APPENDIX TO

L1 and L2 transfer to L3 in L3 and L2 learners of Standard Arabic

Appendix 1

Tasks

I.   Insert the definite article الـ when necessary

1. يوجد أكثر من مئة وتسعين دولة في .... عالَم.
2. معظم .... موظفين في الشركة يسافرون في عطلة نهاية الأسبوع.
3. هناك .... حديقة بجانب مدرستها.
4. كل........................... شخص يحترم القانون في هذا البلد.
5. أخذتُ هذا .... قلم من صديقي.
6. ....خضراوات مفيدة للجسم.
7. ....أولاد يحبون الشكولاتا.
8. هناك .... كومبيوتر في غرفتي.
9. بعض .... ناس يقضون عطلهم بالقرب من البحر.
10. لا أعرف اسم هذا .... أستاذ.
11. قابلتُ عدة .... شباب أعرفهم في الجامعة.
12. الطقس بارد جداً اليوم ولكنَّ........................... سماء صافية.
13. هناك .... مطبخ في بيتي.
14. لا أعرف أي .... كلمة باللغة الماليزية.
15. هو يحب .... فواكه وخاصةً التفاح والموز.
16. أحب أن أرى .... شمس في الشتاء.
17. كل .... طلاب يستطيعون التعلم.
18. اشتريت هذه .... حقيبة من المكسيك.

II.   Insert the correct preposition when necessary

1. خالد يحاول أن يعتاد .... الاستيقاظ في الصباح الباكر.
2. سمير يعاني .... مرض خطير..
3. طارق دائماً يسأل الأستاذ .... التمارين الصعبة في الدرس.
4. صديقي استمتع .... رحلته إلى فلوريدا.
5. أحمد حصل .... عمل جديد في شركة.
6. الطقس بارد وهي تشعر .... البرد.
7. محمود دعا أستاذه................... حفلة عيد ميلاده.
8. أحمد يحب أن ينظر .... السماء في الليل.
9. هو يستمع .... الموسيقى في الصباح.
10. خالد يصرف فلوس كثيرة......................... الملابس والطعام.
11. سامي يُفضِّل دراسة الطب .... دراسة الهندسة.
12. رامي توقَّف .... الذهاب إلى السينما كل أسبوع.
13. أخي يحبّ أن يتحدّث .... كرة القدم لأنها رياضته المفضّلة.

14. سمير سافر .... اليابان في الصيف.
15. الطالب رغب .... السفر إلى الشرق الأوسط.
16. خالد احتفل .... عيد ميلاده يوم السبت الماضي.
17. عمر انضمّ .... نادي كرة سلة في الصيف.
18. عبدالله شارك .... الحفلة مع أصدقائه.

III. Turn these affirmative sentences into negative sentences

1. صديقي يلعب كرة السلة في فريق الجامعة...
2. عدنان طالب في جامعة أوهايو...
3. خالد درس في المكتبة طوال الليل..
4. عبد الله مهندس في شركة كبيرة..
5. جورج جاء إلى الحفلة وحده...
6. محمود يكتب رسالة إلى والدته كل أسبوع...
7. عمر سافر إلى مصر في الصيف الماضي...
8. سامي يسبح في المسبح كل يوم..
9. حسام أستاذ رياضيات في مدرسة ابتدائية..
10. أخي ذهب إلى السينما مع أصدقائه...
11. سامر يساعد أمّه في تنظيف البيت..
12. سمير عمل في الأمم المتحدة في سنة2010..
13. خالد موظف في مكتبة الجامعة..
14. الطالب يقرأ قصّة كل يوم...
15. سمير دكتور في هذا المستشفى...
16. أحمد ركب سيّارته الجديدة البارحة..
17. سامر يتكلم ثلاث لغات...
18. أحمد مدير مدرسة ابتدائية هنا...

Tasks: English translation

I.   Insert the definite article الـ when necessary

1. There are more than one hundred and ninety countries in ………………world.
2. Most ………………employees in the company travel on the weekend.
3. There is ………………garden next to her house.
4. Every………………person respects the law in this country.
5. I took this………………pen from my friend.
6. ………………vegetables are useful for the body.
7. ………………children like chocolate.
8. There is ………………computer in my room.
9. Some………………people spend their holidays near the sea.
10. I do not know the name of this ………………teacher
11. I met several ………………young men I know from the university.
12. The weather is very cold today, but ………………sky is clear.
13. There is ………………kitchen in my house.
14. I do not know any ………………word in the Malaysian language.
15. He likes ………………fruits especially apples and bananas.
16. I like to see ………………sun in winter.

