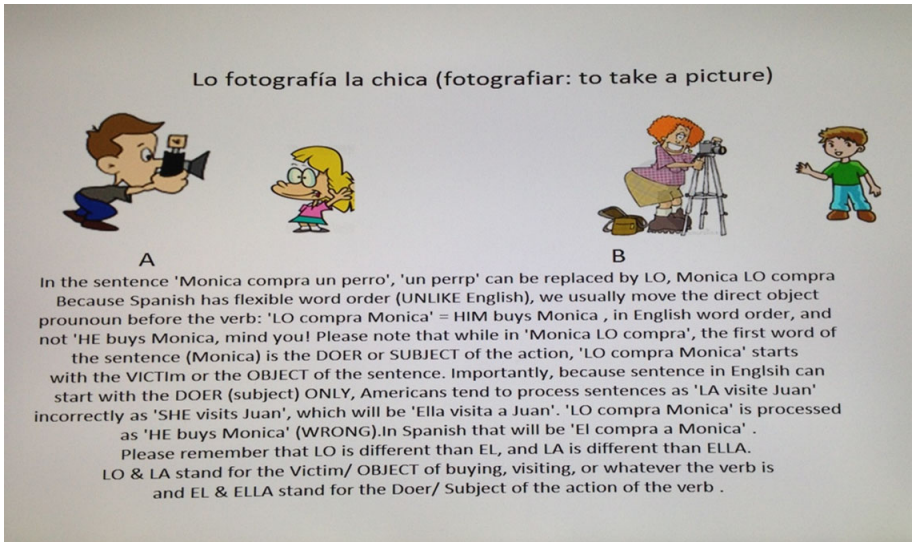
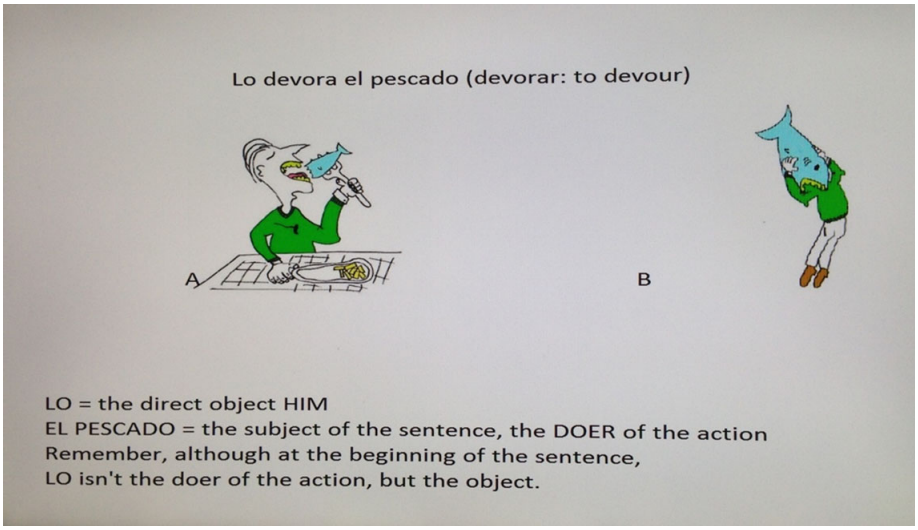
Appendix A: Sample training items for Groups GEd+

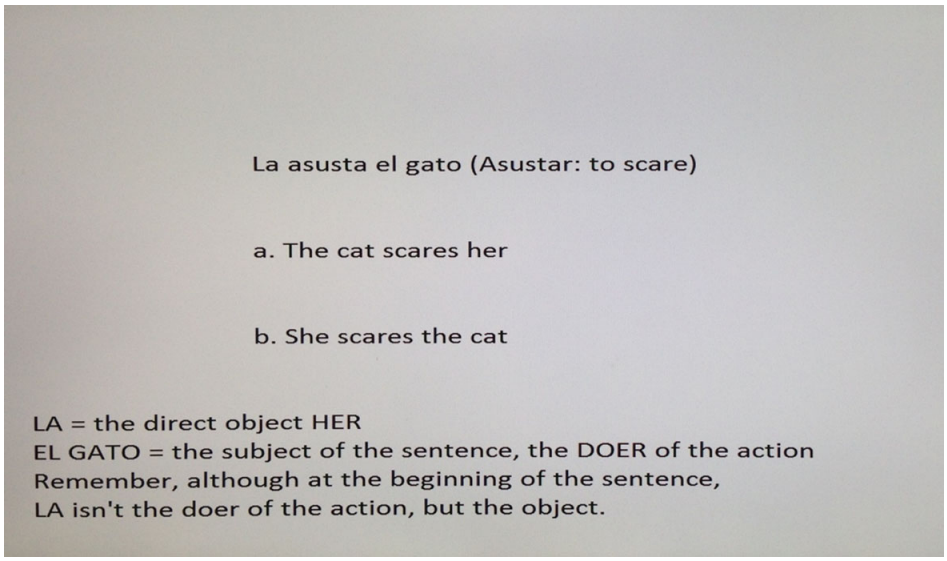
First practice slide for the picture-matching task



EI on all subsequent practice items for the picture-matching task

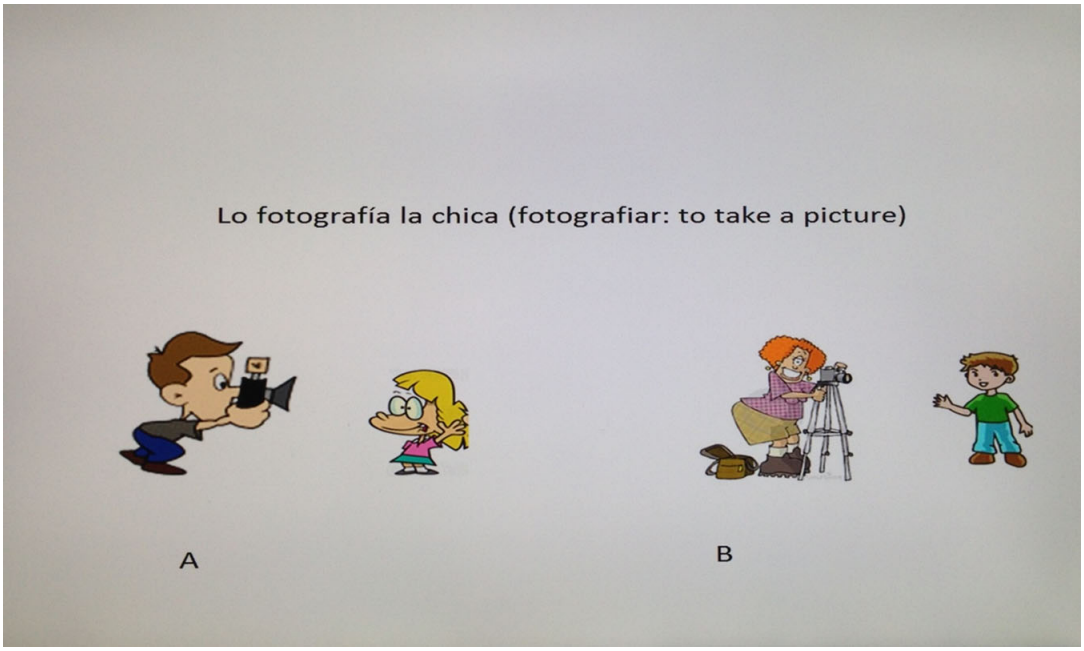


EI on all subsequent practice items for the sentence-interpretation task

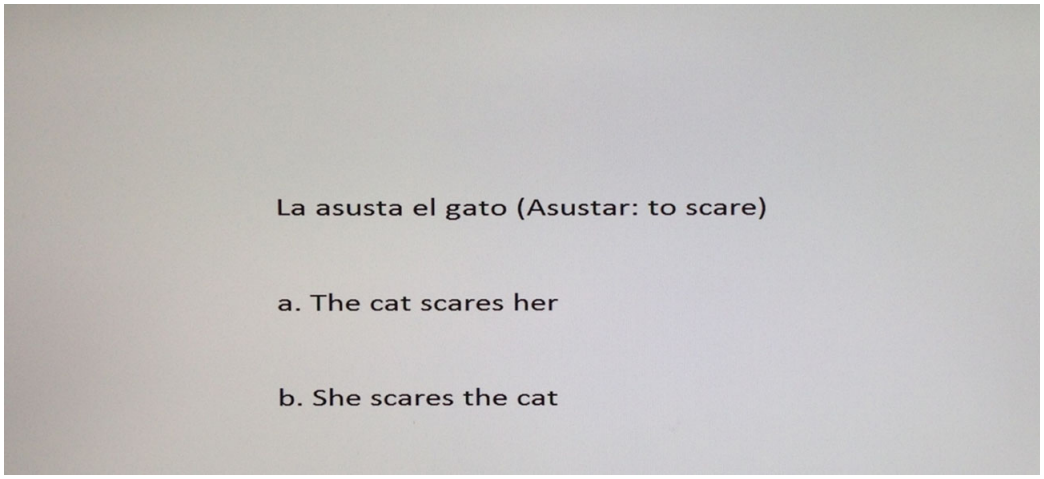


Appendix B: Sample training items for Groups GEd-

Practice items for the picture-matching task



Practice items for the sentence-interpretation task



Appendix C: Cronbach's reliability analysis

Table A1 *Cronbach's alpha for the outcome measures*

Outcome measure	Cronbach's Alpha
CovsT1	.85
CovsT2	.92
CovsT3	.89
CovsT4	.90
CserT1	.65
CserT2	.78
CserT3	.69
CserT4	.89
PovT1	.78
PovT2	.95
PovT3	.96
PovT4	.83
PserT1	.85
PserT2	.83
PserT3	.66
PserT4	.84
GovsT1	.64
GovsT2	.88
GovsT3	.88
GovsT4	.92
GserT1	.60
GserT2	.60
GserT3	.73
GserT4	.72

