 0 0	- 0.8 366 4	0.4 03	1. 00 0	1. 00 0
		-	Left	Con trol	Spa nis h- Eng lish	- 0.91 890	0. 93 0	3 0 0	- 0.9 884 2	0.3 24	1. 00 0	1. 00 0
		-	Left	Con trol	Chi nes e- Eng lish	1.23 480	0. 71 3	3 4 1	1.7 324 7	0.0 84	0. 98 9	1. 00 0
		-	Rig ht	Pho nOr th	Eng lish	- 0.90 327	0. 93 0	3 0 0	- 0.9 716 0	0.3 32	1. 00 0	1. 00 0
		-	Rig ht	Pho nOr th	Spa nis h- Eng lish	0.28 256	0. 93 0	3 0 0	0.3 039 4	0.7 61	1. 00 0	1. 00 0
		-	Rig ht	Pho nOr th	Chi nes e- Eng lish	1.27 132	0. 89 9	1 5 5	1.4 147 1	0.1 59	0. 99 9	1. 00 0
		-	Rig ht	Pho n	Eng lish	- 1.13 342	0. 93 0	3 0 0	- 1.2 191 7	0.2 24	1. 00 0	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Dif fer en ce	SE	df	t	p	p <sub>tu key</sub>	p <sub>ho lm</sub>
-			Rig ht	Pho n	Spa nis h- Eng lish	1.20 326	0. 93 0	3 0 0	1.2 942 9	0.1 97	1. 00 0	1. 00 0
-			Rig ht	Pho n	Chi nes e- Eng lish	0.64 351	0. 91 1	1 7 5	0.7 066 4	0.4 81	1. 00 0	1. 00 0
-			Rig ht	Ort h	Eng lish	- 1.14 047	0. 93 0	3 0 0	- 1.2 267 5	0.2 21	1. 00 0	1. 00 0
-			Rig ht	Ort h	Spa nis h- Eng lish	1.94 270	0. 93 0	3 0 0	2.0 896 7	0.0 37	0. 91 5	1. 00 0
-			Rig ht	Ort h	Chi nes e- Eng lish	0.21 450	0. 91 1	1 7 5	0.2 355 4	0.8 14	1. 00 0	1. 00 0
-			Rig ht	Con trol	Eng lish	0.03 147	0. 93 0	3 0 0	0.0 338 5	0.9 73	1. 00 0	1. 00 0
-			Rig ht	Con trol	Spa nis h- Eng lish	0.03 142	0. 93 0	3 0 0	0.0 338 0	0.9 73	1. 00 0	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	plim
			Right	Control	Chinese-English	0.55284	0.911	175	0.6078	0.545	1.000	1.000
	Phon	English	Left	Phon	Spanish-English	0.70285	0.930	302	0.7562	0.450	1.000	1.000
			Left	Phon	Chinese-English	1.48929	0.930	305	1.6019	0.110	0.996	1.000
			Left	Orth	English	0.34872	0.713	347	0.4892	0.625	1.000	1.000
			Left	Orth	Spanish-English	1.60964	0.930	314	1.7314	0.084	0.989	1.000
			Left	Orth	Chinese-English	0.56160	0.930	309	0.6049	0.546	1.000	1.000
			Left	Control	English	0.43245	0.713	344	0.6067	0.544	1.000	1.000
			Left	Control	Spanish-English	0.29135	0.930	309	0.3139	0.754	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tu</sub> key	P <sub>ho</sub> lm
		-	Left	Con trol	Chi nes e- Eng lish	2.44 505	0. 93 0	3 0 0	2.6 300 2	0.0 09	0. 57 4	1. 00 0
		-	Rig ht	Pho nOr th	Eng lish	0.30 698	0. 91 1	1 7 5	0.3 371 0	0.7 36	1. 00 0	1. 00 0
		-	Rig ht	Pho nOr th	Spa nis h- Eng lish	1.49 281	0. 93 0	3 0 0	1.6 057 4	0.1 09	0. 99 6	1. 00 0
		-	Rig ht	Pho nOr th	Chi nes e- Eng lish	2.48 157	0. 93 0	3 0 0	2.6 693 0	0.0 08	0. 54 3	1. 00 0
		-	Rig ht	Pho n	Eng lish	0.07 682	0. 89 9	1 5 5	0.0 854 9	0.9 32	1. 00 0	1. 00 0
		-	Rig ht	Pho n	Spa nis h- Eng lish	2.41 351	0. 93 0	3 0 0	2.5 960 9	0.0 10	0. 60 1	1. 00 0
		-	Rig ht	Pho n	Chi nes e- Eng lish	1.85 376	0. 93 0	3 0 0	1.9 939 9	0.0 47	0. 94 6	1. 00 0
		-	Rig ht	Ort h	Eng lish	0.06 977	0. 91 1	1 7 5	0.0 766 2	0.9 39	1. 00 0	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Group	Hemi sphe re	RRT diff	Group	Mean Diff erence	SE	df	t	p	ptu key	Pho lm
		-	Rig ht	Orth	Spa nis h- Eng lish	3.15 295	0. 93 0	3 0 0	3.3 914 7	< . 00 1	0. 11 6	0. 21 7
		-	Rig ht	Orth	Chi nes e- Eng lish	1.42 475	0. 93 0	3 0 0	1.5 325 3	0.1 26	0. 99 8	1. 00 0
		-	Rig ht	Con trol	Eng lish	1.24 172	0. 91 1	1 7 5	1.3 635 4	0.1 74	1. 00 0	1. 00 0
		-	Rig ht	Con trol	Spa nis h- Eng lish	1.24 167	0. 93 0	3 0 0	1.3 356 0	0.1 83	1. 00 0	1. 00 0
		-	Rig ht	Con trol	Chi nes e- Eng lish	1.76 309	0. 93 0	3 0 0	1.8 964 7	0.0 59	0. 96 8	1. 00 0
		-	Left	Pho n	Chi nes e- Eng lish	0.78 644	0. 93 0	3 0 0	0.8 459 4	0.3 98	1. 00 0	1. 00 0
		-	Left	Orth	Eng lish	- 0.35 412	0. 93 0	3 0 0	- 0.3 809 1	0.7 04	1. 00 0	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Group	Hemi sphe re	RRT diff	Group	Mean Diff erence	SE	df	t	p	ptu key	Pho lm
-	Left	Orth	Spanish- English	0.90679	0.713	341	1.2727	0.204	1.2727	0.204	1.000	1.000
-	Left	Orth	Chinese- English	-0.14124	0.0930	300	-0.15193	0.079	-0.15193	0.879	1.000	1.000
-	Left	Control	English	-0.27040	0.0930	300	-0.29085	0.071	-0.29085	0.771	1.000	1.000
-	Left	Control	Spanish- English	-0.41150	0.0713	341	-0.57735	0.064	-0.57735	0.564	1.000	1.000
-	Left	Control	Chinese- English	1.74220	0.0930	300	1.87400	0.062	1.87400	0.062	0.997	1.000
-	Right	PhonOrth	English	-0.39586	0.0930	300	-0.42581	0.071	-0.42581	0.671	1.000	1.000
-	Right	PhonOrth	Spanish- English	0.78996	0.0911	175	0.86746	0.087	0.86746	0.387	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	plim
-			Right	PhonOrth	Chinese-English	1.77872	0.930	300	1.91328	0.057	0.965	1.000
-			Right	Phon	English	0.62602	0.930	300	-0.67338	0.501	1.000	1.000
-			Right	Phon	Spanish-English	1.71066	0.899	155	1.90360	0.059	0.965	1.000
-			Right	Phon	Chinese-English	1.15091	0.930	300	1.23798	0.217	1.000	1.000
-			Right	Orth	English	0.63307	0.930	300	0.68096	0.496	1.000	1.000
-			Right	Orth	Spanish-English	2.45010	0.911	175	2.69047	0.008	0.0528	1.000
-			Right	Orth	Chinese-English	0.72190	0.930	300	0.77651	0.438	1.000	1.000
-			Right	Control	English	0.53888	0.930	300	0.57964	0.563	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison													
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff erence	SE	df	t	p	P <sub>tu</sub> key	P <sub>ho</sub> lm	
		-	Rig ht	Con trol	Spa nis h- Eng lish	0.53 883	0. 91 1	1 7 5	0.5 916 9	0.5 55	1. 00 0	1. 00 0	
		-	Rig ht	Con trol	Chi nes e- Eng lish	1.06 025	0. 93 0	3 0 0	1.1 404 5	0.2 55	1. 00 0	1. 00 0	
		Chi nes e- Eng lish	-	Left	Ort h	Eng lish	- 1.14 056	0. 93 0	3 0 0	- 1.2 268 5	0.2 21	1. 00 0	1. 00 0
		-	Left	Ort h	Spa nis h- Eng lish	0.12 035	0. 93 0	3 0 0	0.1 294 6	0.8 97	1. 00 0	1. 00 0	
		-	Left	Ort h	Chi nes e- Eng lish	- 0.92 769	0. 71 3	3 4 1	- 1.3 015 8	0.1 94	1. 00 0	1. 00 0	
		-	Left	Con trol	Eng lish	- 1.05 684	0. 93 0	3 0 0	- 1.1 367 9	0.2 57	1. 00 0	1. 00 0	
		-	Left	Con trol	Spa nis h- Eng lish	- 1.19 794	0. 93 0	3 0 0	- 1.2 885 7	0.1 99	1. 00 0	1. 00 0	

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	p <sub>tu key</sub>	p <sub>ho lm</sub>
		-	Left	Con trol	Chi nes e- Eng lish	0.95 576	0. 71 3	3 4 1	1.3 409 7	0.1 81	1. 00 0	1. 00 0
		-	Rig ht	Pho nOr th	Eng lish	- 1.18 231	0. 93 0	3 0 0	- 1.2 717 5	0.2 04	1. 00 0	1. 00 0
		-	Rig ht	Pho nOr th	Spa nis h- Eng lish	0.00 352	0. 93 0	3 0 0	0.0 037 9	0.9 97	1. 00 0	1. 00 0
		-	Rig ht	Pho nOr th	Chi nes e- Eng lish	0.99 228	0. 91 1	1 7 5	1.0 896 3	0.2 77	1. 00 0	1. 00 0
		-	Rig ht	Pho n	Eng lish	- 1.41 246	0. 93 0	3 0 0	- 1.5 193 2	0.1 30	0. 99 8	1. 00 0
		-	Rig ht	Pho n	Spa nis h- Eng lish	0.92 422	0. 93 0	3 0 0	0.9 941 4	0.3 21	1. 00 0	1. 00 0
		-	Rig ht	Pho n	Chi nes e- Eng lish	0.36 447	0. 89 9	1 5 5	0.4 055 8	0.6 86	1. 00 0	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison													
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	ptu key	Pho lm	
		-	Rig ht	Ort h	Eng lish	- 1.41 951	0. 93 0	3 0 0	- 1.5 269 0	0.1 28	0. 99 8	1. 00 0	
		-	Rig ht	Ort h	Spa nis h- Eng lish	1.66 366	0. 93 0	3 0 0	1.7 895 2	0.0 75	0. 98 3	1. 00 0	
		-	Rig ht	Ort h	Chi nes e- Eng lish	- 0.06 454	0. 91 1	1 7 5	- 0.0 708 7	0.9 44	1. 00 0	1. 00 0	
		-	Rig ht	Con trol	Eng lish	- 0.24 757	0. 93 0	3 0 0	- 0.2 662 9	0.7 90	1. 00 0	1. 00 0	
		-	Rig ht	Con trol	Spa nis h- Eng lish	- 0.24 762	0. 93 0	3 0 0	- 0.2 663 5	0.7 90	1. 00 0	1. 00 0	
		-	Rig ht	Con trol	Chi nes e- Eng lish	0.27 380	0. 91 1	1 7 5	0.3 006 7	0.7 64	1. 00 0	1. 00 0	
	Ort h	Eng lish	-	Left	Ort h	Spa nis h- Eng lish	1.26 091	0. 93 0	3 0 0	1.3 563 0	0.1 76	1. 00 0	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	p <sub>tu key</sub>	p <sub>ho lm</sub>
		-	Left	Orth	Chinese-English	0.21288	0.930	300	0.2289	0.819	1.000	1.000
		-	Left	Control	English	0.08372	0.713	341	0.1174	0.907	1.000	1.000
		-	Left	Control	Spanish-English	-0.05738	0.930	300	-0.06172	0.951	1.000	1.000
		-	Left	Control	Chinese-English	2.09632	0.930	300	2.25491	0.025	0.838	1.000
		-	Right	PhonOrth	English	-0.04174	0.911	75	-0.04584	0.963	1.000	1.000
		-	Right	PhonOrth	Spanish-English	1.14408	0.930	300	1.23063	0.219	1.000	1.000
		-	Right	PhonOrth	Chinese-English	2.13284	0.930	300	2.29419	0.022	0.816	1.000
		-	Right	Phon	English	-0.27190	0.911	75	-0.29858	0.766	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Group	Hemi sphe re	RRT diff	Group	Mean Diff erence	SE	df	t	p	ptu key	Pho lm
-			Right	Phon	Spanish-English	2.06478	0.930	300	2.2098	0.027	0.857	1.000
-			Right	Phon	Chinese-English	1.50503	0.930	300	1.6189	0.107	0.995	1.000
-			Right	Orth	English	0.27895	0.899	1045	0.31041	0.757	1.000	1.000
-			Right	Orth	Spanish-English	2.80423	0.930	300	3.0166	0.003	0.291	0.075
-			Right	Orth	Chinese-English	1.07602	0.930	300	1.15742	0.248	1.000	1.000
-			Right	Control	English	0.89300	0.911	705	0.98060	0.328	1.000	1.000
-			Right	Control	Spanish-English	0.89295	0.930	300	0.96050	0.338	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	ptu key	Pho Im
		-	Rig ht	Con trol	Chi nes e- Eng lish	1.41 437	0. 93	3 0	1.5 213 6	0.1 29	0. 99	1. 00
		-	Spa nis h- Eng lish	Left	Ort h	Chi nes e- Eng lish	- 1.04 804	0. 93 0	3 0 0	- 1.1 273 2	0.2 61	1. 00 0
		-		Left	Con trol	Eng lish	- 1.17 719	0. 93 0	3 0 0	- 1.2 662 5	0.2 06	1. 00 0
		-		Left	Con trol	Spa nis h- Eng lish	- 1.31 829	0. 71 3	3 4 1	- 1.8 496 2	0.0 65	0. 97 6
		-		Left	Con trol	Chi nes e- Eng lish	0.83 541	0. 93 0	3 0 0	0.8 986 1	0.3 70	1. 00 0
		-	Rig ht	Pho nOr th	Eng lish	- 1.30 266	0. 93 0	3 0 0	- 1.4 012 0	0.1 62	0. 99	1. 00
		-	Rig ht	Pho nOr th	Spa nis h- Eng lish	- 0.11 683	0. 91 1	1 7 5	- 0.1 282 9	0.8 98	1. 00 0	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	p <sub>tu key</sub>	p <sub>ho lm</sub>
		-	Rig ht	Pho nOr th	Chi nes e- Eng lish	0.87 193	0. 93 0	3 0 0	0.9 378 9	0.3 49	1. 00 0	1. 00 0
		-	Rig ht	Pho n	Eng lish	- 1.53 281	0. 93 0	3 0 0	- 1.6 487 7	0.1 00	0. 99 4	1. 00 0
		-	Rig ht	Pho n	Spa nis h- Eng lish	0.80 387	0. 91 1	1 7 5	0.8 827 3	0.3 79	1. 00 0	1. 00 0
		-	Rig ht	Pho n	Chi nes e- Eng lish	0.24 412	0. 93 0	3 0 0	0.2 625 8	0.7 93	1. 00 0	1. 00 0
		-	Rig ht	Ort h	Eng lish	- 1.53 986	0. 93 0	3 0 0	- 1.6 563 6	0.0 99	0. 99 4	1. 00 0
		-	Rig ht	Ort h	Spa nis h- Eng lish	1.54 331	0. 89 9	1 5 5	1.7 173 8	0.0 88	0. 98 9	1. 00 0
		-	Rig ht	Ort h	Chi nes e- Eng lish	- 0.18 489	0. 93 0	3 0 0	- 0.1 988 8	0.8 42	1. 00 0	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison													
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	ptu key	Pho lm	
			-	Rig ht	Con trol	Eng lish	- 0.36 792	0. 93 0	3 0	- 0.3 957 5	0.6 93	1. 00 0	1. 00 0
			-	Rig ht	Con trol	Spa nis h- Eng lish	- 0.36 797	0. 91 1	1 7 5	- 0.4 040 7	0.6 87	1. 00 0	1. 00 0
			-	Rig ht	Con trol	Chi nes e- Eng lish	0.15 345	0. 93 0	3 0 0	0.1 650 6	0.8 69	1. 00 0	1. 00 0
		Chi nes e- Eng lish	-	Left	Con trol	Eng lish	- 0.12 915	0. 93 0	3 0 0	- 0.1 389 3	0.8 90	1. 00 0	1. 00 0
			-	Left	Con trol	Spa nis h- Eng lish	- 0.27 026	0. 93 0	3 0 0	- 0.2 907 0	0.7 71	1. 00 0	1. 00 0
			-	Left	Con trol	Chi nes e- Eng lish	1.88 345	0. 71 3	3 4 1	2.6 425 5	0.0 09	0. 56 4	1. 00 0
			-	Rig ht	Pho nOr th	Eng lish	- 0.25 462	0. 93 0	3 0 0	- 0.2 738 8	0.7 84	1. 00 0	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	ptu key	P <sub>ho</sub> lm
		-	Rig ht	Pho nOr th	Spa nis h- Eng lish	0.93 121	0. 93 0	3 0 0	1.0 016 5	0.3 17	1. 00 0	1. 00 0
		-	Rig ht	Pho nOr th	Chi nes e- Eng lish	1.91 997	0. 91 1	1 7 5	2.1 083 3	0.0 36	0. 90 6	1. 00 0
		-	Rig ht	Pho n	Eng lish	- 0.48 478	0. 93 0	3 0 0	- 0.5 214 5	0.6 02	1. 00 0	1. 00 0
		-	Rig ht	Pho n	Spa nis h- Eng lish	1.85 191	0. 93 0	3 0 0	1.9 920 0	0.0 47	0. 94 6	1. 00 0
		-	Rig ht	Pho n	Chi nes e- Eng lish	1.29 215	0. 91 1	1 7 5	1.4 189 2	0.1 58	0. 99 9	1. 00 0
		-	Rig ht	Ort h	Eng lish	- 0.49 183	0. 93 0	3 0 0	- 0.5 290 3	0.5 97	1. 00 0	1. 00 0
		-	Rig ht	Ort h	Spa nis h- Eng lish	2.59 135	0. 93 0	3 0 0	2.7 873 9	0.0 06	0. 45 1	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison													
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	ptu key	Pho lm	
			-	Rig ht	Ort h	Chi nes e- Eng lish	0.86 315	0. 89 9	1 5 5	0.9 605 0	0.3 38	1. 00 0	1. 00 0
			-	Rig ht	Con trol	Eng lish	0.68 012	0. 93 0	3 0 0	0.7 315 7	0.4 65	1. 00 0	1. 00 0
			-	Rig ht	Con trol	Spa nis h- Eng lish	0.68 007	0. 93 0	3 0 0	0.7 315 2	0.4 65	1. 00 0	1. 00 0
			-	Rig ht	Con trol	Chi nes e- Eng lish	1.20 149	0. 91 1	1 7 5	1.3 193 6	0.1 89	1. 00 0	1. 00 0
	Con trol	Eng lish	-	Left	Con trol	Spa nis h- Eng lish	- 0.14 110	0. 93 0	3 0 0	- 0.1 517 8	0.8 79	1. 00 0	1. 00 0
			-	Left	Con trol	Chi nes e- Eng lish	2.01 260	0. 93 0	3 0 0	2.1 648 5	0.0 31	0. 88 4	1. 00 0
			-	Rig ht	Pho nOr th	Eng lish	- 0.12 547	0. 91 1	1 7 5	- 0.1 377 7	0.8 91	1. 00 0	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	ptu key	Pho lm
		-	Rig ht	Pho nOr th	Spa nis h- Eng lish	1.06 036	0. 93 0	3 0 0	1.1 405 8	0.2 55	1. 00 0	1. 00 0
		-	Rig ht	Pho nOr th	Chi nes e- Eng lish	2.04 912	0. 93 0	3 0 0	2.2 041 4	0.0 28	0. 86 5	1. 00 0
		-	Rig ht	Pho n	Eng lish	- 0.35 562	0. 91 1	1 7 5	- 0.3 905 1	0.6 97	1. 00 0	1. 00 0
		-	Rig ht	Pho n	Spa nis h- Eng lish	1.98 106	0. 93 0	3 0 0	2.1 309 3	0.0 34	0. 89 9	1. 00 0
		-	Rig ht	Pho n	Chi nes e- Eng lish	1.42 131	0. 93 0	3 0 0	1.5 288 3	0.1 27	0. 99 8	1. 00 0
		-	Rig ht	Ort h	Eng lish	- 0.36 267	0. 91 1	1 7 5	- 0.3 982 5	0.6 91	1. 00 0	1. 00 0
		-	Rig ht	Ort h	Spa nis h- Eng lish	2.72 050	0. 93 0	3 0 0	2.9 263 1	0.0 04	0. 35 0	0. 99 3

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison													
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tu</sub> key	P <sub>ho</sub> lm	
			-	Rig ht	Ort h	Chi nes e- Eng lish	0.99 230	0. 93	3 0	1.0 673	0.2 87	1. 00	1. 00
			-	Rig ht	Con trol	Eng lish	0.80 927	0. 89	1 5	0.9 005	0.3 69	1. 00	1. 00
			-	Rig ht	Con trol	Spa nis h- Eng lish	0.80 922	0. 93	3 0	0.8 704	0.3 85	1. 00	1. 00
			-	Rig ht	Con trol	Chi nes e- Eng lish	1.33 064	0. 93	3 0	1.4 313	0.1 53	0. 99	1. 00
		Spa nis h- Eng lish	-	Left	Con trol	Chi nes e- Eng lish	2.15 370	0. 93	3 0	2.3 166	0.0 21	0. 80	1. 00
			-	Rig ht	Pho nOr th	Eng lish	0.01 564	0. 93	3 0	0.0 168	0.9 87	1. 00	1. 00
			-	Rig ht	Pho nOr th	Spa nis h- Eng lish	1.20 146	0. 91	1 7	1.3 193	0.1 89	1. 00	1. 00
			-	Rig ht	Pho nOr th	Chi nes e- Eng lish	2.19 022	0. 93	3 0	2.3 559	0.0 19	0. 77	1. 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tu</sub> key	P <sub>ho</sub> lm
-			Rig ht	Pho n	Eng lish	- 0.21 452	0. 93 0	3 0 0	- 0.2 307 5	0.8 18	1. 00 0	1. 00 0
-			Rig ht	Pho n	Spa nis h- Eng lish	2.12 216	0. 91 1	1 7 5	2.3 303 5	0.0 21	0. 79 1	1. 00 0
-			Rig ht	Pho n	Chi nes e- Eng lish	1.56 241	0. 93 0	3 0 0	1.6 806 1	0.0 94	0. 99 2	1. 00 0
-			Rig ht	Ort h	Eng lish	- 0.22 157	0. 93 0	3 0 0	- 0.2 383 3	0.8 12	1. 00 0	1. 00 0
-			Rig ht	Ort h	Spa nis h- Eng lish	2.86 160	0. 91 1	1 7 5	3.1 423 4	0.0 02	0. 22 5	0. 53 6
-			Rig ht	Ort h	Chi nes e- Eng lish	1.13 340	0. 93 0	3 0 0	1.2 191 4	0.2 24	1. 00 0	1. 00 0
-			Rig ht	Con trol	Eng lish	0.95 037	0. 93 0	3 0 0	1.0 222 7	0.3 07	1. 00 0	1. 00 0
-			Rig ht	Con trol	Spa nis h- Eng lish	0.95 033	0. 89 9	1 5 5	1.0 575 1	0.2 92	1. 00 0	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison													
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tu</sub> key	P <sub>ho</sub> lm	
		-	Rig ht	Con trol	Chi nes e- Eng lish	1.47 175	0. 93	3 0	1.5 830	0.1 14	0. 99	1. 00	
		Chi nes e- Eng lish	-	Rig ht	Pho nOr th	Eng lish	- 2.13 807	0. 93	3 0	- 2.2 998 1	0.0 22	0. 81 2	1. 00 0
		-	Rig ht	Pho nOr th	Spa nis h- Eng lish	- 0.95 224	0. 93	3 0	- 1.0 242 8	0.3 07	1. 00	1. 00	
		-	Rig ht	Pho nOr th	Chi nes e- Eng lish	0.03 652	0. 91	1 7	0.0 401	0.9 68	1. 00	1. 00	
		-	Rig ht	Pho n	Eng lish	- 2.36 822	0. 93	3 0	- 2.5 473 8	0.0 11	0. 63	1. 00	
		-	Rig ht	Pho n	Spa nis h- Eng lish	- 0.03 154	0. 93	3 0	- 0.0 339 3	0.9 73	1. 00	1. 00	
		-	Rig ht	Pho n	Chi nes e- Eng lish	- 0.59 129	0. 91	1 7	- 0.6 493 0	0.5 17	1. 00	1. 00	

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison													
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	ptu key	Pho lm	
		-	Rig ht	Ort h	Eng lish	- 2.37 527	0. 93 0	3 0 0	- 2.5 549 6	0.0 11	0. 63 3	1. 00 0	
		-	Rig ht	Ort h	Spa nis h- Eng lish	0.70 790	0. 93 0	3 0 0	0.7 614 6	0.4 47	1. 00 0	1. 00 0	
		-	Rig ht	Ort h	Chi nes e- Eng lish	- 1.02 030	0. 91 1	1 7 5	- 1.1 203 9	0.2 64	1. 00 0	1. 00 0	
		-	Rig ht	Con trol	Eng lish	- 1.20 333	0. 93 0	3 0 0	- 1.2 943 6	0.1 97	1. 00 0	1. 00 0	
		-	Rig ht	Con trol	Spa nis h- Eng lish	- 1.20 338	0. 93 0	3 0 0	- 1.2 944 1	0.1 97	1. 00 0	1. 00 0	
		-	Rig ht	Con trol	Chi nes e- Eng lish	- 0.68 196	0. 89 9	1 5 5	- 0.7 588 7	0.4 49	1. 00 0	1. 00 0	
Rig ht	Pho nOr th	Eng lish	-	Rig ht	Pho nOr th	Spa nis h- Eng lish	1.18 583	0. 93 0	3 0 0	1.2 755 3	0.2 03	1. 00 0	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	plim
-			Right	PhonOrth	Chinese-English	2.17459	0.930	300	2.33910	0.020	0.788	1.000
-			Right	Phon	English	0.23016	0.713	341	-0.32292	0.747	1.000	1.000
-			Right	Phon	Spanish-English	2.10653	0.930	300	2.26588	0.024	0.832	1.000
-			Right	Phon	Chinese-English	1.54677	0.930	300	1.66379	0.097	0.993	1.000
-			Right	Orth	English	0.23721	0.713	341	0.33281	0.739	1.000	1.000
-			Right	Orth	Spanish-English	2.84597	0.930	300	3.06127	0.002	0.264	0.651
-			Right	Orth	Chinese-English	1.11777	0.930	300	1.20233	0.230	1.000	1.000
-			Right	Control	English	0.93474	0.713	341	1.31148	0.191	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	ptu key	P <sub>ho</sub> lm
					Spa nis h- Eng lish	0.93 469	0. 93 0	3 0 0	1.0 054 0	0.3 16	1. 00 0	1. 00 0
					Chi nes e- Eng lish	1.45 611	0. 93 0	3 0 0	1.5 662 6	0.1 18	0. 99 7	1. 00 0
		Spa nis h- Eng lish			Chi nes e- Eng lish	0.98 876	0. 93 0	3 0 0	1.0 635 6	0.2 88	1. 00 0	1. 00 0
					Eng lish	1.41 598	0. 93 0	3 0 0	1.5 231 0	0.1 29	0. 99 8	1. 00 0
					Spa nis h- Eng lish	0.92 070	0. 71 3	3 4 1	1.2 917 8	0.1 97	1. 00 0	1. 00 0
					Chi nes e- Eng lish	0.36 095	0. 93 0	3 0 0	0.3 882 5	0.6 98	1. 00 0	1. 00 0
					Eng lish	1.42 303	0. 93 0	3 0 0	1.5 306 9	0.1 27	0. 99 8	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison													
Hemi sphe re	RRT diff	Group	Hemi sphe re	RRT diff	Group	Mean Diff erence	SE	df	t	p	ptu key	Pho lm	
			-	Rig ht	Orth	Spa nis h- Eng lish	1.66 014	0. 71 3	3 4 1	2.3 292 4	0.0 20	0. 79 5	1. 00 0
			-	Rig ht	Orth	Chi nes e- Eng lish	- 0.06 806	0. 93 0	3 0 0	- 0.0 732 1	0.9 42	1. 00 0	1. 00 0
			-	Rig ht	Con trol	Eng lish	- 0.25 109	0. 93 0	3 0 0	- 0.2 700 8	0.7 87	1. 00 0	1. 00 0
			-	Rig ht	Con trol	Spa nis h- Eng lish	- 0.25 114	0. 71 3	3 4 1	- 0.3 523 5	0.7 25	1. 00 0	1. 00 0
			-	Rig ht	Con trol	Chi nes e- Eng lish	0.27 028	0. 93 0	3 0 0	0.2 907 3	0.7 71	1. 00 0	1. 00 0
		Chi nes e- Eng lish	-	Rig ht	Pho n	Eng lish	- 2.40 475	0. 93 0	3 0 0	- 2.5 866 6	0.0 10	0. 60 8	1. 00 0
			-	Rig ht	Pho n	Spa nis h- Eng lish	- 0.06 806	0. 93 0	3 0 0	- 0.0 732 1	0.9 42	1. 00 0	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	p <sub>tu key</sub>	p <sub>ho lm</sub>
					Chi nes e- Eng lish	- 0.62 781	0. 71 3	3 4 1	- 0.8 808 5	0.3 79	1. 00 0	1. 00 0
					Eng lish	- 2.41 180	0. 93 0	3 0 0	- 2.5 942 5	0.0 10	0. 60 2	1. 00 0
					Spa nis h- Eng lish	0.67 138	0. 93 0	3 0 0	0.7 221 7	0.4 71	1. 00 0	1. 00 0
					Chi nes e- Eng lish	- 1.05 682	0. 71 3	3 4 1	- 1.4 827 6	0.1 39	0. 99 9	1. 00 0
					Eng lish	- 1.23 985	0. 93 0	3 0 0	- 1.3 336 4	0.1 83	1. 00 0	1. 00 0
					Spa nis h- Eng lish	- 1.23 990	0. 93 0	3 0 0	- 1.3 337 0	0.1 83	1. 00 0	1. 00 0
					Chi nes e- Eng lish	- 0.71 848	0. 71 3	3 4 1	- 1.0 080 5	0.3 14	1. 00 0	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison													
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	ptu key	P <sub>ho</sub> lm	
	Pho n	Eng lish	-	Rig ht	Pho n	Spa nis h- Eng lish	2.33 668	0. 93 0	3 0 0	2.5 134 5	0.0 12	0. 66 5	1. 00 0
			-	Rig ht	Pho n	Chi nes e- Eng lish	1.77 693	0. 93 0	3 0 0	1.9 113 6	0.0 57	0. 96 5	1. 00 0
			-	Rig ht	Ort h	Eng lish	- 0.00 705	0. 71 3	3 4 1	- 0.0 098 9	0.9 92	1. 00 0	1. 00 0
			-	Rig ht	Ort h	Spa nis h- Eng lish	3.07 613	0. 93 0	3 0 0	3.3 088 4	0.0 01	0. 14 5	0. 28 7
			-	Rig ht	Ort h	Chi nes e- Eng lish	1.34 792	0. 93 0	3 0 0	1.4 498 9	0.1 48	0. 99 9	1. 00 0
			-	Rig ht	Con trol	Eng lish	1.16 490	0. 71 3	3 4 1	1.6 343 9	0.1 03	0. 99 5	1. 00 0
			-	Rig ht	Con trol	Spa nis h- Eng lish	1.16 485	0. 93 0	3 0 0	1.2 529 7	0.2 11	1. 00 0	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	p <sub>tu key</sub>	p <sub>ho lm</sub>
			-	Rig ht	Con trol	Chi nes e- Eng lish 1.68 627	0. 93 0	3 0 0	1.8 138 3	0.0 71	0. 98 1	1. 00 0
		Spa nis h- Eng lish	-	Rig ht	Pho n	Chi nes e- Eng lish - 0.55 975	0. 93 0	3 0 0	- 0.6 021 0	0.5 48	1. 00 0	1. 00 0
			-	Rig ht	Ort h	Eng lish - 2.34 373	0. 93 0	3 0 0	- 2.5 210 4	0.0 12	0. 65 9	1. 00 0
			-	Rig ht	Ort h	Spa nis h- Eng lish 0.73 944	0. 71 3	3 4 1	1.0 374 7	0.3 00	1. 00 0	1. 00 0
			-	Rig ht	Ort h	Chi nes e- Eng lish - 0.98 876	0. 93 0	3 0 0	- 1.0 635 6	0.2 88	1. 00 0	1. 00 0
			-	Rig ht	Con trol	Eng lish - 1.17 179	0. 93 0	3 0 0	- 1.2 604 3	0.2 08	1. 00 0	1. 00 0
			-	Rig ht	Con trol	Spa nis h- Eng lish - 1.17 184	0. 71 3	3 4 1	- 1.6 441 3	0.1 01	0. 99 4	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
					Chinese-English	-0.65042	0.9300	300	-0.69962	0.485	1.000	1.000
		Chinese-English			English	-1.78398	0.9300	300	-1.91894	0.056	0.964	1.000
					Spanish-English	1.29919	0.9300	300	1.39748	0.163	0.999	1.000
					Chinese-English	-0.42901	0.7131	341	-0.60191	0.548	1.000	1.000
					English	-0.61203	0.9300	300	-0.65834	0.511	1.000	1.000
					Spanish-English	-0.61208	0.9300	300	-0.65839	0.511	1.000	1.000
					Chinese-English	-0.09066	0.7131	341	-0.12721	0.899	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tu key</sub>	P <sub>ho lm</sub>
	Ort h	Eng lish	-	Rig ht	Ort h	Spa nis h- Eng lish 3.08 318	0. 93 0	3 0 0	3.3 164 2	0.0 01	0. 14 2	0. 28 1
			-	Rig ht	Ort h	Chi nes e- Eng lish 1.35 497	0. 93 0	3 0 0	1.4 574 8	0.1 46	0. 99 9	1. 00 0
			-	Rig ht	Con trol	Eng lish 1.17 195	0. 71 3	3 4 1	1.6 442 9	0.1 01	0. 99 4	1. 00 0
			-	Rig ht	Con trol	Spa nis h- Eng lish 1.17 190	0. 93 0	3 0 0	1.2 605 5	0.2 08	1. 00 0	1. 00 0
			-	Rig ht	Con trol	Chi nes e- Eng lish 1.69 332	0. 93 0	3 0 0	1.8 214 2	0.0 70	0. 98 0	1. 00 0
		Spa nis h- Eng lish	-	Rig ht	Ort h	Chi nes e- Eng lish - 1.72 820	0. 93 0	3 0 0	- 1.8 589 4	0.0 64	0. 97 4	1. 00 0
			-	Rig ht	Con trol	Eng lish - 1.91 123	0. 93 0	3 0 0	- 2.0 558 1	0.0 41	0. 92 7	1. 00 0