17. All ……………….students can learn.
18. I bought this ……………….bag from Mexico.

II. Insert the correct preposition when necessary
1. Khaled is trying to get used ……………….waking up early in the morning.
2. Samir suffers……………….a dangerous disease.
3. Tariq always asks the teacher……………….the difficult exercises in the lesson.
4. My friend enjoyed……………….his trip to Florida.
5. Ahmad got……………….a new job in a company.
6. The weather is cold, and she feels……………….cold.
7. Mahmoud invited his teacher……………….his birthday party.
8. Ahmad likes to look……………….the sky at night.
9. He listens……………….music in the morning.
10. Khaled spends a lot of money……………….clothes and food.
11. Sami prefers studying medicine……………….studying engineering.
12. Rami stopped……………….going to the cinema every week.
13. My brother likes to speak……………….soccer because it is his favorite sport.
14. Sameer traveled……………….Japan in the summer.
15. The student had desire……………….traveling to the Middle East.
16. Khaled celebrated……………….his birthday last Saturday.
17. Omar joined……………….a basketball club in the summer.
18. Abdullah participated……………….the party with his friends.

III. Turn these affirmative sentences into negative sentences
1. My friend plays basketball with the university team...
2. Adnan is a student at Ohio University...
3. Khaled studied in the library throughout the night...
4. Abdullah is an engineer in a big company...
5. George came to the party alone...
6. Mahmoud writes a letter to his mother every week...
7. Omar traveled to Egypt last summer..
8. Sami swims in the swimming pool every day...
9. Husam is a math teacher at a primary school..
10. My brother went to the cinema with his friends..
11. Samer helps his mother with cleaning the house...
12. Sameer worked with the United Nations in the year 2010..
13. Khaled is an employee at the university library..
14. The student reads a story every day...
15. Sameer is a doctor in this hospital..
16. Ahmad rode his new car yesterday...
17. Samer speaks three languages...
18. Ahmad is a principal of a primary school here..

Appendix 2

Summary of the results in relation to the three models of L3 transfer

Linguistic area	Model	Prediction	Results
Definite article	CEM	– L3 learners to outperform L2 learners	– confirmed
		– No difference between AoC & AoD	– partly confirmed
Definite article	TPM	– L3 learners to outperform L2 learners	– confirmed
		– No difference between AoC & AoD	– confirmed
Definite article	LPM	– L3 learners may not necessarily outperform L2 learners	– disconfirmed
		– Difference between AoC & AoD	– disconfirmed for L3 learners
Subcategorization	CEM	– L3 learners to outperform L2 learners	– confirmed
		– No difference between AoC & AoD	– disconfirmed
Subcategorization	TPM	– L3 learners to outperform L2 learners	– confirmed
		– No difference between AoC & AoD	– disconfirmed
Subcategorization	LPM	– L3 learners may not necessarily outperform L2 learners	– disconfirmed
		– Difference between AoC & AoD	– confirmed
Negation	CEM	– L3 learners to outperform L2 learners on past-tense negation involving *maa*	– confirmed
		– L2 and L3 learners to do better on negation involving *lam* than on present-tense and verbless negation	– disconfirmed
		– No group difference on past tense involving negation *lam*, present-tense, and verbless negation	– partly confirmed
Negation	TPM	– L3 learners to outperform L2 learners on past-tense negation involving *maa*	– partly confirmed
Negation	LPM	– L3 learners may not necessarily outperform L2 learners on past-tense negation involving *maa*	– disconfirmed
		– L2 Learners to perform better on past negation involving *lam* than that involving *maa*, present-tense and verbless negation	– disconfirmed
		– No group difference on present-tense and verbless negation	– confirmed

Appendix 3. SPSS statistical output for the Definite Article, Subcategorization, and Negation Tasks

General Linear Model

Within-Subjects Factors
Measure: MEASURE_1

DefiniteLevels	Dependent Variable
1	DefiniteSIM
2	DefiniteDIF

Between-Subjects Factors

		N
Group	1.00	20
	2.00	21
	3.00	25
	4.00	22
	5.00	17

Box's Test of Equality of Covariance Matrices[a]

Box's M	24.448
F	2.598
df1	9
df2	72701.321
Sig.	.005

Tests the null hypothesis that the observed covariance matrices of the dependent variables are equal across groups.
a. Design: Intercept + GroupWithin Subjects Design: DefiniteLevels

Multivariate Tests[a]