Appendix D: Correlation matrices between the outcome measures and the IDs

bvn A2 *Pearson's correlations between ID and outcome measures for Group 1 [GEb+GEd+]*

	LLAMA	SRT	WM
LLAMA			
SRT	.108		
WM	.194	-.044	
CovsT1	.097	-.127	.381*
CovsT2	.349	.051	.112
CovsT3	.458*	-.233	.483**
CovsT4	.367*	.098	.170
CserT1	.038	-.216	.372*
CserT2	.2	-.123	.337
CserT3	.153	-.082	.379*
CserT4	.2	.108	.665**
PovsT1	.068	-.066	-.282
PovsT2	.308	.201	.012
PovsT3	.134	-.014	.155
PovsT4	-.236	-.354	-.352
PserT1	-.131	-.071	-.058
PserT2	.369*	.133	.612**
PserT3	.212	.257	.095
PserT4	.19	.175	.629**
GovsT1	.232	-.027	.085
GovsT2	.425*	-.078	.287
GovsT3	.087	-.038	.121
GovsT4	.253	.022	.364*
GserT1	-.219	.168	.142
GserT2	.152	-.198	.349
GserT3	.311	.18	.439*
GserT4	.140	.239	.562**

*Note *p<.05, **p<.01

Table A3 *Pearson's correlations between ID and outcome measures for Group 2 [GEb+GEd-]*

	LLAMA	SRT	WM
LLAMA			
SRT	-.167		
WM	.389*	.267	
CovsT1	-.258	.123	-.394*
CovsT2	.102	.05	.401*
CovsT3	.444*	.025	.248
CovsT4	.734**	.089	.5**
CserT1	-.311	.078	.-.003
CserT2	.282	.165	.584**
CserT3	.286	.158	.548**
CserT4	.351	-.069	.535**
PovsT1	-.301	.306	.070
PovsT2	-.070	.570**	.394*
PovsT3	.143	.556**	.382*
PovsT4	.053	-.045	-.152
PserT1	.268	.264	.391
PserT2	.211	.265	.558**
PserT3	.312	.197	.615**
PserT4	.503**	-.019	.403*
GovsT1	-.420*	-.147	-.456
GovsT2	.069	.154	.348
GovsT3	.252	.112	.462*
GovsT4	.383*	.090	.401*
GserT1	-.220	.052	.042
GserT2	.320	.144	.429*
GserT3	.125	.022	.309
GserT4	.228	-.029	.334

*Note *p<.05, **p<.01

Table A4 *Pearson's correlations between ID and outcome measures for Group 3 [GEb-GEd+]*

	LLAMA	SRT	WM
LLAMA			
SRT	-.087		
WM	-.191	.276	
CovsT1	-.459	.054	.181
CovsT2	.070	-.247	-.163
CovsT3	.184	-.220	.125
CovsT4	.150	-.054	.243
CserT1	-.183	.116	.128
CserT2	.203	.140	.440*
CserT3	.236	.212	.524**
CserT4	.236	.117	.137
PovsT1	.098	-.097	-.006
PovsT2	.376*	-.004	-.039
PovsT3	.098	.171	.195
PovsT4	.094	-.02	-.109
PserT1	.083	-.177	.247
PserT2	.242	.108	.369*
PserT3	.047	.206	.405*
PserT4	.234	-.019	-.043
GovsT1	.017	-.214	.203
GovsT2	-.062	-.1	.143
GovsT3	.063	-.137	.073
GovsT4	.191	-.148	.155
GserT1	-.153	.114	.141
GserT2	.259	-.050	-.086
GserT3	-.13	.003	.296
GserT4	.011	-.180	.293
GRserT4	-.018	-.087	.198

*Note *p<.05, **p<.01

Table A5 *Pearson's correlations between ID and outcome measures for Group 4 [GEb-GEd-]*

	LLAMA	SRT	WM
LLAMA			
SRT	-.337		
WM	.064	.079	
CovsT1	-.261	-.178	-.115
CovsT2	.120	.218	-.108
CovsT3	-.101	.143	-.016
CovsT4	.687**	-.123	-.004
CserT1	-.119	-.132	.305
CserT2	.490**	-.026	.121
CserT3	.076	.359^	.259
CserT4	.338^	.356^	.355
PovsT1	-.079	-.308	-.069
PovsT2	.441	.156	-.080
PovsT3	.360	.191	.078
PovsT4	-.037	-.196	.149
PserT1	.397*	-.064	.195
PserT2	.570**	-.020	-.073
PserT3	.403*	.369^	.135
PserT4	.128	.281	.231
GovsT1	-.214	-.356	-.149
GovsT2	.465*	.002	.162
GovsT3	.445*	-.073	.180
GovsT4	.446*	-.024	.111
GserT1	.108	-.043	.150
GserT2	.387*	.040	-.048
GserT3	.137	-.075	.041
GserT4	-.048	.082	.027