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptukey	pholm
					Spanish-English	-1.9128	0.713	341	-2.68160	0.008	0.533	1.000
					Chinese-English	-1.38986	0.930	300	-1.49500	0.136	0.998	1.000
		Chinese-English			English	-0.18303	0.930	300	-0.19687	0.844	1.000	1.000
					Spanish-English	-0.18308	0.930	300	-0.19693	0.844	1.000	1.000
					Chinese-English	0.33834	0.713	341	0.47471	0.635	1.000	1.000
	Control	English			Spanish-English	-4.91e-5	0.930	300	-5.28e-5	1.000	1.000	1.000
					Chinese-English	0.52137	0.930	300	0.56081	0.575	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub>	P <sub>hol</sub>
		Spanish-English	Right	Control	Chinese-English	0.52142	0.930	300	0.56087	0.575	1.000	1.000

Post Hoc Comparisons - RRT diff \* Group

Comparison											
RRT diff	Group	RRT diff	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub>	P <sub>hol</sub>	
Phon Orth	English	-	Phon Orth	Spanish-English	1.3070	0.679	148	1.926	0.056	0.741	1.000
		-	Phon Orth	Chinese-English	1.7308	0.679	148	2.550	0.012	0.318	0.683
		-	Phon	English	0.0767	0.515	171	0.149	0.882	1.000	1.000
		-	Phon	Spanish-English	1.4430	0.679	148	2.126	0.035	0.605	1.000
		-	Phon	Chinese-English	1.5564	0.679	148	2.293	0.023	0.486	1.000

Post Hoc Comparisons - RRT diff \* Group

Comparison										
RRT diff	Group	RRT diff	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> y	P <sub>hol</sub> m
	-	Orth	English	0.0941	0.515	171	0.183	0.855	1.000	1.000
	-	Orth	Spanish-English	2.2662	0.679	148	3.339	0.001	0.047	0.069
	-	Orth	Chinese-English	0.8780	0.679	148	1.294	0.198	0.979	1.000
	-	Control	English	0.7219	0.515	171	1.403	0.162	0.962	1.000
	-	Control	Spanish-English	0.6514	0.679	148	0.960	0.339	0.998	1.000
	-	Control	Chinese-English	1.9889	0.679	148	2.931	0.004	0.141	0.239
	-	Phon Orth	Chinese-English	0.4237	0.679	148	0.624	0.533	1.000	1.000
	-	Phon	English	-1.3838	0.679	148	-2.039	0.043	0.666	1.000
	-	Phon	Spanish-English	0.1360	0.515	171	0.264	0.792	1.000	1.000
	-	Phon	Chinese-English	0.2493	0.679	148	0.367	0.714	1.000	1.000

Post Hoc Comparisons - RRT diff \* Group

Comparison										
RRT diff	Group	RRT diff	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> y	P <sub>hol</sub> m
		- Orth	Englis h	- 1.2129	0.679	148	- 1.787	0.076	0.822	1.000
		- Orth	Spani sh-Englis h	0.9591	0.515	171	1.864	0.064	0.780	1.000
		- Orth	Chine se-Englis h	- 0.4290	0.679	148	- 0.632	0.528	1.000	1.000
		- Contr ol	Englis h	- 0.5851	0.679	148	- 0.862	0.390	0.999	1.000
		- Contr ol	Spani sh-Englis h	- 0.6557	0.515	171	- 1.274	0.204	0.981	1.000
		- Contr ol	Chine se-Englis h	0.6819	0.679	148	1.005	0.317	0.997	1.000
	Chine se-Englis h	- Phon	Englis h	- 1.8075	0.679	148	- 2.664	0.009	0.255	0.507
		- Phon	Spani sh-Englis h	- 0.2877	0.679	148	- 0.424	0.672	1.000	1.000
		- Phon	Chine se-Englis h	- 0.1744	0.515	171	- 0.339	0.735	1.000	1.000

Post Hoc Comparisons - RRT diff \* Group

Comparison										
RRT diff	Group	RRT diff	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> y	P <sub>hol</sub> m
		- Orth	Englis h	- 1.6367	0.679	148	- 2.412	0.017	0.405	0.975
		- Orth	Spani sh-Englis h	0.5354	0.679	148	0.789	0.431	1.000	1.000
		- Orth	Chine se-Englis h	- 0.8527	0.515	171	- 1.657	0.099	0.885	1.000
		- Contr ol	Englis h	- 1.0088	0.679	148	- 1.487	0.139	0.942	1.000
		- Contr ol	Spani sh-Englis h	- 1.0794	0.679	148	- 1.591	0.114	0.910	1.000
		- Contr ol	Chine se-Englis h	0.2582	0.515	171	0.502	0.617	1.000	1.000
Phon	Englis h	- Phon	Spani sh-Englis h	1.5198	0.679	148	2.240	0.027	0.524	1.000
		- Phon	Chine se-Englis h	1.6331	0.679	148	2.407	0.017	0.408	0.975
		- Orth	Englis h	0.1708	0.515	171	0.332	0.740	1.000	1.000
		- Orth	Spani sh-Englis h	2.3429	0.679	148	3.452	<.001	0.034	0.048

Post Hoc Comparisons - RRT diff \* Group

Comparison										
RRT diff	Group	RRT diff	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> y	P <sub>hol</sub> m
		- Orth	Chinese-English	0.9548	0.679	148	1.407	0.162	0.961	1.000
		- Control	English	0.7987	0.515	171	1.552	0.123	0.923	1.000
		- Control	Spanish-English	0.7281	0.679	148	1.073	0.285	0.995	1.000
		- Control	Chinese-English	2.0657	0.679	148	3.044	0.003	0.107	0.171
	Spanish-English	- Phon	Chinese-English	0.1133	0.679	148	0.167	0.868	1.000	1.000
		- Orth	English	-1.3489	0.679	148	-1.988	0.049	0.701	1.000
		- Orth	Spanish-English	0.8231	0.515	171	1.599	0.112	0.907	1.000
		- Orth	Chinese-English	-0.5650	0.679	148	-0.833	0.406	1.000	1.000
		- Control	English	-0.7211	0.679	148	-1.063	0.290	0.996	1.000
		- Control	Spanish-English	-0.7917	0.515	171	-1.538	0.126	0.928	1.000

Post Hoc Comparisons - RRT diff \* Group

Comparison										
RRT diff	Group	RRT diff	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> <sub>y</sub>	P <sub>hol</sub> <sub>m</sub>
		-	Chinese-English	0.5459	0.679	148	0.804	0.422	1.000	1.000
	Chinese-English	-	English	-1.4623	0.679	148	-2.155	0.033	0.585	1.000
		-	Spanish-English	0.7098	0.679	148	1.046	0.297	0.996	1.000
		-	Chinese-English	-0.6783	0.515	171	-1.318	0.189	0.976	1.000
		-	English	-0.8344	0.679	148	-1.230	0.221	0.986	1.000
		-	Spanish-English	-0.9050	0.679	148	-1.334	0.184	0.973	1.000
		-	Chinese-English	0.4325	0.515	171	0.840	0.402	1.000	1.000
Orth	English	-	Spanish-English	2.1720	0.679	148	3.201	0.002	0.070	0.107
		-	Chinese-English	0.7839	0.679	148	1.155	0.250	0.991	1.000

Post Hoc Comparisons - RRT diff \* Group

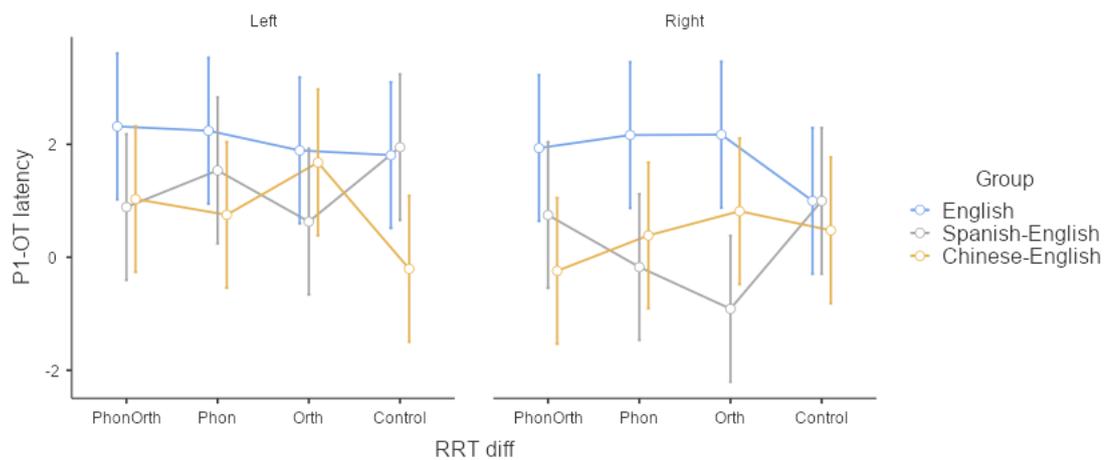
Comparison										
RRT diff	Group	RRT diff	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> y	P <sub>hol</sub> m
-	Control	Control	English	0.6278	0.515	171	1.220	0.224	0.987	1.000
-	Control	Control	Spanish-English	0.5573	0.679	148	0.821	0.413	1.000	1.000
-	Control	Control	Chinese-English	1.8948	0.679	148	2.792	0.006	0.194	0.356
-	Spanish-English	Orth	Chinese-English	1.3881	0.679	148	-2.046	0.043	0.662	1.000
-	Control	Control	English	1.5442	0.679	148	2.276	0.024	0.499	1.000
-	Control	Control	Spanish-English	1.6148	0.515	171	-3.138	0.002	0.082	0.126
-	Control	Control	Chinese-English	0.2772	0.679	148	0.409	0.683	1.000	1.000
-	Chinese-English	Control	English	0.1561	0.679	148	0.230	0.818	1.000	1.000
-	Control	Control	Spanish-English	0.2267	0.679	148	0.334	0.739	1.000	1.000

Post Hoc Comparisons - RRT diff \* Group

Comparison											
RRT diff	Group	RRT diff	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> y	P <sub>hol</sub> m	
		-	Control	Chinese-English	1.1109	0.515	171	2.159	0.032	0.582	1.000
Control	English	-	Control	Spanish-English	-0.0706	0.679	148	-0.104	0.917	1.000	1.000
		-	Control	Chinese-English	1.2670	0.679	148	1.867	0.064	0.777	1.000
	Spanish-English	-	Control	Chinese-English	1.3376	0.679	148	1.971	0.051	0.712	1.000

Estimated Marginal Means

RRT diff \* Group \* Hemisphere



Repeated Measures ANOVA

#### Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Hemisphere	45.48	1	45.48	4.067	0.048	0.067
Hemisphere * Group	8.20	2	4.10	0.367	0.695	0.013
Residual	637.31	57	11.18			

Note. Type 3 Sums of Squares

#### Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Group	374	2	186.8	9.65	< .001	0.253
Residual	1103	57	19.4			

Note. Type 3 Sums of Squares

## Assumptions

#### Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
PAL50_P1.LeftOP\$prime	1.77	2	57	0.180
PAL50_P1.RightOP\$prime	1.26	2	57	0.292

## Post Hoc Tests

Post Hoc Comparisons - Hemisphere \* Group

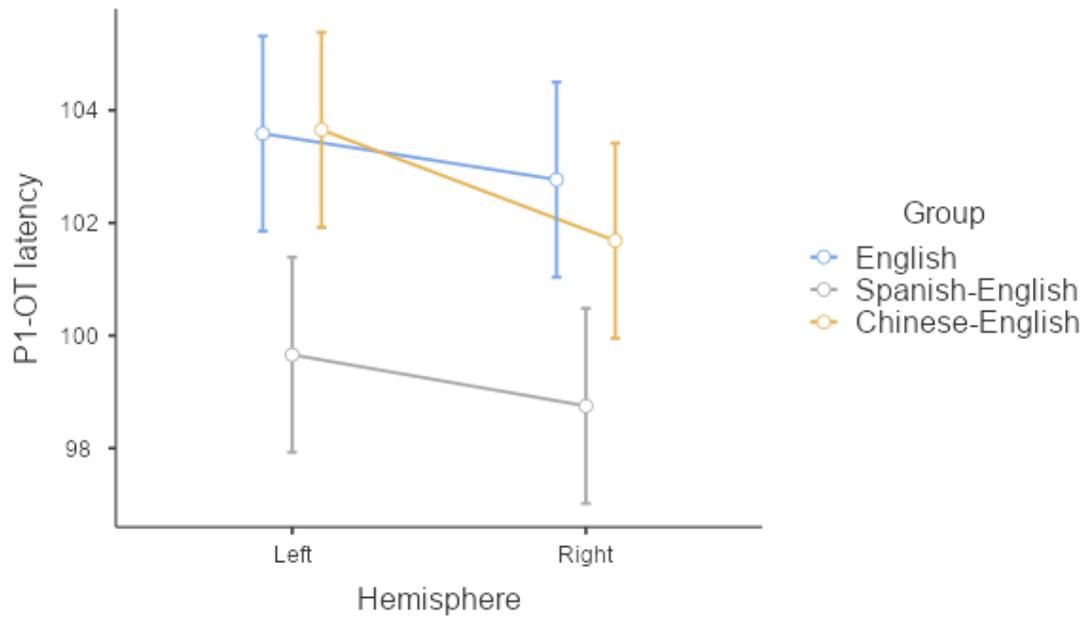
Comparison											
Hemisphere	Group		Hemisphere	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> <sub>ey</sub>	P <sub>holm</sub> <sub>m</sub>
Left	English	-	Left	Spanish-English	3.9255	1.24	106.4	3.1771	0.002	0.023	0.021
				Chinese-English	-0.0663	1.24	106.4	-0.0536	0.957	1.000	1.000
		-	Right	English	0.8163	1.06	57.0	0.7719	0.443	0.971	1.000
				Spanish-English	4.8341	1.24	106.4	3.9124	<.001	0.002	0.002
		-	Right	Chinese-English	1.9026	1.24	106.4	1.5398	0.127	0.640	0.759
				Spanish-English	-3.9918	1.24	106.4	-3.2307	0.002	0.020	0.020
	Spanish-English	-	Right	English	-3.1093	1.24	106.4	-2.5164	0.013	0.129	0.133
				Spanish-English	0.9085	1.06	57.0	0.8592	0.394	0.955	1.000
		-	Right	Chinese-English	-2.0230	1.24	106.4	-1.6373	0.105	0.576	0.732

Post Hoc Comparisons - Hemisphere \* Group

Comparison										
Hemisphere	Group	Hemisphere	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub>	P <sub>holm</sub>
	Chinese-English	-	Right	English	0.8825	106	0.7143	0.477	0.980	1.000
		-	Right	Spanish-English	4.9004	106	3.9660	<.001	0.002	0.002
		-	Right	Chinese-English	1.9689	57	1.8620	0.068	0.436	0.542
Right	English	-	Right	Spanish-English	4.0178	106	3.2517	0.002	0.019	0.020
		-	Right	Chinese-English	1.0863	106	0.8792	0.381	0.951	1.000
	Spanish-English	-	Right	Chinese-English	-2.9315	106	-2.3725	0.019	0.175	0.175

**Estimated Marginal Means**

**Hemisphere \* Group**



*N100-FC latency*

## Repeated Measures ANOVA

Within Subjects Effects

	Sphericity Correction	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
RRT Target	None	6.83	3	2.28	0.309	0.819	0.005
	Greenhouse-Geisser	6.83	2.89	2.36	0.309	0.811	0.005
	Huynh-Feldt	6.83	3.00	2.28	0.309	0.819	0.005
RRT Target * Group	None	58.44	6	9.74	1.324	0.249	0.044
	Greenhouse-Geisser	58.44	5.78	10.12	1.324	0.251	0.044
	Huynh-Feldt	58.44	6.00	9.74	1.324	0.249	0.044
Residual	None	1257.65	171	7.35			

Within Subjects Effects

	<b>Sphericity Correction</b>	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
	Greenhouse-Geisser	1257.65	164.61	7.64			
	Huynh-Feldt	1257.65	171.00	7.35			
Hemisphere	None	71.10	1	71.10	5.817	0.019	0.093
	Greenhouse-Geisser	71.10	1.00	71.10	5.817	0.019	0.093
	Huynh-Feldt	71.10	1.00	71.10	5.817	0.019	0.093
Hemisphere *	None	133.59	2	66.79	5.465	0.007	0.161
Group	Greenhouse-Geisser	133.59	2.00	66.79	5.465	0.007	0.161
	Huynh-Feldt	133.59	2.00	66.79	5.465	0.007	0.161
Residual	None	696.70	57	12.22			
	Greenhouse-Geisser	696.70	57.00	12.22			
	Huynh-Feldt	696.70	57.00	12.22			
RRT Target *	None	11.21	3	3.74	0.804	0.493	0.014
Hemisphere	Greenhouse-Geisser	11.21	2.68	4.18	0.804	0.481	0.014
	Huynh-Feldt	11.21	2.83	3.96	0.804	0.487	0.014
RRT Target *	None	176.87	6	29.48	6.345	< .001	0.182
Hemisphere *	Greenhouse-Geisser	176.87	5.37	32.97	6.345	< .001	0.182
Group	Huynh-Feldt	176.87	5.66	31.27	6.345	< .001	0.182
Residual	None	794.41	171	4.65			

Within Subjects Effects

	<b>Sphericity Correction</b>	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
	Greenhouse-Geisser	794.41	152.91	5.20			
	Huynh-Feldt	794.41	161.18	4.93			

Note. Type 3 Sums of Squares

Between Subjects Effects

	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
Group	1339	2	669.5	9.77	< .001	0.255
Residual	3906	57	68.5			

Note. Type 3 Sums of Squares

## Assumptions

Tests of Sphericity

	<b>Mauchly's W</b>	<b>p</b>	<b>Greenhouse-Geisser <math>\epsilon</math></b>	<b>Huynh-Feldt <math>\epsilon</math></b>
RRT Target	0.946	0.682	0.963	1.000
Hemisphere	1.000	NaN <sup>a</sup>	1.000	1.000
RRT Target * Hemisphere	0.849	0.104	0.894	0.943

<sup>a</sup> The repeated measures has only two levels. The assumption of sphericity is always met when the repeated measures has only two levels

Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
NAL50_P1.LeftFC\$PhonOrth_TARGET	2.2430	2	57	0.115
NAL50_P1.RightFC\$PhonOrth_TARGET	0.0716	2	57	0.931
NAL50_P1.LeftFC\$Phon_TARGET	0.3642	2	57	0.696
NAL50_P1.RightFC\$Phon_TARGET	0.3412	2	57	0.712
NAL50_P1.LeftFC\$Orth_TARGET	0.5095	2	57	0.604
NAL50_P1.RightFC\$Orth_TARGET	1.7552	2	57	0.182
NAL50_P1.LeftFC\$Control_TARGET	0.6655	2	57	0.518
NAL50_P1.RightFC\$Control_TARGET	4.5041	2	57	0.015

## Post Hoc Tests

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison														
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m		
PhonOrth	Left	English	PhonOrth	Left	Spanish-English	1.8963	1.208	153	1.5697	0.119	0.997	1.000		
					PhonOrth	Left	Chinese-English	-2.4578	1.208	153	-2.0346	0.044	0.931	1.000
							PhonOrth	Right	English	0.7000	0.809	182	0.8655	0.388

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	PhonOrth		PhonOrth	Right	Spanish-English	2.7263	1.208	153	2.2568	0.025	0.834	1.000
-	PhonOrth		PhonOrth	Right	Chinese-English	-0.4557	1.208	153	-0.3772	0.707	1.000	1.000
-	Phon		Phon	Left	English	0.8383	0.775	325	1.0822	0.280	1.000	1.000
-	Phon		Phon	Left	Spanish-English	1.4079	1.208	153	1.1655	0.246	1.000	1.000
-	Phon		Phon	Left	Chinese-English	-1.2614	1.208	153	-1.0442	0.298	1.000	1.000
-	Phon		Phon	Right	English	1.9939	0.889	249	2.2441	0.026	0.844	1.000
-	Phon		Phon	Right	Spanish-English	3.2472	1.208	153	2.6881	0.008	0.530	1.000
-	Phon		Phon	Right	Chinese-English	-2.0264	1.208	153	-1.6775	0.095	0.992	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Orth	Left	Orth	Left	English	0.2605	0.775	325	0.3362	0.737	1.000	1.000
-	Orth	Left	Orth	Left	Spanish-English	0.5860	1.208	153	0.4851	0.628	1.000	1.000
-	Orth	Left	Orth	Left	Chinese-English	-0.6226	1.208	153	-0.5154	0.607	1.000	1.000
-	Orth	Right	Orth	Right	English	0.7650	0.889	249	0.8610	0.390	1.000	1.000
-	Orth	Right	Orth	Right	Spanish-English	4.7039	1.208	153	3.899	<.001	0.027	0.037
-	Orth	Right	Orth	Right	Chinese-English	-2.7304	1.208	153	-2.2602	0.025	0.832	1.000
-	Control	Left	Control	Left	English	0.7895	0.775	325	1.0192	0.309	1.000	1.000
-	Control	Left	Control	Left	Spanish-English	1.7253	1.208	153	1.4282	0.155	0.999	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Control	Left	Chinese-English	-	1.0498	1.208	153	0.869	0.386	1.000	1.000	
-	Control	Right	English	2.6937	0.889	249	3.037	0.003	0.283	0.586		
-	Control	Right	Spanish-English	2.4903	1.208	535	2.0615	0.041	0.922	1.000		
-	Control	Right	Chinese-English	-	2.7589	1.208	538	2.283	0.024	0.819	1.000	
-	Spanish-English	Left	Chinese-English	-	4.3540	1.208	533	3.6043	<.001	0.068	0.101	
-	Spanish-English	Right	English	-	1.1963	1.208	533	0.9903	0.324	1.000	1.000	
-	Spanish-English	Right	Spanish-English	0.8300	0.809	182	1.0263	0.306	1.000	1.000		

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	PhonOrth	Right	Chinese-English	-	2.3520	1.208	153	1.947	0.053	0.955	1.000	
-	Phon	Left	English	-	1.0580	1.208	153	0.875	0.383	1.000	1.000	
-	Phon	Left	Spanish-English	-	0.4883	0.775	325	0.630	0.529	1.000	1.000	
-	Phon	Left	Chinese-English	-	3.1577	1.208	153	2.614	0.010	0.588	1.000	
-	Phon	Right	English	0.0977	1.208	153	0.080	0.936	1.000	1.000		
-	Phon	Right	Spanish-English	1.3509	0.889	249	1.520	0.130	0.998	1.000		
-	Phon	Right	Chinese-English	-	3.9227	1.208	153	3.247	0.001	0.178	0.328	
-	Orth	Left	English	-	1.6358	1.208	153	1.354	0.178	1.000	1.000	

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk	Phol
-	Orth	Left	Spanish-English	Left	Spanish-English	-1.3102	0.775	325	-1.6915	0.092	0.992	1.000
-	Orth	Left	Chinese-English	Left	Chinese-English	-2.5189	1.208	153	-2.0851	0.039	0.914	1.000
-	Orth	Right	English	Right	English	-1.1312	1.208	153	-0.9364	0.351	1.000	1.000
-	Orth	Right	Spanish-English	Right	Spanish-English	2.8076	0.889	249	3.1599	0.002	0.212	0.397
-	Orth	Right	Chinese-English	Right	Chinese-English	-4.6266	1.208	153	-3.8300	<.001	0.034	0.046
-	Control	Left	English	Left	English	-1.1068	1.208	153	-0.9162	0.361	1.000	1.000
-	Control	Left	Spanish-English	Left	Spanish-English	-0.1709	0.775	325	-0.2207	0.825	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Control	Left	Chinese-English			-2.9461	1.2088	153	-2.438	0.016	0.718	1.000
-	Control	Right	English			0.7974	1.2088	153	0.661	0.510	1.000	1.000
-	Control	Right	Spanish-English			0.5940	0.8899	249	0.6686	0.504	1.000	1.000
-	Control	Right	Chinese-English			-4.6551	1.2088	153	-3.855	<.001	0.031	0.043
-	Chinese-English	PhonOrth	Right	English		3.1577	1.2088	153	2.6140	0.010	0.588	1.000
-	Chinese-English	PhonOrth	Right	Spanish-English		5.1840	1.2088	153	4.2914	<.001	0.007	0.008
-	Chinese-English	PhonOrth	Right	Chinese-English		2.0021	0.8099	182	2.4757	0.014	0.692	1.000
-	Chinese-English	Phon	Left	English		3.2961	1.2088	153	2.7285	0.007	0.499	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk	Phol
-	Phon	Left	Phon	Left	Spanish-English	3.8657	1.208	153	3.2001	0.002	0.199	0.378
-	Phon	Left	Phon	Left	Chinese-English	1.1964	0.775	325	1.5445	0.123	0.998	1.000
-	Phon	Right	Phon	Right	English	4.4517	1.208	153	3.6851	<.001	0.053	0.077
-	Phon	Right	Phon	Right	Spanish-English	5.7050	1.208	153	4.7226	<.001	0.001	0.001
-	Phon	Right	Phon	Right	Chinese-English	0.4313	0.889	249	0.4854	0.628	1.000	1.000
-	Orth	Left	Orth	Left	English	2.7182	1.208	153	2.2502	0.026	0.838	1.000
-	Orth	Left	Orth	Left	Spanish-English	3.0438	1.208	153	2.5197	0.013	0.659	1.000
-	Orth	Left	Orth	Left	Chinese-English	1.8352	0.775	325	2.3692	0.018	0.769	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Orth	Right	English	3.22	28	1.208	1.208	15	2.679	0.008	0.546	1.000
-	Orth	Right	Spanish-English	7.16	16	1.208	1.208	15	5.928	<.001	<.001	<.001
-	Orth	Right	Chinese-English	-0.27	26	0.889	0.889	24	-0.306	0.759	1.000	1.000
-	Control	Left	English	3.24	72	1.208	1.208	15	2.688	0.008	0.530	1.000
-	Control	Left	Spanish-English	4.18	31	1.208	1.208	15	3.462	<.001	0.101	0.165
-	Control	Left	Chinese-English	1.40	80	0.775	0.775	25	1.817	0.070	0.980	1.000
-	Control	Right	English	5.15	15	1.208	1.208	15	4.264	<.001	0.007	0.009
-	Control	Right	Spanish-English	4.94	81	1.208	1.208	15	4.096	<.001	0.014	0.017

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
		-	Control	Right	Chinese-English	-0.3011	0.889	249	-0.3389	0.735	1.000	1.000
	Right	English	-	PhonOrth	Right	2.0263	1.208	153	1.6774	0.096	0.992	1.000
		-	PhonOrth	Right	Chinese-English	-1.1557	1.208	153	-0.9567	0.340	1.000	1.000
		-	Phon	Left	English	0.1383	0.889	249	0.1557	0.876	1.000	1.000
		-	Phon	Left	Spanish-English	0.7080	1.208	153	0.5861	0.559	1.000	1.000
		-	Phon	Left	Chinese-English	-1.9614	1.208	153	-1.6236	0.107	0.995	1.000
		-	Phon	Right	English	1.2940	0.775	325	1.6705	0.096	0.993	1.000
		-	Phon	Right	Spanish-English	2.5473	1.208	153	2.1086	0.037	0.905	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Phon	Right	Chinese-English	-	2.7264	1.208	153	2.2569	0.025	0.834	1.000	
-	Orth	Left	English	-	0.4395	0.889	249	0.496	0.621	1.000	1.000	
-	Orth	Left	Spanish-English	-	0.1139	1.208	153	0.093	0.925	1.000	1.000	
-	Orth	Left	Chinese-English	-	1.3226	1.208	153	1.098	0.275	1.000	1.000	
-	Orth	Right	English	0.0651	0.775	325	0.0840	0.933	1.000	1.000		
-	Orth	Right	Spanish-English	4.0039	1.208	153	3.3145	0.001	0.150	0.267		
-	Orth	Right	Chinese-English	-	3.4303	1.208	153	2.8396	0.005	0.417	1.000	
-	Control	Left	English	0.0895	0.889	249	0.1007	0.920	1.000	1.000		

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Control	Left	Spanish-English	1.0254	1.208	1.53	0.848	0.397	1.00	1.00		
-	Control	Left	Chinese-English	1.7498	1.208	1.53	1.4485	0.150	0.99	1.00		
-	Control	Right	English	1.9938	0.775	3.25	2.5739	0.010	0.618	1.00		
-	Control	Right	Spanish-English	1.7904	1.208	1.53	1.4821	0.140	0.998	1.00		
-	Control	Right	Chinese-English	3.4588	1.208	1.53	2.8632	0.005	0.400	0.985		
-	Spanish-English	PhonOrth	Right	Chinese-English	3.1820	1.208	1.53	2.6341	0.009	0.572	1.00	
-	Spanish-English	Phon	Left	English	1.8880	1.208	1.53	1.5629	0.120	0.997	1.00	

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk	Phol
et	re	up	et	re	up	ce					ey	m
-	Phon	Left	Phon	Left	Spanish-English	-1.3183	0.889	249	-1.483	0.139	0.999	1.000
-	Phon	Left	Phon	Left	Chinese-English	-3.9877	1.208	153	-3.3010	0.001	0.155	0.278
-	Phon	Right	Phon	Right	English	-0.7323	1.208	153	-0.6062	0.545	1.000	1.000
-	Phon	Right	Phon	Right	Spanish-English	0.5209	0.775	325	0.6725	0.502	1.000	1.000
-	Phon	Right	Phon	Right	Chinese-English	-4.7527	1.208	153	-3.9343	<.001	0.024	0.032
-	Orth	Left	Orth	Left	English	-2.4658	1.208	153	-2.0412	0.043	0.929	1.000
-	Orth	Left	Orth	Left	Spanish-English	-2.1402	0.889	249	-2.4088	0.017	0.741	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Orth	Left	Chinese-English	Left	Chinese-English	-3.3489	1.2088	153	-2.772	0.0066	0.466	1.000
-	Orth	Right	English	Right	English	-1.9612	1.2088	153	-1.6235	0.107	0.995	1.000
-	Orth	Right	Spanish-English	Right	Spanish-English	-1.9776	0.7755	255	-2.5530	0.011	0.634	1.000
-	Orth	Right	Chinese-English	Right	Chinese-English	-5.4566	1.2088	153	-4.5170	<.001	0.003	0.003
-	Control	Left	English	Left	English	-1.9368	1.2088	153	-1.6033	0.111	0.995	1.000
-	Control	Left	Spanish-English	Left	Spanish-English	-1.0009	0.8899	249	-1.1265	0.261	1.000	1.000
-	Control	Left	Chinese-English	Left	Chinese-English	-3.7761	1.2088	153	-3.1259	0.002	0.236	0.473