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[c]
DefiniteLevels	Pillai's Trace	.165	19.806[b]	1.000	100.000	.000	.165	19.806	.993
	Wilks' Lambda	.835	19.806[b]	1.000	100.000	.000	.165	19.806	.993
	Hotelling's Trace	.198	19.806[b]	1.000	100.000	.000	.165	19.806	.993
	Roy's Largest Root	.198	19.806[b]	1.000	100.000	.000	.165	19.806	.993
DefiniteLevels * Group	Pillai's Trace	.160	4.758[b]	4.000	100.000	.001	.160	19.033	.945
	Wilks' Lambda	.840	4.758[b]	4.000	100.000	.001	.160	19.033	.945
	Hotelling's Trace	.190	4.758[b]	4.000	100.000	.001	.160	19.033	.945
	Roy's Largest Root	.190	4.758[b]	4.000	100.000	.001	.160	19.033	.945

a. Design: Intercept + GroupWithin Subjects Design: DefiniteLevels
b. Exact statistic
c. Computed using alpha = .05

Mauchly's Test of Sphericity[a]
Measure: MEASURE_1

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon[b]		
					Greenhouse-Geisser	Huynh-Feldt	Lower-bound
DefiniteLevels	1.000	.000	0	.	1.000	1.000	1.000

Tests the null hypothesis that the error covariance matrix of the orthonormalized transformed dependent variables is proportional to an identity matrix.
a. Design: Intercept + GroupWithin Subjects Design: DefiniteLevels
b. May be used to adjust the degrees of freedom for the averaged tests of significance. Corrected tests are displayed in the Tests of Within-Subjects Effects table.

Tests of Within-Subjects Effects
Measure: MEASURE_1

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
DefiniteLevels	Sphericity Assumed	3734.581	1	3734.581	19.806	.000	.165	19.806	.993
	Greenhouse-Geisser	3734.581	1.000	3734.581	19.806	.000	.165	19.806	.993
	Huynh-Feldt	3734.581	1.000	3734.581	19.806	.000	.165	19.806	.993
	Lower-bound	3734.581	1.000	3734.581	19.806	.000	.165	19.806	.993
DefiniteLevels * Group	Sphericity Assumed	3588.913	4	897.228	4.758	.001	.160	19.033	.945
	Greenhouse-Geisser	3588.913	4.000	897.228	4.758	.001	.160	19.033	.945
	Huynh-Feldt	3588.913	4.000	897.228	4.758	.001	.160	19.033	.945
	Lower-bound	3588.913	4.000	897.228	4.758	.001	.160	19.033	.945
Error (DefiniteLevels)	Sphericity Assumed	18856.279	100	188.563					
	Greenhouse-Geisser	18856.279	100.000	188.563					
	Huynh-Feldt	18856.279	100.000	188.563					
	Lower-bound	18856.279	100.000	188.563					

a. Computed using alpha = .05

Tests of Within-Subjects Contrasts
Measure: MEASURE_1

Source	DefiniteLevels	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
DefiniteLevels	Linear	3734.581	1	3734.581	19.806	.000	.165	19.806	.993
DefiniteLevels * Group	Linear	3588.913	4	897.228	4.758	.001	.160	19.033	.945
Error (DefiniteLevels)	Linear	18856.279	100	188.563					

a. Computed using alpha = .05

Levene's Test of Equality of Error Variances[a]

	F	df1	df2	Sig.
DefiniteSIM	11.758	4	100	.000
DefiniteDIF	11.207	4	100	.000

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.
a. Design: Intercept + Group Within Subjects Design: DefiniteLevels

Tests of Between-Subjects Effects
Measure: MEASURE_1
Transformed Variable:Average

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Intercept	1327331.593	1	1327331.593	6254.674	.000	.984	6254.674	1.000
Group	49756.154	4	12439.039	58.615	.000	.701	234.462	1.000
Error	21221.435	100	212.214					

a. Computed using alpha = .05

Estimated Marginal Means

1. Grand
Mean
Measure: MEASURE_1

Mean	Std. Error	95% Confidence Interval	
		Lower Bound	Upper Bound
80.135	1.013	78.124	82.145

2. Group
Estimates
Measure: MEASURE_1

Group	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
1.00	80.557	2.303	75.987	85.127
2.00	89.155	2.248	84.695	93.614
3.00	54.444	2.060	50.357	58.532
4.00	76.517	2.196	72.160	80.874
5.00	100.000	2.498	95.043	104.957

Pairwise Comparisons
Measure: MEASURE_1

(I) Group	(J) Group	Mean Difference (I–J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
					Lower Bound	Upper Bound
1.00	2.00	−8.597	3.218	.088	−17.836	.642
	3.00	26.113[a]	3.090	.000	17.242	34.984
	4.00	4.040	3.183	1.000	−5.095	13.176
	5.00	−19.443[a]	3.398	.000	−29.197	−9.688
2.00	1.00	8.597	3.218	.088	−.642	17.836
	3.00	34.710[a]	3.049	.000	25.957	43.463
	4.00	12.638[a]	3.143	.001	3.616	21.659
	5.00	−10.845[a]	3.361	.017	−20.493	−1.198