*Note *p<.05,

Appendix E: J-N Figures

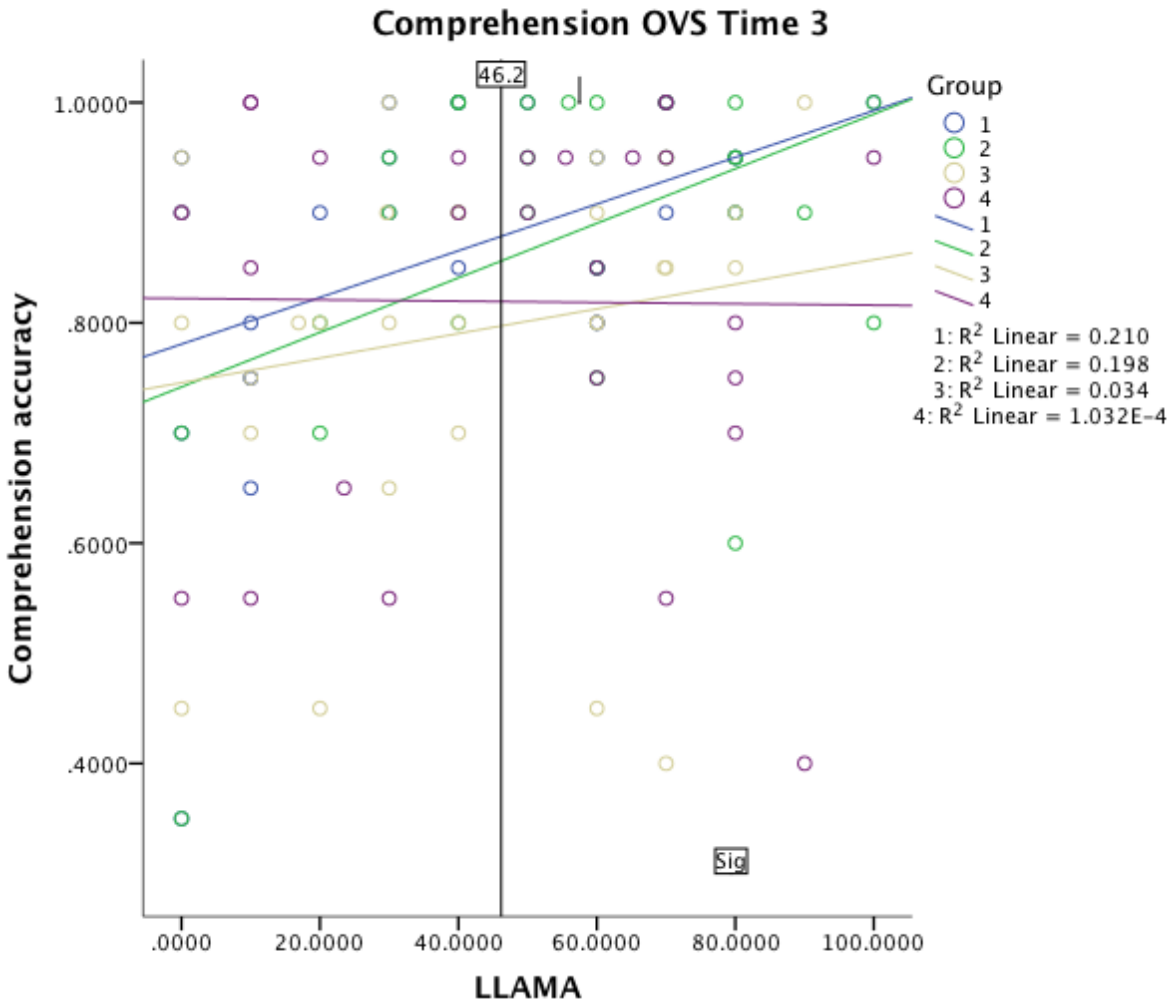


Figure A1 Group by LLAMA interaction plot for comprehension of OVS during Time 3

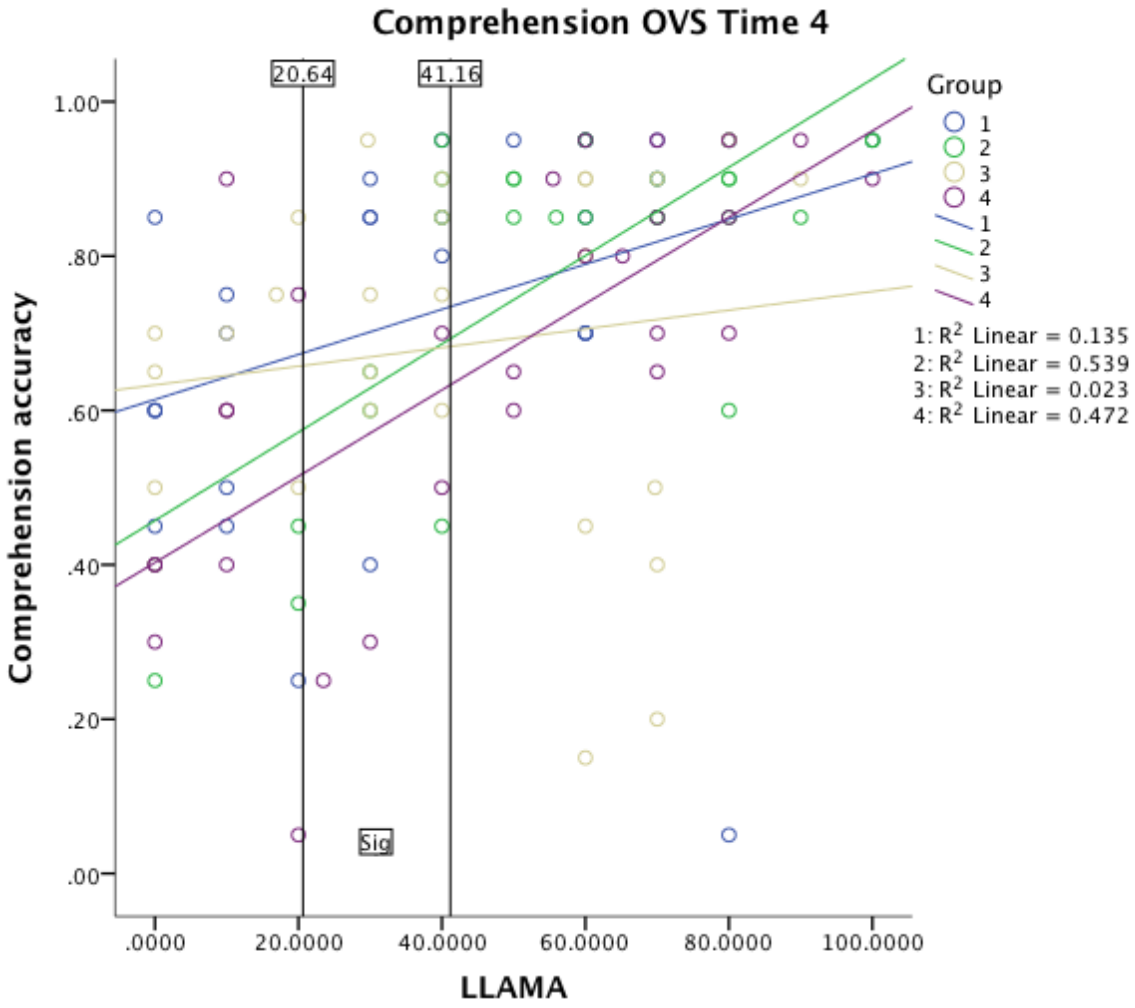


Figure A2 Group by LLAMA interaction plot for comprehension of OVS during Time 4

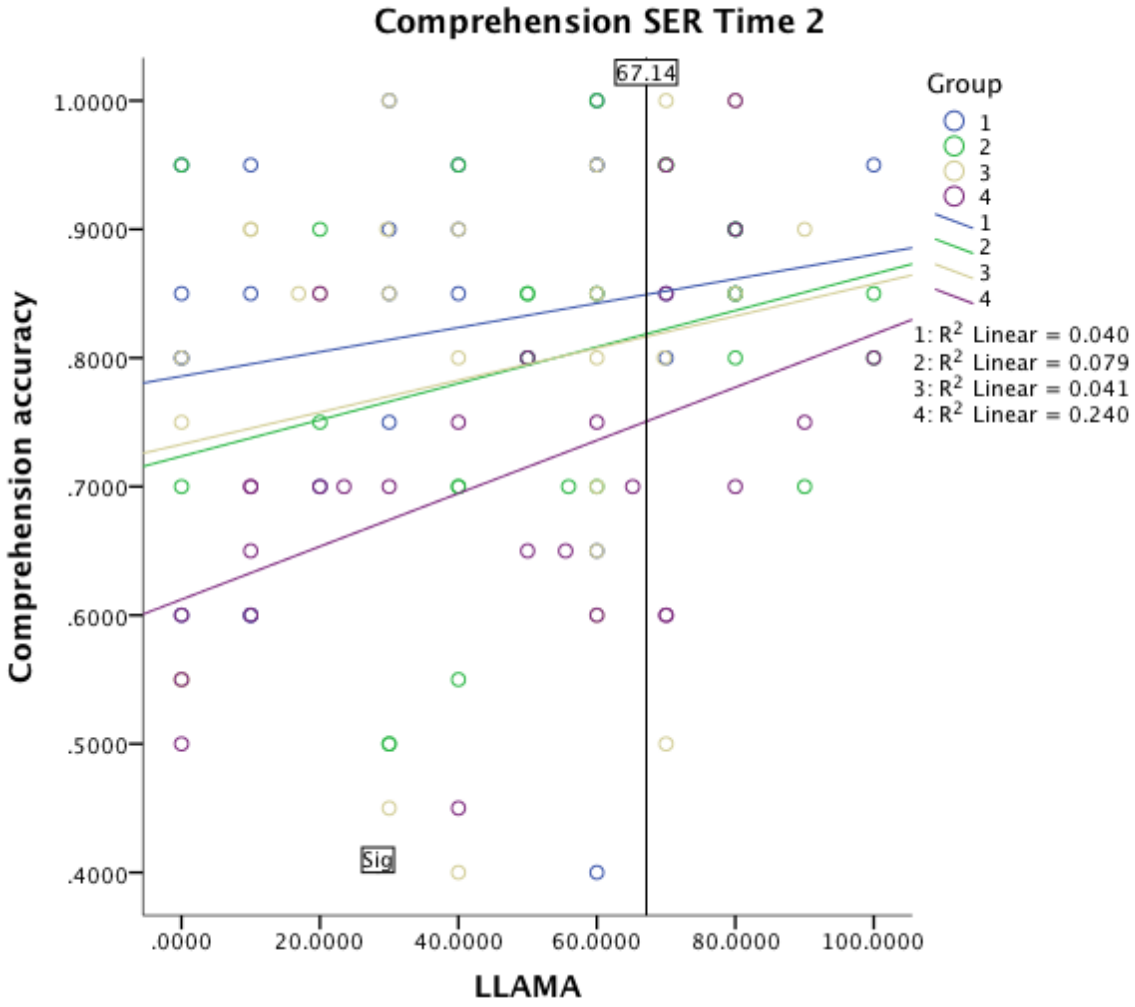


Figure A3 Group by LLAMA interaction plot for comprehension of SER during Time 2

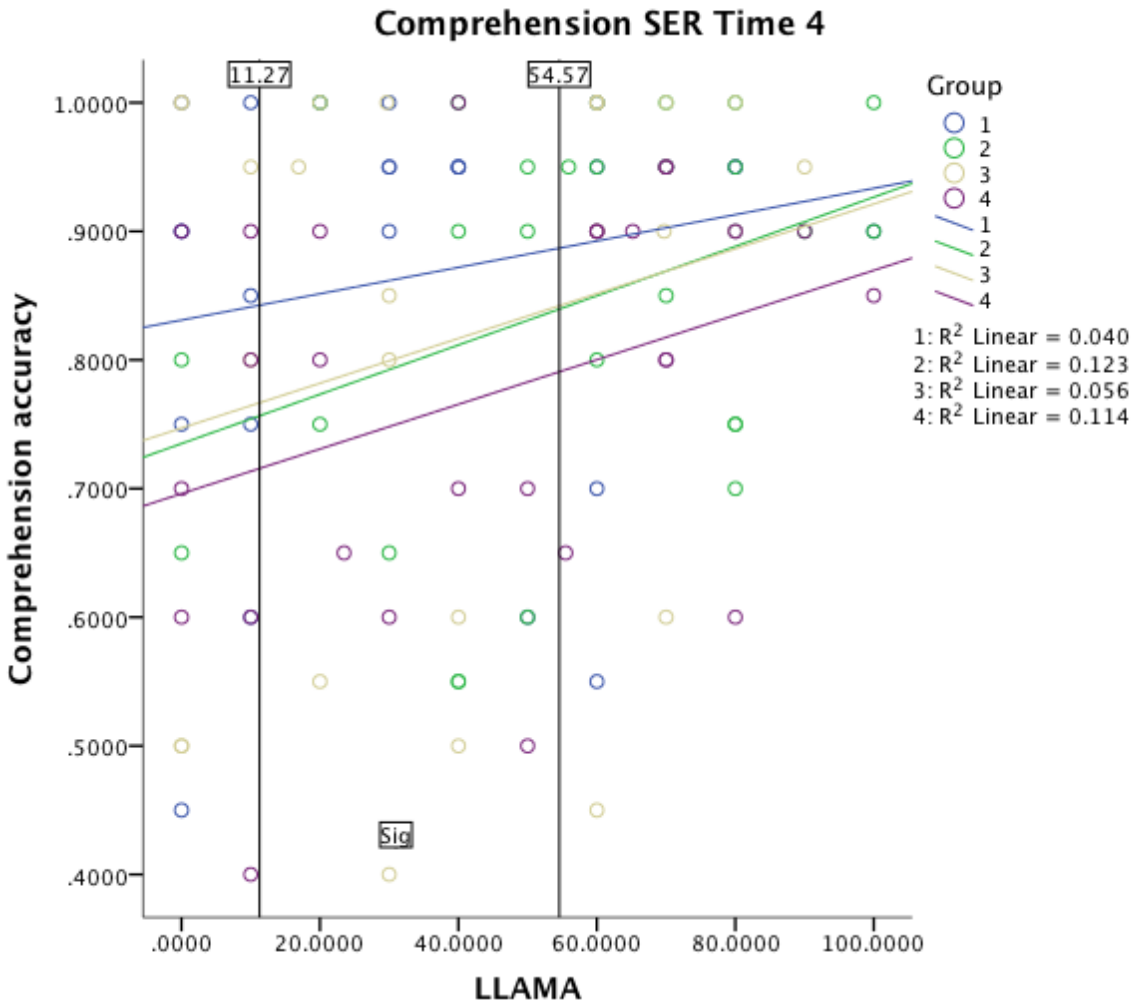


Figure A4 Group by LLAMA interaction plot for comprehension of SER during Time 4

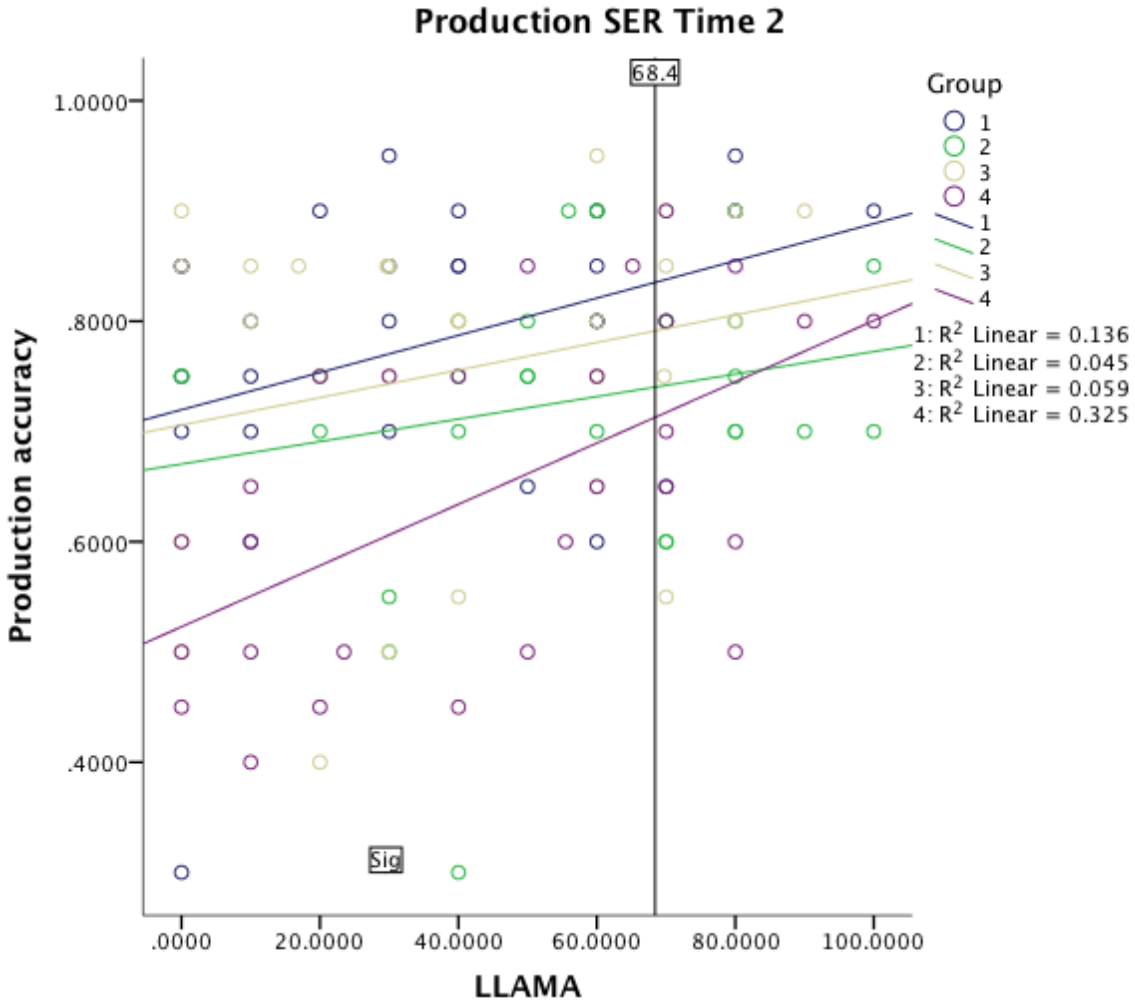


Figure A5 Group by LLAMA interaction plot for Production of SER during Time 2

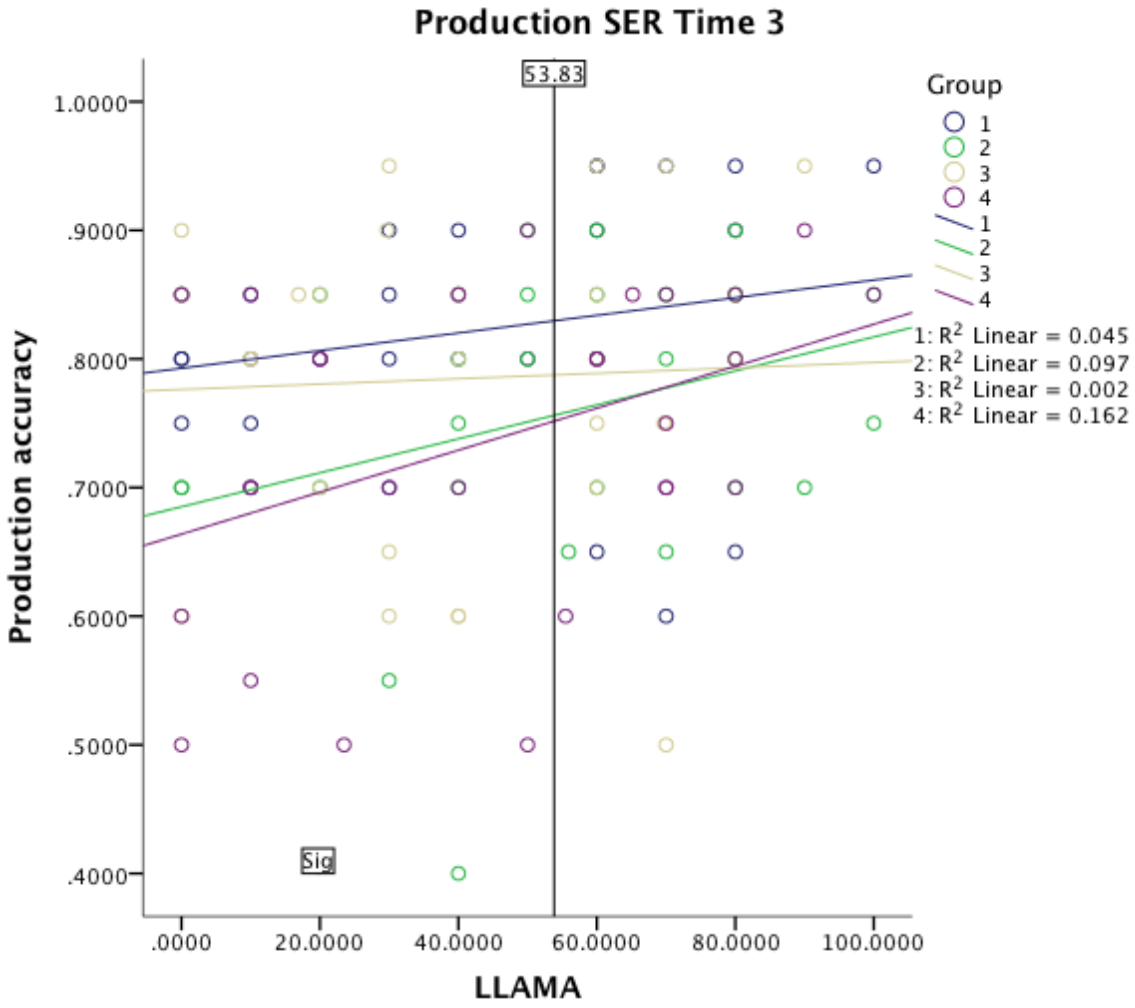


Figure A6 Group by LLAMA interaction plot for Production of SER during Time 3

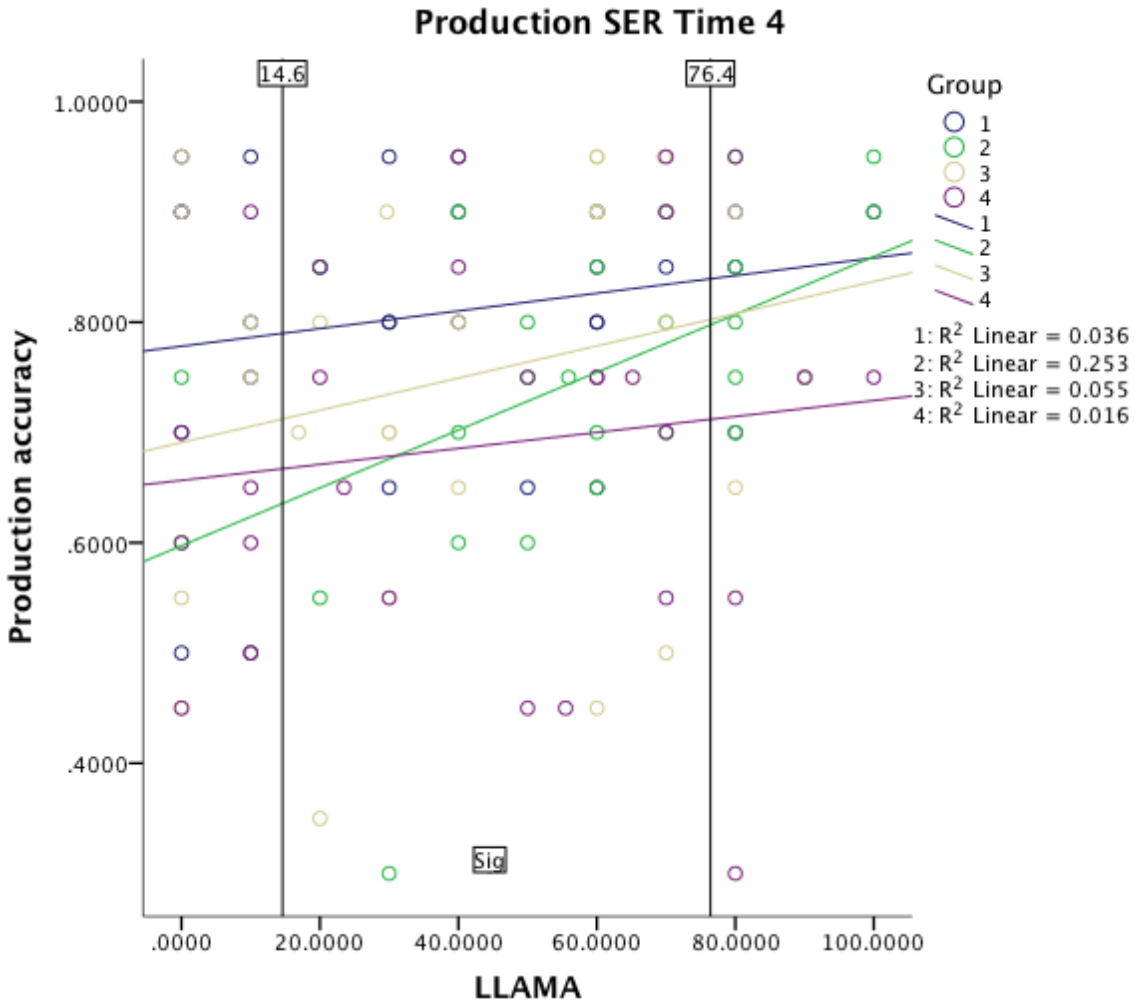