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Control	Right	English	-	0.0325	1.208	153	-0.0	0.979	1.000	1.000	
-	Control	Right	Spanish-English	-	0.2360	0.775	325	-0.3046	0.761	1.000	1.000	
-	Control	Right	Chinese-English	-	5.4851	1.208	153	-4.5406	<.001	0.003	0.003	
-	Chinese-English	Phon	Left	English	1.2940	1.208	153	1.0712	0.286	1.000	1.000	
-	Chinese-English	Phon	Left	Spanish-English	1.8636	1.208	153	1.5427	0.125	0.997	1.000	
-	Chinese-English	Phon	Left	Chinese-English	0.8057	0.889	249	-0.9068	0.365	1.000	1.000	
-	Chinese-English	Phon	Right	English	2.4496	1.208	153	2.0278	0.044	0.933	1.000	

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Phon	Right	Spanish-English	3.7029	1.208	153	3.0653	0.003	0.269	0.563		
-	Phon	Right	Chinese-English	1.5707	0.775	325	2.0278	0.043	0.936	1.000		
-	Orth	Left	English	0.7162	1.208	153	0.5928	0.554	1.000	1.000		
-	Orth	Left	Spanish-English	1.0417	1.208	153	0.8624	0.390	1.000	1.000		
-	Orth	Left	Chinese-English	0.1669	0.889	249	0.1878	0.851	1.000	1.000		
-	Orth	Right	English	1.2207	1.208	153	1.0105	0.314	1.000	1.000		
-	Orth	Right	Spanish-English	5.1596	1.208	153	4.2711	<.001	0.007	0.009		
-	Orth	Right	Chinese-English	2.2747	0.775	325	2.9365	0.004	0.343	0.761		

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
		-	Control	Left	English	1.2452	1.208	153	1.0308	0.304	1.000	1.000
		-	Control	Left	Spanish-English	2.1810	1.208	153	1.8055	0.073	0.980	1.000
		-	Control	Left	Chinese-English	-0.5941	0.889	249	-0.6687	0.504	1.000	1.000
		-	Control	Right	English	3.1494	1.208	153	2.6071	0.010	0.593	1.000
		-	Control	Right	Spanish-English	2.9460	1.208	153	2.4387	0.016	0.718	1.000
		-	Control	Right	Chinese-English	-2.3031	0.775	325	-2.9733	0.003	0.318	0.684
Phon	Left	English	Phon	Left	Spanish-English	0.5697	1.208	153	0.4716	0.638	1.000	1.000
		-	Phon	Left	Chinese-English	-2.0997	1.208	153	-1.7381	0.084	0.987	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Phon	Right	English			1.1556	0.89	182	1.4290	0.155	0.999	1.000
-	Phon	Right	Spanish-English			2.4089	1.28	153	1.941	0.048	0.943	1.000
-	Phon	Right	Chinese-English			-2.8647	1.28	153	-2.34	0.019	0.764	1.000
-	Orth	Left	English			-0.5778	0.75	325	-0.7460	0.456	1.000	1.000
-	Orth	Left	Spanish-English			-0.2523	1.28	153	-0.2088	0.835	1.000	1.000
-	Orth	Left	Chinese-English			-1.4609	1.28	153	-1.2093	0.228	1.000	1.000
-	Orth	Right	English			-0.0732	0.889	249	0.0824	0.934	1.000	1.000
-	Orth	Right	Spanish-English			3.8656	1.28	153	3.199	0.002	0.999	0.378

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Orth			Right	Chinese-English	-3.5687	1.208	153	-2.9541	0.004	0.338	0.773
-	Control			Left	English	-0.0488	0.775	325	-0.0630	0.950	1.000	1.000
-	Control			Left	Spanish-English	0.8870	1.208	153	0.7343	0.464	1.000	1.000
-	Control			Left	Chinese-English	-1.8881	1.208	153	-1.5630	0.120	0.997	1.000
-	Control			Right	English	1.8554	0.889	249	2.0883	0.038	0.915	1.000
-	Control			Right	Spanish-English	1.6520	1.208	153	1.3676	0.173	1.000	1.000
-	Control			Right	Chinese-English	-3.5971	1.208	153	-2.9777	0.003	0.322	0.726

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
		Spanish-English	Phon	Left	Chinese-English	-2.6693	1.208	15	-2.2097	0.029	0.859	1.000
			Phon	Right	English	0.5860	1.208	15	0.4851	0.628	1.000	1.000
			Phon	Right	Spanish-English	1.8393	0.809	18	2.2744	0.024	0.825	1.000
			Phon	Right	Chinese-English	-3.4344	1.208	15	-2.8430	0.005	0.414	1.000
			Orth	Left	English	-1.1475	1.208	15	-0.9499	0.344	1.000	1.000
			Orth	Left	Spanish-English	-0.8219	0.775	15	-1.0611	0.289	1.000	1.000
			Orth	Left	Chinese-English	-2.0305	1.208	15	-1.6809	0.095	0.992	1.000
			Orth	Right	English	-0.6429	1.208	15	-0.5322	0.595	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk	ptom
-	Orth	Right	Spanish-English	3.2959	0.889	24	3.7095	<.001	0.045	0.063		
-	Orth	Right	Chinese-English	4.1383	1.208	153	3.4257	<.001	0.112	0.186		
-	Control	Left	English	0.6185	1.208	153	0.5120	0.609	1.000	1.000		
-	Control	Left	Spanish-English	0.3174	0.775	325	0.4097	0.682	1.000	1.000		
-	Control	Left	Chinese-English	2.4577	1.208	153	2.0345	0.044	0.931	1.000		
-	Control	Right	English	1.2858	1.208	153	1.0644	0.289	1.000	1.000		
-	Control	Right	Spanish-English	1.0824	0.889	24	1.2182	0.224	1.000	1.000		

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Control	Right	Chinese-English	-	4.1668	1.2088	153	3.4493	<.001	0.105	0.172	
-	Phon	Right	English	Chinese-English	3.2553	1.2088	153	2.6948	0.008	0.525	1.000	
-	Phon	Right	Spanish-English	Spanish-English	4.5086	1.2088	153	3.7323	<.001	0.046	0.065	
-	Phon	Right	Chinese-English	Chinese-English	0.7650	0.8092	82	0.9460	0.345	1.000	1.000	
-	Orth	Left	English	English	1.5219	1.2088	153	1.2598	0.210	1.000	1.000	
-	Orth	Left	Spanish-English	Spanish-English	1.8474	1.2088	153	1.5293	0.128	0.998	1.000	
-	Orth	Left	Chinese-English	Chinese-English	0.6388	0.7755	325	0.8247	0.410	1.000	1.000	
-	Orth	Right	English	English	2.0264	1.2088	153	1.6775	0.095	0.992	1.000	

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Orth	Right	Spanish-English	5.9653	1.208	15	4.9381	<.001	<.001	<.001		
-	Orth	Right	Chinese-English	1.4690	0.889	24	1.6533	0.100	0.994	1.000		
-	Control	Left	English	2.0509	1.208	15	1.6977	0.092	0.991	1.000		
-	Control	Left	Spanish-English	2.9867	1.208	15	2.4724	0.015	0.694	1.000		
-	Control	Left	Chinese-English	0.2116	0.775	32	0.2732	0.785	1.000	1.000		
-	Control	Right	English	3.9551	1.208	15	3.2741	0.001	0.166	0.303		
-	Control	Right	Spanish-English	3.7517	1.208	15	3.1057	0.002	0.247	0.502		
-	Control	Right	Chinese-English	1.4974	0.889	24	1.6853	0.093	0.992	1.000		

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
	Right	English	-	Phon	Right	Spanish-English	1.2533	1.208	153	1.0375	0.301	1.000
			-	Phon	Right	Chinese-English	-4.0204	1.208	153	-3.3281	0.001	0.145
			-	Orth	Left	English	-1.7335	0.889	249	-1.9510	0.052	0.956
			-	Orth	Left	Spanish-English	-1.4079	1.208	153	-1.1655	0.246	1.000
			-	Orth	Left	Chinese-English	-2.6165	1.208	153	-2.1660	0.032	0.880
			-	Orth	Right	English	-1.2289	0.775	325	-1.5865	0.114	0.997
			-	Orth	Right	Spanish-English	2.7099	1.208	153	2.2433	0.026	0.841

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Orth	Right	Chinese-English	-	4.7243	1.2088	2053	15	-3.9108	<.001	0.026	0.035
-	Control	Left	English	-	1.2045	0.8899	8849	249	1.3556	0.176	1.000	1.000
-	Control	Left	Spanish-English	-	0.2686	1.2088	2053	53	0.223	0.824	1.000	1.000
-	Control	Left	Chinese-English	-	3.0437	1.2088	2053	53	2.5196	0.013	0.659	1.000
-	Control	Right	English	0.6998	0.775	325	25	34	0.9034	0.367	1.000	1.000
-	Control	Right	Spanish-English	0.4964	1.2088	2053	53	109	0.4109	0.682	1.000	1.000
-	Control	Right	Chinese-English	-	4.7528	1.2088	2053	53	-3.9344	<.001	0.024	0.032

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
		Spanish-English	Phon	Right	Chinese-English	-5.2737	1.208	15	-4.36	<.001	0.005	0.006
			Orth	Left	English	-2.9868	1.208	15	-2.45	0.015	0.694	1.000
			Orth	Left	Spanish-English	-2.6612	0.889	24	-2.99	0.003	0.306	0.656
			Orth	Left	Chinese-English	-3.8698	1.208	15	-3.24	0.002	0.197	0.375
			Orth	Right	English	-2.4822	1.208	15	-2.05	0.042	0.924	1.000
			Orth	Right	Spanish-English	1.4567	0.775	32	1.805	0.061	0.971	1.000
			Orth	Right	Chinese-English	-5.9776	1.208	15	-4.93	<.001	<.001	<.001

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Control	Left	English	-	2.4578	1.208	153	2.0345	0.044	0.931	1.000	
-	Control	Left	Spanish-English	-	1.5219	0.889	249	1.7129	0.088	0.990	1.000	
-	Control	Left	Chinese-English	-	4.2970	1.208	203	3.5571	<.001	0.078	0.119	
-	Control	Right	English	-	0.5535	1.208	203	0.4582	0.647	1.000	1.000	
-	Control	Right	Spanish-English	-	0.7569	0.775	325	0.9771	0.329	1.000	1.000	
-	Control	Right	Chinese-English	-	6.0061	1.208	203	4.9718	<.001	<.001	<.001	
-	Orth	Left	English	Chinese-English	2.2869	1.208	203	1.8931	0.060	0.967	1.000	

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Orth	Left	Spanish-English	Left	Spanish-English	2.6125	1.208	15	2.162	0.032	0.882	1.000
-	Orth	Left	Chinese-English	Left	Chinese-English	1.4038	0.889	24	1.580	0.115	0.997	1.000
-	Orth	Right	English	Right	English	2.7915	1.208	15	2.310	0.022	0.803	1.000
-	Orth	Right	Spanish-English	Right	Spanish-English	6.7303	1.208	15	5.574	<.001	<.001	<.001
-	Orth	Right	Chinese-English	Right	Chinese-English	0.7039	0.775	32	0.908	0.364	1.000	1.000
-	Control	Left	English	Left	English	2.8159	1.208	18	2.330	0.021	0.790	1.000
-	Control	Left	Spanish-English	Left	Spanish-English	3.7518	1.208	18	3.107	0.002	0.246	0.502
-	Control	Left	Chinese-English	Left	Chinese-English	0.9766	0.889	27	1.099	0.273	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
		-	Control	Right	English	4.7202	1.208	153	3.9074	<.001	0.026	0.035
		-	Control	Right	Spanish-English	4.5168	1.208	153	3.7390	<.001	0.045	0.064
		-	Control	Right	Chinese-English	-0.7324	0.775	325	-0.9455	0.345	1.000	1.000
Orth	Left	English	Orth	Left	Spanish-English	0.3256	1.208	153	0.2695	0.788	1.000	1.000
		-	Orth	Left	Chinese-English	-0.8831	1.208	153	-0.7310	0.466	1.000	1.000
		-	Orth	Right	English	0.5046	0.809	182	0.6239	0.533	1.000	1.000
		-	Orth	Right	Spanish-English	4.4434	1.208	153	3.6783	<.001	0.054	0.078
		-	Orth	Right	Chinese-English	-2.9908	1.208	153	-2.4758	0.014	0.692	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Control	Left	English	0.5290	0.775	32	0.6829	0.495	1.000	1.000	1.000	1.000
-	Control	Left	Spanish-English	1.4649	1.208	15	1.2126	0.273	0.227	1.000	1.000	1.000
-	Control	Left	Chinese-English	-1.3103	1.208	15	-1.0846	0.273	0.280	1.000	1.000	1.000
-	Control	Right	English	2.4333	0.889	24	2.7386	0.079	0.007	0.489	1.000	1.000
-	Control	Right	Spanish-English	2.2299	1.208	15	1.8459	0.067	0.075	0.975	1.000	1.000
-	Control	Right	Chinese-English	-3.0193	1.208	15	-2.4994	0.067	0.013	0.675	1.000	1.000
-	Orth	Left	Chinese-English	-1.2086	1.208	15	-1.0005	0.319	0.319	1.000	1.000	1.000
-	Orth	Right	English	0.1790	1.208	15	0.1482	0.882	1.000	1.000	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-	Orth	Right	Spanish-English	4.1178	0.89	182	5.0919	<.001	<.001	<.001		
-	Orth	Right	Chinese-English	3.3164	1.208	153	2.7453	0.007	0.487	1.000		
-	Control	Left	English	0.2034	1.208	153	0.1684	0.866	1.000	1.000		
-	Control	Left	Spanish-English	1.1393	0.775	178	1.4708	0.142	0.999	1.000		
-	Control	Left	Chinese-English	1.6358	1.208	153	1.3542	0.178	1.000	1.000		
-	Control	Right	English	2.1077	1.208	153	1.7448	0.083	0.987	1.000		
-	Control	Right	Spanish-English	1.9043	0.889	178	2.1432	0.033	0.893	1.000		
-	Control	Right	Chinese-English	3.3449	1.208	153	2.7689	0.006	0.469	1.000		

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
		Chinese-English	Orth	Right	English	1.3876	1.208	153	1.1487	0.252	1.000	1.000
			Orth	Right	Spanish-English	5.3265	1.208	153	4.4093	<.001	0.004	0.005
			Orth	Right	Chinese-English	-2.1078	0.809	182	-2.6064	0.010	0.593	1.000
			Control	Left	English	1.4121	1.208	153	1.1689	0.244	1.000	1.000
			Control	Left	Spanish-English	2.3479	1.208	153	1.9436	0.054	0.956	1.000
			Control	Left	Chinese-English	-0.4272	0.775	175	-0.5515	0.582	1.000	1.000
			Control	Right	English	3.3163	1.208	153	2.7453	0.007	0.487	1.000
			Control	Right	Spanish-English	3.1129	1.208	153	2.5769	0.011	0.616	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-			Control	Right	Chinese-English	-2.1362	0.889	249	-2.4043	0.017	0.744	1.000
	Right	English	-	Orth	Right	Spanish-English	3.9388	1.208	153	3.2606	0.001	0.315
			-	Orth	Right	Chinese-English	-3.4954	1.208	153	-2.8935	0.004	0.308
			-	Control	Left	English	0.0244	0.889	249	0.0275	0.978	1.000
			-	Control	Left	Spanish-English	0.9603	1.208	153	0.7949	0.428	1.000
			-	Control	Left	Chinese-English	-1.8148	1.208	153	-1.5023	0.135	0.998
			-	Control	Right	English	1.9287	0.775	325	2.4899	0.013	0.683
			-	Control	Right	Spanish-English	1.7253	1.208	153	1.4282	0.155	0.999

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-			Control	Right	Chinese-English	-3.5239	1.208	153	-2.917	0.004	0.362	0.854
-		Spanish-English	Orth	Right	Chinese-English	-7.4342	1.208	153	-6.1541	<.001	<.001	<.001
-			Control	Left	English	-3.9144	1.208	153	-3.2404	0.001	0.181	0.334
-			Control	Left	Spanish-English	-2.9785	0.889	249	-3.3523	<.001	0.130	0.218
-			Control	Left	Chinese-English	-5.7537	1.208	153	-4.7629	<.001	0.001	0.001
-			Control	Right	English	-2.0101	1.208	153	-1.6640	0.098	0.993	1.000
-			Control	Right	Spanish-English	-2.2136	0.775	325	-2.8576	0.005	0.398	0.940

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
-			Control	Right	Chinese-English	-7.4627	1.208	15	-6.177	<.001	<.001	<.001
		Chinese-English	Control	Left	English	3.5198	1.208	15	2.913	0.004	0.365	0.858
			Control	Left	Spanish-English	4.4557	1.208	15	3.688	<.001	0.053	0.076
			Control	Left	Chinese-English	1.6806	0.889	24	1.891	0.060	0.968	1.000
			Control	Right	English	5.4241	1.208	15	4.491	<.001	0.003	0.004
			Control	Right	Spanish-English	5.2207	1.208	15	4.321	<.001	0.006	0.007
			Control	Right	Chinese-English	-0.0285	0.775	32	-0.0368	0.971	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

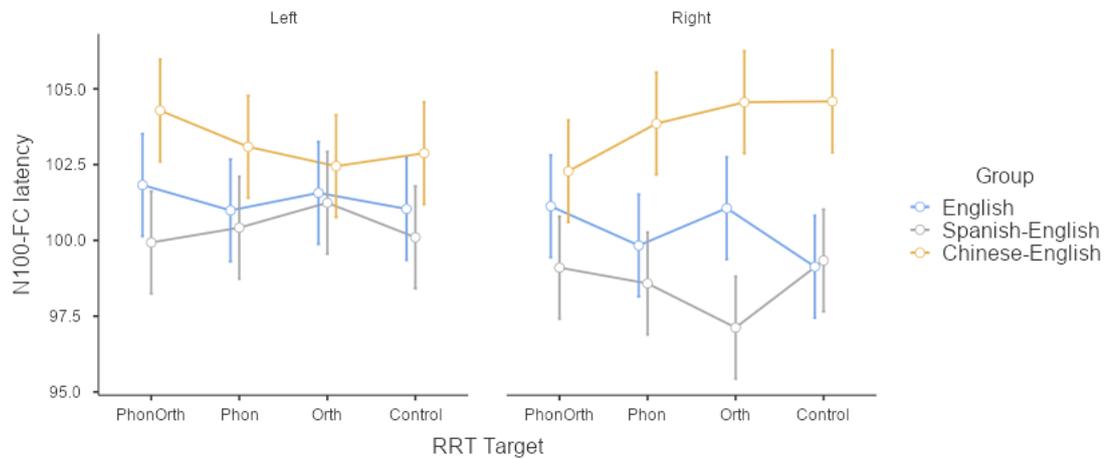
Comparison																						
RRT Target	Hemisphere	Group		RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m									
Control	Left	English	-	Control	Left	Spanish-English	0.9359	1.208	153	0.7747	0.440	1.000	1.000									
						-	Control	Left	Chinese-English	-1.8393	1.208	153	-1.5226	0.130	0.998	1.000						
									-	Control	Right	English	1.9043	0.809	182	2.3547	0.020	0.776	1.000			
												-	Control	Right	Spanish-English	1.7008	1.208	153	1.4080	0.161	0.999	1.000
															-	Control	Right	Chinese-English	-3.5483	1.208	153	-2.9373
		Spanish-English	-	Control	Left	Chinese-English	-2.7751	1.208	153	-2.2973	0.023	0.811	1.000									
						-	Control	Right	English	0.9684	1.208	153	0.8016	0.424	1.000	1.000						
									-	Control	Right	Spanish-English	0.7650	0.809	182	0.9459	0.345	1.000	1.000			

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison													
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptuk	Phol	
			-	Control	Right	Chinese-English	-4.4842	1.208	15	-3.7120	<.001	0.049	0.070
		Chinese-English	-	Control	Right	English	3.7435	1.208	15	3.0989	0.002	0.250	0.509
			-	Control	Right	Spanish-English	3.5401	1.208	15	2.9305	0.004	0.353	0.823
			-	Control	Right	Chinese-English	-1.7090	0.809	18	-2.1133	0.036	0.904	1.000
	Right	English	-	Control	Right	Spanish-English	-0.2034	1.208	15	-0.1684	0.866	1.000	1.000
			-	Control	Right	Chinese-English	-5.4526	1.208	15	-4.5137	<.001	0.003	0.003
		Spanish-English	-	Control	Right	Chinese-English	-5.2492	1.208	15	-4.3453	<.001	0.005	0.007

## Estimated Marginal Means

RRT Target \* Group \* Hemisphere



## Repeated Measures ANOVA

Within Subjects Effects

	Sphericity Correction	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Hemisphere	None	46.21	1	46.21	2.778	0.101	0.046
	Greenhouse-Geisser	46.21	1.00	46.21	2.778	0.101	0.046
	Huynh-Feldt	46.21	1.00	46.21	2.778	0.101	0.046
Hemisphere * Group	None	224.46	2	112.23	6.749	0.002	0.191
	Greenhouse-Geisser	224.46	2.00	112.23	6.749	0.002	0.191
	Huynh-Feldt	224.46	2.00	112.23	6.749	0.002	0.191
Residual	None	947.91	57	16.63			
	Greenhouse-Geisser	947.91	57.00	16.63			
	Huynh-Feldt	947.91	57.00	16.63			
RRT diff	None	6.83	3	2.28	0.309	0.819	0.005

Within Subjects Effects

	<b>Sphericity Correction</b>	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
	Greenhouse-Geisser	6.83	2.89	2.36	0.309	0.811	0.005
	Huynh-Feldt	6.83	3.00	2.28	0.309	0.819	0.005
RRT diff * Group	None	58.44	6	9.74	1.324	0.249	0.044
	Greenhouse-Geisser	58.44	5.78	10.12	1.324	0.251	0.044
	Huynh-Feldt	58.44	6.00	9.74	1.324	0.249	0.044
Residual	None	1257.65	171	7.35			
	Greenhouse-Geisser	1257.65	164.61	7.64			
	Huynh-Feldt	1257.65	171.00	7.35			
Hemisphere * RRT diff	None	11.21	3	3.74	0.804	0.493	0.014
	Greenhouse-Geisser	11.21	2.68	4.18	0.804	0.481	0.014
	Huynh-Feldt	11.21	2.83	3.96	0.804	0.487	0.014
Hemisphere * RRT diff * Group	None	176.87	6	29.48	6.345	< .001	0.182
	Greenhouse-Geisser	176.87	5.37	32.97	6.345	< .001	0.182
	Huynh-Feldt	176.87	5.66	31.27	6.345	< .001	0.182
Residual	None	794.41	171	4.65			
	Greenhouse-Geisser	794.41	152.91	5.20			
	Huynh-Feldt	794.41	161.18	4.93			

Note. Type 3 Sums of Squares

Between Subjects Effects

	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
Group	393	2	196.3	5.81	0.005	0.169
Residual	1926	57	33.8			

Note. Type 3 Sums of Squares

## Assumptions

Tests of Sphericity

	<b>Mauchly's W</b>	<b>p</b>	<b>Greenhouse-Geisser <math>\epsilon</math></b>	<b>Huynh-Feldt <math>\epsilon</math></b>
Hemisphere	1.000	NaN <sup>a</sup>	1.000	1.000
RRT diff	0.946	0.682	0.963	1.000
Hemisphere * RRT diff	0.849	0.104	0.894	0.943

<sup>a</sup> The repeated measures has only two levels. The assumption of sphericity is always met when the repeated measures has only two levels

Homogeneity of Variances Test (Levene's)

	<b>F</b>	<b>df1</b>	<b>df2</b>	<b>p</b>
NAL50_P1.LeftFC\$PhonOrth_PTdiff	1.1432	2	57	0.326
NAL50_P1.RightFC\$PhonOrth_PTdiff	0.7293	2	57	0.487
NAL50_P1.LeftFC\$Phon_PTdiff	2.3459	2	57	0.105
NAL50_P1.RightFC\$Phon_PTdiff	1.2246	2	57	0.301
NAL50_P1.LeftFC\$Orth_PTdiff	0.0879	2	57	0.916
NAL50_P1.RightFC\$Orth_PTdiff	0.1285	2	57	0.880
NAL50_P1.LeftFC\$Control_PTdiff	0.4580	2	57	0.635

Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
NAL50_P1.RightFC\$Control_PTdiff	0.6293	2	57	0.537

## Post Hoc Tests

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison																						
Hemi sphe re	RRT diff	Gro up		Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>									
Left	Pho nOr th	Eng lish	-	Left	Pho nOr th	Spa nis h- Eng lish	1.57 868	1. 03 9	2 5 9	1.5 18 86	0.1 30	0.9 98	1.0 00									
						-	Left	Pho nOr th	Chi nes e- Eng lish	1.09 865	1. 03 9	2 5 9	1.0 57 02	0.2 91	1.0 00	1.0 00						
									-	Left	Pho n	Eng lish	- 0.83 828	0. 77 5	3 2 5	- 1.0 82 20	0.2 80	1.0 00	1.0 00			
												-	Left	Pho n	Spa nis h- Eng lish	2.06 702	1. 03 9	2 5 9	1.9 88 70	0.0 48	0.9 47	1.0 00
															-	Left	Pho n	Chi nes e- Eng lish	- 0.09 771	1. 03 9	2 5 9	- 0.0 94 01