(I) Group	(J) Group	Mean Difference (I–J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
					Lower Bound	Upper Bound
3.00	1.00	−26.113[a]	3.090	.000	−34.984	−17.242
	2.00	−34.710[a]	3.049	.000	−43.463	−25.957
	4.00	−22.072[a]	3.011	.000	−30.717	−13.428
	5.00	−45.556[a]	3.238	.000	−54.851	−36.260
4.00	1.00	−4.040	3.183	1.000	−13.176	5.095
	2.00	−12.638[a]	3.143	.001	−21.659	−3.616
	3.00	22.072[a]	3.011	.000	13.428	30.717
	5.00	−23.483[a]	3.326	.000	−33.032	−13.934
5.00	1.00	19.443[a]	3.398	.000	9.688	29.197
	2.00	10.845[a]	3.361	.017	1.198	20.493
	3.00	45.556[a]	3.238	.000	36.260	54.851
	4.00	23.483[a]	3.326	.000	13.934	33.032

Based on estimated marginal means
a. The mean difference is significant at the .05 level.
b. Adjustment for multiple comparisons: Bonferroni.

Univariate Tests
Measure: MEASURE_1

	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Contrast	24878.077	4	6219.519	58.615	.000	.701	234.462	1.000
Error	10610.718	100	106.107					

The F tests the effect of Group. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.
a. Computed using alpha = .05

Post Hoc Tests

Group
Multiple Comparisons
Measure: MEASURE_1
Bonferroni

(I) Group	(J) Group	Mean Difference (I–J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1.00	2.00	−8.5973	3.21840	.088	−17.8362	.6416
	3.00	26.1129[a]	3.09025	.000	17.2418	34.9839
	4.00	4.0404	3.18252	1.000	−5.0955	13.1763
	5.00	−19.4428[a]	3.39808	.000	−29.1975	−9.6880
2.00	1.00	8.5973	3.21840	.088	−.6416	17.8362
	3.00	34.7101[a]	3.04910	.000	25.9572	43.4630
	4.00	12.6377[a]	3.14257	.001	3.6165	21.6589
	5.00	−10.8455[a]	3.36070	.017	−20.4929	−1.1981
3.00	1.00	−26.1129[a]	3.09025	.000	−34.9839	−17.2418
	2.00	−34.7101[a]	3.04910	.000	−43.4630	−25.9572
	4.00	−22.0724[a]	3.01120	.000	−30.7165	−13.4283
	5.00	−45.5556[a]	3.23819	.000	−54.8513	−36.2599
4.00	1.00	−4.0404	3.18252	1.000	−13.1763	5.0955
	2.00	−12.6377[a]	3.14257	.001	−21.6589	−3.6165
	3.00	22.0724[a]	3.01120	.000	13.4283	30.7165
	5.00	−23.4832[a]	3.32636	.000	−33.0320	−13.9344
5.00	1.00	19.4428[a]	3.39808	.000	9.6880	29.1975
	2.00	10.8455[a]	3.36070	.017	1.1981	20.4929
	3.00	45.5556[a]	3.23819	.000	36.2599	54.8513
	4.00	23.4832[a]	3.32636	.000	13.9344	33.0320

Based on observed means.
The error term is Mean Square(Error) = 106.107.
a. The mean difference is significant at the .05 level.

GLM SubcategorizSIM SubcategorizDIF BY Group

    /WSFACTOR=SubcategorizLevels 2 Polynomial
    /METHOD=SSTYPE(3)
    /POSTHOC=Group(BONFERRONI)
    /EMMEANS=TABLES(OVERALL)
    /EMMEANS=TABLES(Group) COMPARE ADJ(BONFERRONI)
    /PRINT=ETASQ OPOWER HOMOGENEITY
    /CRITERIA=ALPHA(.05)
    /WSDESIGN=SubcategorizLevels
    /DESIGN=Group.