Figure A7 Group by LLAMA interaction plot for Production of SER during Time 4

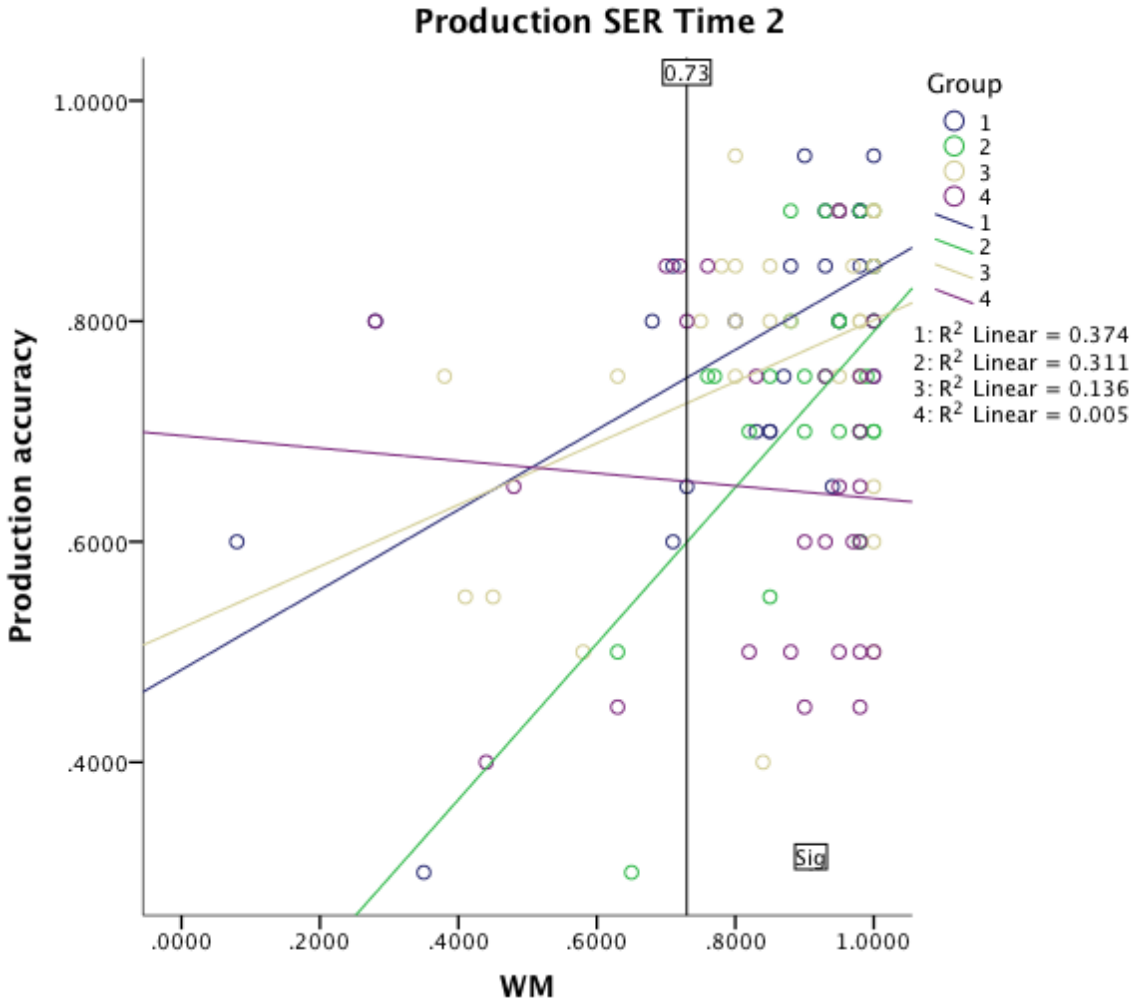


Figure A8 Group by WM interaction plot for Production of SER during Time 2

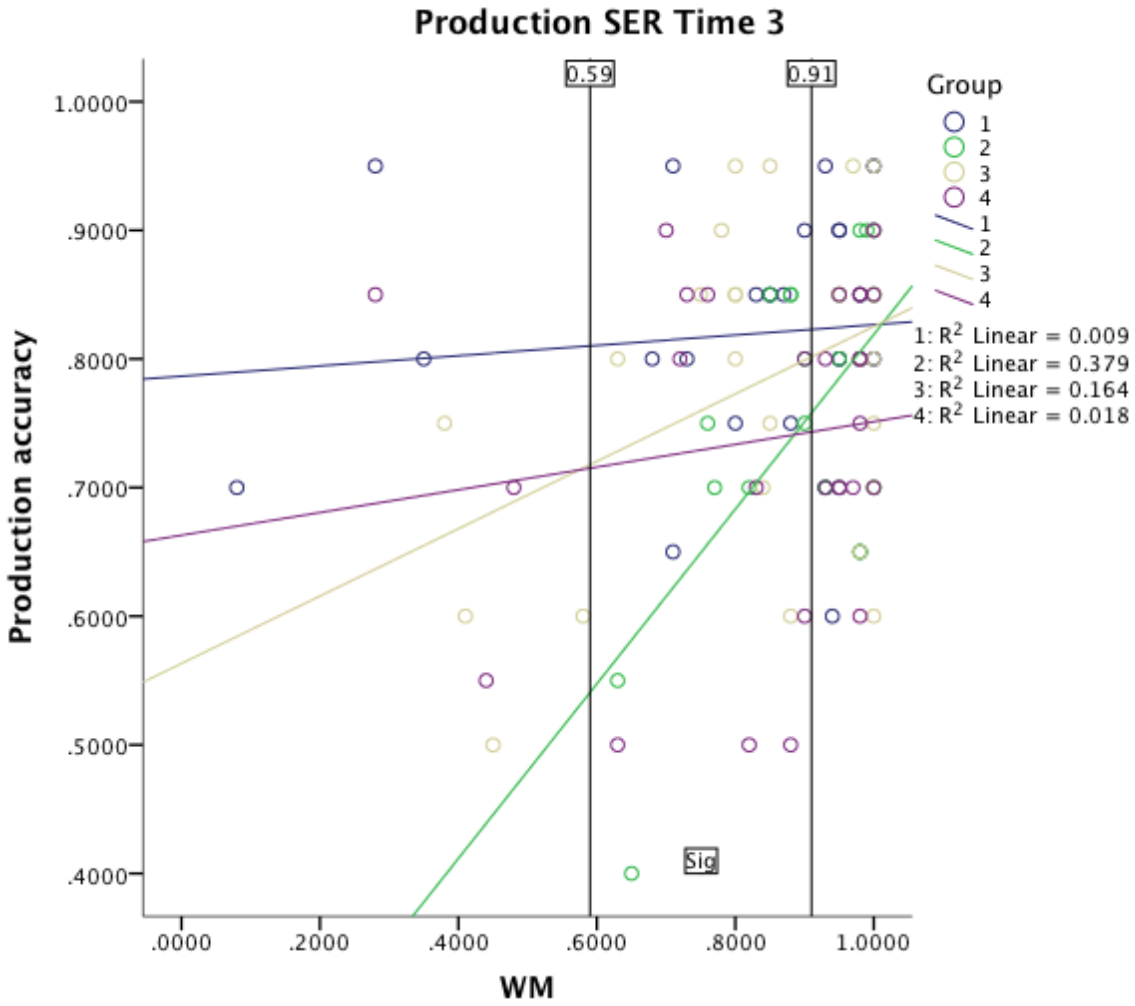


Figure A9 Group by WM interaction plot for Production of SER during Time 3

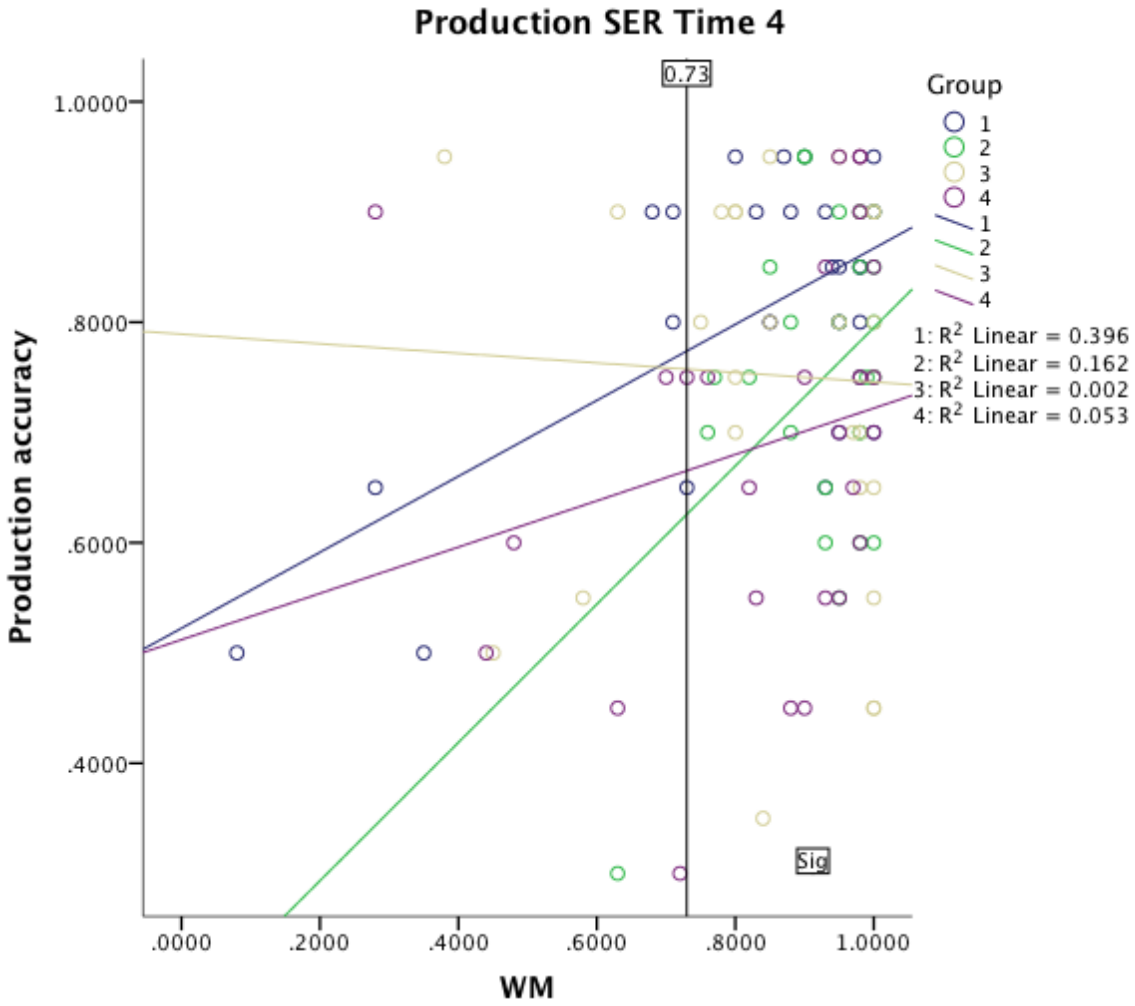


Figure A10 Group by WM interaction plot for Production of SER during Time 4

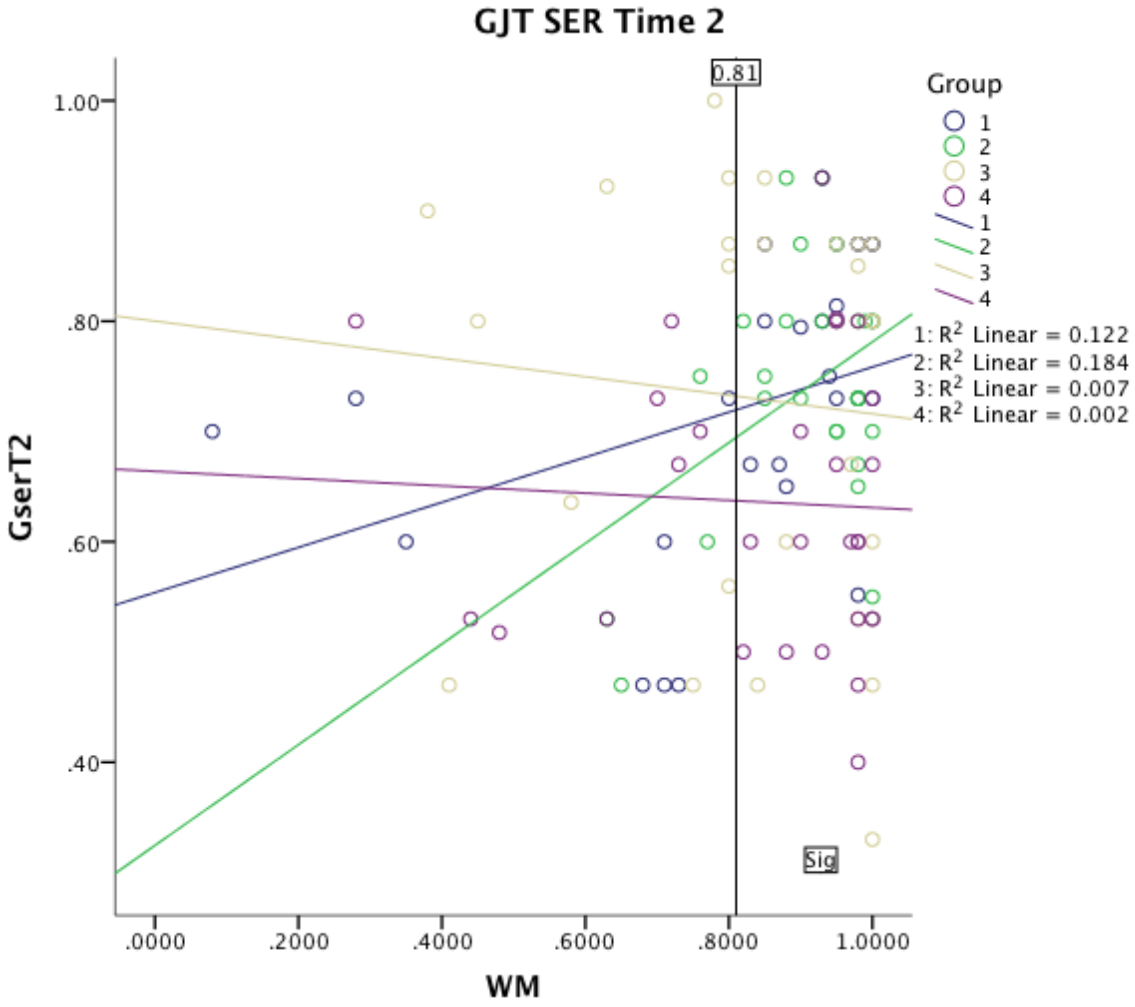


Figure A11 Group by WM interaction plot for GJT of SER during Time 2

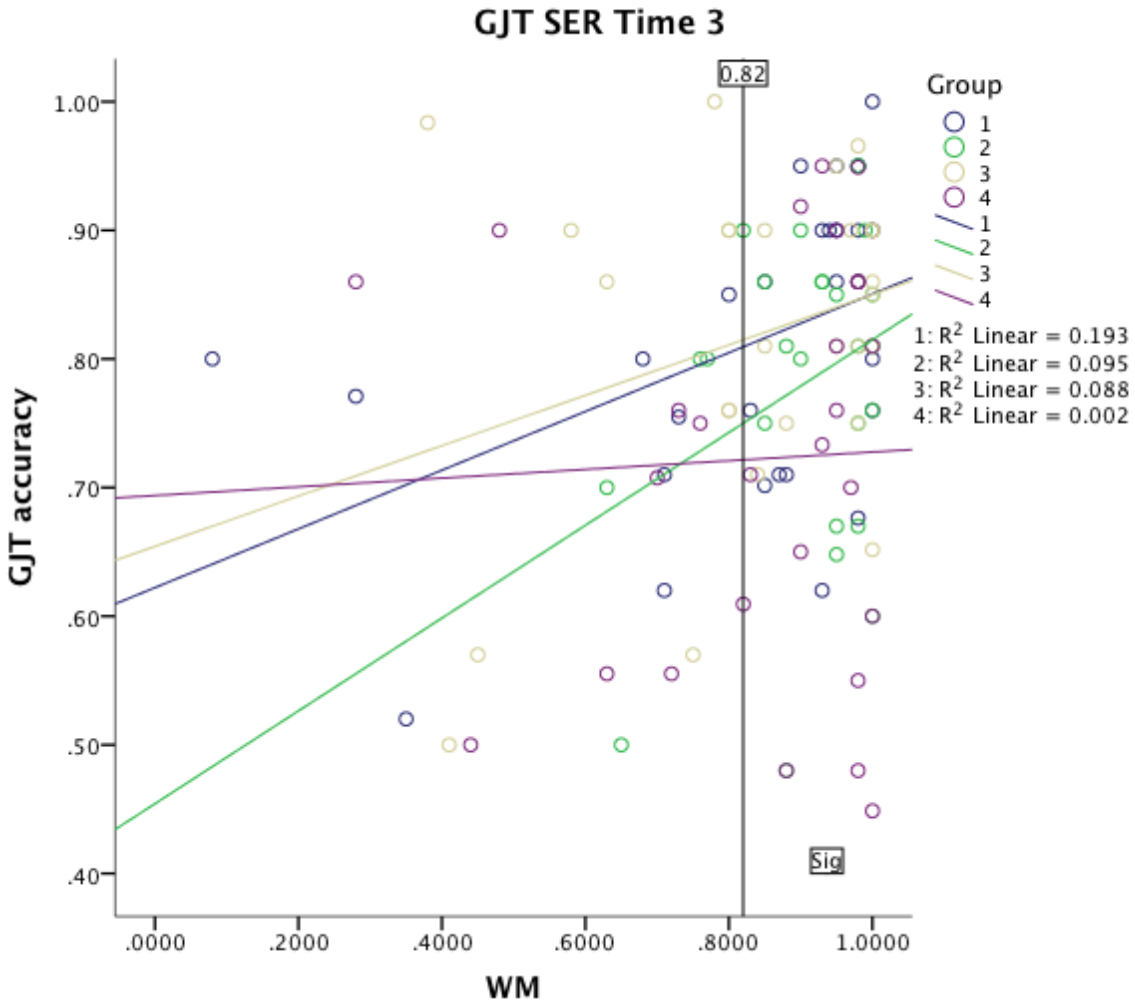


Figure A12 Group by WM interaction plot for GJT of SER during Time 3

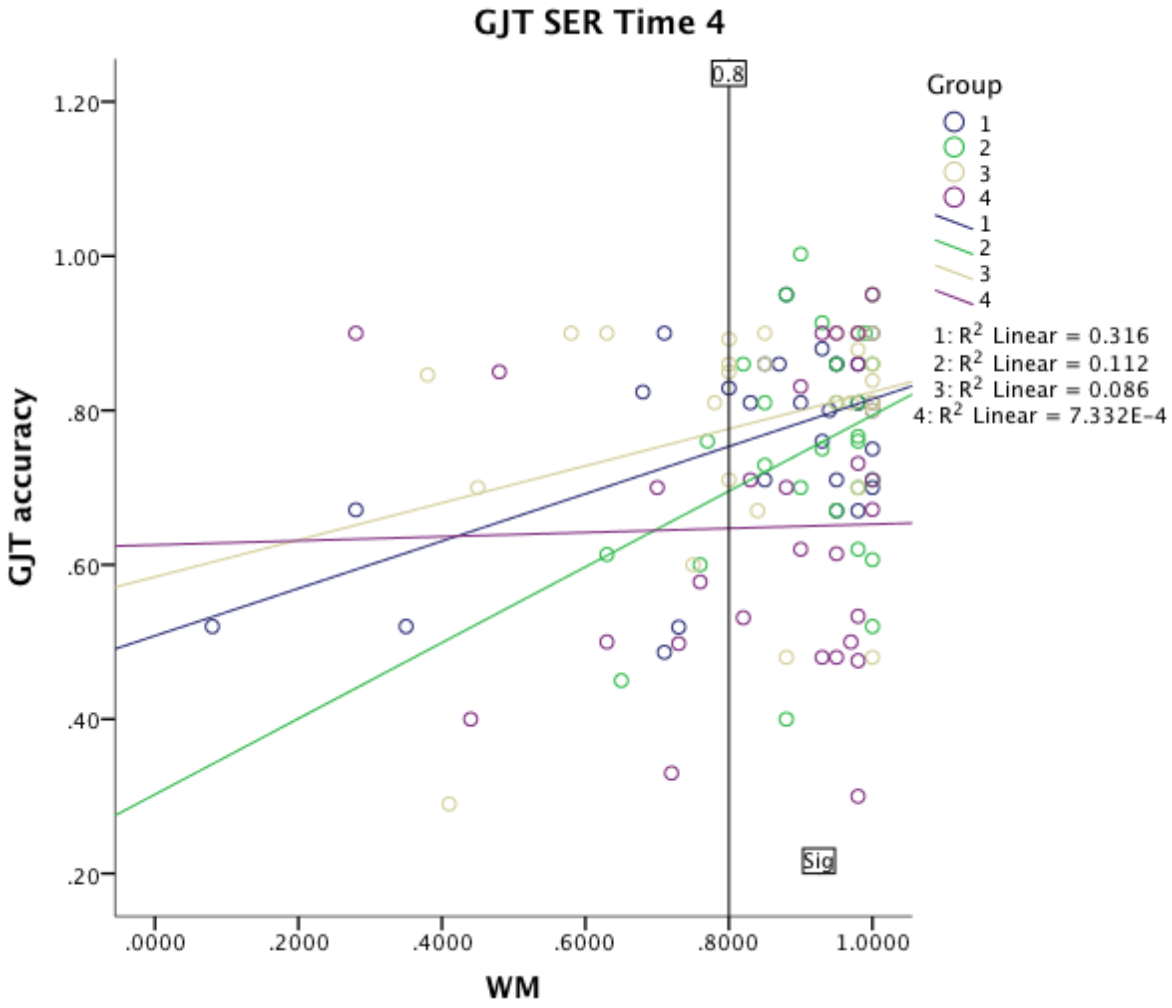


Figure A13 Group by WM interaction plot for GJT of SER during Time 4

Appendix F: Simple linear regressions