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
-			Left	Orth	Eng lish	- 0.26 045	0. 77 5	3 2 5	- 0.3 36 24	0.7 37	1.0 00	1.0 00
-			Left	Orth	Spa nis h- Eng lish	2.88 893	1. 03 9	2 5 9	2.7 79 46	0.0 06	0.4 58	1.0 00
-			Left	Orth	Chi nes e- Eng lish	- 0.73 652	1. 03 9	2 5 9	- 0.7 08 61	0.4 79	1.0 00	1.0 00
-			Left	Con trol	Eng lish	- 0.78 946	0. 77 5	3 2 5	- 1.0 19 17	0.3 09	1.0 00	1.0 00
-			Left	Con trol	Spa nis h- Eng lish	1.74 963	1. 03 9	2 5 9	1.6 83 34	0.0 94	0.9 92	1.0 00
-			Left	Con trol	Chi nes e- Eng lish	- 0.30 931	1. 03 9	2 5 9	- 0.2 97 59	0.7 66	1.0 00	1.0 00
-			Rig ht	Pho nOr th	Eng lish	- 0.75 286	0. 87 4	1 5 6	- 0.8 61 23	0.3 90	1.0 00	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Group	Hemi sphe re	RRT diff	Group	Mea n Diff erence	SE	df	t	p	P <sub>tuk</sub> ey	P <sub>hol</sub> m
		-	Rig ht	Pho nOr th	Spa nis h- Eng lish	0.64 698	1. 03 9	2 5 9	0.6 22 46	0.5 34	1.0 00	1.0 00
		-	Rig ht	Pho nOr th	Chi nes e- Eng lish	- 0.30 119	1. 03 9	2 5 9	- 0.2 89 78	0.7 72	1.0 00	1.0 00
		-	Rig ht	Pho n	Eng lish	- 2.04 684	0. 94 8	2 0 7	- 2.1 58 00	0.0 32	0.8 85	1.0 00
		-	Rig ht	Pho n	Spa nis h- Eng lish	0.12 604	1. 03 9	2 5 9	0.1 21 26	0.9 04	1.0 00	1.0 00
		-	Rig ht	Pho n	Chi nes e- Eng lish	1.26 955	1. 03 9	2 5 9	1.2 21 45	0.2 23	1.0 00	1.0 00
		-	Rig ht	Ort h	Eng lish	- 0.81 795	0. 94 8	2 0 7	- 0.8 62 37	0.3 89	1.0 00	1.0 00
		-	Rig ht	Ort h	Spa nis h- Eng lish	- 1.33 062	1. 03 9	2 5 9	- 1.2 80 20	0.2 02	1.0 00	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
			-	Rig ht	Ort h	Chi nes e- Eng lish 1.97 347	1. 03 9	2 5 9	1.8 98 70	0.0 59	0.9 67	1.0 00
			-	Rig ht	Con trol	Eng lish - 2.74 663	0. 94 8	2 0 7	- 2.8 95 81	0.0 04	0.3 74	1.0 00
			-	Rig ht	Con trol	Spa nis h- Eng lish 0.88 294	1. 03 9	2 5 9	0.8 49 49	0.3 96	1.0 00	1.0 00
			-	Rig ht	Con trol	Chi nes e- Eng lish 2.00 196	1. 03 9	2 5 9	1.9 26 10	0.0 55	0.9 62	1.0 00
		Spa nis h- Eng lish	-	Left	Pho nOr th	Chi nes e- Eng lish - 0.48 003	1. 03 9	2 5 9	- 0.4 61 84	0.6 45	1.0 00	1.0 00
			-	Left	Pho n	Eng lish - 2.41 696	1. 03 9	2 5 9	- 2.3 25 38	0.0 21	0.7 96	1.0 00
			-	Left	Pho n	Spa nis h- Eng lish 0.48 834	0. 77 5	3 2 5	0.6 30 43	0.5 29	1.0 00	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
			-	Left	Pho n	Chi nes e- Eng lish - 1.67 639	1. 03 9	2 5 9	- 1.6 12 87	0.1 08	0.9 96	1.0 00
			-	Left	Ort h	Eng lish - 1.83 914	1. 03 9	2 5 9	- 1.7 69 45	0.0 78	0.9 85	1.0 00
			-	Left	Ort h	Spa nis h- Eng lish 1.31 025	0. 77 5	3 2 5	1.6 91 49	0.0 92	0.9 92	1.0 00
			-	Left	Ort h	Chi nes e- Eng lish - 2.31 520	1. 03 9	2 5 9	- 2.2 27 48	0.0 27	0.8 53	1.0 00
			-	Left	Con trol	Eng lish - 2.36 814	1. 03 9	2 5 9	- 2.2 78 41	0.0 24	0.8 24	1.0 00
			-	Left	Con trol	Spa nis h- Eng lish 0.17 095	0. 77 5	3 2 5	0.2 20 69	0.8 25	1.0 00	1.0 00
			-	Left	Con trol	Chi nes e- Eng lish - 1.88 799	1. 03 9	2 5 9	- 1.8 16 45	0.0 70	0.9 80	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Group	Hemi sphe re	RRT diff	Group	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
-			Rig ht	Pho nOr th	Eng lish	- 2.33 154	1. 03 9	2 5 9	- 2.2 43 20	0.0 26	0.8 44	1.0 00
-			Rig ht	Pho nOr th	Spa nis h- Eng lish	- 0.93 171	0. 87 4	1 5 6	- 1.0 65 81	0.2 88	1.0 00	1.0 00
-			Rig ht	Pho nOr th	Chi nes e- Eng lish	- 1.87 987	1. 03 9	2 5 9	- 1.8 08 64	0.0 72	0.9 81	1.0 00
-			Rig ht	Pho n	Eng lish	- 3.62 552	1. 03 9	2 5 9	- 3.4 88 15	<. 00 1	0.0 89	0.1 46
-			Rig ht	Pho n	Spa nis h- Eng lish	- 1.45 264	0. 94 8	2 0 7	- 1.5 31 54	0.1 27	0.9 98	1.0 00
-			Rig ht	Pho n	Chi nes e- Eng lish	- 0.30 913	1. 03 9	2 5 9	- 0.2 97 42	0.7 66	1.0 00	1.0 00
-			Rig ht	Ort h	Eng lish	- 2.39 663	1. 03 9	2 5 9	- 2.3 05 82	0.0 22	0.8 08	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Group	Hemi sphe re	RRT diff	Group	Mean Diff erence	SE	df	t	p	ptuk ey	Phol m
					Spa nis h- Eng lish	- 2.90 930	0. 94 8	2 0 7	- 3.0 67 30	0.0 02	0.2 64	0.6 02
					Chi nes e- Eng lish	0.39 479	1. 03 9	2 5 9	0.3 79 83	0.7 04	1.0 00	1.0 00
					Eng lish	- 4.32 531	1. 03 9	2 5 9	- 4.1 61 43	<. 00 1	0.0 09	0.0 12
					Spa nis h- Eng lish	- 0.69 574	0. 94 8	2 0 7	- 0.7 33 52	0.4 64	1.0 00	1.0 00
					Chi nes e- Eng lish	0.42 327	1. 03 9	2 5 9	0.4 07 24	0.6 84	1.0 00	1.0 00
		Chi nes e- Eng lish			Eng lish	- 1.93 693	1. 03 9	2 5 9	- 1.8 63 54	0.0 64	0.9 73	1.0 00
					Spa nis h- Eng lish	0.96 837	1. 03 9	2 5 9	0.9 31 68	0.3 52	1.0 00	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
					Chi nes e- Eng lish	- 1.19 636	0. 77 5	3 2 5	- 1.5 44 47	0.1 23	0.9 98	1.0 00
					Eng lish	- 1.35 910	1. 03 9	2 5 9	- 1.3 07 61	0.1 92	1.0 00	1.0 00
					Spa nis h- Eng lish	1.79 028	1. 03 9	2 5 9	1.7 22 44	0.0 86	0.9 89	1.0 00
					Chi nes e- Eng lish	- 1.83 517	0. 77 5	3 2 5	- 2.3 69 16	0.0 18	0.7 69	1.0 00
					Eng lish	- 1.88 811	1. 03 9	2 5 9	- 1.8 16 57	0.0 70	0.9 80	1.0 00
					Spa nis h- Eng lish	0.65 098	1. 03 9	2 5 9	0.6 26 32	0.5 32	1.0 00	1.0 00
					Chi nes e- Eng lish	- 1.40 796	0. 77 5	3 2 5	- 1.8 17 64	0.0 70	0.9 80	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Group	Hemi sphe re	RRT diff	Group	Mea n Diff erence	SE	df	t	p	P <sub>tuke</sub> y	P <sub>hol</sub> m
-			Right	PhonOrth	English	-1.85151	1.039	259	-1.781	0.076	0.984	1.000
-			Right	PhonOrth	Spanish-English	-0.45167	1.039	259	-0.434	0.664	1.000	1.000
-			Right	PhonOrth	Chinese-English	-1.39984	0.874	156	-1.601	0.111	0.996	1.000
-			Right	Phon	English	-3.14549	1.039	259	-3.026	0.003	0.286	0.665
-			Right	Phon	Spanish-English	-0.97261	1.039	259	-0.935	0.350	1.000	1.000
-			Right	Phon	Chinese-English	0.17090	0.948	207	0.180	0.857	1.000	1.000
-			Right	Orth	English	-1.91660	1.039	259	-1.843	0.066	0.976	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
			-	Right	Orth	Spanish- English	-2.42	1.03	2.37	0.020	0.789	1.000
			-	Right	Orth	Chinese- English	0.87	0.94	0.92	0.357	1.000	1.000
			-	Right	Control	English	-3.84	1.03	-3.69	<.001	0.047	0.070
			-	Right	Control	Spanish- English	-0.21	1.03	0.20	0.836	1.000	1.000
			-	Right	Control	Chinese- English	0.90	0.94	0.95	0.342	1.000	1.000
	Pho n	Eng lish	-	Left	Pho n	Spanish- English	2.90	1.03	2.79	0.006	0.446	1.000
			-	Left	Pho n	Chinese- English	0.74	1.03	0.71	0.477	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
		-	Left	Orth	Eng lish	0.57 783	0. 77 5	3 2 5	0.7 45 96	0.4 56	1.0 00	1.0 00
		-	Left	Orth	Spa nis h- Eng lish	3.72 721	1. 03 9	2 5 9	3.5 85 98	< . 00 1	0.0 66	0.1 05
		-	Left	Orth	Chi nes e- Eng lish	0.10 176	1. 03 9	2 5 9	0.0 97 91	0.9 22	1.0 00	1.0 00
		-	Left	Con trol	Eng lish	0.04 883	0. 77 5	3 2 5	0.0 63 03	0.9 50	1.0 00	1.0 00
		-	Left	Con trol	Spa nis h- Eng lish	2.58 791	1. 03 9	2 5 9	2.4 89 86	0.0 13	0.6 82	1.0 00
		-	Left	Con trol	Chi nes e- Eng lish	0.52 897	1. 03 9	2 5 9	0.5 08 93	0.6 11	1.0 00	1.0 00
		-	Rig ht	Pho nOr th	Eng lish	0.08 542	0. 94 8	2 0 7	0.0 90 06	0.9 28	1.0 00	1.0 00
		-	Rig ht	Pho nOr th	Spa nis h- Eng lish	1.48 526	1. 03 9	2 5 9	1.4 28 98	0.1 54	0.9 99	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
-			Rig ht	Pho nOr th	Chi nes e- Eng lish	0.53 709	1. 03 9	2 5 9	0.5 16 74	0.6 06	1.0 00	1.0 00
-			Rig ht	Pho n	Eng lish	- 1.20 855	0. 87 4	1 5 6	- 1.3 82 51	0.1 69	0.9 99	1.0 00
-			Rig ht	Pho n	Spa nis h- Eng lish	0.96 432	1. 03 9	2 5 9	0.9 27 78	0.3 54	1.0 00	1.0 00
-			Rig ht	Pho n	Chi nes e- Eng lish	2.10 784	1. 03 9	2 5 9	2.0 27 97	0.0 44	0.9 36	1.0 00
-			Rig ht	Ort h	Eng lish	0.02 034	0. 94 8	2 0 7	0.0 21 44	0.9 83	1.0 00	1.0 00
-			Rig ht	Ort h	Spa nis h- Eng lish	- 0.49 233	1. 03 9	2 5 9	- 0.4 73 68	0.6 36	1.0 00	1.0 00
-			Rig ht	Ort h	Chi nes e- Eng lish	2.81 176	1. 03 9	2 5 9	2.7 05 22	0.0 07	0.5 15	1.0 00
-			Rig ht	Con trol	Eng lish	- 1.90 835	0. 94 8	2 0 7	- 2.0 11 99	0.0 46	0.9 39	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
			Right	Control	Spanish-English	1.72 123	1.03 9	25 9	1.656 01	0.099	0.994	1.000
			Right	Control	Chinese-English	2.84 024	1.03 9	25 9	2.732 62	0.007	0.494	1.000
		Spanish-English	Left	Phon	Chinese-English	-2.16 473	1.03 9	25 9	-2.082 70	0.038	0.917	1.000
			Left	Orth	English	-2.32 747	1.03 9	25 9	-2.239 28	0.026	0.846	1.000
			Left	Orth	Spanish-English	0.82 191	0.77 5	32 5	1.061 06	0.289	1.000	1.000
			Left	Orth	Chinese-English	-2.80 354	1.03 9	25 9	-2.697 31	0.007	0.521	1.000
			Left	Control	English	-2.85 648	1.03 9	25 9	-2.748 24	0.006	0.482	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Group	Hemi sphe re	RRT diff	Group	Mean Diff erence	SE	df	t	p	ptuk ey	Phol m
-			Left	Control	Spanish-English	-0.31739	0.775	325	-0.40974	0.682	1.000	1.000
-			Left	Control	Chinese-English	-2.37633	1.039	259	-2.28629	0.023	0.820	1.000
-			Right	PhonOrth	English	-2.81988	1.039	259	-2.71303	0.007	0.509	1.000
-			Right	PhonOrth	Spanish-English	-1.42004	0.948	207	-1.49717	0.136	0.998	1.000
-			Right	PhonOrth	Chinese-English	-2.36821	1.039	259	-2.27848	0.024	0.824	1.000
-			Right	Phon	English	-4.11386	1.039	259	-3.95798	<.001	0.019	0.026
-			Right	Phon	Spanish-English	-1.94098	0.874	156	-2.22036	0.028	0.854	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
-			Rig ht	Pho n	Chi nes e- Eng lish	- 0.79 747	1. 03 9	2 5 9	- 0.7 67 25	0.4 44	1.0 00	1.0 00
-			Rig ht	Ort h	Eng lish	- 2.88 496	1. 03 9	2 5 9	- 2.7 75 65	0.0 06	0.4 61	1.0 00
-			Rig ht	Ort h	Spa nis h- Eng lish	- 3.39 763	0. 94 8	2 0 7	- 3.5 82 16	<. 00 1	0.0 69	0.1 11
-			Rig ht	Ort h	Chi nes e- Eng lish	- 0.09 354	1. 03 9	2 5 9	- 0.0 90 00	0.9 28	1.0 00	1.0 00
-			Rig ht	Con trol	Eng lish	- 4.81 365	1. 03 9	2 5 9	- 4.6 31 26	<. 00 1	0.0 01	0.0 02
-			Rig ht	Con trol	Spa nis h- Eng lish	- 1.18 408	0. 94 8	2 0 7	- 1.2 48 38	0.2 13	1.0 00	1.0 00
-			Rig ht	Con trol	Chi nes e- Eng lish	- 0.06 506	1. 03 9	2 5 9	- 0.0 62 60	0.9 50	1.0 00	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
		Chinese-English	-	Left	Orth	English	-0.16275	1.039	259	0.15658	0.876	1.000
			-	Left	Orth	Spanish-English	2.98664	1.039	259	2.87347	0.004	0.388
			-	Left	Orth	Chinese-English	-0.63881	0.775	325	-0.82469	0.410	1.000
			-	Left	Control	English	-0.69175	1.039	259	-0.66554	0.506	1.000
			-	Left	Control	Spanish-English	1.84734	1.039	259	1.77734	0.077	0.985
			-	Left	Control	Chinese-English	-0.21160	0.775	325	-0.27317	0.785	1.000
			-	Right	PhonOrth	English	-0.65515	1.039	259	-0.63033	0.529	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Group	Hemi sphe re	RRT diff	Group	Mean Diff erence	SE	df	t	p	ptuk ey	Phol m
-			Right	PhonOrth	Spanish-English	0.74468	1.039	259	0.71647	0.474	1.000	1.000
-			Right	PhonOrth	Chinese-English	0.20348	0.948	207	-0.21453	0.830	1.000	1.000
-			Right	Phon	English	1.94913	1.039	259	1.87528	0.062	0.971	1.000
-			Right	Phon	Spanish-English	0.22375	1.039	259	0.21527	0.830	1.000	1.000
-			Right	Phon	Chinese-English	1.36726	0.874	156	1.56406	0.120	0.997	1.000
-			Right	Orth	English	0.72024	1.039	259	0.69295	0.489	1.000	1.000
-			Right	Orth	Spanish-English	1.23291	1.039	259	1.18619	0.237	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison													
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>	
			-	Rig ht	Ort h	Chi nes e- Eng lish	2.07 118	0. 94 8	2 0 7	2.1 83 67	0.0 30	0.8 74	1.0 00
			-	Rig ht	Con trol	Eng lish	- 2.64 892	1. 03 9	2 5 9	- 2.5 48 56	0.0 11	0.6 38	1.0 00
			-	Rig ht	Con trol	Spa nis h- Eng lish	0.98 065	1. 03 9	2 5 9	0.9 43 49	0.3 46	1.0 00	1.0 00
			-	Rig ht	Con trol	Chi nes e- Eng lish	2.09 967	0. 94 8	2 0 7	2.2 13 70	0.0 28	0.8 59	1.0 00
	Ort h	Eng lish	-	Left	Ort h	Spa nis h- Eng lish	3.14 938	1. 03 9	2 5 9	3.0 30 05	0.0 03	0.2 84	0.6 60
			-	Left	Ort h	Chi nes e- Eng lish	- 0.47 607	1. 03 9	2 5 9	- 0.4 58 03	0.6 47	1.0 00	1.0 00
			-	Left	Con trol	Eng lish	- 0.52 900	0. 77 5	3 2 5	- 0.6 82 93	0.4 95	1.0 00	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Group	Hemi sphe re	RRT diff	Group	Mean Diff erence	SE	df	t	p	ptuk ey	Phol m
		-	Left	Control	Spanish-English	2.01009	1.039	259	1.93392	0.054	0.960	1.000
		-	Left	Control	Chinese-English	-0.04885	1.039	259	-0.04700	0.963	1.000	1.000
		-	Right	PhonOrth	English	-0.49241	0.948	207	-0.51915	0.604	1.000	1.000
		-	Right	PhonOrth	Spanish-English	0.90743	1.039	259	0.87305	0.383	1.000	1.000
		-	Right	PhonOrth	Chinese-English	-0.04074	1.039	259	-0.03919	0.969	1.000	1.000
		-	Right	Phon	English	-1.78638	0.948	207	-1.88340	0.061	0.969	1.000
		-	Right	Phon	Spanish-English	0.38649	1.039	259	0.37185	0.710	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
-			Rig ht	Pho n	Chi nes e- Eng lish	1.53 001	1. 03 9	2 5 9	1.4 72 03	0.1 42	0.9 99	1.0 00
-			Rig ht	Ort h	Eng lish	- 0.55 749	0. 87 4	1 5 6	- 0.6 37 74	0.5 25	1.0 00	1.0 00
-			Rig ht	Ort h	Spa nis h- Eng lish	- 1.07 016	1. 03 9	2 5 9	- 1.0 29 61	0.3 04	1.0 00	1.0 00
-			Rig ht	Ort h	Chi nes e- Eng lish	2.23 393	1. 03 9	2 5 9	2.1 49 28	0.0 33	0.8 90	1.0 00
-			Rig ht	Con trol	Eng lish	- 2.48 618	0. 94 8	2 0 7	- 2.6 21 21	0.0 09	0.5 82	1.0 00
-			Rig ht	Con trol	Spa nis h- Eng lish	1.14 340	1. 03 9	2 5 9	1.1 00 07	0.2 72	1.0 00	1.0 00
-			Rig ht	Con trol	Chi nes e- Eng lish	2.26 241	1. 03 9	2 5 9	2.1 76 69	0.0 30	0.8 78	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison													
Hemi sphe re	RRT diff	Group	Hemi sphe re	RRT diff	Group	Mea n Diff erence	SE	df	t	p	P <sub>tuk</sub> ey	P <sub>hol</sub> m	
		Spa nis h- Eng lish	-	Left	Ort h	Chi nes e- Eng lish	- 3.62 545	1. 03 9	2 5 9	- 3.4 88 08	<. 00 1	0.0 89	0.1 46
			-	Left	Con trol	Eng lish	- 3.67 839	1. 03 9	2 5 9	- 3.5 39 01	<. 00 1	0.0 77	0.1 23
			-	Left	Con trol	Spa nis h- Eng lish	- 1.13 930	0. 77 5	3 2 5	- 1.4 70 80	0.1 42	0.9 99	1.0 00
			-	Left	Con trol	Chi nes e- Eng lish	- 3.19 824	1. 03 9	2 5 9	- 3.0 77 05	0.0 02	0.2 56	0.5 74
			-	Rig ht	Pho nOr th	Eng lish	- 3.64 179	1. 03 9	2 5 9	- 3.5 03 80	<. 00 1	0.0 85	0.1 39
			-	Rig ht	Pho nOr th	Spa nis h- Eng lish	- 2.24 195	0. 94 8	2 0 7	- 2.3 63 71	0.0 19	0.7 71	1.0 00
			-	Rig ht	Pho nOr th	Chi nes e- Eng lish	- 3.19 012	1. 03 9	2 5 9	- 3.0 69 24	0.0 02	0.2 61	0.5 86

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Group	Hemi sphe re	RRT diff	Group	Mea n Diff erence	SE	df	t	p	P <sub>tuke</sub> y	P <sub>hol</sub> m
-			Rig ht	Pho n	Eng lish	- 4.93 576	1. 03 9	2 5 9	- 4.7 48 75	<. 00 1	<. 00 1	<. 00 1
-			Rig ht	Pho n	Spa nis h- Eng lish	- 2.76 289	0. 94 8	2 0 7	- 2.9 12 94	0.0 04	0.3 62	0.9 57
-			Rig ht	Pho n	Chi nes e- Eng lish	- 1.61 937	1. 03 9	2 5 9	- 1.5 58 02	0.1 20	0.9 97	1.0 00
-			Rig ht	Ort h	Eng lish	- 3.70 687	1. 03 9	2 5 9	- 3.5 66 42	<. 00 1	0.0 71	0.1 12
-			Rig ht	Ort h	Spa nis h- Eng lish	- 4.21 954	0. 87 4	1 5 6	- 4.8 26 90	<. 00 1	<. 00 1	<. 00 1
-			Rig ht	Ort h	Chi nes e- Eng lish	- 0.91 545	1. 03 9	2 5 9	- 0.8 80 77	0.3 79	1.0 00	1.0 00
-			Rig ht	Con trol	Eng lish	- 5.63 556	1. 03 9	2 5 9	- 5.4 22 03	<. 00 1	<. 00 1	<. 00 1

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
					Spanish-English	-2.00	0.948	207	-2.114	0.036	0.904	1.000
					Chinese-English	-0.88	1.039	259	-0.853	0.394	1.000	1.000
		Chinese-English			English	-0.05	1.039	259	0.050	0.959	1.000	1.000
					Spanish-English	2.48	1.039	259	2.391	0.017	0.753	1.000
					Chinese-English	0.42	0.775	325	0.551	0.582	1.000	1.000
					English	0.01	1.039	259	0.015	0.987	1.000	1.000
					Spanish-English	1.38	1.039	259	1.331	0.184	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
		-	Rig ht	Pho nOr th	Chi nes e- Eng lish	0.43 533	0. 94 8	2 0 7	0.4 58 98	0.6 47	1.0 00	1.0 00
		-	Rig ht	Pho n	Eng lish	- 1.31 032	1. 03 9	2 5 9	- 1.2 60 67	0.2 09	1.0 00	1.0 00
		-	Rig ht	Pho n	Spa nis h- Eng lish	0.86 256	1. 03 9	2 5 9	0.8 29 88	0.4 07	1.0 00	1.0 00
		-	Rig ht	Pho n	Chi nes e- Eng lish	2.00 607	0. 94 8	2 0 7	2.1 15 03	0.0 36	0.9 04	1.0 00
		-	Rig ht	Ort h	Eng lish	- 0.08 142	1. 03 9	2 5 9	- 0.0 78 34	0.9 38	1.0 00	1.0 00
		-	Rig ht	Ort h	Spa nis h- Eng lish	- 0.59 409	1. 03 9	2 5 9	- 0.5 71 58	0.5 68	1.0 00	1.0 00
		-	Rig ht	Ort h	Chi nes e- Eng lish	2.71 000	0. 87 4	1 5 6	3.1 00 07	0.0 02	0.2 49	0.5 72

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison													
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>	
			-	Rig ht	Con trol	Eng lish	2.01 011	1. 03 9	2 5 9	- 1.9 33 95	0.0 54	0.9 60	1.0 00
			-	Rig ht	Con trol	Spa nis h- Eng lish	1.61 946	1. 03 9	2 5 9	1.5 58 10	0.1 20	0.9 97	1.0 00
			-	Rig ht	Con trol	Chi nes e- Eng lish	2.73 848	0. 94 8	2 0 7	2.8 87 21	0.0 04	0.3 80	1.0 00
	Con trol	Eng lish	-	Left	Con trol	Spa nis h- Eng lish	2.53 909	1. 03 9	2 5 9	2.4 42 88	0.0 15	0.7 17	1.0 00
			-	Left	Con trol	Chi nes e- Eng lish	0.48 015	1. 03 9	2 5 9	0.4 61 96	0.6 45	1.0 00	1.0 00
			-	Rig ht	Pho nOr th	Eng lish	0.03 660	0. 94 8	2 0 7	0.0 38 58	0.9 69	1.0 00	1.0 00
			-	Rig ht	Pho nOr th	Spa nis h- Eng lish	1.43 643	1. 03 9	2 5 9	1.3 82 01	0.1 68	1.0 00	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
		-	Rig ht	Pho nOr th	Chi nes e- Eng lish	0.48 827	1. 03 9	2 5 9	0.4 69 77	0.6 39	1.0 00	1.0 00
		-	Rig ht	Pho n	Eng lish	- 1.25 738	0. 94 8	2 0 7	- 1.3 25 67	0.1 86	1.0 00	1.0 00
		-	Rig ht	Pho n	Spa nis h- Eng lish	0.91 550	1. 03 9	2 5 9	0.8 80 81	0.3 79	1.0 00	1.0 00
		-	Rig ht	Pho n	Chi nes e- Eng lish	2.05 901	1. 03 9	2 5 9	1.9 80 99	0.0 49	0.9 49	1.0 00
		-	Rig ht	Ort h	Eng lish	- 0.02 849	0. 94 8	2 0 7	- 0.0 30 03	0.9 76	1.0 00	1.0 00
		-	Rig ht	Ort h	Spa nis h- Eng lish	- 0.54 116	1. 03 9	2 5 9	- 0.5 20 65	0.6 03	1.0 00	1.0 00
		-	Rig ht	Ort h	Chi nes e- Eng lish	2.76 293	1. 03 9	2 5 9	2.6 58 24	0.0 08	0.5 52	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison													
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>	
			-	Rig ht	Con trol	Eng lish	- 1.95 718	0. 87 4	1 5 6	- 2.2 38 89	0.0 27	0.8 44	1.0 00
			-	Rig ht	Con trol	Spa nis h- Eng lish	1.67 240	1. 03 9	2 5 9	1.6 09 03	0.1 09	0.9 96	1.0 00
			-	Rig ht	Con trol	Chi nes e- Eng lish	2.79 141	1. 03 9	2 5 9	2.6 85 65	0.0 08	0.5 31	1.0 00
		Spa nis h- Eng lish	-	Left	Con trol	Chi nes e- Eng lish	- 2.05 894	1. 03 9	2 5 9	- 1.9 80 93	0.0 49	0.9 49	1.0 00
			-	Rig ht	Pho nOr th	Eng lish	- 2.50 249	1. 03 9	2 5 9	- 2.4 07 67	0.0 17	0.7 42	1.0 00
			-	Rig ht	Pho nOr th	Spa nis h- Eng lish	- 1.10 266	0. 94 8	2 0 7	- 1.1 62 54	0.2 46	1.0 00	1.0 00
			-	Rig ht	Pho nOr th	Chi nes e- Eng lish	- 2.05 082	1. 03 9	2 5 9	- 1.9 73 11	0.0 50	0.9 51	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
-			Rig ht	Pho n	Eng lish	- 3.79 647	1. 03 9	2 5 9	- 3.6 52 62	<. 00 1	0.0 54	0.0 83
-			Rig ht	Pho n	Spa nis h- Eng lish	- 1.62 359	0. 94 8	2 0 7	- 1.7 11 77	0.0 88	0.9 90	1.0 00
-			Rig ht	Pho n	Chi nes e- Eng lish	- 0.48 008	1. 03 9	2 5 9	- 0.4 61 89	0.6 45	1.0 00	1.0 00
-			Rig ht	Ort h	Eng lish	- 2.56 758	1. 03 9	2 5 9	- 2.4 70 29	0.0 14	0.6 97	1.0 00
-			Rig ht	Ort h	Spa nis h- Eng lish	- 3.08 025	0. 94 8	2 0 7	- 3.2 47 54	0.0 01	0.1 73	0.3 43
-			Rig ht	Ort h	Chi nes e- Eng lish	0.22 384	1. 03 9	2 5 9	0.2 15 36	0.8 30	1.0 00	1.0 00
-			Rig ht	Con trol	Eng lish	- 4.49 626	1. 03 9	2 5 9	- 4.3 25 90	<. 00 1	0.0 05	0.0 06

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
			Right	Control	Spanish-English	-0.86669	0.874	156	-0.99144	0.323	1.000	1.000
			Right	Control	Chinese-English	0.25232	1.039	259	0.24276	0.808	1.000	1.000
		Chinese-English	Right	PhonOrth	English	-0.44355	1.039	259	-0.42675	0.670	1.000	1.000
			Right	PhonOrth	Spanish-English	0.95628	1.039	259	0.92005	0.358	1.000	1.000
			Right	PhonOrth	Chinese-English	0.00812	0.948	207	0.0856	0.993	1.000	1.000
			Right	Phon	English	1.73753	1.039	259	1.67169	0.096	0.993	1.000
			Right	Phon	Spanish-English	0.43535	1.039	259	0.41885	0.676	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Group	Hemi sphe re	RRT diff	Group	Mean Diff erence	SE	df	t	p	ptuk ey	Phol m
-			Rig ht	Pho n	Chi nes e- Eng lish	1.57 886	0. 94 8	2 0 7	1.6 64 61	0.0 98	0.9 93	1.0 00
-			Rig ht	Ort h	Eng lish	- 0.50 864	1. 03 9	2 5 9	- 0.4 89 36	0.6 25	1.0 00	1.0 00
-			Rig ht	Ort h	Spa nis h- Eng lish	- 1.02 131	1. 03 9	2 5 9	- 0.9 82 61	0.3 27	1.0 00	1.0 00
-			Rig ht	Ort h	Chi nes e- Eng lish	2.28 278	0. 94 8	2 0 7	2.4 06 76	0.0 17	0.7 42	1.0 00
-			Rig ht	Con trol	Eng lish	- 2.43 732	1. 03 9	2 5 9	- 2.3 44 97	0.0 20	0.7 84	1.0 00
-			Rig ht	Con trol	Spa nis h- Eng lish	1.19 225	1. 03 9	2 5 9	1.1 47 08	0.2 52	1.0 00	1.0 00
-			Rig ht	Con trol	Chi nes e- Eng lish	2.31 127	0. 87 4	1 5 6	2.6 43 95	0.0 09	0.5 64	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison																
Hemisphere	RRT diff	Group		Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m			
Right	PhonOrth	English	-	Right	PhonOrth	Spanish-English	1.39984	1.039	259	1.34680	0.179	1.000	1.000			
			-	Right	PhonOrth	Chinese-English	0.45167	1.039	259	0.43456	0.664	1.000	1.000			
			-	Right	Phon	English	-	0.1775	325	-1.29398	0.1775	325	1.67049	0.09693	1.000	
			-	Right	Phon	Spanish-English	0.87890	1.039	259	0.84560	1.039	259	0.81999	1.000	1.000	
			-	Right	Phon	Chinese-English	2.02241	1.039	259	1.94578	1.039	259	1.95353	0.057	1.000	
			-	Right	Orth	English	-	0.07508	325	-0.06508	0.07508	325	0.08402	0.933	1.000	1.000
			-	Right	Orth	Spanish-English	-	0.57775	259	-0.57775	1.039	259	0.5586	0.579	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
			-	Rig ht	Ort h	Chi nes e- Eng lish 2.72 634	1. 03 9	2 5 9	2.6 23 04	0.0 09	0.5 80	1.0 00
			-	Rig ht	Con trol	Eng lish - 1.99 377	0. 77 5	3 2 5	- 2.5 73 91	0.0 10	0.6 18	1.0 00
			-	Rig ht	Con trol	Spa nis h- Eng lish 1.63 581	1. 03 9	2 5 9	1.5 73 82	0.1 17	0.9 97	1.0 00
			-	Rig ht	Con trol	Chi nes e- Eng lish 2.75 482	1. 03 9	2 5 9	2.6 50 44	0.0 09	0.5 58	1.0 00
		Spa nis h- Eng lish	-	Rig ht	Pho nOr th	Chi nes e- Eng lish - 0.94 817	1. 03 9	2 5 9	- 0.9 12 24	0.3 62	1.0 00	1.0 00
			-	Rig ht	Pho n	Eng lish - 2.69 381	1. 03 9	2 5 9	- 2.5 91 74	0.0 10	0.6 04	1.0 00
			-	Rig ht	Pho n	Spa nis h- Eng lish - 0.52 094	0. 77 5	3 2 5	- 0.6 72 52	0.5 02	1.0 00	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Group	Hemi sphe re	RRT diff	Group	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
-			Right	Phon	Chinese-English	0.62258	1.039	25	0.59899	0.550	1.000	1.000
-			Right	Orth	English	1.46492	1.039	25	1.40942	0.160	0.999	1.000
-			Right	Orth	Spanish-English	1.97759	0.775	32	2.55302	0.011	0.634	1.000
-			Right	Orth	Chinese-English	1.32650	1.039	25	1.27624	0.203	1.000	1.000
-			Right	Control	English	3.39361	1.039	25	3.26502	0.001	0.164	0.316
-			Right	Control	Spanish-English	0.23597	0.775	32	0.30463	0.761	1.000	1.000
-			Right	Control	Chinese-English	1.35498	1.039	25	1.30364	0.194	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
		Chinese-English	Right	Phon	English	-1.74565	1.039	259	-1.67950	0.094	0.992	1.000
			Right	Phon	Spanish-English	0.42723	1.039	259	0.41104	0.681	1.000	1.000
			Right	Phon	Chinese-English	1.57074	0.775	325	2.02779	0.043	0.936	1.000
			Right	Orth	English	-0.51676	1.039	259	-0.49718	0.619	1.000	1.000
			Right	Orth	Spanish-English	-1.02943	1.039	259	-0.99042	0.323	1.000	1.000
			Right	Orth	Chinese-English	2.27466	0.775	325	2.93653	0.004	0.343	0.860
			Right	Control	English	-2.44544	1.039	259	-2.35278	0.019	0.779	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
			-	Rig ht	Con trol	Spa nis h- Eng lish 1.18 413	1. 03 9	2 5 9	1.1 39 26	0.2 56	1.0 00	1.0 00
			-	Rig ht	Con trol	Chi nes e- Eng lish 2.30 315	0. 77 5	3 2 5	2.9 73 30	0.0 03	0.3 18	0.7 69
	Pho n	Eng lish	-	Rig ht	Pho n	Spa nis h- Eng lish 2.17 288	1. 03 9	2 5 9	2.0 90 54	0.0 38	0.9 14	1.0 00
			-	Rig ht	Pho n	Chi nes e- Eng lish 3.31 639	1. 03 9	2 5 9	3.1 90 73	0.0 02	0.1 97	0.4 00
			-	Rig ht	Ort h	Eng lish 1.22 889	0. 77 5	3 2 5	1.5 86 47	0.1 14	0.9 97	1.0 00
			-	Rig ht	Ort h	Spa nis h- Eng lish 0.71 622	1. 03 9	2 5 9	0.6 89 08	0.4 91	1.0 00	1.0 00
			-	Rig ht	Ort h	Chi nes e- Eng lish 4.02 031	1. 03 9	2 5 9	3.8 67 98	< . 00 1	0.0 27	0.0 37

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison													
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>	
			-	Rig ht	Con trol	Eng lish	0.69 980	0.77 5	3 2 5	- 0.9 03 42	0.3 67	1.0 00	1.0 00
			-	Rig ht	Con trol	Spa nis h- Eng lish	2.92 978	1.03 9	2 5 9	2.8 18 77	0.0 05	0.4 28	1.0 00
			-	Rig ht	Con trol	Chi nes e- Eng lish	4.04 879	1.03 9	2 5 9	3.8 95 38	< . 00 1	0.0 24	0.0 33
		Spa nis h- Eng lish	-	Rig ht	Pho n	Chi nes e- Eng lish	1.14 351	1.03 9	2 5 9	1.1 00 19	0.2 72	1.0 00	1.0 00
			-	Rig ht	Ort h	Eng lish	0.94 398	1.03 9	2 5 9	- 0.9 08 22	0.3 65	1.0 00	1.0 00
			-	Rig ht	Ort h	Spa nis h- Eng lish	1.45 665	0.77 5	3 2 5	- 1.8 80 50	0.0 61	0.9 71	1.0 00
			-	Rig ht	Ort h	Chi nes e- Eng lish	1.84 744	1.03 9	2 5 9	1.7 77 44	0.0 77	0.9 85	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison													
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m	
			-	Right	Control	English	-2.87267	1.039	259	-2.76382	0.006	0.470	1.000
			-	Right	Control	Spanish-English	0.75690	0.775	325	0.97714	0.329	1.000	1.000
			-	Right	Control	Chinese-English	1.87592	1.039	259	1.80484	0.072	0.982	1.000
		Chinese-English	-	Right	Orth	English	-2.08750	1.039	259	-2.00840	0.046	0.941	1.000
			-	Right	Orth	Spanish-English	-2.60017	1.039	259	-2.50165	0.013	0.674	1.000
			-	Right	Orth	Chinese-English	0.70392	0.775	325	0.90875	0.364	1.000	1.000
			-	Right	Control	English	-4.01619	1.039	259	-3.86401	<.001	0.027	0.037

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
			Right	Control	Spanish-English	-0.38661	1.039	259	-0.37196	0.710	1.000	1.000
			Right	Control	Chinese-English	0.73240	0.775	325	0.94552	0.345	1.000	1.000
	Orth	English	Right	Orth	Spanish-English	-0.51267	1.039	259	-0.49324	0.622	1.000	1.000
			Right	Orth	Chinese-English	2.79142	1.039	259	2.68565	0.008	0.531	1.000
			Right	Control	English	-1.92869	0.775	325	-2.48989	0.013	0.683	1.000
			Right	Control	Spanish-English	1.70089	1.039	259	1.63644	0.103	0.995	1.000
			Right	Control	Chinese-English	2.81990	1.039	259	2.71305	0.007	0.509	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