General Linear Model

Within-Subjects Factors
Measure: MEASURE_1

SubcategizLevels	Dependent Variable
1	SubcategorizSIM
2	SubcategorizDIF

Between-Subjects Factors

		N
Group	1.00	20
	2.00	21
	3.00	25
	4.00	22
	5.00	17

Box's Test of Equality of Covariance Matrices[a]

Box's M	67.047
F	7.126
df1	9
df2	72701.321
Sig.	.000

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

a. Design: Intercept + GroupWithin Subjects Design: SubcategorizLevels

Multivariate Tests[a]

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[c]
SubcategorizLevels	Pillai's Trace	.583	139.704[b]	1.000	100.000	.000	.583	139.704	1.000
	Wilks' Lambda	.417	139.704[b]	1.000	100.000	.000	.583	139.704	1.000
	Hotelling's Trace	1.397	139.704[b]	1.000	100.000	.000	.583	139.704	1.000
	Roy's Largest Root	1.397	139.704[b]	1.000	100.000	.000	.583	139.704	1.000
SubcategorizLevels * Group	Pillai's Trace	.291	10.256[b]	4.000	100.000	.000	.291	41.024	1.000
	Wilks' Lambda	.709	10.256[b]	4.000	100.000	.000	.291	41.024	1.000
	Hotelling's Trace	.410	10.256[b]	4.000	100.000	.000	.291	41.024	1.000
	Roy's Largest Root	.410	10.256[b]	4.000	100.000	.000	.291	41.024	1.000

a. Design: Intercept + Group Within Subjects Design: SubcategorizLevels
b. Exact statistic
c. Computed using alpha = .05

Mauchly's Test of Sphericity[a]
Measure: MEASURE_1

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon[b]		
					Greenhouse-Geisser	Huynh-Feldt	Lower-bound
SubcategorizLevels	1.000	.000	0	.	1.000	1.000	1.000

Tests the null hypothesis that the error covariance matrix of the orthonormalized transformed dependent variables is proportional to an identity matrix.
a. Design: Intercept + Group Within Subjects Design: SubcategorizLevels
b. May be used to adjust the degrees of freedom for the averaged tests of significance. Corrected tests are displayed in the Tests of Within-Subjects Effects table.

Tests of Within-Subjects Effects
Measure: MEASURE_1

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
SubcategorizLevels	Sphericity Assumed	23341.039	1	23341.039	139.704	.000	.583	139.704	1.000
	Greenhouse-Geisser	23341.039	1.000	23341.039	139.704	.000	.583	139.704	1.000
	Huynh-Feldt	23341.039	1.000	23341.039	139.704	.000	.583	139.704	1.000
	Lower-bound	23341.039	1.000	23341.039	139.704	.000	.583	139.704	1.000
SubcategorizLevels * Group	Sphericity Assumed	6854.087	4	1713.522	10.256	.000	.291	41.024	1.000
	Greenhouse-Geisser	6854.087	4.000	1713.522	10.256	.000	.291	41.024	1.000
	Huynh-Feldt	6854.087	4.000	1713.522	10.256	.000	.291	41.024	1.000
	Lower-bound	6854.087	4.000	1713.522	10.256	.000	.291	41.024	1.000
Error (SubcategorizLevels)	Sphericity Assumed	16707.482	100	167.075					
	Greenhouse-Geisser	16707.482	100.000	167.075					
	Huynh-Feldt	16707.482	100.000	167.075					
	Lower-bound	16707.482	100.000	167.075					

a. Computed using alpha = .05

Tests of Within-Subjects Contrasts
Measure: MEASURE_1

Source		SubcategorizLevels	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
SubcategorizLevels		Linear	23341.039	1	23341.039	139.704	.000	.583	139.704	1.000
SubcategorizLevels * Group		Linear	6854.087	4	1713.522	10.256	.000	.291	41.024	1.000
Error (SubcategorizLevels)		Linear	16707.482	100	167.075					

a. Computed using alpha = .05

Levene's Test of Equality of Error Variances[a]

	F	df1	df2	Sig.
SubcategorizSIM	9.829	4	100	.000
SubcategorizDIF	14.319	4	100	.000

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.
a. Design: Intercept + Group Within Subjects Design: SubcategorizLevels

Tests of Between-Subjects Effects
Measure: MEASURE_1
Transformed Variable: Average

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Intercept	454353.517	1	454353.517	1177.572	.000	.922	1177.572	1.000
Group	175924.188	4	43981.047	113.988	.000	.820	455.952	1.000
Error	38583.930	100	385.839					

a. Computed using alpha = .05

Estimated Marginal Means

1. Grand
Mean
Measure: MEASURE_1

Mean	Std. Error	95% Confidence Interval	
		Lower Bound	Upper Bound
46.884	1.366	44.174	49.595

2. Group
Estimates
Measure: MEASURE_1

Group	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
1.00	33.611	3.106	27.449	39.772
2.00	55.291	3.031	49.278	61.305
3.00	8.444	2.778	2.932	13.955
4.00	38.383	2.961	32.508	44.258
5.00	98.693	3.369	92.010	105.376