Table A6 Simple linear regressions for OVS predicting outcome measures from LLAMA and WM for each group separately

Regression Model	R^2				Regression model *F* value *p<.05, **p<.01,***p<.001				Unstandardized B *t* value *p<.05, **p<.01,***p<.001			
	Gr1	Gr2	Gr3	Gr4	Gr1	Gr2	Gr3	Gr4	Gr1	Gr2	Gr3	Gr4
LLAMA on CovsT3 (111)	.21	.19	.03	.00	7.1*	6.4*	.94	.002	.002 2.6*	.002 2.5*	.001 .97	0 .05
LLAMA on CovsT4 (115)	.13	.54	.02	.47	4.3*	30.37***	.64	23.21***	.003, 2.08*	.006, 5.5***	.001, .8	.006, 4.8***
LLAMA on PovsT2 (115)	.09	.005	.14	.20	2.9^	.128	4.6*	6.3**	.003, 1.7^	.001, .35	.005, 2.15*	.005, 2.5**
LLAMA on PovsT3 (115)	.01	.02	.01	.13	.50	.54	.27	3.87*	.001, .7	.001, .73	.001, .52	.004, 2*
LLAMA on GovsT2	.18	.005	.004	.22	6.1*	.123	.109	7.18*	.004, 2.4*	.001, .351	.001, .329	.004, 2.7*