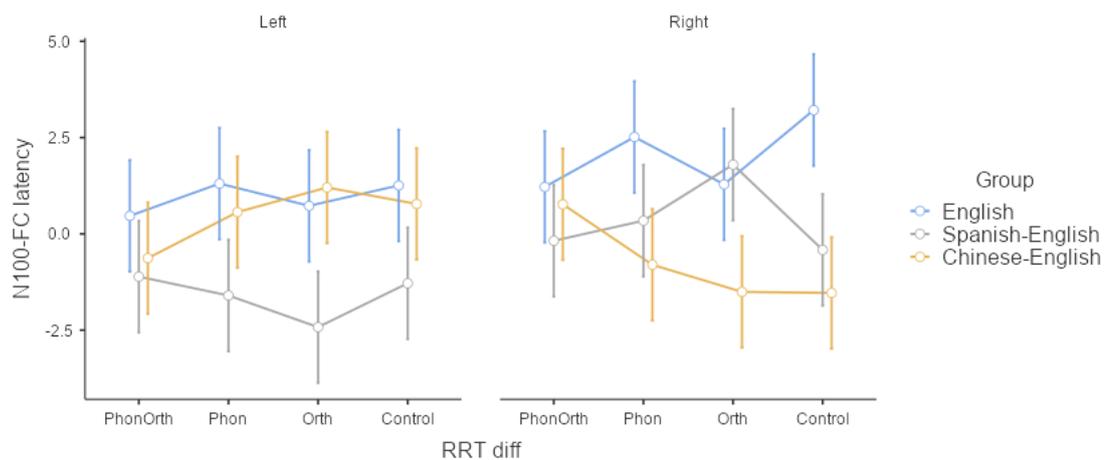
Comparison													
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>	
		Spa nis h- Eng lish	-	Rig ht	Ort h	Chi nes e- Eng lish	3.30 409	1. 03 9	2 5 9	3.1 78 90	0.0 02	0.2 02	0.4 15
			-	Rig ht	Con trol	Eng lish	- 1.41 602	1. 03 9	2 5 9	- 1.3 62 36	0.1 74	1.0 00	1.0 00
			-	Rig ht	Con trol	Spa nis h- Eng lish	2.21 356	0. 77 5	3 2 5	2.8 57 65	0.0 05	0.3 98	1.0 00
			-	Rig ht	Con trol	Chi nes e- Eng lish	3.33 257	1. 03 9	2 5 9	3.2 06 30	0.0 02	0.1 89	0.3 81
		Chi nes e- Eng lish	-	Rig ht	Con trol	Eng lish	- 4.72 011	1. 03 9	2 5 9	- 4.5 41 26	<. 00 1	0.0 02	0.0 02
			-	Rig ht	Con trol	Spa nis h- Eng lish	- 1.09 053	1. 03 9	2 5 9	- 1.0 49 21	0.2 95	1.0 00	1.0 00
			-	Rig ht	Con trol	Chi nes e- Eng lish	0.02 848	0. 77 5	3 2 5	0.0 36 77	0.9 71	1.0 00	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	$\eta^2_{puk}$	$\eta^2_{hol}$
	Control	English	Right	Control	Spanish-English	3.62958	1.039	259	3.49205	<.001	0.088	0.145
			Right	Control	Chinese-English	4.74859	1.039	259	4.5666	<.001	0.092	0.092
		Spanish-English	Right	Control	Chinese-English	1.11901	1.039	259	1.07661	0.283	1.000	1.000

### Estimated Marginal Means

#### RRT diff \* Group \* Hemisphere



### Repeated Measures ANOVA

#### Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Hemisphere	0.668	1	0.668	0.123	0.727	0.002
Hemisphere * Group	3.090	2	1.545	0.285	0.753	0.010
Residual	308.695	57	5.416			

Note. Type 3 Sums of Squares

#### Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Group	441	2	220.4	9.05	< .001	0.241
Residual	1388	57	24.3			

Note. Type 3 Sums of Squares

## Assumptions

#### Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
NAL50_P1.LeftFC\$prime	0.344	2	57	0.711
NAL50_P1.RightFC\$prime	0.220	2	57	0.803

## Post Hoc Tests

Post Hoc Comparisons - Hemisphere \* Group

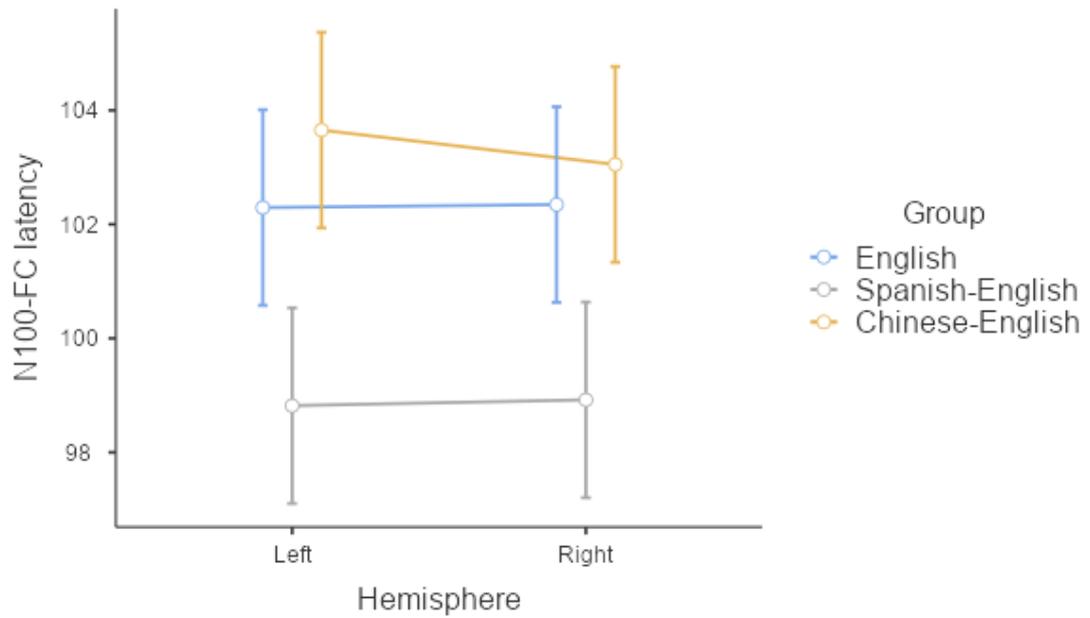
Comparison											
Hemisphere	Group		Hemisphere	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> ey	P <sub>holm</sub> m
Left	English	-	Left	Spanish-English	3.4750	1.220	81.2	2.8486	0.006	0.060	0.056
		-		Chinese-English	-1.3591	1.220	81.2	-1.1141	0.269	0.874	1.000
		-	Right	English	-0.0529	0.736	57.0	-0.0719	0.943	1.000	1.000
		-		Spanish-English	3.3732	1.220	81.2	2.7652	0.007	0.074	0.056
	-	Right	Chinese-English	-0.7569	1.220	81.2	-0.6205	0.537	0.989	1.000	
	-		Spanish-English	Chinese-English	-4.8341	1.220	81.2	-3.9628	<.001	0.002	0.002
	-	Right		English	-3.5279	1.220	81.2	-2.8920	0.005	0.054	0.054
	-	Right		Spanish-English	-0.1017	0.736	57.0	-0.1382	0.891	1.000	1.000
	-	Right		Chinese-English	-4.2319	1.220	81.2	-3.4691	<.001	0.011	0.011

Post Hoc Comparisons - Hemisphere \* Group

Comparison											
Hemisphere	Group	Hemisphere	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub>	P <sub>holm</sub>	
Right	Chinese-English	-	Right	English	1.306	1.2	81.2	1.07	0.28	0.892	1.000
				Spanish-English	4.732	1.2	81.2	3.87	<.001	0.003	0.003
				Chinese-English	0.602	0.7	57.0	0.81	0.417	0.963	1.000
	English	-	Right	Spanish-English	3.426	1.2	81.2	2.80	0.006	0.066	0.056
				Chinese-English	0.704	1.2	81.2	0.57	0.565	0.992	1.000
				Spanish-English	4.130	1.2	81.2	3.38	0.001	0.014	0.013

**Estimated Marginal Means**

**Hemisphere \* Group**



*N170-OT latency*

## Repeated Measures ANOVA

Within Subjects Effects

	Sphericity Correction	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
RRT Target	None	105.5	3	35.18	2.311	0.078	0.039
	Greenhouse-Geisser	105.5	2.52	41.80	2.311	0.089	0.039
	Huynh-Feldt	105.5	2.65	39.81	2.311	0.086	0.039
RRT Target * Group	None	148.5	6	24.75	1.626	0.143	0.054
	Greenhouse-Geisser	148.5	5.05	29.41	1.626	0.156	0.054
	Huynh-Feldt	148.5	5.30	28.00	1.626	0.153	0.054
Residual	None	2603.1	171	15.22			

Within Subjects Effects

	<b>Sphericity Correction</b>	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
	Greenhouse-Geisser	2603.1	143.90	18.09			
	Huynh-Feldt	2603.1	151.11	17.23			
Hemisphere	None	870.7	1	870.71	6.285	0.015	0.099
	Greenhouse-Geisser	870.7	1.00	870.71	6.285	0.015	0.099
	Huynh-Feldt	870.7	1.00	870.71	6.285	0.015	0.099
Hemisphere *	None	124.7	2	62.37	0.450	0.640	0.016
Group	Greenhouse-Geisser	124.7	2.00	62.37	0.450	0.640	0.016
	Huynh-Feldt	124.7	2.00	62.37	0.450	0.640	0.016
Residual	None	7896.1	57	138.53			
	Greenhouse-Geisser	7896.1	57.00	138.53			
	Huynh-Feldt	7896.1	57.00	138.53			
RRT Target *	None	105.3	3	35.10	2.735	0.045	0.046
Hemisphere	Greenhouse-Geisser	105.3	2.20	47.79	2.735	0.063	0.046
	Huynh-Feldt	105.3	2.30	45.87	2.735	0.061	0.046
RRT Target *	None	38.6	6	6.43	0.501	0.807	0.017
Hemisphere *	Greenhouse-Geisser	38.6	4.41	8.75	0.501	0.753	0.017
Group	Huynh-Feldt	38.6	4.59	8.40	0.501	0.760	0.017
Residual	None	2194.6	171	12.83			

Within Subjects Effects

	<b>Sphericity Correction</b>	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
	Greenhouse-Geisser	2194.6	125.58	17.48			
	Huynh-Feldt	2194.6	130.84	16.77			

Note. Type 3 Sums of Squares

Between Subjects Effects

	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
Group	594	2	297	1.51	0.230	0.050
Residual	11235	57	197			

Note. Type 3 Sums of Squares

## Assumptions

Tests of Sphericity

	<b>Mauchly's W</b>	<b>p</b>	<b>Greenhouse-Geisser <math>\epsilon</math></b>	<b>Huynh-Feldt <math>\epsilon</math></b>
RRT Target	0.762	0.010	0.841	0.884
Hemisphere	1.000	NaN <sup>a</sup>	1.000	1.000
RRT Target * Hemisphere	0.585	< .001	0.734	0.765

<sup>a</sup> The repeated measures has only two levels. The assumption of sphericity is always met when the repeated measures has only two levels

Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
NAL50_N170.LeftOP\$PhonOrth_TARGET	0.662	2	57	0.520
NAL50_N170.RightOP\$PhonOrth_TARGET	1.227	2	57	0.301
NAL50_N170.LeftOP\$Phon_TARGET	2.663	2	57	0.078
NAL50_N170.RightOP\$Phon_TARGET	0.552	2	57	0.579
NAL50_N170.LeftOP\$Orth_TARGET	1.029	2	57	0.364
NAL50_N170.RightOP\$Orth_TARGET	2.445	2	57	0.096
NAL50_N170.LeftOP\$Control_TARGET	2.742	2	57	0.073
NAL50_N170.RightOP\$Control_TARGET	0.384	2	57	0.683

## Post Hoc Tests

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison														
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm		
PhonOrth	Left	English	PhonOrth	Left	Spanish-English	1.2696	2.29	169	0.55422	0.580	1.000	1.000		
					PhonOrth	Left	Chinese-English	-0.9348	2.29	169	-0.40806	0.684	1.000	1.000
							PhonOrth	Right	English	3.6831	2.10	908	1.75071	0.083

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-	PhonOrth		PhonOrth	Right	Spanish-English	2.9157	2.29	169	1.272	0.205	1.000	1.000
-	PhonOrth		PhonOrth	Right	Chinese-English	1.4509	2.29	169	0.633	0.527	1.000	1.000
-	Phon		Phon	Left	English	-0.1953	1.18	335	-0.164	0.869	1.000	1.000
-	Phon		Phon	Left	Spanish-English	2.0299	2.29	169	0.886	0.377	1.000	1.000
-	Phon		Phon	Left	Chinese-English	-2.9436	2.29	169	-1.284	0.201	1.000	1.000
-	Phon		Phon	Right	English	1.1579	2.13	964	0.543	0.588	1.000	1.000
-	Phon		Phon	Right	Spanish-English	1.9113	2.29	169	0.834	0.405	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-	Phon	Right	Chinese-English			0.4883	2.29	1696	0.21315	0.831	1.000	1.000
-	Orth	Left	English			-1.1161	1.18	3395	-0.94230	0.347	1.000	1.000
-	Orth	Left	Spanish-English			0.5232	2.29	1696	0.22839	0.820	1.000	1.000
-	Orth	Left	Chinese-English			-4.7223	2.29	1696	-2.06146	0.041	0.923	1.000
-	Orth	Right	English			3.7179	2.13	964	1.74392	0.084	0.986	1.000
-	Orth	Right	Spanish-English			3.1878	2.29	1696	1.39159	0.166	0.999	1.000
-	Orth	Right	Chinese-English			0.2651	2.29	1696	0.11573	0.908	1.000	1.000
-	Control	Left	English			-2.0578	1.18	3395	-1.73737	0.083	0.989	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-	Control	Left	Spanish-English	0.8860	2.29	169	0.386	0.699	1.100	1.000	1.000	
-	Control	Left	Chinese-English	1.8066	2.29	169	-0.788	0.431	1.800	1.000	1.000	
-	Control	Right	English	1.6393	2.13	964	0.768	0.444	1.700	1.000	1.000	
-	Control	Right	Spanish-English	1.7020	2.29	169	0.743	0.459	1.600	1.000	1.000	
-	Control	Right	Chinese-English	1.1370	2.29	169	0.496	0.620	1.600	1.000	1.000	
-	Spanish-English	Left	Chinese-English	2.2044	2.29	169	-0.962	0.337	2.800	1.000	1.000	
-	Spanish-English	Right	English	2.4135	2.29	169	1.053	0.294	3.500	1.000	1.000	
-	Spanish-English	Right	Spanish-English	1.6461	2.10	908	0.782	0.436	1.800	1.000	1.000	

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-	PhonOrth		PhonOrth	Right	Chinese-English	0.1813	2.29	1696	0.07914	0.937	1.000	1.000
-	Phon		Phon	Left	English	-1.4649	2.29	1696	-0.63949	0.523	1.000	1.000
-	Phon		Phon	Left	Spanish-English	0.7603	1.18	3395	0.64191	0.521	1.000	1.000
-	Phon		Phon	Left	Chinese-English	-4.2132	2.29	1696	-1.83921	0.068	0.976	1.000
-	Phon		Phon	Right	English	-0.1117	2.29	1696	-0.04875	0.961	1.000	1.000
-	Phon		Phon	Right	Spanish-English	0.6417	2.13	964	0.30097	0.764	1.000	1.000
-	Phon		Phon	Right	Chinese-English	-0.7813	2.29	1696	-0.34108	0.733	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-	Orth	Left	English			-2.3857	2.29	169	-1.041	0.299	1.000	1.000
-	Orth	Left	Spanish-English			-0.7464	1.18	335	-0.630	0.529	1.000	1.000
-	Orth	Left	Chinese-English			-5.9919	2.29	169	-2.615	0.010	0.586	1.000
-	Orth	Right	English			2.4483	2.29	169	1.068	0.287	1.000	1.000
-	Orth	Right	Spanish-English			1.9182	2.13	964	0.899	0.371	1.000	1.000
-	Orth	Right	Chinese-English			-1.0045	2.29	169	-0.438	0.662	1.000	1.000
-	Control	Left	English			-3.3274	2.29	169	-1.452	0.148	0.999	1.000
-	Control	Left	Spanish-English			-0.3836	1.18	335	-0.323	0.746	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-	Control	Left	Chinese-English	-	3.0762	2.29	169	-1.342	0.181	1.000	1.000	
-	Control	Right	English	-	0.3697	2.29	169	0.161	0.872	1.000	1.000	
-	Control	Right	Spanish-English	-	0.4325	2.13	964	0.202	0.840	1.000	1.000	
-	Control	Right	Chinese-English	-	0.1326	2.29	169	0.057	0.987	1.000	1.000	
-	PhonOrth	Right	English	Chinese-English	4.6178	2.29	169	2.015	0.045	0.937	1.000	
-	PhonOrth	Right	Spanish-English	-	3.8505	2.29	169	1.680	0.095	0.992	1.000	
-	PhonOrth	Right	Chinese-English	-	2.3857	2.10	908	1.134	0.260	1.000	1.000	
-	Phon	Left	English	-	0.7394	2.29	169	0.322	0.747	1.000	1.000	

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-	Phon	Left	Phon	Left	Spanish-English	2.9646	2.29	169	1.294	0.197	1.000	1.000
-	Phon	Left	Phon	Left	Chinese-English	2.0088	1.18	339	-1.696	0.091	0.992	1.000
-	Phon	Right	Phon	Right	English	2.0927	2.29	169	0.913	0.362	1.000	1.000
-	Phon	Right	Phon	Right	Spanish-English	2.8460	2.29	169	1.242	0.216	1.000	1.000
-	Phon	Right	Phon	Right	Chinese-English	1.4230	2.13	964	0.667	0.506	1.000	1.000
-	Orth	Left	Orth	Left	English	0.1813	2.29	169	-0.079	0.937	1.000	1.000
-	Orth	Left	Orth	Left	Spanish-English	1.4580	2.29	169	0.636	0.525	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-	Orth	Left	Chinese-English	Left	Chinese-English	-3.7875	1.118	3395	-3.19781	0.002	0.191	0.412
-	Orth	Right	English	Right	English	4.6527	2.299	1696	2.03108	0.044	0.933	1.000
-	Orth	Right	Spanish-English	Right	Spanish-English	4.1226	2.299	1696	1.79965	0.074	0.981	1.000
-	Orth	Right	Chinese-English	Right	Chinese-English	1.1999	2.113	964	0.56281	0.575	1.000	1.000
-	Control	Left	English	Left	English	-1.1230	2.299	1696	-0.49023	0.625	1.000	1.000
-	Control	Left	Spanish-English	Left	Spanish-English	1.8207	2.299	1696	0.79482	0.428	1.000	1.000
-	Control	Left	Chinese-English	Left	Chinese-English	-0.8718	1.118	3395	-0.73609	0.462	1.000	1.000
-	Control	Right	English	Right	English	2.5740	2.299	1696	1.12367	0.263	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
			-	Control	Right	Spanish-English	2.6368	2.29	169	1.15107	0.251	1.000
			-	Control	Right	Chinese-English	2.0718	2.13	964	0.97179	0.334	1.000
	Right	English	-	PhonOrth	Right	Spanish-English	-0.7673	2.29	169	-0.33497	0.738	1.000
			-	PhonOrth	Right	Chinese-English	-2.2322	2.29	169	-0.97442	0.331	1.000
			-	Phon	Left	English	-3.8784	2.13	964	-1.81917	0.072	0.997
			-	Phon	Left	Spanish-English	-1.6532	2.29	169	-0.72167	0.471	1.000
			-	Phon	Left	Chinese-English	-6.6267	2.29	169	-2.89278	0.004	0.378

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-	Phon	Right	English	-	2.5251	1.18	3395	-2.13196	0.034	0.089	1.000	
-	Phon	Right	Spanish-English	-	1.7718	2.29	1696	-0.77346	0.440	1.000	1.000	
-	Phon	Right	Chinese-English	-	3.1948	2.29	1696	-1.39464	0.165	0.999	1.000	
-	Orth	Left	English	-	4.7991	2.13	964	-2.25106	0.027	0.834	1.000	
-	Orth	Left	Spanish-English	-	3.1599	2.29	1696	-1.37940	0.170	0.999	1.000	
-	Orth	Left	Chinese-English	-	8.4054	2.29	1696	-3.66925	<.001	0.005	0.009	
-	Orth	Right	English	0.0349	1.18	3395	0.02945	0.977	1.000	1.000		
-	Orth	Right	Spanish-English	-	0.4953	2.29	1696	-0.21620	0.829	1.000	1.000	

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-	Orth	Righth	Chinese-English	-	3.4179	2.29	16.96	-1.4925	0.138	0.998	1.000	
-	Control	Left	English	-	5.7408	2.13	96.4	2.6926	0.008	0.529	1.000	
-	Control	Left	Spanish-English	-	2.7971	2.29	16.96	1.22103	0.224	1.000	1.000	
-	Control	Left	Chinese-English	-	5.4897	2.29	16.96	2.39644	0.018	0.748	1.000	
-	Control	Righth	English	-	2.0438	1.18	33.95	1.7255	0.085	0.990	1.000	
-	Control	Righth	Spanish-English	-	1.9810	2.29	16.96	0.86478	0.388	1.000	1.000	
-	Control	Righth	Chinese-English	-	2.5460	2.29	16.96	1.11143	0.268	1.000	1.000	

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
		Spanish-English	PhonOrth	Right	Chinese-English	-1.4648	2.299	1696	-0.63945	0.523	1.000	1.000
			Phon	Left	English	-3.1110	2.299	1696	-1.35808	0.176	1.000	1.000
			Phon	Left	Spanish-English	-0.8858	2.153	964	-0.4150	0.679	1.000	1.000
			Phon	Left	Chinese-English	-5.8593	2.299	1696	-2.55781	0.011	0.631	1.000
			Phon	Right	English	-1.7578	2.299	1696	-0.76734	0.444	1.000	1.000
			Phon	Right	Spanish-English	-1.0045	1.198	3395	-0.84806	0.397	1.000	1.000
			Phon	Right	Chinese-English	-2.4274	2.299	1696	-1.05967	0.291	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-	Orth	Left	English			4.0318	2.29	169	-1.7603	0.080	0.986	1.000
-	Orth	Left	Spanish-English			2.3925	2.13	964	-1.1222	0.265	1.000	1.000
-	Orth	Left	Chinese-English			7.6380	2.29	169	-3.33428	0.001	0.141	0.287
-	Orth	Right	English			0.8022	2.29	169	0.35020	0.727	1.000	1.000
-	Orth	Right	Spanish-English			0.2721	1.18	339	0.22972	0.818	1.000	1.000
-	Orth	Right	Chinese-English			2.6506	2.29	169	-1.15708	0.249	1.000	1.000
-	Control	Left	English			4.9735	2.29	169	-2.1711	0.031	0.878	1.000
-	Control	Left	Spanish-English			2.0297	2.13	964	-0.95206	0.343	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-	Control	Left	Chinese-English	-	4.7223	2.29	1696	-2.06147	0.041	0.0923	1.000	1.000
-	Control	Right	English	-	1.2764	2.29	1696	0.55721	0.578	1.000	1.000	1.000
-	Control	Right	Spanish-English	-	1.2137	1.18	3395	1.02470	0.306	1.000	1.000	1.000
-	Control	Right	Chinese-English	-	1.7787	2.29	1696	0.77646	0.439	1.000	1.000	1.000
-	Chinese-English	Phon	Left	English	-	1.6462	2.29	1696	0.71863	0.473	1.000	1.000
-	Chinese-English	Phon	Left	Spanish-English	0.5790	2.29	1696	0.25275	0.801	1.000	1.000	1.000
-	Chinese-English	Phon	Left	Chinese-English	-	4.3945	2.13	964	2.06126	0.042	0.0919	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-	Phon	Right	English	-	0.2930	2.29	169	-0.12789	0.898	1.000	1.000	
-	Phon	Right	Spanish-English	-	0.4604	2.29	169	0.20097	0.841	1.000	1.000	
-	Phon	Right	Chinese-English	-	0.9626	1.18	335	-0.81274	0.417	1.000	1.000	
-	Orth	Left	English	-	2.5670	2.29	169	1.12057	0.264	1.000	1.000	
-	Orth	Left	Spanish-English	-	0.9277	2.29	169	0.40497	0.686	1.000	1.000	
-	Orth	Left	Chinese-English	-	6.1732	2.13	964	2.89557	0.005	0.383	1.000	
-	Orth	Right	English	-	2.2670	2.29	169	0.98965	0.324	1.000	1.000	
-	Orth	Right	Spanish-English	-	1.7369	2.29	169	0.75822	0.449	1.000	1.000	

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-	Orth			Right	Chinese-English	-1.1858	1.18	3395	-1.0014	0.317	1.000	1.000
-	Control			Left	English	-3.5087	2.3509	1696	-1.53166	0.127	0.998	1.000
-	Control			Left	Spanish-English	-0.5649	2.259	1696	-0.2461	0.806	1.000	1.000
-	Control			Left	Chinese-English	-3.2575	2.1753	964	-1.52794	0.130	0.997	1.000
-	Control			Right	English	0.1884	2.299	1696	0.08224	0.935	1.000	1.000
-	Control			Right	Spanish-English	0.2512	2.299	1696	0.10964	0.913	1.000	1.000
-	Control			Right	Chinese-English	-0.3139	1.198	3395	-0.26499	0.791	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison													
RRT Target	Hemisphere	Group		RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
Phon	Left	English	-	Phon	Left	Spanish-English	2.2252	2.29	166	0.97139	0.333	1.000	1.000
			-			Phon	Left	Chinese-English	-2.7483	2.29	166	-1.19972	0.232
		-	Phon	Right	English			1.3533	2.10	90.8	0.64326	0.522	1.000
		-			Phon	Right	Spanish-English	2.1066	2.29	166	0.91960	0.359	1.000
	-	Phon	Right	Chinese-English			0.6836	2.29	166	0.29842	0.766	1.000	1.000
	-			Orth	Left	English	-0.9207	1.18	335	-0.77739	0.437	1.000	1.000
	-	Orth	Left			Spanish-English	0.7185	2.29	166	0.31366	0.754	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-	Orth	Left	Chinese-English	Left	Chinese-English	-4.5270	2.29	169	-1.97620	0.050	0.949	1.000
-	Orth	Right	English	Right	English	3.9133	2.13	964	1.8354	0.070	0.974	1.000
-	Orth	Right	Spanish-English	Right	Spanish-English	3.3831	2.29	169	1.47686	0.142	0.999	1.000
-	Orth	Right	Chinese-English	Right	Chinese-English	0.4604	2.29	169	0.20100	0.841	1.000	1.000
-	Control	Left	English	Left	English	-1.8624	1.18	339	-1.57245	0.117	0.997	1.000
-	Control	Left	Spanish-English	Left	Spanish-English	1.0813	2.29	169	0.47203	0.638	1.000	1.000
-	Control	Left	Chinese-English	Left	Chinese-English	-1.6113	2.29	169	-0.70338	0.483	1.000	1.000
-	Control	Right	English	Right	English	1.8346	2.13	964	0.86053	0.392	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-			Control	Right	Spanish-English	1.8974	2.29	169	0.828	0.409	1.000	1.000
-			Control	Right	Chinese-English	1.3324	2.29	169	0.58162	0.562	1.000	1.000
-	Spanish-English		Phon	Left	Chinese-English	-4.9735	2.29	169	-2.1711	0.031	0.878	1.000
-			Phon	Right	English	-0.8720	2.29	169	-0.38064	0.704	1.000	1.000
-			Phon	Right	Spanish-English	-0.1186	2.10	90	-0.05639	0.955	1.000	1.000
-			Phon	Right	Chinese-English	-1.5416	2.29	169	-0.67297	0.502	1.000	1.000
-			Orth	Left	English	-3.1460	2.29	169	-1.3733	0.171	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-	Orth	Left	Spanish-English	Left	Spanish-English	-1.5067	1.18	3395	-1.27209	0.204	1.000	1.000
-	Orth	Left	Chinese-English	Left	Chinese-English	-6.7522	2.2996	1696	-2.94758	0.004	0.341	0.990
-	Orth	Right	English	Right	English	1.6881	2.2299	1696	0.73690	0.462	1.000	1.000
-	Orth	Right	Spanish-English	Right	Spanish-English	1.1579	2.113	964	0.54312	0.588	1.000	1.000
-	Orth	Right	Chinese-English	Right	Chinese-English	-1.7648	2.2299	1696	-0.77038	0.442	1.000	1.000
-	Control	Left	English	Left	English	-4.0876	2.2299	1696	-1.78441	0.076	0.983	1.000
-	Control	Left	Spanish-English	Left	Spanish-English	-1.1439	1.188	3395	-0.96580	0.335	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
		-	Control	Left	Chinese-English	-3.8365	2.29	1696	-1.67477	0.096	0.992	1.000
		-	Control	Right	English	-0.3906	2.29	1696	-0.17051	0.865	1.000	1.000
		-	Control	Right	Spanish-English	-0.3278	2.13	964	-0.15377	0.878	1.000	1.000
		-	Control	Right	Chinese-English	-0.8929	2.29	1696	-0.38976	0.697	1.000	1.000
		-	Phon	Right	English	4.1015	2.29	1696	1.79047	0.075	0.982	1.000
		-	Phon	Right	Spanish-English	4.8549	2.29	1696	2.11932	0.036	0.901	1.000
		-	Phon	Right	Chinese-English	3.4319	2.10	908	1.63131	0.106	0.994	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-	Orth	Left	Orth	Left	English	1.8275	2.29	166	0.7978	0.426	1.000	1.000
-	Orth	Left	Orth	Left	Spanish-English	3.4668	2.29	166	1.5138	0.132	0.998	1.000
-	Orth	Left	Orth	Left	Chinese-English	-1.7787	1.18	339	-1.50176	0.134	0.998	1.000
-	Orth	Right	Orth	Right	English	6.6615	2.29	166	2.90801	0.004	0.367	1.000
-	Orth	Right	Orth	Right	Spanish-English	6.1314	2.29	166	2.67658	0.008	0.539	1.000
-	Orth	Right	Orth	Right	Chinese-English	3.2087	2.13	964	1.50507	0.136	0.998	1.000
-	Control	Left	Control	Left	English	0.8858	2.29	166	0.38670	0.699	1.000	1.000
-	Control	Left	Control	Left	Spanish-English	3.8296	2.29	166	1.67175	0.096	0.992	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
		-	Control	Left	Chinese-English	1.1370	1.18	335	0.959	0.338	1.00	1.00
		-	Control	Right	English	4.5829	2.29	169	2.000	0.047	0.942	1.00
		-	Control	Right	Spanish-English	4.6456	2.29	169	2.027	0.044	0.934	1.00
		-	Control	Right	Chinese-English	4.0806	2.13	964	1.914	0.059	0.960	1.00
	Right	English	-	Phon	Right	0.7533	2.29	169	0.328	0.743	1.00	1.00
		-	Phon	Right	Chinese-English	0.6697	2.29	169	0.292	0.770	1.00	1.00
		-	Orth	Left	English	2.2740	2.13	964	1.066	0.289	1.00	1.00

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-	Orth	Left	Spanish-English	Left	Spanish-English	-0.6347	2.29	169	-0.27709	0.782	1.000	1.000
-	Orth	Left	Chinese-English	Left	Chinese-English	-5.8802	2.29	169	-2.56694	0.011	0.624	1.000
-	Orth	Right	English	Right	English	2.5600	1.18	335	2.16141	0.031	0.886	1.000
-	Orth	Right	Spanish-English	Right	Spanish-English	2.0299	2.29	169	0.88611	0.377	1.000	1.000
-	Orth	Right	Chinese-English	Right	Chinese-English	-0.8928	2.29	169	-0.38974	0.697	1.000	1.000
-	Control	Left	English	Left	English	-3.2157	2.13	964	-1.50834	0.135	0.998	1.000
-	Control	Left	Spanish-English	Left	Spanish-English	-0.2720	2.29	169	-0.11872	0.906	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-	Control	Left	Chinese-English	-	2.9645	2.29	16.96	-1.294	0.197	1.000	1.000	
-	Control	Right	English	0.4814	1.18	33.95	0.406	0.685	1.000	1.000		
-	Control	Right	Spanish-English	0.5441	2.29	16.96	0.237	0.813	1.000	1.000		
-	Control	Right	Chinese-English	-0.0209	2.29	16.96	0.009	0.912	1.000	1.000		
-	Spanish-English	Right	Chinese-English	-1.4230	2.29	16.96	-0.621	0.535	1.000	1.000		
-	Orth	Left	English	-3.0273	2.29	16.96	-1.321	0.188	1.000	1.000		
-	Orth	Left	Spanish-English	-1.3881	2.13	96.4	-0.651	0.517	1.000	1.000		