Pairwise Comparisons
Measure: MEASURE_1

(I) Group	(J) Group	Mean Difference (I–J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
					Lower Bound	Upper Bound
1.00	2.00	−21.681[a]	4.340	.000	−34.139	−9.223
	3.00	25.167[a]	4.167	.000	13.205	37.129
	4.00	−4.772	4.291	1.000	−17.091	7.546
	5.00	−65.082[a]	4.582	.000	−78.236	−51.929
2.00	1.00	21.681[a]	4.340	.000	9.223	34.139
	3.00	46.848[a]	4.111	.000	35.045	58.650
	4.00	16.908[a]	4.237	.001	4.744	29.073
	5.00	−43.402[a]	4.532	.000	−56.410	−30.393

(I) Group	(J) Group	Mean Difference (I–J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
					Lower Bound	Upper Bound
3.00	1.00	−25.167[a]	4.167	.000	−37.129	−13.205
	2.00	−46.848[a]	4.111	.000	−58.650	−35.045
	4.00	−29.939[a]	4.060	.000	−41.595	−18.284
	5.00	−90.249[a]	4.366	.000	−102.784	−77.715
4.00	1.00	4.772	4.291	1.000	−7.546	17.091
	2.00	−16.908[a]	4.237	.001	−29.073	−4.744
	3.00	29.939[a]	4.060	.000	18.284	41.595
	5.00	−60.310[a]	4.485	.000	−73.186	−47.434
5.00	1.00	65.082[a]	4.582	.000	51.929	78.236
	2.00	43.402[a]	4.532	.000	30.393	56.410
	3.00	90.249[a]	4.366	.000	77.715	102.784
	4.00	60.310[a]	4.485	.000	47.434	73.186

Based on estimated marginal means
a. The mean difference is significant at the .05 level.
b. Adjustment for multiple comparisons: Bonferroni.

Univariate Tests
Measure: MEASURE_1

	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Contrast	87962.094	4	21990.524	113.988	.000	.820	455.952	1.000
Error	19291.965	100	192.920					

The F tests the effect of Group. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.
a. Computed using alpha = .05

Post Hoc Tests

Group

Multiple Comparisons
Measure: MEASURE_1
Bonferroni

(I) Group	(J) Group	Mean Difference (I–J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1.00	2.00	−21.6809[a]	4.33966	.000	−34.1386	−9.2233
	3.00	25.1669[a]	4.16687	.000	13.2053	37.1285
	4.00	−4.7725	4.29128	1.000	−17.0912	7.5463
	5.00	−65.0824[a]	4.58194	.000	−78.2356	−51.9293
2.00	1.00	21.6809[a]	4.33966	.000	9.2233	34.1386
	3.00	46.8478[a]	4.11138	.000	35.0455	58.6502
	4.00	16.9085[a]	4.23742	.001	.7443	29.0726
	5.00	−43.4015[a]	4.53154	.000	−56.4100	−30.3930
3.00	1.00	−25.1669[a]	4.16687	.000	−37.1285	−13.2053
	2.00	−46.8478[a]	4.11138	.000	−58.6502	−35.0455
	4.00	−29.9394[a]	4.06028	.000	−41.5950	−18.2837
	5.00	−90.2493[a]	4.36635	.000	−102.7836	−77.7151
4.00	1.00	4.7725	4.29128	1.000	−7.5463	17.0912
	2.00	−16.9085[a]	4.23742	.001	−29.0726	−4.7443
	3.00	29.9394[a]	4.06028	.000	18.2837	41.5950
	5.00	−60.3100[a]	4.48523	.000	−73.1855	−47.4345
5.00	1.00	65.0824[a]	4.58194	.000	51.9293	78.2356
	2.00	43.4015[a]	4.53154	.000	30.3930	56.4100
	3.00	90.2493[a]	4.36635	.000	77.7151	102.7836
	4.00	60.3100[a]	4.48523	.000	47.4345	73.1855

Based on observed means.
The error term is Mean Square(Error) = 192.920.
a. The mean difference is significant at the .05 level.