LLAMA on GovsT3 (115)	.008	.06	.004	.20	.214	1.7	.112	6.4*	.001, .463	.001, 1.3	.0, .33	.004, 2.5*
LLAMA on GovsT4 (115)	.06	.15	.04	.20	1.9	4.5*	1.05	6.5*	.002, 1.3	.002, 2.1*	.001, 1.02	.003, 2.5*
WM on CovsT2	.01	.16	.02	.01	.31	4.5*	.73	.35	.09, .5	.5, 2.15*	-.19, -.85	-.09, -.55
WM on CovsT3	.23	.06	.02	.00	8.2**	1.7	.42	.006	.29, 2.9**	.36, 1.3	.11, .65	-.014, -.078

WM on CovsT4	.03	.25	.06	.00	.83	8.7**	1.7	.00	.18, .91	1, 2.9**	.28, 1.3	-.006, -.02
WM on PovsT2	.01	.15	.001	.006	.004	4.7*	.042	.16	.016, .06	1, 2.18*	-.07, -.2	-.13, -.40
WM on PovsT3	.02	.15	.04	.006	.68	4.4*	1.1	.15	.19, .82	.96, 2.1*	.36, 1.05	.13, .39
WM on GovT2	.08	.12	.02	.02	2.5	3.6^	.58	.70	.32, 1.50	.69, 1.8^	.19, .76	.22, .83
WM on GovT4	.13	.16	.02	.01	4.2*	4.9*	.69	.32	.33, 2.06*	.61, 2.20*	.16, .83	.14, .57