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-	Orth	Left	Chinese-English	Left	Chinese-English	-6.6336	2.299	169	-2.895	0.004	0.376	1.000
-	Orth	Right	English	Right	English	1.8067	2.299	169	0.788	0.431	1.000	1.000
-	Orth	Right	Spanish-English	Right	Spanish-English	1.2765	1.198	335	1.077	0.282	1.000	1.000
-	Orth	Right	Chinese-English	Right	Chinese-English	1.6461	2.299	169	0.718	0.473	1.000	1.000
-	Control	Left	English	Left	English	3.9690	2.299	169	1.732	0.085	0.998	1.000
-	Control	Left	Spanish-English	Left	Spanish-English	1.0253	2.193	964	0.480	0.632	1.000	1.000
-	Control	Left	Chinese-English	Left	Chinese-English	3.7179	2.299	169	1.622	0.106	0.995	1.000
-	Control	Right	English	Right	English	0.2720	2.299	169	0.118	0.906	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-	Control	Right	Spanish-English	-	0.2092	1.188	3395	-0.1764	0.860	1.000	1.000	
-	Control	Right	Chinese-English	-	0.7742	2.299	1696	-0.33798	0.736	1.000	1.000	
-	Orth	Left	English	-	1.6043	2.299	1696	0.70036	0.485	1.000	1.000	
-	Orth	Left	Spanish-English	0.0349	2.299	1696	0.01524	0.988	1.000	1.000		
-	Orth	Left	Chinese-English	-	5.2106	2.193	964	2.44405	0.016	0.713	1.000	
-	Orth	Right	English	3.2297	2.299	1696	1.40987	0.160	0.999	1.000		
-	Orth	Right	Spanish-English	2.6995	2.299	1696	1.17844	0.240	1.000	1.000		

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-	Orth			Right	Chinese-English	-0.2232	1.188	3395	-0.18841	0.851	1.000	1.000
-	Control			Left	English	-2.5460	2.299	1696	-1.11144	0.268	1.000	1.000
-	Control			Left	Spanish-English	0.3977	2.299	1696	0.17361	0.862	1.000	1.000
-	Control			Left	Chinese-English	-2.2949	2.193	964	-1.07642	0.284	1.000	1.000
-	Control			Right	English	1.1510	2.299	1696	0.50246	0.616	1.000	1.000
-	Control			Right	Spanish-English	1.2138	2.299	1696	0.52986	0.597	1.000	1.000
-	Control			Right	Chinese-English	0.6488	1.188	3395	0.54775	0.584	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison													
RRT Target	Hemisphere	Group		RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	pholm
Orth	Left	English	-	Orth	Left	Spanish-English	1.6393	2.29	166	0.71560	0.475	1.000	1.000
			-			Orth	Left	Chinese-English	-3.6062	2.29	166	-1.57426	0.177
		-	Orth	Right	English			4.8340	2.10	90	2.29781	0.024	0.807
		-			Orth	Right	Spanish-English	4.3039	2.29	166	1.8780	0.062	0.970
	-	Orth	Right	Chinese-English			1.3812	2.29	166	0.60294	0.547	1.000	1.000
	-			Control	Left	English	-0.9417	1.18	339	-0.79507	0.427	1.000	1.000
	-	Control	Left			Spanish-English	2.0020	2.29	166	0.87397	0.383	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-	Control	Left	Chinese-English	-	0.6905	2.29	169	-0.30144	0.763	1.000	1.000	
-	Control	Right	English	-	2.7554	2.13	964	1.29241	0.199	1.000	1.000	
-	Control	Right	Spanish-English	-	2.8181	2.29	169	1.23021	0.220	1.000	1.000	
-	Control	Right	Chinese-English	-	2.2531	2.29	169	0.98356	0.327	1.000	1.000	
-	Spanish-English	Orth	Left	Chinese-English	-	5.2455	2.29	169	-2.28986	0.023	0.816	1.000
-	Spanish-English	Orth	Right	English	-	3.1947	2.29	169	1.39462	0.165	0.999	1.000
-	Spanish-English	Orth	Right	Spanish-English	-	2.6646	2.10	908	1.26660	0.209	1.000	1.000
-	Spanish-English	Orth	Right	Chinese-English	-	0.2581	2.29	169	-0.11266	0.910	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-	Control	Left	English			-2.5810	2.29	169	-1.1268	0.261	1.000	1.000
-	Control	Left	Spanish-English			0.3628	1.18	339	0.30629	0.760	1.000	1.000
-	Control	Left	Chinese-English			-2.3298	2.29	169	-1.01704	0.311	1.000	1.000
-	Control	Right	English			1.1161	2.29	169	0.48721	0.627	1.000	1.000
-	Control	Right	Spanish-English			1.1788	2.13	964	0.55295	0.582	1.000	1.000
-	Control	Right	Chinese-English			0.6138	2.29	169	0.26796	0.789	1.000	1.000
-	Orth	Right	English	Chinese-English		8.4403	2.29	169	3.68448	<.001	0.052	0.085

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
-	Orth	Right	Spanish-English	7.9101	2.29	169	3.453	<.001	0.103	0.192		
-	Orth	Right	Chinese-English	4.9874	2.10	908	2.37074	0.020	0.762	1.000		
-	Control	Left	English	2.6645	2.29	169	1.16317	0.246	1.000	1.000		
-	Control	Left	Spanish-English	5.6083	2.29	169	2.44822	0.015	0.712	1.000		
-	Control	Left	Chinese-English	2.9157	1.18	339	2.46172	0.014	0.704	1.000		
-	Control	Right	English	6.3616	2.29	169	2.77707	0.006	0.462	1.000		
-	Control	Right	Spanish-English	6.4244	2.29	169	2.80447	0.006	0.441	1.000		
-	Control	Right	Chinese-English	5.8593	2.13	964	2.74836	0.007	0.488	1.000		

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	pholm
	Right	English	-	Orth	Right	Spanish-English	-0.5301	2.29	169.6	-0.23143	0.817	1.000
			-	Orth	Right	Chinese-English	-3.4528	2.29	169.6	-1.50728	0.134	0.998
			-	Control	Left	English	-5.7757	2.13	96.4	-2.70912	0.008	0.517
			-	Control	Left	Spanish-English	-2.8320	2.29	169.6	-1.23626	0.218	1.000
			-	Control	Left	Chinese-English	-5.5245	2.29	169.6	-2.41167	0.017	0.738
			-	Control	Right	English	-2.0787	1.18	339.5	-1.75501	0.080	0.987
			-	Control	Right	Spanish-English	-2.0159	2.29	169.6	-0.88001	0.380	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-			Control	Right	Chinese-English	-2.5809	2.29	1696	-1.1266	0.261	1.000	1.000
-		Spanish-English	Orth	Right	Chinese-English	-2.9227	2.29	1696	-1.27585	0.204	1.000	1.000
-			Control	Left	English	-5.2456	2.29	1696	-2.28988	0.023	0.816	1.000
-			Control	Left	Spanish-English	-2.3018	2.13	964	-1.07968	0.283	1.000	1.000
-			Control	Left	Chinese-English	-4.9944	2.29	1696	-2.18024	0.031	0.874	1.000
-			Control	Right	English	-1.5485	2.29	1696	-0.67598	0.500	1.000	1.000
-			Control	Right	Spanish-English	-1.4858	1.19	335	-1.25442	0.211	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	pholm
-			Control	Right	Chinese-English	-2.0508	2.29	1696	-0.89523	0.372	1.000	1.000
-		Chinese-English	Control	Left	English	-2.3229	2.29	1696	-1.01403	0.312	1.000	1.000
-			Control	Left	Spanish-English	0.6209	2.29	1696	0.27102	0.787	1.000	1.000
-			Control	Left	Chinese-English	-2.0717	2.13	964	-0.97175	0.334	1.000	1.000
-			Control	Right	English	1.3742	2.29	1696	0.59987	0.549	1.000	1.000
-			Control	Right	Spanish-English	1.4369	2.29	1696	0.62727	0.531	1.000	1.000
-			Control	Right	Chinese-English	0.8719	1.18	3395	0.73615	0.462	1.000	1.000

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

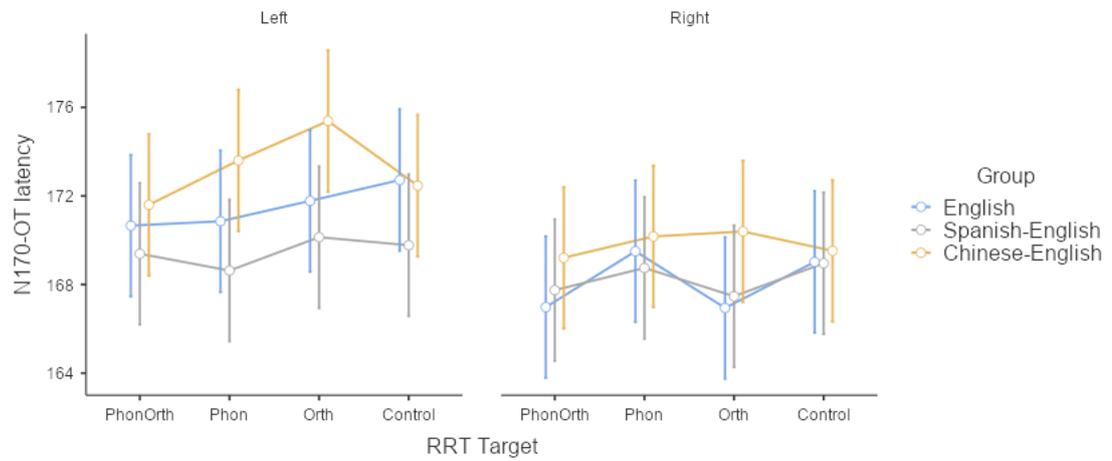
Comparison															
RRT Target	Hemisphere	Group		RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm		
Control	Left	English	-	Control	Left	Spanish-English	2.9437	2.29	166	1.285	0.201	1.000	1.000		
			-			Chinese-English	0.2512	2.29	166	0.109	0.913	1.000	1.000		
			-			Control	Right	English	3.6970	2.10	90	1.757	0.082	0.984	1.000
		-	Spanish-English	Control	Right	Spanish-English	3.7598	2.29	166	1.641	0.103	0.994	1.000		
		-				Control	Right	Chinese-English	3.1948	2.29	166	1.394	0.165	0.999	1.000
		-				Control	Left	Chinese-English	-2.6926	2.29	166	-1.175	0.241	1.000	1.000
	-	Spanish-English	Control	Right	English	0.7533	2.29	166	0.328	0.743	1.000	1.000			
	-				Control	Right	Spanish-English	0.8161	2.10	90	0.387	0.699	1.000	1.000	

Post Hoc Comparisons - RRT Target \* Hemisphere \* Group

Comparison												
RRT Target	Hemisphere	Group	RRT Target	Hemisphere	Group	Mean Difference	SE	df	t	p	ptukey	PhoIm
			-	Control	Right	Chinese-English	0.2511	2.29	169	0.10960	0.913	1.000
		Chinese-English	-	Control	Right	English	3.4459	2.29	169	1.50426	0.134	0.998
			-	Control	Right	Spanish-English	3.5086	2.29	169	1.53165	0.127	0.998
			-	Control	Right	Chinese-English	2.9436	2.10	908	1.39923	0.165	0.999
	Right	English	-	Control	Right	Spanish-English	0.0628	2.29	169	0.02740	0.978	1.000
			-	Control	Right	Chinese-English	-0.5022	2.29	169	-0.21925	0.827	1.000
		Spanish-English	-	Control	Right	Chinese-English	-0.5650	2.29	169	-0.24665	0.805	1.000

## Estimated Marginal Means

RRT Target \* Group \* Hemisphere



## Repeated Measures ANOVA

Within Subjects Effects

	Sphericity Correction	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Hemisphere	None	301.4	1	301.41	4.349	0.042	0.071
	Greenhouse-Geisser	301.4	1.00	301.41	4.349	0.042	0.071
	Huynh-Feldt	301.4	1.00	301.41	4.349	0.042	0.071
Hemisphere * Group	None	341.3	2	170.64	2.462	0.094	0.080
	Greenhouse-Geisser	341.3	2.00	170.64	2.462	0.094	0.080
	Huynh-Feldt	341.3	2.00	170.64	2.462	0.094	0.080
Residual	None	3950.2	57	69.30			
	Greenhouse-Geisser	3950.2	57.00	69.30			
	Huynh-Feldt	3950.2	57.00	69.30			
RRT diff	None	105.5	3	35.18	2.311	0.078	0.039

Within Subjects Effects

	<b>Sphericity Correction</b>	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>	<b><math>\eta^2_p</math></b>
	Greenhouse-Geisser	105.5	2.52	41.80	2.311	0.089	0.039
	Huynh-Feldt	105.5	2.65	39.81	2.311	0.086	0.039
RRT diff * Group	None	148.5	6	24.75	1.626	0.143	0.054
	Greenhouse-Geisser	148.5	5.05	29.41	1.626	0.156	0.054
	Huynh-Feldt	148.5	5.30	28.00	1.626	0.153	0.054
Residual	None	2603.1	171	15.22			
	Greenhouse-Geisser	2603.1	143.90	18.09			
	Huynh-Feldt	2603.1	151.11	17.23			
Hemisphere * RRT diff	None	105.3	3	35.10	2.735	0.045	0.046
	Greenhouse-Geisser	105.3	2.20	47.79	2.735	0.063	0.046
	Huynh-Feldt	105.3	2.30	45.87	2.735	0.061	0.046
Hemisphere * RRT diff * Group	None	38.6	6	6.43	0.501	0.807	0.017
	Greenhouse-Geisser	38.6	4.41	8.75	0.501	0.753	0.017
	Huynh-Feldt	38.6	4.59	8.40	0.501	0.760	0.017
Residual	None	2194.6	171	12.83			
	Greenhouse-Geisser	2194.6	125.58	17.48			
	Huynh-Feldt	2194.6	130.84	16.77			

Note. Type 3 Sums of Squares

Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Group	868	2	434	3.85	0.027	0.119
Residual	6422	57	113			

Note. Type 3 Sums of Squares

## Assumptions

### Tests of Sphericity

	Mauchly's W	p	Greenhouse-Geisser $\epsilon$	Huynh-Feldt $\epsilon$
Hemisphere	1.000	NaN <sup>a</sup>	1.000	1.000
RRT diff	0.762	0.010	0.841	0.884
Hemisphere * RRT diff	0.585	< .001	0.734	0.765

<sup>a</sup> The repeated measures has only two levels. The assumption of sphericity is always met when the repeated measures has only two levels

### Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
NAL50_N170.LeftOP\$PhonOrth_PTdiff	0.822	2	57	0.445
NAL50_N170.RightOP\$PhonOrth_PTdiff	0.295	2	57	0.745
NAL50_N170.LeftOP\$Phon_PTdiff	1.927	2	57	0.155
NAL50_N170.RightOP\$Phon_PTdiff	1.123	2	57	0.332
NAL50_N170.LeftOP\$Orth_PTdiff	8.268	2	57	< .001
NAL50_N170.RightOP\$Orth_PTdiff	2.218	2	57	0.118
NAL50_N170.LeftOP\$Control_PTdiff	3.164	2	57	0.050

Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
NAL50_N170.RightOP\$Control_PTdiff	1.867	2	57	0.164

## Post Hoc Tests

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison																									
Hemi sphe re	RRT diff	Gro up		Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	p <sub>tuk ey</sub>	p <sub>hol m</sub>												
Left	Pho nOr th	Eng lish	-	Left	Pho nOr th	Spa nis h- Eng lish	2.19 64	1. 8	2 1	1.2 04	0.2 30	1.0 00	1.0 00												
						-	Left	Pho nOr th	Chi nes e- Eng lish	2.36 47	1. 8	2 1	1.2 96	0.1 96	1.0 00	1.0 00									
									-	Left	Pho n	Eng lish	0.19 53	1. 1	3 4	0.1 64	0.8 69	1.0 00	1.0 00						
												-	Left	Pho n	Spa nis h- Eng lish	1.43 61	1. 8	2 1	0.7 87	0.4 32	1.0 00	1.0 00			
															-	Left	Pho n	Chi nes e- Eng lish	4.37 35	1. 8	2 1	2.3 97	0.0 17	0.7 48	1.0 00
																		-	Left	Ort h	Eng lish	1.11 61	1. 1	3 4	0.9 42

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
		-	Left	Orth	Spa nis h- Eng lish	2.94 28	1. 8 2	2 1 6	1.6 13 43	0.1 08	0.9 95	1.0 00
		-	Left	Orth	Chi nes e- Eng lish	6.15 23	1. 8 2	2 1 6	3.3 73 08	< . 00 1	0.1 25	0.2 34
		-	Left	Con trol	Eng lish	2.05 78	1. 1 8	3 4 0	1.7 37 37	0.0 83	0.9 89	1.0 00
		-	Left	Con trol	Spa nis h- Eng lish	2.58 00	1. 8 2	2 1 6	1.4 14 53	0.1 59	0.9 99	1.0 00
		-	Left	Con trol	Chi nes e- Eng lish	3.23 65	1. 8 2	2 1 6	1.7 74 49	0.0 77	0.9 85	1.0 00
		-	Rig ht	Pho nOr th	Eng lish	- 2.57 92	1. 6 4	1 2 5	- 1.5 71 07	0.1 19	0.9 96	1.0 00
		-	Rig ht	Pho nOr th	Spa nis h- Eng lish	2.54 26	1. 8 2	2 1 6	1.3 94 04	0.1 65	0.9 99	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
					Chi nes e- Eng lish	0.20 93	1. 8 2	2 1 6	0.1 14 74	0.9 09	1.0 00	1.0 00
					Eng lish	- 0.05 41	1. 6 8	1 4 0	- 0.0 32 22	0.9 74	1.0 00	1.0 00
					Spa nis h- Eng lish	3.54 71	1. 8 2	2 1 6	1.9 44 75	0.0 53	0.9 57	1.0 00
					Chi nes e- Eng lish	1.17 19	1. 8 2	2 1 6	0.6 42 51	0.5 21	1.0 00	1.0 00
					Eng lish	- 2.61 41	1. 6 8	1 4 0	- 1.5 58 17	0.1 21	0.9 97	1.0 00
					Spa nis h- Eng lish	2.27 05	1. 8 2	2 1 6	1.2 44 86	0.2 15	1.0 00	1.0 00
					Chi nes e- Eng lish	1.39 50	1. 8 2	2 1 6	0.7 64 85	0.4 45	1.0 00	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison													
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>	
			-	Rig ht	Con trol	Eng lish	0.53 54	1. 6 8	1 4 0	- 0.3 19 14	0.7 50	1.0 00	1.0 00
			-	Rig ht	Con trol	Spa nis h- Eng lish	3.75 63	1. 8 2	2 1 6	2.0 59 45	0.0 41	0.9 25	1.0 00
			-	Rig ht	Con trol	Chi nes e- Eng lish	0.52 31	1. 8 2	2 1 6	0.2 86 81	0.7 75	1.0 00	1.0 00
		Spa nis h- Eng lish	-	Left	Pho nOr th	Chi nes e- Eng lish	0.16 83	1. 8 2	2 1 6	0.0 92 29	0.9 27	1.0 00	1.0 00
			-	Left	Pho n	Eng lish	2.00 10	1. 8 2	2 1 6	- 1.0 97 11	0.2 74	1.0 00	1.0 00
			-	Left	Pho n	Spa nis h- Eng lish	0.76 03	1. 1 8	3 4 0	- 0.6 41 91	0.5 21	1.0 00	1.0 00
			-	Left	Pho n	Chi nes e- Eng lish	2.17 72	1. 8 2	2 1 6	1.1 93 67	0.2 34	1.0 00	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Group	Hemi sphe re	RRT diff	Group	Mea n Diff erence	SE	df	t	p	ptuk ey	Phol m
		-	Left	Orth	Eng lish	- 1.08 03	1. 8 2	2 1 6	- 0.5 92 29	0.5 54	1.0 00	1.0 00
		-	Left	Orth	Spa nis h- Eng lish	0.74 64	1. 1 8	3 4 0	0.6 30 18	0.5 29	1.0 00	1.0 00
		-	Left	Orth	Chi nes e- Eng lish	3.95 59	1. 8 2	2 1 6	2.1 68 87	0.0 31	0.8 81	1.0 00
		-	Left	Con trol	Eng lish	- 0.13 86	1. 8 2	2 1 6	- 0.0 76 00	0.9 39	1.0 00	1.0 00
		-	Left	Con trol	Spa nis h- Eng lish	0.38 36	1. 1 8	3 4 0	0.3 23 89	0.7 46	1.0 00	1.0 00
		-	Left	Con trol	Chi nes e- Eng lish	1.04 02	1. 8 2	2 1 6	0.5 70 29	0.5 69	1.0 00	1.0 00
		-	Rig ht	Pho nOr th	Eng lish	- 4.77 56	1. 8 2	2 1 6	- 2.6 18 28	0.0 09	0.5 84	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
-			Rig ht	Pho nOr th	Spa nis h- Eng lish	0.34 62	1. 6 4	1 2 5	0.2 10 91	0.8 33	1.0 00	1.0 00
-			Rig ht	Pho nOr th	Chi nes e- Eng lish	- 1.98 71	1. 8 2	2 1 6	- 1.0 89 46	0.2 77	1.0 00	1.0 00
-			Rig ht	Pho n	Eng lish	- 2.25 04	1. 8 2	2 1 6	- 1.2 33 84	0.2 19	1.0 00	1.0 00
-			Rig ht	Pho n	Spa nis h- Eng lish	1.35 07	1. 6 8	1 4 0	0.8 05 12	0.4 22	1.0 00	1.0 00
-			Rig ht	Pho n	Chi nes e- Eng lish	- 1.02 45	1. 8 2	2 1 6	- 0.5 61 69	0.5 75	1.0 00	1.0 00
-			Rig ht	Ort h	Eng lish	- 4.81 04	1. 8 2	2 1 6	- 2.6 37 41	0.0 09	0.5 69	1.0 00
-			Rig ht	Ort h	Spa nis h- Eng lish	0.07 42	1. 6 8	1 4 0	0.0 44 21	0.9 65	1.0 00	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi spher e	RRT diff	Group	Hemi spher e	RRT diff	Group	Mean Diff erence	SE	df	t	p	ptuk ey	Phol om
			-	Right	Orth	Chinese-English	-0.8013	1.82	216	-0.43935	0.661	1.000
			-	Right	Control	English	-2.7318	1.82	216	-1.49775	0.136	0.998
			-	Right	Control	Spanish-English	1.5599	1.648	140	0.92982	0.354	1.000
			-	Right	Control	Chinese-English	-1.6732	1.82	216	-0.91739	0.360	1.000
		Chinese-English	-	Left	Phon	English	-2.1694	1.82	216	-1.18940	0.236	1.000
			-	Left	Phon	Spanish-English	-0.9286	1.82	216	-0.50913	0.611	1.000
			-	Left	Phon	Chinese-English	2.0088	1.82	340	1.69605	0.091	0.992

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
		-	Left	Orth	Eng lish	- 1.24 86	1. 8 2	2 1 6	- 0.6 84 58	0.4 94	1.0 00	1.0 00
		-	Left	Orth	Spa nis h- Eng lish	0.57 81	1. 8 2	2 1 6	0.3 16 94	0.7 52	1.0 00	1.0 00
		-	Left	Orth	Chi nes e- Eng lish	3.78 75	1. 1 8	3 4 0	3.1 97 81	0.0 02	0.1 91	0.3 97
		-	Left	Con trol	Eng lish	- 0.30 69	1. 8 2	2 1 6	- 0.1 68 29	0.8 67	1.0 00	1.0 00
		-	Left	Con trol	Spa nis h- Eng lish	0.21 53	1. 8 2	2 1 6	0.1 18 04	0.9 06	1.0 00	1.0 00
		-	Left	Con trol	Chi nes e- Eng lish	0.87 18	1. 1 8	3 4 0	0.7 36 09	0.4 62	1.0 00	1.0 00
		-	Rig ht	Pho nOr th	Eng lish	- 4.94 39	1. 8 2	2 1 6	- 2.7 10 57	0.0 07	0.5 12	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
		-	Rig ht	Pho nOr th	Spa nis h- Eng lish	0.17 79	1. 8 2	2 1 6	0.0 97 54	0.9 22	1.0 00	1.0 00
		-	Rig ht	Pho nOr th	Chi nes e- Eng lish	- 2.15 54	1. 6 4	1 2 5	- 1.3 12 95	0.1 92	1.0 00	1.0 00
		-	Rig ht	Pho n	Eng lish	- 2.41 88	1. 8 2	2 1 6	- 1.3 26 13	0.1 86	1.0 00	1.0 00
		-	Rig ht	Pho n	Spa nis h- Eng lish	1.18 24	1. 8 2	2 1 6	0.6 48 26	0.5 18	1.0 00	1.0 00
		-	Rig ht	Pho n	Chi nes e- Eng lish	- 1.19 28	1. 6 8	1 4 0	- 0.7 11 01	0.4 78	1.0 00	1.0 00
		-	Rig ht	Ort h	Eng lish	- 4.97 88	1. 8 2	2 1 6	- 2.7 29 70	0.0 07	0.4 97	1.0 00
		-	Rig ht	Ort h	Spa nis h- Eng lish	- 0.09 42	1. 8 2	2 1 6	- 0.0 51 63	0.9 59	1.0 00	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
			-	Rig ht	Ort h	Chi nes e- Eng lish - 0.96 97	1. 6 8	1 4 0	- 0.5 77 99	0.5 64	1.0 00	1.0 00
			-	Rig ht	Con trol	Eng lish - 2.90 01	1. 8 2	2 1 6	- 1.5 90 04	0.1 13	0.9 96	1.0 00
			-	Rig ht	Con trol	Spa nis h- Eng lish 1.39 16	1. 8 2	2 1 6	0.7 62 96	0.4 46	1.0 00	1.0 00
			-	Rig ht	Con trol	Chi nes e- Eng lish - 1.84 16	1. 6 8	1 4 0	- 1.0 97 71	0.2 74	1.0 00	1.0 00
	Pho n	Eng lish	-	Left	Pho n	Spa nis h- Eng lish 1.24 08	1. 8 2	2 1 6	0.6 80 27	0.4 97	1.0 00	1.0 00
			-	Left	Pho n	Chi nes e- Eng lish 4.17 82	1. 8 2	2 1 6	2.2 90 77	0.0 23	0.8 17	1.0 00
			-	Left	Ort h	Eng lish 0.92 07	1. 1 8	3 4 0	0.7 77 39	0.4 37	1.0 00	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
		-	Left	Orth	Span ish- Eng lish	2.74 74	1. 8 2	2 1 6	1.5 06 34	0.1 33	0.9 98	1.0 00
		-	Left	Orth	Chi nes e- Eng lish	5.95 69	1. 8 2	2 1 6	3.2 65 98	0.0 01	0.1 65	0.3 34
		-	Left	Con trol	Eng lish	1.86 24	1. 1 8	3 4 0	1.5 72 45	0.1 17	0.9 97	1.0 00
		-	Left	Con trol	Span ish- Eng lish	2.38 47	1. 8 2	2 1 6	1.3 07 44	0.1 92	1.0 00	1.0 00
		-	Left	Con trol	Chi nes e- Eng lish	3.04 12	1. 8 2	2 1 6	1.6 67 40	0.0 97	0.9 93	1.0 00
		-	Rig ht	Pho nOr th	Eng lish	- 2.77 45	1. 6 8	1 4 0	- 1.6 53 81	0.1 00	0.9 93	1.0 00
		-	Rig ht	Pho nOr th	Span ish- Eng lish	2.34 73	1. 8 2	2 1 6	1.2 86 94	0.1 99	1.0 00	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
					Chi nes e- Eng lish	0.01 39	1. 8 2	2 1 6	0.0 07 64	0.9 94	1.0 00	1.0 00
					Eng lish	- 0.24 94	1. 6 4	1 2 5	- 0.1 51 91	0.8 80	1.0 00	1.0 00
					Spa nis h- Eng lish	3.35 18	1. 8 2	2 1 6	1.8 37 66	0.0 67	0.9 77	1.0 00
					Chi nes e- Eng lish	0.97 66	1. 8 2	2 1 6	0.5 35 42	0.5 93	1.0 00	1.0 00
					Eng lish	- 2.80 94	1. 6 8	1 4 0	- 1.6 74 60	0.0 96	0.9 92	1.0 00
					Spa nis h- Eng lish	2.07 52	1. 8 2	2 1 6	1.1 37 77	0.2 56	1.0 00	1.0 00
					Chi nes e- Eng lish	1.19 97	1. 8 2	2 1 6	0.6 57 76	0.5 11	1.0 00	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Group	Hemi sphe re	RRT diff	Group	Mea n Diff erence	SE	df	t	p	P <sub>tuke</sub> y	P <sub>hol</sub> m
		-	Rig ht	Con trol	Eng lish	- 0.73 07	1. 6 8	1 4 0	- 0.4 35 57	0.6 64	1.0 00	1.0 00
		-	Rig ht	Con trol	Spa nis h- Eng lish	3.56 10	1. 8 2	2 1 6	1.9 52 36	0.0 52	0.9 55	1.0 00
		-	Rig ht	Con trol	Chi nes e- Eng lish	0.32 78	1. 8 2	2 1 6	0.1 79 72	0.8 58	1.0 00	1.0 00
		Spa nis h- Eng lish	Left	Pho n	Chi nes e- Eng lish	2.93 75	1. 8 2	2 1 6	1.6 10 51	0.1 09	0.9 96	1.0 00
		-	Left	Ort h	Eng lish	- 0.32 00	1. 8 2	2 1 6	- 0.1 75 45	0.8 61	1.0 00	1.0 00
		-	Left	Ort h	Spa nis h- Eng lish	1.50 67	1. 1 8	3 4 0	1.2 72 09	0.2 04	1.0 00	1.0 00
		-	Left	Ort h	Chi nes e- Eng lish	4.71 62	1. 8 2	2 1 6	2.5 85 72	0.0 10	0.6 09	1.0 00
		-	Left	Con trol	Eng lish	0.62 17	1. 8 2	2 1 6	0.3 40 85	0.7 34	1.0 00	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Group	Hemi sphe re	RRT diff	Group	Mea n Diff erence	SE	df	t	p	P <sub>tuk</sub> ey	P <sub>hol</sub> m
		-	Left	Control	Spanish-English	1.1439	1.18	34	0.96580	0.335	1.000	1.000
		-	Left	Control	Chinese-English	1.8005	1.82	21	0.98713	0.325	1.000	1.000
		-	Right	PhonOrth	English	-4.0153	1.82	21	-2.20144	0.029	0.865	1.000
		-	Right	PhonOrth	Spanish-English	1.1065	1.88	14	0.65957	0.511	1.000	1.000
		-	Right	PhonOrth	Chinese-English	-1.2268	1.82	21	-0.67262	0.502	1.000	1.000
		-	Right	Phon	English	-1.4901	1.82	21	-0.81700	0.415	1.000	1.000
		-	Right	Phon	Spanish-English	2.1110	1.84	15	1.28588	0.201	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
					Chi nes e- Eng lish	- 0.26 42	1. 8 2	2 1 6	- 0.1 44 85	0.8 85	1.0 00	1.0 00
					Eng lish	- 4.05 02	1. 8 2	2 1 6	- 2.2 20 57	0.0 27	0.8 55	1.0 00
					Spa nis h- Eng lish	0.83 45	1. 6 8	1 4 0	0.4 97 39	0.6 20	1.0 00	1.0 00
					Chi nes e- Eng lish	- 0.04 10	1. 8 2	2 1 6	- 0.0 22 51	0.9 82	1.0 00	1.0 00
					Eng lish	- 1.97 15	1. 8 2	2 1 6	- 1.0 80 91	0.2 81	1.0 00	1.0 00
					Spa nis h- Eng lish	2.32 02	1. 6 8	1 4 0	1.3 83 01	0.1 69	0.9 99	1.0 00
					Chi nes e- Eng lish	- 0.91 30	1. 8 2	2 1 6	- 0.5 00 55	0.6 17	1.0 00	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison													
Hemi sphe re	RRT diff	Group	Hemi sphe re	RRT diff	Group	Mea n Diff erence	SE	df	t	p	ptuk ey	Phol m	
		Chi nes e- Eng lish	-	Left	Orth lish	- 3.25 75	1. 8 2	2 1 6	- 1.7 85 96	0.0 76	0.9 83	1.0 00	
			-	Left	Orth lish	Spa nis h- Eng lish	- 1.43 08	1. 8 2	2 1 6	- 0.7 84 44	0.4 34	1.0 00	1.0 00
			-	Left	Orth lish	Chi nes e- Eng lish	1.77 87	1. 1 8	3 4 0	1.5 01 76	0.1 34	0.9 98	1.0 00
			-	Left	Con trol	Eng lish	- 2.31 58	1. 8 2	2 1 6	- 1.2 69 66	0.2 06	1.0 00	1.0 00
			-	Left	Con trol	Spa nis h- Eng lish	- 1.79 35	1. 8 2	2 1 6	- 0.9 83 34	0.3 27	1.0 00	1.0 00
			-	Left	Con trol	Chi nes e- Eng lish	- 1.13 70	1. 1 8	3 4 0	- 0.9 59 96	0.3 38	1.0 00	1.0 00
			-	Rig ht	Pho nOr th	Eng lish	- 6.95 27	1. 8 2	2 1 6	- 3.8 11 95	<. 00 1	0.0 33	0.0 49