GLM NegationVerbless NegationPresent NegationPast BY Group

```
/WSFACTOR=NegationLevels 3 Polynomial
/METHOD=SSTYPE(3)
/POSTHOC=Group(BONFERRONI)
/EMMEANS=TABLES(OVERALL)
/EMMEANS=TABLES(Group) COMPARE ADJ(BONFERRONI)
/PRINT=ETASQ OPOWER HOMOGENEITY
/CRITERIA=ALPHA(.05)
/WSDESIGN=NegationLevels
/DESIGN=Group.
```

General Linear Model

Within-Subjects Factors
Measure: MEASURE_1

NegationLevels	Dependent Variable
1	NegationVerbless
2	NegationPresent
3	NegationPast

Between-Subjects Factors

		N
Group	1.00	20
	2.00	21
	3.00	25
	4.00	22
	5.00	17

Box's Test of Equality of Covariance Matrices[a]

Box's M	39.725
F	2.062
df1	18
df2	23591.310
Sig.	.005

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

a. Design: Intercept + GroupWithin Subjects Design: NegationLevels

Multivariate Tests[a]

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[d]
NegationLevels	Pillai's Trace	.397	32.529[b]	2.000	99.000	.000	.397	65.057	1.000
	Wilks' Lambda	.603	32.529[b]	2.000	99.000	.000	.397	65.057	1.000
	Hotelling's Trace	.657	32.529[b]	2.000	99.000	.000	.397	65.057	1.000
	Roy's Largest Root	.657	32.529[b]	2.000	99.000	.000	.397	65.057	1.000
NegationLevels * Group	Pillai's Trace	.455	7.356	8.000	200.000	.000	.227	58.844	1.000
	Wilks' Lambda	.586	7.584[b]	8.000	198.000	.000	.235	60.671	1.000
	Hotelling's Trace	.637	7.809	8.000	196.000	.000	.242	62.471	1.000
	Roy's Largest Root	.499	12.463[c]	4.000	100.000	.000	.333	49.851	1.000

a. Design: Intercept + GroupWithin Subjects Design: NegationLevels
b. Exact statistic
c. The statistic is an upper bound on F that yields a lower bound on the significance level.
d. Computed using alpha = .05

Mauchly's Test of Sphericity[a]
Measure: MEASURE_1

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon[b] Greenhouse-Geisser	Huynh-Feldt	Lower-bound
NegationLevels	.838	17.459	2	.000	.861	.910	.500

Tests the null hypothesis that the error covariance matrix of the orthonormalized transformed dependent variables is proportional to an identity matrix.
a. Design: Intercept + GroupWithin Subjects Design: NegationLevels
b. May be used to adjust the degrees of freedom for the averaged tests of significance. Corrected tests are displayed in the Tests of Within-Subjects Effects table.

Tests of Within-Subjects Effects
Measure: MEASURE_1

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
NegationLevels	Sphericity Assumed	70331.248	2	35165.624	42.195	.000	.297	84.390	1.000
	Greenhouse-Geisser	70331.248	1.722	40851.126	42.195	.000	.297	72.645	1.000
	Huynh-Feldt	70331.248	1.819	38663.774	42.195	.000	.297	76.755	1.000
	Lower-bound	70331.248	1.000	70331.248	42.195	.000	.297	42.195	1.000
NegationLevels * Group	Sphericity Assumed	42768.328	8	5346.041	6.415	.000	.204	51.317	1.000
	Greenhouse-Geisser	42768.328	6.887	6210.377	6.415	.000	.204	44.175	1.000
	Huynh-Feldt	42768.328	7.276	5877.846	6.415	.000	.204	46.674	1.000
	Lower-bound	42768.328	4.000	10692.082	6.415	.000	.204	25.659	.988
Error (NegationLevels)	Sphericity Assumed	166681.923	200	833.410					
	Greenhouse-Geisser	166681.923	172.165	968.153					
	Huynh-Feldt	166681.923	181.905	916.314					
	Lower-bound	166681.923	100.000	1666.819					

a. Computed using alpha = .05

Tests of Within-Subjects Contrasts
Measure: MEASURE_1

Source	NegationLevels	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
NegationLevels	Linear	34348.315	1	34348.315	34.498	.000	.256	34.498	1.000
	Quadratic	35982.933	1	35982.933	53.613	.000	.349	53.613	1.000
NegationLevels * Group	Linear	26450.796	4	6612.699	6.642	.000	.210	26.566	.990
	Quadratic	16317.533	4	4079.383	6.078	.000	.196	24.313	.983
Error (NegationLevels)	Linear	99566.297	100	995.663					
	Quadratic	67115.625	100	671.156					

a. Computed using alpha = .05

Levene's Test of Equality of Error Variances[a]

	F	df1	df2	Sig.
NegationVerbless	17.131	4	100	.000
NegationPresent	18.500	4	100	.000
NegationPast	24.709	4	100	.000

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.
a. Design: Intercept + Group Within Subjects Design: NegationLevels