Table A7 Simple linear regressions for SER predicting outcome measures from LLAMA and WM for each group separately

Regression Model	R^2				Regression model *F* value *p<.05, **p<.01,***p<.001				Unstandardized B *t* value *p<.05, **p<.01,***p<.001			
	Gr1	Gr2	Gr3	Gr4	Gr1	Gr2	Gr3	Gr4	Gr1	Gr2	Gr3	Gr4
LLAMA on CserT2 (113)	.04	.08	.04	.24	1.16	2.2	1.1	8.20**	.001, 1.07	.001, 1.50	.001, 1.05	.002, 2.90**
LLAMA on CserT2 (113)	.04	.08	.04	.24	1.16	2.2	1.1	8.20**	.001, 1.07	.001, 1.50	.001, 1.05	.002, 2.90**
LLAMA on CserT4 (111)	.04	.12	.05	.11	1.17	3.5^	1.5	3.20^	.001, 1.08	.002, 1.80^	.002, 1.20	.002, 1.80
LLAMA on PserT2 (114)	.14	.04	.05	.32	4.42*	1.2	1.6	12.50**	.002, 2.10*	.001, 1.10	.001, 1.20	.003, 3.50**
LLAMA on PserT3 (114)	.04	.09	.002	.16	1.3	2.6	.063	5.04*	.001, 1.10	.001, 1.60	.00, .25	.002, 2.25*