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
-			Rig ht	Pho nOr th	Spa nis h- Eng lish	- 1.83 09	1. 8 2	2 1 6	- 1.0 03 83	0.3 17	1.0 00	1.0 00
-			Rig ht	Pho nOr th	Chi nes e- Eng lish	- 4.16 43	1. 6 8	1 4 0	- 2.4 82 20	0.0 14	0.6 87	1.0 00
-			Rig ht	Pho n	Eng lish	- 4.42 76	1. 8 2	2 1 6	- 2.4 27 51	0.0 16	0.7 27	1.0 00
-			Rig ht	Pho n	Spa nis h- Eng lish	- 0.82 65	1. 8 2	2 1 6	- 0.4 53 12	0.6 51	1.0 00	1.0 00
-			Rig ht	Pho n	Chi nes e- Eng lish	- 3.20 17	1. 6 4	1 2 5	- 1.9 50 24	0.0 53	0.9 53	1.0 00
-			Rig ht	Ort h	Eng lish	- 6.98 76	1. 8 2	2 1 6	- 3.8 31 07	<. 00 1	0.0 31	0.0 46
-			Rig ht	Ort h	Spa nis h- Eng lish	- 2.10 30	1. 8 2	2 1 6	- 1.1 53 00	0.2 50	1.0 00	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison													
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>	
			-	Right	Orth	Chinese-English	-2.9785	1.68	140	-1.77540	0.078	0.984	1.000
			-	Right	Control	English	-4.9089	1.826	216	-2.69141	0.008	0.527	1.000
			-	Right	Control	Spanish-English	-0.6172	1.826	216	-0.33842	0.735	1.000	1.000
			-	Right	Control	Chinese-English	-3.8504	1.688	140	-2.29512	0.023	0.812	1.000
	Orth	English	-	Left	Orth	Spanish-English	1.8267	1.826	216	1.00152	0.318	1.000	1.000
			-	Left	Orth	Chinese-English	5.0362	1.826	216	2.76117	0.006	0.473	1.000
			-	Left	Control	English	0.9417	1.826	340	0.79507	0.427	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi spher e	RRT diff	Group	Hemi spher e	RRT diff	Group	Mea n Diff erence	SE	df	t	p	P <sub>tuke</sub> y	P <sub>hol</sub> m
		-	Left	Control	Spanish-English	1.4639	1.82	216	0.80262	0.423	1.000	1.000
		-	Left	Control	Chinese-English	2.1205	1.82	216	1.16258	0.246	1.000	1.000
		-	Right	PhonOrth	English	-3.6953	1.68	140	-2.20264	0.029	0.862	1.000
		-	Right	PhonOrth	Spanish-English	1.4265	1.82	216	0.78213	0.435	1.000	1.000
		-	Right	PhonOrth	Chinese-English	-0.9068	1.82	216	-0.49717	0.620	1.000	1.000
		-	Right	Phon	English	-1.1701	1.68	140	-0.69749	0.487	1.000	1.000
		-	Right	Phon	Spanish-English	2.4310	1.82	216	1.33284	0.184	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
		-	Right	Phon	Chinese-English	0.0558	1.82	216	0.03060	0.976	1.000	1.000
		-	Right	Orth	English	-3.7301	1.64	125	-2.27217	0.025	0.824	1.000
		-	Right	Orth	Spanish-English	1.1545	1.82	132	0.63495	0.527	1.000	1.000
		-	Right	Orth	Chinese-English	0.2790	1.82	152	0.15294	0.879	1.000	1.000
		-	Right	Control	English	-1.6515	1.64	140	-0.98440	0.327	1.000	1.000
		-	Right	Control	Spanish-English	2.6402	1.82	147	1.4754	0.149	0.999	1.000
		-	Right	Control	Chinese-English	-0.5929	1.82	125	-0.32509	0.745	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison													
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>	
		Spa nis h- Eng lish	-	Left	Ort h	Chi nes e- Eng lish	3.20 95	1. 8 2	2 1 6	1.7 59 65	0.0 80	0.9 86	1.0 00
			-	Left	Con trol	Eng lish	- 0.88 50	1. 8 2	2 1 6	- 0.4 85 22	0.6 28	1.0 00	1.0 00
			-	Left	Con trol	Spa nis h- Eng lish	- 0.36 28	1. 1 8	3 4 0	- 0.3 06 29	0.7 60	1.0 00	1.0 00
			-	Left	Con trol	Chi nes e- Eng lish	0.29 38	1. 8 2	2 1 6	0.1 61 06	0.8 72	1.0 00	1.0 00
			-	Rig ht	Pho nOr th	Eng lish	- 5.52 20	1. 8 2	2 1 6	- 3.0 27 51	0.0 03	0.2 87	0.7 14
			-	Rig ht	Pho nOr th	Spa nis h- Eng lish	- 0.40 02	1. 6 8	1 4 0	- 0.2 38 52	0.8 12	1.0 00	1.0 00
			-	Rig ht	Pho nOr th	Chi nes e- Eng lish	- 2.73 35	1. 8 2	2 1 6	- 1.4 98 69	0.1 35	0.9 98	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
-			Rig ht	Pho n	Eng lish	- 2.99 68	1. 8 2	2 1 6	- 1.6 43 07	0.1 02	0.9 94	1.0 00
-			Rig ht	Pho n	Spa nis h- Eng lish	0.60 43	1. 6 8	1 4 0	0.3 60 21	0.7 19	1.0 00	1.0 00
-			Rig ht	Pho n	Chi nes e- Eng lish	- 1.77 09	1. 8 2	2 1 6	- 0.9 70 92	0.3 33	1.0 00	1.0 00
-			Rig ht	Ort h	Eng lish	- 5.55 68	1. 8 2	2 1 6	- 3.0 46 63	0.0 03	0.2 76	0.6 74
-			Rig ht	Ort h	Spa nis h- Eng lish	- 0.67 22	1. 6 4	1 2 5	- 0.4 09 48	0.6 83	1.0 00	1.0 00
-			Rig ht	Ort h	Chi nes e- Eng lish	- 1.54 77	1. 8 2	2 1 6	- 0.8 48 57	0.3 97	1.0 00	1.0 00
-			Rig ht	Con trol	Eng lish	- 3.47 82	1. 8 2	2 1 6	- 1.9 06 97	0.0 58	0.9 65	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
			Right	Control	Spanish-English	0.8135	1.68	140	0.48491	0.628	1.000	1.000
			Right	Control	Chinese-English	-2.4196	1.82	216	-1.32661	0.186	1.000	1.000
		Chinese-English	Left	Control	English	-4.0945	1.82	216	-2.24487	0.026	0.843	1.000
			Left	Control	Spanish-English	-3.5723	1.82	216	-1.95855	0.051	0.954	1.000
			Left	Control	Chinese-English	-2.9157	1.82	340	-2.46172	0.014	0.704	1.000
			Right	PhonOrth	English	-8.7314	1.82	216	-4.78716	<.001	<.001	<.001
			Right	PhonOrth	Spanish-English	-3.6096	1.82	216	-1.97904	0.049	0.949	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
					Chi nes e- Eng lish	- 5.94 30	1. 6 8	1 4 0	- 3.5 42 44	<. 00 1	0.0 82	0.1 46
			Rig ht	Pho n	Eng lish	- 6.20 63	1. 8 2	2 1 6	- 3.4 02 71	<. 00 1	0.1 15	0.2 13
			Rig ht	Pho n	Spa nis h- Eng lish	- 2.60 52	1. 8 2	2 1 6	- 1.4 28 33	0.1 55	0.9 99	1.0 00
			Rig ht	Pho n	Chi nes e- Eng lish	- 4.98 04	1. 6 8	1 4 0	- 2.9 68 65	0.0 04	0.3 29	0.9 05
			Rig ht	Ort h	Eng lish	- 8.76 63	1. 8 2	2 1 6	- 4.8 06 28	<. 00 1	<. 00 1	<. 00 1
			Rig ht	Ort h	Spa nis h- Eng lish	- 3.88 17	1. 8 2	2 1 6	- 2.1 28 21	0.0 34	0.8 99	1.0 00
			Rig ht	Ort h	Chi nes e- Eng lish	- 4.75 72	1. 6 4	1 2 5	- 2.8 97 79	0.0 04	0.3 78	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison													
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>	
			-	Rig ht	Con trol	Eng lish	- 6.68 77	1. 8 2	2 1 6	- 3.6 66 62	<. 00 1	0.0 53	0.0 84
			-	Rig ht	Con trol	Spa nis h- Eng lish	- 2.39 60	1. 8 2	2 1 6	- 1.3 13 62	0.1 90	1.0 00	1.0 00
			-	Rig ht	Con trol	Chi nes e- Eng lish	- 5.62 91	1. 6 8	1 4 0	- 3.3 55 36	0.0 01	0.1 37	0.2 69
	Con trol	Eng lish	-	Left	Con trol	Spa nis h- Eng lish	0.52 22	1. 8 2	2 1 6	0.2 86 32	0.7 75	1.0 00	1.0 00
			-	Left	Con trol	Chi nes e- Eng lish	1.17 88	1. 8 2	2 1 6	0.6 46 29	0.5 19	1.0 00	1.0 00
			-	Rig ht	Pho nOr th	Eng lish	- 4.63 70	1. 6 8	1 4 0	- 2.7 63 96	0.0 06	0.4 73	1.0 00
			-	Rig ht	Pho nOr th	Spa nis h- Eng lish	0.48 49	1. 8 2	2 1 6	0.2 65 83	0.7 91	1.0 00	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
					Chi nes e- Eng lish	- 1.84 85	1. 8 2	2 1 6	- 1.0 13 47	0.3 12	1.0 00	1.0 00
			Rig ht	Pho n	Eng lish	- 2.11 18	1. 6 8	1 4 0	- 1.2 58 80	0.2 10	1.0 00	1.0 00
			Rig ht	Pho n	Spa nis h- Eng lish	1.48 93	1. 8 2	2 1 6	0.8 16 54	0.4 15	1.0 00	1.0 00
			Rig ht	Pho n	Chi nes e- Eng lish	- 0.88 59	1. 8 2	2 1 6	- 0.4 85 70	0.6 28	1.0 00	1.0 00
			Rig ht	Ort h	Eng lish	- 4.67 18	1. 6 8	1 4 0	- 2.7 84 75	0.0 06	0.4 58	1.0 00
			Rig ht	Ort h	Spa nis h- Eng lish	0.21 28	1. 8 2	2 1 6	0.1 16 66	0.9 07	1.0 00	1.0 00
			Rig ht	Ort h	Chi nes e- Eng lish	- 0.66 27	1. 8 2	2 1 6	- 0.3 63 35	0.7 17	1.0 00	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison													
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>	
			-	Rig ht	Con trol	Eng lish	- 2.59 32	1. 6 4	1 2 5	- 1.5 79 60	0.1 17	0.9 96	1.0 00
			-	Rig ht	Con trol	Spa nis h- Eng lish	1.69 85	1. 8 2	2 1 6	0.9 31 25	0.3 53	1.0 00	1.0 00
			-	Rig ht	Con trol	Chi nes e- Eng lish	- 1.53 46	1. 8 2	2 1 6	- 0.8 41 39	0.4 01	1.0 00	1.0 00
		Spa nis h- Eng lish	-	Left	Con trol	Chi nes e- Eng lish	0.65 65	1. 8 2	2 1 6	0.3 59 96	0.7 19	1.0 00	1.0 00
			-	Rig ht	Pho nOr th	Eng lish	- 5.15 92	1. 8 2	2 1 6	- 2.8 28 61	0.0 05	0.4 22	1.0 00
			-	Rig ht	Pho nOr th	Spa nis h- Eng lish	- 0.03 74	1. 6 8	1 4 0	- 0.0 22 28	0.9 82	1.0 00	1.0 00
			-	Rig ht	Pho nOr th	Chi nes e- Eng lish	- 2.37 07	1. 8 2	2 1 6	- 1.2 99 79	0.1 95	1.0 00	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
-			Rig ht	Pho n	Eng lish	- 2.63 41	1. 8 2	2 1 6	- 1.4 44 17	0.1 50	0.9 99	1.0 00
-			Rig ht	Pho n	Spa nis h- Eng lish	0.96 71	1. 6 8	1 4 0	0.5 76 45	0.5 65	1.0 00	1.0 00
-			Rig ht	Pho n	Chi nes e- Eng lish	- 1.40 81	1. 8 2	2 1 6	- 0.7 72 02	0.4 41	1.0 00	1.0 00
-			Rig ht	Ort h	Eng lish	- 5.19 41	1. 8 2	2 1 6	- 2.8 47 74	0.0 05	0.4 08	1.0 00
-			Rig ht	Ort h	Spa nis h- Eng lish	- 0.30 95	1. 6 8	1 4 0	- 0.1 84 46	0.8 54	1.0 00	1.0 00
-			Rig ht	Ort h	Chi nes e- Eng lish	- 1.18 50	1. 8 2	2 1 6	- 0.6 49 67	0.5 17	1.0 00	1.0 00
-			Rig ht	Con trol	Eng lish	- 3.11 54	1. 8 2	2 1 6	- 1.7 08 07	0.0 89	0.9 90	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
			Right	Control	Spanish-English	1.1763	1.64	125	0.716	0.475	1.000	1.000
			Right	Control	Chinese-English	-2.0569	1.82	216	-1.127	0.261	1.000	1.000
		Chinese-English	Right	PhonOrth	English	-5.8157	1.81	216	-3.188	0.002	0.200	0.427
			Right	PhonOrth	Spanish-English	-0.6939	1.82	216	-0.380	0.704	1.000	1.000
			Right	PhonOrth	Chinese-English	-3.0273	1.80	214	-1.804	0.073	0.980	1.000
			Right	Phon	English	-3.2906	1.82	216	-1.804	0.073	0.981	1.000
			Right	Phon	Spanish-English	0.3105	1.82	216	0.170	0.865	1.000	1.000

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
		-	Rig ht	Pho n	Chi nes e- Eng lish	- 2.06 47	1. 6 8	1 4 0	- 1.2 30 68	0.2 21	1.0 00	1.0 00
		-	Rig ht	Ort h	Eng lish	- 5.85 06	1. 8 2	2 1 6	- 3.2 07 70	0.0 02	0.1 91	0.4 02
		-	Rig ht	Ort h	Spa nis h- Eng lish	- 0.96 60	1. 8 2	2 1 6	- 0.5 29 63	0.5 97	1.0 00	1.0 00
		-	Rig ht	Ort h	Chi nes e- Eng lish	- 1.84 15	1. 6 8	1 4 0	- 1.0 97 67	0.2 74	1.0 00	1.0 00
		-	Rig ht	Con trol	Eng lish	- 3.77 20	1. 8 2	2 1 6	- 2.0 68 04	0.0 40	0.9 22	1.0 00
		-	Rig ht	Con trol	Spa nis h- Eng lish	0.51 97	1. 8 2	2 1 6	0.2 84 96	0.7 76	1.0 00	1.0 00
		-	Rig ht	Con trol	Chi nes e- Eng lish	- 2.71 34	1. 6 4	1 2 5	- 1.6 52 84	0.1 01	0.9 93	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison													
Hemi sphe re	RRT diff	Gro up		Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
Rig ht	Pho nOr th	Eng lish	-	Rig ht	Pho nOr th	Spa nis h- Eng lish	5.12 18	1. 8 2	2 1 6	2.8 08 12	0.0 05	0.4 37	1.0 00
				-	Rig ht	Pho nOr th	Chi nes e- Eng lish	2.78 85	1. 8 2	2 1 6	1.5 28 82	0.1 28	0.9 98
		-	Rig ht	Pho n	Eng lish	2.52 51	1. 1 8	3 4 0	2.1 31 96	0.0 34	0.8 99	1.0 00	
		-	Rig ht	Pho n	Spa nis h- Eng lish	6.12 63	1. 8 2	2 1 6	3.3 58 83	< . 00 1	0.1 30	0.2 45	
		-	Rig ht	Pho n	Chi nes e- Eng lish	3.75 11	1. 8 2	2 1 6	2.0 56 59	0.0 41	0.9 26	1.0 00	
		-	Rig ht	Ort h	Eng lish	- 0.03 49	1. 1 8	3 4 0	- 0.0 29 45	0.9 77	1.0 00	1.0 00	
		-	Rig ht	Ort h	Spa nis h- Eng lish	4.84 97	1. 8 2	2 1 6	2.6 58 94	0.0 08	0.5 52	1.0 00	

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
					Chi nes e- Eng lish	3.97 42	1. 8 2	2 1 6	2.1 78 93	0.0 30	0.8 76	1.0 00
					Eng lish	2.04 38	1. 1 8	3 4 0	1.7 25 55	0.0 85	0.9 90	1.0 00
					Spa nis h- Eng lish	6.33 55	1. 8 2	2 1 6	3.4 73 53	<. 00 1	0.0 94	0.1 67
					Chi nes e- Eng lish	3.10 23	1. 8 2	2 1 6	1.7 00 89	0.0 90	0.9 91	1.0 00
		Spa nis h- Eng lish			Chi nes e- Eng lish	- 2.33 34	1. 8 2	2 1 6	- 1.2 79 30	0.2 02	1.0 00	1.0 00
					Eng lish	- 2.59 67	1. 8 2	2 1 6	- 1.4 23 67	0.1 56	0.9 99	1.0 00
					Spa nis h- Eng lish	1.00 45	1. 1 8	3 4 0	0.8 48 06	0.3 97	1.0 00	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
					Chi nes e- Eng lish	- 1.37 07	1. 8 2	2 1 6	- 0.7 51 53	0.4 53	1.0 00	1.0 00
					Eng lish	- 5.15 67	1. 8 2	2 1 6	- 2.8 27 24	0.0 05	0.4 23	1.0 00
					Spa nis h- Eng lish	- 0.27 21	1. 1 8	3 4 0	- 0.2 29 72	0.8 18	1.0 00	1.0 00
					Chi nes e- Eng lish	- 1.14 76	1. 8 2	2 1 6	- 0.6 29 18	0.5 30	1.0 00	1.0 00
					Eng lish	- 3.07 80	1. 8 2	2 1 6	- 1.6 87 58	0.0 93	0.9 92	1.0 00
					Spa nis h- Eng lish	1.21 37	1. 1 8	3 4 0	1.0 24 70	0.3 06	1.0 00	1.0 00
					Chi nes e- Eng lish	- 2.01 95	1. 8 2	2 1 6	- 1.1 07 22	0.2 69	1.0 00	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Group	Hemi sphe re	RRT diff	Group	Mea n Diff erence	SE	df	t	p	P <sub>tuk</sub> ey	P <sub>hol</sub> m
		Chi nes e- Eng lish	-	Rig ht	Pho n	Eng lish	- 0.26 33	1. 8 2	2 1 6	- 0.1 44 38	0.8 85	1.0 00 00
			-	Rig ht	Pho n	Spa nis h- Eng lish	3.33 78	1. 8 2	2 1 6	1.8 30 01	0.0 69	0.9 78 00
			-	Rig ht	Pho n	Chi nes e- Eng lish	0.96 26	1. 1 8	3 4 0	0.8 12 74	0.4 17	1.0 00 00
			-	Rig ht	Ort h	Eng lish	- 2.82 33	1. 8 2	2 1 6	- 1.5 47 94	0.1 23	0.9 97 00
			-	Rig ht	Ort h	Spa nis h- Eng lish	2.06 13	1. 8 2	2 1 6	1.1 30 13	0.2 60	1.0 00 00
			-	Rig ht	Ort h	Chi nes e- Eng lish	1.18 58	1. 1 8	3 4 0	1.0 01 14	0.3 17	1.0 00 00
			-	Rig ht	Con trol	Eng lish	- 0.74 47	1. 8 2	2 1 6	- 0.4 08 28	0.6 83	1.0 00 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
			-	Rig ht	Con trol	Spa nis h- Eng lish 3.54 70	1. 8 2	2 1 6	1.9 44 71	0.0 53	0.9 57	1.0 00
			-	Rig ht	Con trol	Chi nes e- Eng lish 0.31 39	1. 1 8	3 4 0	0.2 64 99	0.7 91	1.0 00	1.0 00
	Pho n	Eng lish	-	Rig ht	Pho n	Spa nis h- Eng lish 3.60 11	1. 8 2	2 1 6	1.9 74 39	0.0 50	0.9 50	1.0 00
			-	Rig ht	Pho n	Chi nes e- Eng lish 1.22 59	1. 8 2	2 1 6	0.6 72 15	0.5 02	1.0 00	1.0 00
			-	Rig ht	Ort h	Eng lish - 2.56 00	1. 1 8	3 4 0	- 2.1 61 41	0.0 31	0.8 86	1.0 00
			-	Rig ht	Ort h	Spa nis h- Eng lish 2.32 46	1. 8 2	2 1 6	1.2 74 50	0.2 04	1.0 00	1.0 00
			-	Rig ht	Ort h	Chi nes e- Eng lish 1.44 91	1. 8 2	2 1 6	0.7 94 49	0.4 28	1.0 00	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
		-	Rig ht	Con trol	Eng lish	- 0.48 14	1. 1 8	3 4 0	- 0.4 06 40	0.6 85	1.0 00	1.0 00
		-	Rig ht	Con trol	Spa nis h- Eng lish	3.81 04	1. 8 2	2 1 6	2.0 89 09	0.0 38	0.9 14	1.0 00
		-	Rig ht	Con trol	Chi nes e- Eng lish	0.57 72	1. 8 2	2 1 6	0.3 16 45	0.7 52	1.0 00	1.0 00
		Spa nis h- Eng lish	Rig ht	Pho n	Chi nes e- Eng lish	- 2.37 52	1. 8 2	2 1 6	- 1.3 02 24	0.1 94	1.0 00	1.0 00
		-	Rig ht	Ort h	Eng lish	- 6.16 12	1. 8 2	2 1 6	- 3.3 77 96	<. 00 1	0.1 23	0.2 31
		-	Rig ht	Ort h	Spa nis h- Eng lish	- 1.27 65	1. 1 8	3 4 0	- 1.0 77 78	0.2 82	1.0 00	1.0 00
		-	Rig ht	Ort h	Chi nes e- Eng lish	- 2.15 20	1. 8 2	2 1 6	- 1.1 79 89	0.2 39	1.0 00	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
		-	Rig ht	Con trol	Eng lish	- 4.08 25	1. 8 2	2 1 6	- 2.2 38 30	0.0 26	0.8 46	1.0 00
		-	Rig ht	Con trol	Spa nis h- Eng lish	0.20 92	1. 1 8	3 4 0	0.1 76 64	0.8 60	1.0 00	1.0 00
		-	Rig ht	Con trol	Chi nes e- Eng lish	- 3.02 40	1. 8 2	2 1 6	- 1.6 57 93	0.0 99	0.9 93	1.0 00
		Chi nes e- Eng lish	Rig ht	Ort h	Eng lish	- 3.78 60	1. 8 2	2 1 6	- 2.0 75 72	0.0 39	0.9 19	1.0 00
		-	Rig ht	Ort h	Spa nis h- Eng lish	1.09 87	1. 8 2	2 1 6	0.6 02 36	0.5 48	1.0 00	1.0 00
		-	Rig ht	Ort h	Chi nes e- Eng lish	0.22 32	1. 1 8	3 4 0	0.1 88 41	0.8 51	1.0 00	1.0 00
		-	Rig ht	Con trol	Eng lish	- 1.70 73	1. 8 2	2 1 6	- 0.9 36 05	0.3 50	1.0 00	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>
			-	Rig ht	Con trol	Spa nis h- Eng lish 2.58 44	1. 8 2	2 1 6	1.4 16 94	0.1 58	0.9 99	1.0 00
			-	Rig ht	Con trol	Chi nes e- Eng lish - 0.64 88	1. 1 8	3 4 0	- 0.5 47 75	0.5 84	1.0 00	1.0 00
	Ort h	Eng lish	-	Rig ht	Ort h	Spa nis h- Eng lish 4.88 46	1. 8 2	2 1 6	2.6 78 07	0.0 08	0.5 37	1.0 00
			-	Rig ht	Ort h	Chi nes e- Eng lish 4.00 91	1. 8 2	2 1 6	2.1 98 06	0.0 29	0.8 67	1.0 00
			-	Rig ht	Con trol	Eng lish 2.07 87	1. 1 8	3 4 0	1.7 55 01	0.0 80	0.9 87	1.0 00
			-	Rig ht	Con trol	Spa nis h- Eng lish 6.37 04	1. 8 2	2 1 6	3.4 92 66	<. 00 1	0.0 89	0.1 57
			-	Rig ht	Con trol	Chi nes e- Eng lish 3.13 72	1. 8 2	2 1 6	1.7 20 02	0.0 87	0.9 89	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

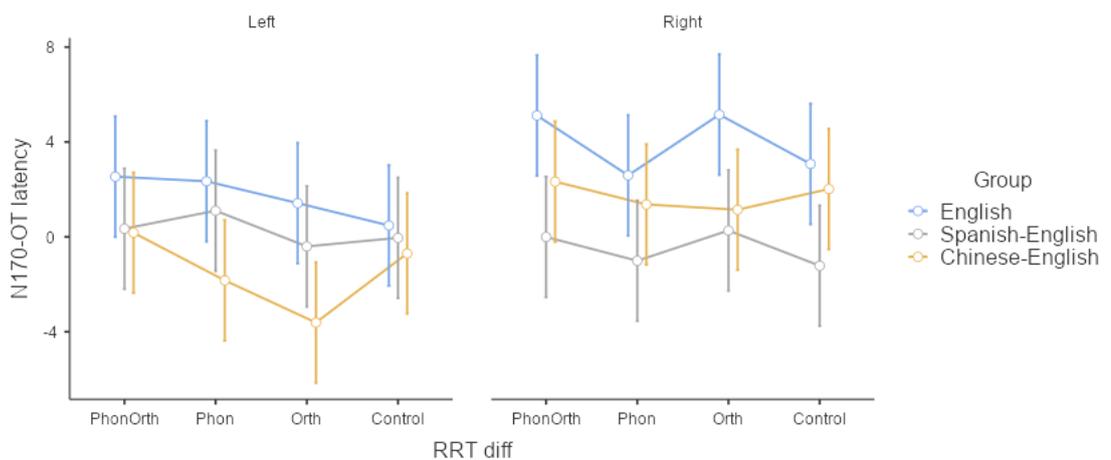
Comparison													
Hemi sphe re	RRT diff	Gro up	Hemi sphe re	RRT diff	Gro up	Mea n Diff eren ce	SE	df	t	p	P <sub>tuk ey</sub>	P <sub>hol m</sub>	
		Spa nis h- Eng lish	-	Rig ht	Ort h	Chi nes e- Eng lish	- 0.87 55	1. 8 2	2 1 6	- 0.4 80 01	0.6 32	1.0 00	1.0 00
			-	Rig ht	Con trol	Eng lish	- 2.80 60	1. 8 2	2 1 6	- 1.5 38 41	0.1 25	0.9 98	1.0 00
			-	Rig ht	Con trol	Spa nis h- Eng lish	1.48 58	1. 1 8	3 4 0	1.2 54 42	0.2 11	1.0 00	1.0 00
			-	Rig ht	Con trol	Chi nes e- Eng lish	- 1.74 74	1. 8 2	2 1 6	- 0.9 58 05	0.3 39	1.0 00	1.0 00
		Chi nes e- Eng lish	-	Rig ht	Con trol	Eng lish	- 1.93 04	1. 8 2	2 1 6	- 1.0 58 40	0.2 91	1.0 00	1.0 00
			-	Rig ht	Con trol	Spa nis h- Eng lish	2.36 13	1. 8 2	2 1 6	1.2 94 60	0.1 97	1.0 00	1.0 00
			-	Rig ht	Con trol	Chi nes e- Eng lish	- 0.87 19	1. 1 8	3 4 0	- 0.7 36 15	0.4 62	1.0 00	1.0 00

Post Hoc Comparisons - Hemisphere \* RRT diff \* Group

Comparison												
Hemisphere	RRT diff	Group	Hemisphere	RRT diff	Group	Mean Difference	SE	df	t	p	ptuk ey	Phol m
	Control	English	-	Right	Control	Spanish-English	4.29	1.82	21	2.353	0.020	0.778
			-	Right	Control	Chinese-English	1.0585	1.82	21	0.580	0.562	1.000
		Spanish-English	-	Right	Control	Chinese-English	-3.2332	1.82	21	-1.764	0.078	0.985

### Estimated Marginal Means

#### RRT diff \* Group \* Hemisphere



### Repeated Measures ANOVA

#### Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Hemisphere	36.9	1	36.88	1.795	0.186	0.031
Hemisphere * Group	15.5	2	7.76	0.378	0.687	0.013
Residual	1171.3	57	20.55			

Note. Type 3 Sums of Squares

#### Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
Group	330	2	165.2	2.84	0.067	0.091
Residual	3319	57	58.2			

Note. Type 3 Sums of Squares

## Assumptions

#### Homogeneity of Variances Test (Levene's)

	F	df1	df2	p
NAL50_N170.LeftOP\$prime	0.0595	2	57	0.942
NAL50_N170.RightOP\$prime	3.4132	2	57	0.040

## Post Hoc Tests

Post Hoc Comparisons - Hemisphere \* Group

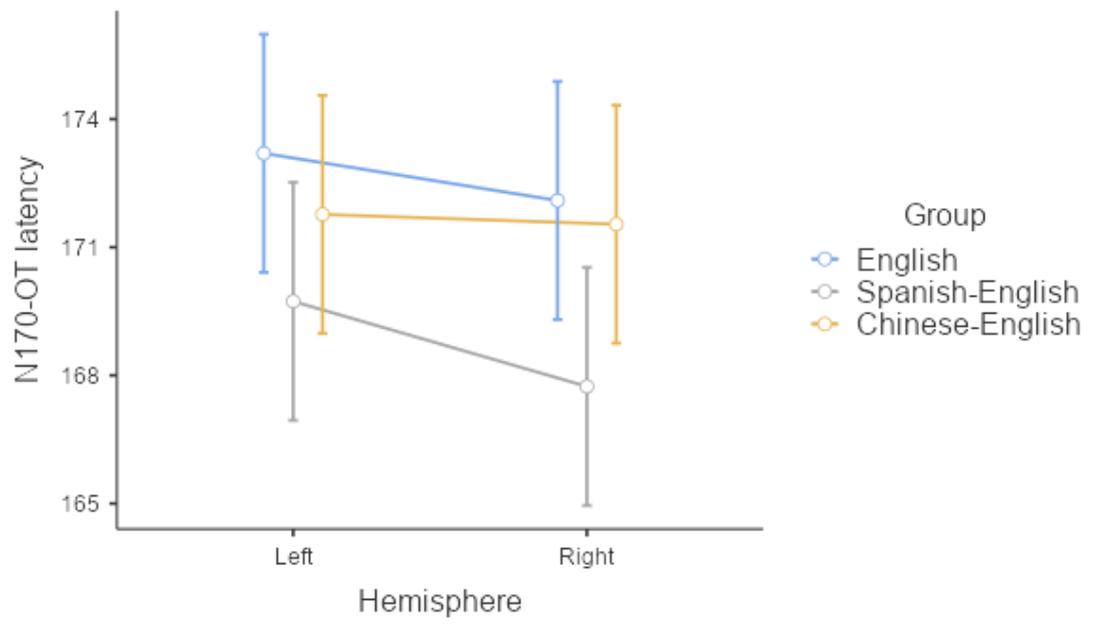
Comparison												
Hemisphere	Group		Hemisphere	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> <sub>y</sub>	P <sub>hol</sub> <sub>m</sub>	
Left	English	-	Left	Spanish-English	3.466	1.98	92.8	1.746	0.084	0.505	0.925	
		-	Left	Chinese-English	1.430	1.98	92.8	0.720	0.473	0.979	1.000	
		-	Right	English	1.104	1.43	57.0	0.770	0.444	0.971	1.000	
		-	Right	Spanish-English	5.458	1.98	92.8	2.750	0.007	0.075	0.107	
		-	Right	Chinese-English	1.660	1.98	92.8	0.836	0.405	0.960	1.000	
		Spanish-English	-	Left	Chinese-English	-2.036	1.98	92.8	-1.026	0.308	0.908	1.000
			-	Right	English	-2.362	1.98	92.8	-1.190	0.237	0.840	1.000
			-	Right	Spanish-English	1.992	1.43	57.0	1.390	0.170	0.733	1.000
			-	Right	Chinese-English	-1.806	1.98	92.8	-0.910	0.365	0.943	1.000

Post Hoc Comparisons - Hemisphere \* Group

Comparison												
Hemisphere	Group	Hemisphere	Group	Mean Difference	SE	df	t	p	P <sub>tuke</sub> <sub>y</sub>	P <sub>holm</sub> <sub>m</sub>		
Right	Chinese-English	-	Right	English	-0.326	1.98	92.8	-0.164	0.870	1.000	1.000	
			-	Right	Spanish-English	4.028	1.98	92.8	2.030	0.045	0.334	0.588
				Right	Chinese-English	0.230	1.43	57.0	0.161	0.873	1.000	1.000
	English	-	Right	Spanish-English	4.354	1.98	92.8	2.194	0.031	0.250	0.430	
			Right	Chinese-English	0.556	1.98	92.8	0.280	0.780	1.000	1.000	
	Spanish-English	-	Right	Chinese-English	-3.798	1.98	92.8	-1.914	0.059	0.400	0.705	