Tests of Between-Subjects Effects

Measure: MEASURE_1

Transformed Variable: Average

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Intercept	1390602.704	1	1390602.704	913.203	.000	.901	913.203	1.000
Group	136593.673	4	34148.418	22.425	.000	.473	89.700	1.000
Error	152277.521	100	1522.775					

a. Computed using alpha = .05

Estimated Marginal Means

1. Grand

Mean

Measure: MEASURE_1

Mean	Std. Error	95% Confidence Interval	
		Lower Bound	Upper Bound
66.971	2.216	62.574	71.368

Estimates

Measure: MEASURE_1

Group	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
1.00	46.111	5.038	36.116	56.106
2.00	72.751	4.916	62.997	82.505
3.00	40.889	4.506	31.949	49.829
4.00	75.757	4.803	66.228	85.287
5.00	99.346	5.464	88.505	110.187

Pairwise Comparisons

Measure: MEASURE_1

(I) Group	(J) Group	Mean Difference (I–J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
					Lower Bound	Upper Bound
1.00	2.00	−26.640[a]	7.039	.003	−46.847	−6.433
	3.00	5.222	6.759	1.000	−14.180	24.625
	4.00	−29.646[a]	6.961	.000	−49.628	−9.664
	5.00	−53.235[a]	7.432	.000	−74.571	−31.900
2.00	1.00	26.640[a]	7.039	.003	6.433	46.847
	3.00	31.862[a]	6.669	.000	12.718	51.006
	4.00	−3.006	6.873	1.000	−22.737	16.725
	5.00	−26.595[a]	7.350	.005	−47.696	−5.495

(I) Group	(J) Group	Mean Difference (I–J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
					Lower Bound	Upper Bound
3.00	1.00	−5.222	6.759	1.000	−24.625	14.180
	2.00	−31.862[a]	6.669	.000	−51.006	−12.718
	4.00	−34.868[a]	6.586	.000	−53.775	−15.962
	5.00	−58.457[a]	7.083	.000	−78.789	−38.126
4.00	1.00	29.646[a]	6.961	.000	9.664	49.628
	2.00	3.006	6.873	1.000	−16.725	22.737
	3.00	34.868[a]	6.586	.000	15.962	53.775
	5.00	−23.589[a]	7.275	.016	−44.474	−2.704
5.00	1.00	53.235[a]	7.432	.000	31.900	74.571
	2.00	26.595[a]	7.350	.005	5.495	47.696
	3.00	58.457[a]	7.083	.000	38.126	78.789
	4.00	23.589[a]	7.275	.016	2.704	44.474

Based on estimated marginal means
a. The mean difference is significant at the .05 level.
b. Adjustment for multiple comparisons: Bonferroni.

Univariate Tests
Measure: MEASURE_1

	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Contrast	45531.224	4	11382.806	22.425	.000	.473	89.700	1.000
Error	50759.174	100	507.592					

The F tests the effect of Group. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.
a. Computed using alpha = .05

Post Hoc Tests

Group
Multiple Comparisons
Measure: MEASURE_1
Bonferroni

(I) Group	(J) Group	Mean Difference (I–J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1.00	2.00	−26.6401[a]	7.03922	.003	−46.8473	−6.4330
	3.00	5.2221	6.75894	1.000	−14.1805	24.6246
	4.00	−29.6463[a]	6.96074	.000	−49.6281	−9.6644
	5.00	−53.2353[a]	7.43222	.000	−74.5706	−31.9000
2.00	1.00	26.6401[a]	7.03922	.003	6.4330	46.8473
	3.00	31.8622[a]	6.66894	.000	12.7180	51.0064
	4.00	−3.0062	6.87338	1.000	−22.7372	16.7249
	5.00	−26.5952[a]	7.35047	.005	−47.6958	−5.4945
3.00	1.00	−5.2221	6.75894	1.000	−24.6246	14.1805
	2.00	−31.8622[a]	6.66894	.000	−51.0064	−12.7180
	4.00	−34.8683[a]	6.58605	.000	−53.7746	−15.9621
	5.00	−58.4573[a]	7.08251	.000	−78.7888	−38.1259
4.00	1.00	29.6463[a]	6.96074	.000	9.6644	49.6281
	2.00	3.0062	6.87338	1.000	−16.7249	22.7372
	3.00	34.8683[a]	6.58605	.000	15.9621	53.7746
	5.00	−23.5890[a]	7.27535	.016	−44.4740	−2.7040
5.00	1.00	53.2353[a]	7.43222	.000	31.9000	74.5706
	2.00	26.5952[a]	7.35047	.005	5.4945	47.6958
	3.00	58.4573[a]	7.08251	.000	38.1259	78.7888
	4.00	23.5890[a]	7.27535	.016	2.7040	44.4740

Based on observed means.
The error term is Mean Square(Error) = 507.592.
a. The mean difference is significant at the .05 level.

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