LLAMA on PserT4 (111)	.03	.25	.05	.01	1.04	8.13**	1.5	.43	.001, 1.02	.003, 2.85**	.001, 1.20	.001, .65

LLAMA on GserT2	.02	.10	.06	.15	.66	2.9^	2.02	4.6*	.001, .8	.001, 1.7^	.002, 1.4	.002, 2.15
WM on CserT2	.1	.34	.19	.01	3.5^	13.48***	6.2*	.38	.2, 1.8^	.77, 3.6***	.34, 2.5*	.08, .62
WM on CserT3	.14	.30	.27	.06	4.7*	11.14**	10.6**	1.8	.2, 2.2*	.66, 3.3**	.5, 3.26**	.19, 1.3
WM on CserT4	.44	.29	.01	.12	22.21***	10.03**	.49	3.6^	.44, 4.7***	.76, 3.16**	.16, .7	.28, 1.8^
WM on PserT2	.37	.31	.14	.005	16.72***	11.37**	4.3*	.13	.36, 4.09***	.7, 3.4**	.28, 2.06*	-.05, -.37
WM on PserT3	.009	.38	.16	.02	.25	15.24***	5.4*	.48	.04, .5	.68, 3.9***	.26, 2.3	.08, .69
WM on PserT4	.40	.16	.002	.05	18.34***	4.6*	.047	1.5	.34, 4.3***	.62, 2.2*	-.04, -.21	.21, 1.2
WM on GserT2	.12	.18	.007	.002	3.8^	5.8	.209	.06	.2, 1.9^	.45, 2.4	-.08, -.45	-.03, -.24