**Estimated Marginal Means**

**Hemisphere \* Group**



## Appendix Q: RRT variant validation

### All groups overall

		Paired Samples Statistics			
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	RRTA_PhonOrth_accuracy	89.875	60	11.5936	1.4967
	RRTB_PhonOrth_accuracy	89.333	60	10.7146	1.3832
Pair 2	RRTA_Phon_accuracy	72.149117	60	23.1670753	2.9908566
	RRTB_Phon_accuracy	73.903510	60	20.6375814	2.6643003
Pair 3	RRTA_Orth_accuracy	48.333	60	32.3404	4.1751
	RRTB_Orth_accuracy	46.583	60	32.8291	4.2382
Pair 4	RRTA_Control_accuracy	95.555560	60	7.3267657	.9458814
	RRTB_Control_accuracy	95.854705	60	5.0425581	.6509915
Pair 5	RRTA_PhonOrth_RT	835.88387	60	231.529843	29.890374
	RRTB_PhonOrth_RT	841.85180	60	232.654727	30.035596
Pair 6	RRTA_Phon_RT	951.46672	60	265.606228	34.289617
	RRTB_Phon_RT	935.30935	60	261.291859	33.732634
Pair 7	RRTA_Orth_RT	1062.74833	60	259.563902	33.509556
	RRTB_Orth_RT	1087.50623	60	253.606648	32.740477
Pair 8	RRTA_Control_RT	792.65130	60	182.643273	23.579145
	RRTB_Control_RT	805.12573	60	181.563746	23.439779

		Paired Samples Correlations		
		N	Correlation	Sig.
Pair 1	RRTA_PhonOrth_accuracy & RRTB_PhonOrth_accuracy	60	.829	.000
Pair 2	RRTA_Phon_accuracy & RRTB_Phon_accuracy	60	.877	.000

Pair 3	RRTA_Orth_accuracy & RRTB_Orth_accuracy	60	.940	.000
Pair 4	RRTA_Control_accuracy & RRTB_Control_accuracy	60	.467	.000
Pair 5	RRTA_PhonOrth_RT & RRTB_PhonOrth_RT	60	.827	.000
Pair 6	RRTA_Phon_RT & RRTB_Phon_RT	60	.863	.000
Pair 7	RRTA_Orth_RT & RRTB_Orth_RT	60	.830	.000
Pair 8	RRTA_Control_RT & RRTB_Control_RT	60	.785	.000

### Paired Samples Test

		Paired Differences			95% Confidence Interval of the Difference Lower
		Mean	Std. Deviation	Std. Error Mean	
Pair 1	RRTA_PhonOrth_accuracy - RRTB_PhonOrth_accuracy	.5417	6.5757	.8489	-1.1570
Pair 2	RRTA_Phon_accuracy - RRTB_Phon_accuracy	-1.7543933	11.1508288	1.4395658	-4.6349579
Pair 3	RRTA_Orth_accuracy - RRTB_Orth_accuracy	1.7500	11.2681	1.4547	-1.1609
Pair 4	RRTA_Control_accuracy - RRTB_Control_accuracy	-.2991450	6.6778776	.8621103	-2.0242237
Pair 5	RRTA_PhonOrth_RT - RRTB_PhonOrth_RT	-5.967933	136.631858	17.639097	-41.263685
Pair 6	RRTA_Phon_RT - RRTB_Phon_RT	16.157367	138.063104	17.823870	-19.508115

Pair 7	RRTA_Orth_RT - RRTB_Orth_RT	-	-	149.849113	19.345437	-63.468031
			24.757900			
Pair 8	RRTA_Control_RT - RRTB_Control_RT	-	-	119.538812	15.432394	-43.354583
			12.474433			

### Paired Samples Test

			Paired Differences 95% Confidence Interval of the Difference Upper	t	df	Sig. (2- tailed)
Pair 1	RRTA_PhonOrth_accuracy - RRTB_PhonOrth_accuracy	-	2.2403	.638	59	.526
Pair 2	RRTA_Phon_accuracy - RRTB_Phon_accuracy	-	1.1261712	-1.219	59	.228
Pair 3	RRTA_Orth_accuracy - RRTB_Orth_accuracy	-	4.6609	1.203	59	.234
Pair 4	RRTA_Control_accuracy - RRTB_Control_accuracy	-	1.4259337	-.347	59	.730
Pair 5	RRTA_PhonOrth_RT - RRTB_PhonOrth_RT	-	29.327818	-.338	59	.736
Pair 6	RRTA_Phon_RT - RRTB_Phon_RT	-	51.822848	.907	59	.368
Pair 7	RRTA_Orth_RT - RRTB_Orth_RT	-	13.952231	-1.280	59	.206
Pair 8	RRTA_Control_RT - RRTB_Control_RT	-	18.405716	-.808	59	.422

### Paired Samples Effect Sizes

			Standardize r <sup>a</sup>	Point Estimate
Pair 1	RRTA_PhonOrth_acc	Cohen's d	6.5757	.082
	uracy - RRTB_PhonOrth_acc	Hedges' correction	6.6179	.082
Pair 2	RRTA_Phon_accurac	Cohen's d	11.1508288	-.157
	y - RRTB_Phon_accurac	Hedges' correction	11.2223340	-.156
	y			

Pair 3	RRTA_Orth_accuracy	Cohen's d	11.2681	.155
	RRTB_Orth_accuracy	Hedges' correction	11.3404	.154
Pair 4	RRTA_Control_accuracy	Cohen's d	6.6778776	-.045
	RRTB_Control_accuracy	Hedges' correction	6.7206997	-.045
Pair 5	RRTA_PhonOrth_RT	Cohen's d	136.631858	-.044
	RRTB_PhonOrth_RT	Hedges' correction	137.508016	-.043
Pair 6	RRTA_Phon_RT	Cohen's d	138.063104	.117
	RRTB_Phon_RT	Hedges' correction	138.948440	.116
Pair 7	RRTA_Orth_RT	Cohen's d	149.849113	-.165
	RRTB_Orth_RT	Hedges' correction	150.810027	-.164
Pair 8	RRTA_Control_RT	Cohen's d	119.538812	-.104
	RRTB_Control_RT	Hedges' correction	120.305359	-.104

### Paired Samples Effect Sizes

			95% Confidence Interval	
			Lower	Upper
Pair 1	RRTA_PhonOrth_accuracy	Cohen's d	-.171	.335
	RRTB_PhonOrth_accuracy	Hedges' correction	-.170	.333
Pair 2	RRTA_Phon_accuracy	Cohen's d	-.411	.098
	RRTB_Phon_accuracy	Hedges' correction	-.409	.097
Pair 3	RRTA_Orth_accuracy	Cohen's d	-.100	.409
	RRTB_Orth_accuracy	Hedges' correction	-.099	.407
Pair 4	RRTA_Control_accuracy	Cohen's d	-.298	.209
	RRTB_Control_accuracy	Hedges' correction	-.296	.207
Pair 5	RRTA_PhonOrth_RT	Cohen's d	-.297	.210
	RRTB_PhonOrth_RT	Hedges' correction	-.295	.208
Pair 6	RRTA_Phon_RT	Cohen's d	-.137	.370
	RRTB_Phon_RT	Hedges' correction	-.136	.368
Pair 7	RRTA_Orth_RT	Cohen's d	-.419	.090
	RRTB_Orth_RT	Hedges' correction	-.417	.090
Pair 8	RRTA_Control_RT	Cohen's d	-.358	.150
	RRTB_Control_RT	Hedges' correction	-.355	.149

a. The denominator used in estimating the effect sizes.

Cohen's d uses the sample standard deviation of the mean difference.

Hedges' correction uses the sample standard deviation of the mean difference, plus a correction factor.

SORT CASES BY Group.

SPLIT FILE SEPARATE BY Group.

```
T-TEST PAIRS=RRTA_PhonOrth_accuracy RRTA_Phon_accuracy RRTA_Orth_accuracy
RRTA_Control_accuracy
  RRTA_PhonOrth_RT RRTA_Phon_RT RRTA_Orth_RT RRTA_Control_RT WITH
RRTB_PhonOrth_accuracy
  RRTB_Phon_accuracy RRTB_Orth_accuracy RRTB_Control_accuracy
RRTB_PhonOrth_RT RRTB_Phon_RT
  RRTB_Orth_RT RRTB_Control_RT (PAIRED)
/ES DISPLAY(TRUE) STANDARDIZER(SD)
/CRITERIA=CI(.9500)
/MISSING=ANALYSIS.
```

### T-Test

#### Notes

Output Created		10-DEC-2021 16:32:07
Comments		
Input	Data	C:\Users\55131438\Downloads\Behavioural and ERP data.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	Group
	N of Rows in Working Data File	60
Missing Handling	Value Definition of Missing	User defined missing values are treated as missing.
	Cases Used	Statistics for each analysis are based on the cases with no missing or out-of-range data for any variable in the analysis.

Syntax		T-TEST PAIRS=RRTA_Phon Orth_accuracy RRTA_Phon_accurac y RRTA_Orth_accuracy RRTA_Control_accur acy  RRTA_PhonOrth_RT RRTA_Phon_RT RRTA_Orth_RT RRTA_Control_RT WITH RRTB_PhonOrth_acc uracy  RRTB_Phon_accurac y RRTB_Orth_accuracy RRTB_Control_accur acy RRTB_PhonOrth_RT RRTB_Phon_RT RRTB_Orth_RT RRTB_Control_RT (PAIRE $\bar{D}$ ) /ES DISPLAY(TRUE) STANDARDIZER(SD)  /CRITERIA=CI(.9500)  /MISSING=ANALYSI S.
Resources	Processor Time	00:00:00.03
	Elapsed Time	00:00:00.03

**Group = English**

**Paired Samples Statistics<sup>a</sup>**

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	RRTA_PhonOrth_acc uracy	97.625	20	2.8648	.6406
	RRTB_PhonOrth_acc uracy	96.750	20	4.0636	.9087

Pair 2	RRTA_Phon_accuracy	93.684195	20	5.8158585	1.3004655
	RRTB_Phon_accuracy	93.552630	20	5.4985426	1.2295115
Pair 3	RRTA_Orth_accuracy	86.625	20	12.2816	2.7463
	RRTB_Orth_accuracy	85.875	20	10.1396	2.2673
Pair 4	RRTA_Control_accuracy	98.589745	20	4.1156128	.9202790
	RRTB_Control_accuracy	97.179490	20	4.4722089	1.0000163
Pair 5	RRTA_PhonOrth_RT	645.62570	20	98.442393	22.012388
	RRTB_PhonOrth_RT	646.94715	20	89.206897	19.947269
Pair 6	RRTA_Phon_RT	695.36350	20	94.317717	21.090083
	RRTB_Phon_RT	688.14205	20	84.359316	18.863317
Pair 7	RRTA_Orth_RT	793.83740	20	80.950460	18.101073
	RRTB_Orth_RT	811.82735	20	91.723170	20.509924
Pair 8	RRTA_Control_RT	645.12590	20	92.263376	20.630718
	RRTB_Control_RT	658.23105	20	90.643491	20.268501

a. Group = English

#### Paired Samples Correlations<sup>a</sup>

	N	Correlation	Sig.
Pair 1 RRTA_PhonOrth_accuracy & RRTB_PhonOrth_accuracy	20	.065	.785
Pair 2 RRTA_Phon_accuracy & RRTB_Phon_accuracy	20	.517	.019
Pair 3 RRTA_Orth_accuracy & RRTB_Orth_accuracy	20	.506	.023

Pair 4	RRTA_Control_accuracy & RRTB_Control_accuracy	20	.111	.642
Pair 5	RRTA_PhonOrth_RT & RRTB_PhonOrth_RT	20	.720	.000
Pair 6	RRTA_Phon_RT & RRTB_Phon_RT	20	.694	.001
Pair 7	RRTA_Orth_RT & RRTB_Orth_RT	20	.743	.000
Pair 8	RRTA_Control_RT & RRTB_Control_RT	20	.693	.001

a. Group = English

### Paired Samples Test<sup>a</sup>

		Paired Differences			95% Confidence Interval of the Difference
		Mean	Std. Deviation	Std. Error Mean	Lower
Pair 1	RRTA_PhonOrth_accuracy - RRTB_PhonOrth_accuracy	.8750	4.8174	1.0772	-1.3796
Pair 2	RRTA_Phon_accuracy - RRTB_Phon_accuracy	.1315650	5.5644454	1.2442478	-2.4726756
Pair 3	RRTA_Orth_accuracy - RRTB_Orth_accuracy	.7500	11.3003	2.5268	-4.5387
Pair 4	RRTA_Control_accuracy - RRTB_Control_accuracy	1.4102550	5.7319929	1.2817126	-1.2724002
Pair 5	RRTA_PhonOrth_RT - RRTB_PhonOrth_RT	-1.321450	70.687825	15.806278	-34.404371
Pair 6	RRTA_Phon_RT - RRTB_Phon_RT	7.221450	70.518274	15.768365	-25.782118
Pair 7	RRTA_Orth_RT - RRTB_Orth_RT	-17.989950	62.666002	14.012544	-47.318542

Pair 8	RRTA_Control_RT - RRTB_Control_RT	-	13.105150	71.663630	16.024475	-46.644761
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**Paired Samples Test<sup>a</sup>**

		Paired Differences 95% Confidence Interval of the Difference Upper	t	df	Sig. (2- tailed)
Pair 1	RRTA_PhonOrth_accuracy - RRTB_PhonOrth_accuracy	3.1296	.812	19	.427
Pair 2	RRTA_Phon_accuracy - RRTB_Phon_accuracy	2.7358056	.106	19	.917
Pair 3	RRTA_Orth_accuracy - RRTB_Orth_accuracy	6.0387	.297	19	.770
Pair 4	RRTA_Control_accuracy - RRTB_Control_accuracy	4.0929102	1.100	19	.285
Pair 5	RRTA_PhonOrth_RT - RRTB_PhonOrth_RT	31.761471	-.084	19	.934
Pair 6	RRTA_Phon_RT - RRTB_Phon_RT	40.225018	.458	19	.652
Pair 7	RRTA_Orth_RT - RRTB_Orth_RT	11.338642	-1.284	19	.215
Pair 8	RRTA_Control_RT - RRTB_Control_RT	20.434461	-.818	19	.424

a. Group = English

**Paired Samples Effect Sizes<sup>a</sup>**

		Standardize r <sup>b</sup>	Point Estimate
Pair 1	RRTA_PhonOrth_acc	Cohen's d	.182
	uracy - RRTB_PhonOrth_acc	Hedges' correction	.178
Pair 2	RRTA_Phon_accurac	Cohen's d	.024
	y - RRTB_Phon_accurac	Hedges' correction	.023
Pair 3		Cohen's d	.066

	RRTA_Orth_accuracy	Hedges' correction	11.5296	.065
	RRTB_Orth_accuracy			
Pair 4	RRTA_Control_accuracy	Cohen's d	5.7319929	.246
	RRTB_Control_accuracy	Hedges' correction	5.8483135	.241
Pair 5	RRTA_PhonOrth_RT	Cohen's d	70.687825	-.019
	RRTB_PhonOrth_RT	Hedges' correction	72.122309	-.018
Pair 6	RRTA_Phon_RT	Cohen's d	70.518274	.102
	RRTB_Phon_RT	Hedges' correction	71.949317	.100
Pair 7	RRTA_Orth_RT	Cohen's d	62.666002	-.287
	RRTB_Orth_RT	Hedges' correction	63.937697	-.281
Pair 8	RRTA_Control_RT	Cohen's d	71.663630	-.183
	RRTB_Control_RT	Hedges' correction	73.117916	-.179

### Paired Samples Effect Sizes<sup>a</sup>

			95% Confidence Interval	
			Lower	Upper
Pair 1	RRTA_PhonOrth_accuracy	Cohen's d	-.263	.621
	RRTB_PhonOrth_accuracy	Hedges' correction	-.257	.609
Pair 2	RRTA_Phon_accuracy	Cohen's d	-.415	.462
	RRTB_Phon_accuracy	Hedges' correction	-.407	.452
Pair 3	RRTA_Orth_accuracy	Cohen's d	-.373	.504
	RRTB_Orth_accuracy	Hedges' correction	-.366	.494
Pair 4	RRTA_Control_accuracy	Cohen's d	-.202	.688
	RRTB_Control_accuracy	Hedges' correction	-.198	.674
Pair 5	RRTA_PhonOrth_RT	Cohen's d	-.457	.420
	RRTB_PhonOrth_RT	Hedges' correction	-.448	.412
Pair 6	RRTA_Phon_RT	Cohen's d	-.338	.541
	RRTB_Phon_RT	Hedges' correction	-.332	.530
Pair 7	RRTA_Orth_RT	Cohen's d	-.731	.164
	RRTB_Orth_RT	Hedges' correction	-.716	.161
Pair 8	RRTA_Control_RT	Cohen's d	-.623	.262
	RRTB_Control_RT	Hedges' correction	-.610	.256

a. Group = English

b. The denominator used in estimating the effect sizes.

Cohen's d uses the sample standard deviation of the mean difference.

Hedges' correction uses the sample standard deviation of the mean difference, plus a correction factor.

Group = Spanish-English

**Paired Samples Statistics<sup>a</sup>**

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	RRTA_PhonOrth_accuracy	85.000	20	15.1310	3.3834
	RRTB_PhonOrth_accuracy	84.875	20	13.8952	3.1071
Pair 2	RRTA_Phon_accuracy	53.552630	20	20.2815015	4.5350816
	RRTB_Phon_accuracy	58.552640	20	19.6164310	4.3863673
Pair 3	RRTA_Orth_accuracy	23.250	20	14.6247	3.2702
	RRTB_Orth_accuracy	19.750	20	17.0120	3.8040
Pair 4	RRTA_Control_accuracy	95.256415	20	9.9923744	2.2343628
	RRTB_Control_accuracy	96.410260	20	3.9372878	.8804043
Pair 5	RRTA_PhonOrth_RT	973.28770	20	256.013978	57.246466
	RRTB_PhonOrth_RT	957.74720	20	239.467656	53.546596
Pair 6	RRTA_Phon_RT	1159.02015	20	228.919951	51.188057
	RRTB_Phon_RT	1098.52600	20	246.115826	55.033172
Pair 7	RRTA_Orth_RT	1297.67785	20	186.487954	41.699974
	RRTB_Orth_RT	1271.48190	20	191.114558	42.734514
Pair 8	RRTA_Control_RT	878.19050	20	195.864032	43.796529
	RRTB_Control_RT	846.38490	20	182.797118	40.874678

a. Group = Spanish-English

**Paired Samples Correlations<sup>a</sup>**

	N	Correlation	Sig.
Pair 1 RRTA_PhonOrth_accuracy & RRTB_PhonOrth_accuracy	20	.862	.000

Pair 2	RRTA_Phon_accuracy & RRTB_Phon_accuracy	20	.651	.002
Pair 3	RRTA_Orth_accuracy & RRTB_Orth_accuracy	20	.727	.000
Pair 4	RRTA_Control_accuracy & RRTB_Control_accuracy	20	.617	.004
Pair 5	RRTA_PhonOrth_RT & RRTB_PhonOrth_RT	20	.731	.000
Pair 6	RRTA_Phon_RT & RRTB_Phon_RT	20	.687	.001
Pair 7	RRTA_Orth_RT & RRTB_Orth_RT	20	.466	.038
Pair 8	RRTA_Control_RT & RRTB_Control_RT	20	.695	.001

a. Group = Spanish-English

### Paired Samples Test<sup>a</sup>

		Paired Differences			95% Confidence Interval of the Difference
		Mean	Std. Deviation	Std. Error Mean	Lower
Pair 1	RRTA_PhonOrth_accuracy - RRTB_PhonOrth_accuracy	.1250	7.7151	1.7252	-3.4858
Pair 2	RRTA_Phon_accuracy - RRTB_Phon_accuracy	5.000010	16.6851379	3.7309103	-12.8088949
Pair 3	RRTA_Orth_accuracy - RRTB_Orth_accuracy	3.5000	11.9042	2.6619	-2.0713
Pair 4	RRTA_Control_accuracy - RRTB_Control_accuracy	1.1538450	8.1711005	1.8271136	-4.9780377

Pair 5	RRTA_PhonOrth_RT - RRTB_PhonOrth_RT	15.54050 0	182.488125	40.805585	-69.866572
Pair 6	RRTA_Phon_RT - RRTB_Phon_RT	60.49415 0	188.507320	42.151518	-27.729991
Pair 7	RRTA_Orth_RT - RRTB_Orth_RT	26.19595 0	195.182600	43.644156	-65.152318
Pair 8	RRTA_Control_RT - RRTB_Control_RT	31.80560 0	148.286956	33.157971	-37.594832

**Paired Samples Test<sup>a</sup>**

		Paired Differences 95% Confidence Interval of the Difference Upper	t	df	Sig. (2- tailed)
Pair 1	RRTA_PhonOrth_accu racy - RRTB_PhonOrth_accu racy	3.7358	.072	19	.943
Pair 2	RRTA_Phon_accuracy - RRTB_Phon_accuracy	2.8088749	-1.340	19	.196
Pair 3	RRTA_Orth_accuracy - RRTB_Orth_accuracy	9.0713	1.315	19	.204
Pair 4	RRTA_Control_accurac y - RRTB_Control_accurac y	2.6703477	-.632	19	.535
Pair 5	RRTA_PhonOrth_RT - RRTB_PhonOrth_RT	100.947572	.381	19	.708
Pair 6	RRTA_Phon_RT - RRTB_Phon_RT	148.718291	1.435	19	.167
Pair 7	RRTA_Orth_RT - RRTB_Orth_RT	117.544218	.600	19	.555
Pair 8	RRTA_Control_RT - RRTB_Control_RT	101.206032	.959	19	.349

a. Group = Spanish-English

**Paired Samples Effect Sizes<sup>a</sup>**

		Standardize r <sup>b</sup>	Point Estimate
Pair 1	Cohen's d	7.7151	.016

	RRTA_PhonOrth_acc uracy RRTB_PhonOrth_acc uracy	Hedges' - correction	7.8717	.016
Pair 2	RRTA_Phon_accurac y RRTB_Phon_accurac y	Cohen's d - Hedges' correction	16.6851379 17.0237332	-.300 -.294
Pair 3	RRTA_Orth_accurac y RRTB_Orth_accurac y	Cohen's d - Hedges' correction	11.9042 12.1458	.294 .288
Pair 4	RRTA_Control_accur acy RRTB_Control_accur acy	Cohen's d - Hedges' correction	8.1711005 8.3369184	-.141 -.138
Pair 5	RRTA_PhonOrth_RT - RRTB_PhonOrth_RT	Cohen's d - Hedges' correction	182.488125 186.191397	.085 .083
Pair 6	RRTA_Phon_RT RRTB_Phon_RT	Cohen's d - Hedges' correction	188.507320 192.332741	.321 .315
Pair 7	RRTA_Orth_RT RRTB_Orth_RT	Cohen's d - Hedges' correction	195.182600 199.143483	.134 .132
Pair 8	RRTA_Control_RT RRTB_Control_RT	Cohen's d - Hedges' correction	148.286956 151.296176	.214 .210

### Paired Samples Effect Sizes<sup>a</sup>

		95% Confidence Interval	
		Lower	Upper
Pair 1	RRTA_PhonOrth_accurac y RRTB_PhonOrth_accurac y	Cohen's d - Hedges' correction	
		-.422	.454
		-.414	.445
Pair 2	RRTA_Phon_accuracy RRTB_Phon_accuracy	Cohen's d Hedges' correction	
		-.744	.152
		-.729	.149
Pair 3	RRTA_Orth_accuracy RRTB_Orth_accuracy	Cohen's d Hedges' correction	
		-.158	.738
		-.155	.724
Pair 4	RRTA_Control_accuracy RRTB_Control_accuracy	Cohen's d Hedges' correction	
		-.580	.301
		-.568	.295
Pair 5	RRTA_PhonOrth_RT RRTB_PhonOrth_RT	Cohen's d Hedges' correction	
		-.355	.523
		-.348	.513
Pair 6	RRTA_Phon_RT RRTB_Phon_RT	Cohen's d Hedges' correction	
		-.133	.767
		-.130	.752
Pair 7	RRTA_Orth_RT RRTB_Orth_RT	Cohen's d Hedges' correction	
		-.308	.573
		-.302	.561
Pair 8		Cohen's d	
		-.232	.655

RRTA_Control_RT	- Hedges' correction	-.227	.642
RRTB_Control_RT			

a. Group = Spanish-English

b. The denominator used in estimating the effect sizes.

Cohen's d uses the sample standard deviation of the mean difference.

Hedges' correction uses the sample standard deviation of the mean difference, plus a correction factor.

**Group = Chinese-English**

**Paired Samples Statistics<sup>a</sup>**

	Mean	N	Std. Deviation	Std. Error Mean
Pair 1 RRTA_PhonOrth_accuracy	87.000	20	9.1263	2.0407
RRTB_PhonOrth_accuracy	86.375	20	7.6724	1.7156
Pair 2 RRTA_Phon_accuracy	69.210525	20	18.9785167	4.2437254
RRTB_Phon_accuracy	69.605260	20	15.2845059	3.4177194
Pair 3 RRTA_Orth_accuracy	35.125	20	22.2201	4.9686
RRTB_Orth_accuracy	34.125	20	20.2009	4.5171
Pair 4 RRTA_Control_accuracy	92.820520	20	5.6789248	1.2698462
RRTB_Control_accuracy	93.974365	20	6.1287665	1.3704338
Pair 5 RRTA_PhonOrth_RT	888.73820	20	174.096100	38.929071
RRTB_PhonOrth_RT	920.86105	20	205.141107	45.870946
Pair 6 RRTA_Phon_RT	1000.01650	20	202.232640	45.220593
RRTB_Phon_RT	1019.26000	20	211.068846	47.196429
Pair 7 RRTA_Orth_RT	1096.72975	20	180.139374	40.280389
RRTB_Orth_RT	1179.20945	20	174.074358	38.924210
Pair 8 RRTA_Control_RT	854.63750	20	148.512954	33.208506
RRTB_Control_RT	910.76125	20	156.471639	34.988122

a. Group = Chinese-English

**Paired Samples Correlations<sup>a</sup>**

	N	Correlation	Sig.
Pair 1 RRTA_PhonOrth_accuracy & RRTB_PhonOrth_accuracy	20	.649	.002
Pair 2 RRTA_Phon_accuracy & RRTB_Phon_accuracy	20	.920	.000
Pair 3 RRTA_Orth_accuracy & RRTB_Orth_accuracy	20	.871	.000
Pair 4 RRTA_Control_accuracy & RRTB_Control_accuracy	20	.511	.021
Pair 5 RRTA_PhonOrth_RT & RRTB_PhonOrth_RT	20	.755	.000
Pair 6 RRTA_Phon_RT & RRTB_Phon_RT	20	.823	.000
Pair 7 RRTA_Orth_RT & RRTB_Orth_RT	20	.659	.002
Pair 8 RRTA_Control_RT & RRTB_Control_RT	20	.718	.000

a. Group = Chinese-English

**Paired Samples Test<sup>a</sup>**

	Paired Differences			95% Confidence Interval of the Difference Lower
	Mean	Std. Deviation	Std. Error Mean	
Pair 1 RRTA_PhonOrth_accuracy - RRTB_PhonOrth_accuracy	.6250	7.1578	1.6005	-2.7249
Pair 2 RRTA_Phon_accuracy - RRTB_Phon_accuracy	-.3947350	7.7444259	1.7317063	-4.0192379

Pair 3	RRTA_Orth_accuracy - RRTB_Orth_accuracy	1.0000	10.9545	2.4495	-4.1268
Pair 4	RRTA_Control_accuracy - RRTB_Control_accuracy	1.1538450	5.8514845	1.3084317	-3.8924240
Pair 5	RRTA_PhonOrth_RT - RRTB_PhonOrth_RT	32.122850	135.799188	30.365621	-95.678826
Pair 6	RRTA_Phon_RT - RRTB_Phon_RT	19.243500	123.330638	27.577569	-76.964015
Pair 7	RRTA_Orth_RT - RRTB_Orth_RT	82.479700	146.343197	32.723334	-150.970425
Pair 8	RRTA_Control_RT - RRTB_Control_RT	56.123750	114.796212	25.669213	-109.850031

**Paired Samples Test<sup>a</sup>**

	Paired Differences 95% Confidence Interval of the Difference Upper	t	df	Sig. (2-tailed)	
Pair 1	RRTA_PhonOrth_accuracy - RRTB_PhonOrth_accuracy	3.9749	.390	19	.701
Pair 2	RRTA_Phon_accuracy - RRTB_Phon_accuracy	3.2297679	-.228	19	.822
Pair 3	RRTA_Orth_accuracy - RRTB_Orth_accuracy	6.1268	.408	19	.688
Pair 4	RRTA_Control_accuracy - RRTB_Control_accuracy	1.5847340	-.882	19	.389
Pair 5	RRTA_PhonOrth_RT - RRTB_PhonOrth_RT	31.433126	-1.058	19	.303
Pair 6	RRTA_Phon_RT - RRTB_Phon_RT	38.477015	-.698	19	.494
Pair 7	RRTA_Orth_RT - RRTB_Orth_RT	-13.988975	-2.521	19	.021
Pair 8	RRTA_Control_RT - RRTB_Control_RT	-2.397469	-2.186	19	.042

a. Group = Chinese-English

**Paired Samples Effect Sizes<sup>a</sup>**

			Standardize r <sup>b</sup>	Point Estimate
Pair 1	RRTA_PhonOrth_acc	Cohen's d	7.1578	.087
	uracy	- Hedges'	7.3030	.086
Pair 2	RRTB_PhonOrth_acc	correction		
	uracy			
Pair 2	RRTA_Phon_accurac	Cohen's d	7.7444259	-.051
	y	- Hedges'	7.9015852	-.050
Pair 3	RRTB_Phon_accurac	correction		
	y			
Pair 3	RRTA_Orth_accurac	Cohen's d	10.9545	.091
	y	- Hedges'	11.1768	.089
Pair 4	RRTB_Orth_accurac	correction		
	y			
Pair 4	RRTA_Control_accur	Cohen's d	5.8514845	-.197
	acy	- Hedges'	5.9702300	-.193
Pair 5	RRTB_Control_accur	correction		
	acy			
Pair 5	RRTA_PhonOrth_RT	Cohen's d	135.799188	-.237
	-	Hedges'	138.554991	-.232
Pair 6	RRTB_PhonOrth_RT	correction		
Pair 6	RRTA_Phon_RT	Cohen's d	123.330638	-.156
	-	Hedges'	125.833414	-.153
Pair 7	RRTB_Phon_RT	correction		
Pair 7	RRTA_Orth_RT	Cohen's d	146.343197	-.564
	-	Hedges'	149.312972	-.552
Pair 8	RRTB_Orth_RT	correction		
Pair 8	RRTA_Control_RT	Cohen's d	114.796212	-.489
	-	Hedges'	117.125797	-.479
Pair 8	RRTB_Control_RT	correction		

**Paired Samples Effect Sizes<sup>a</sup>**

			95% Confidence Interval	
			Lower	Upper
Pair 1	RRTA_PhonOrth_accurac	Cohen's d	-.353	.525
	y	- Hedges' correction	-.346	.515
Pair 2	RRTB_PhonOrth_accurac			
	y			
Pair 2	RRTA_Phon_accuracy	Cohen's d	-.489	.388
	-	Hedges' correction	-.479	.381
Pair 3	RRTB_Phon_accuracy			
Pair 3	RRTA_Orth_accuracy	Cohen's d	-.349	.529
	-	Hedges' correction	-.342	.519
Pair 4	RRTB_Orth_accuracy			
Pair 4		Cohen's d	-.637	.248

	RRTA_Control_accuracy	- Hedges' correction	-.625	.243
	RRTB_Control_accuracy			
Pair 5	RRTA_PhonOrth_RT	- Cohen's d	-.678	.211
	RRTB_PhonOrth_RT	Hedges' correction	-.665	.207
Pair 6	RRTA_Phon_RT	- Cohen's d	-.595	.287
	RRTB_Phon_RT	Hedges' correction	-.583	.281
Pair 7	RRTA_Orth_RT	- Cohen's d	-1.030	-.084
	RRTB_Orth_RT	Hedges' correction	-1.010	-.083
Pair 8	RRTA_Control_RT	- Cohen's d	-.948	-.019
	RRTB_Control_RT	Hedges' correction	-.929	-.018

a. Group = Chinese-English

b. The denominator used in estimating the effect sizes.

Cohen's d uses the sample standard deviation of the mean difference.

Hedges' correction uses the sample standard deviation of the mean difference, plus a correction factor.

