```
 COMPUTE IDVowelSpace1 = (IDBeadF1 * (IDBootF2-IDBallF2) + IDBootF1 * (IDBeadF2
 -IDBallF2)+IDBallF1*(IDBeadF2-IDBootF2))/2 .
EXECUTE .
COMPUTE PDVowelSpace1 = (PDBeadF1 * (PDBootF2-PDBallF2) + PDBootF1 * (PDBeadF2
 -PDBallF2)+PDBallF1*(PDBeadF2-PDBootF2))/2 .
EXECUTE .
COMPUTE ADVowelSpace1 = (ADBeadF1 * (ADBootF2-ADBallF2) + ADBootF1 * (ADBeadF2
 -ADBallF2)+ADBallF1*(ADBeadF2-ADBootF2))/2 .
EXECUTE .
USE ALL.
COMPUTE filter_$=(Version=2).
VARIABLE LABELS filter_$ 'Version=2 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.
GLM IDVowelSpace1 PDVowelSpace1 ADVowelSpace1
  /WSFACTOR=listener 3 Polynomial
  /METHOD=SSTYPE(3)
  /EMMEANS=TABLES(listener)
  /PRINT=DESCRIPTIVE ETASQ
  /CRITERIA=ALPHA(.05)
  /WSDESIGN=listener.
```

General Linear Model

Within-Subjects Factors

Measure: MEASURE_1

listener	Dependent Variable
1	IDVowelSpace1
2	PDVowelSpace1
3	ADVowelSpace1

Descriptive Statistics

	Mean	Std. Deviation	N
IDVowelSpace1	888984.1980	290358.3573	10
PDVowelSpace1	843058.0113	271207.5697	10
ADVowelSpace1	560006.1115	230773.6877	10

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Type III Sum of Squares	df	Mean Square	F
listener	Sphericity Assumed	6.348E+11	2	3.174E+11	4.833
	Greenhouse-Geisser	6.348E+11	1.712	3.708E+11	4.833
	Huynh-Feldt	6.348E+11	2.000	3.174E+11	4.833
	Lower-bound	6.348E+11	1.000	6.348E+11	4.833
Error(listener)	Sphericity Assumed	1.182E+12	18	6.567E+10	
	Greenhouse-Geisser	1.182E+12	15.411	7.671E+10	
	Huynh-Feldt	1.182E+12	18.000	6.567E+10	
	Lower-bound	1.182E+12	9.000	1.313E+11	

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Sig.	Partial Eta Squared
listener	Sphericity Assumed	.021	.349
	Greenhouse-Geisser	.028	.349
	Huynh-Feldt	.021	.349
	Lower-bound	.055	.349
Error(listener)	Sphericity Assumed		
	Greenhouse-Geisser		
	Huynh-Feldt		
	Lower-bound		

Tests of Within-Subjects Contrasts

Measure: MEASURE_1

Source	listener	Type III Sum of Squares	df	Mean Square	F	Sig.
listener	Linear	5.411E+11	1	5.411E+11	7.528	.023
	Quadratic	9.371E+10	1	9.371E+10	1.576	.241
Error(listener)	Linear	6.470E+11	9	7.189E+10		
	Quadratic	5.352E+11	9	5.946E+10		

Tests of Within-Subjects Contrasts

Measure: MEASURE_1

Source	listener	Partial Eta Squared
listener	Linear	.455
	Quadratic	.149
Error(listener)	Linear	
	Quadratic	

Estimated Marginal Means

listener

Measure: MEASURE_1

listener	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
1	888984.198	91819.375	681274.342	1096694.054
2	843058.011	85763.364	649047.803	1037068.219
3	560006.112	72977.048	394920.560	725091.663

```
BOOTSTRAP
 /SAMPLING METHOD=SIMPLE
 /VARIABLES INPUT=IDVowelSpace1 PDVowelSpace1 ADVowelSpace1
 /CRITERIA CILEVEL=95 CITYPE=PERCENTILE  NSAMPLES=1000
 /MISSING USERMISSING=EXCLUDE.
```

Bootstrap

Bootstrap Specifications

Sampling Method	Simple
Number of Samples	1000
Confidence Interval Level	95.0%
Confidence Interval Type	Percentile

```
T-TEST PAIRS=IDVowelSpace1 IDVowelSpace1 PDVowelSpace1 WITH PDVowelSpace1 ADVowelSpace1
   ADVowelSpace1 (PAIRED)
 /ES DISPLAY(TRUE) STANDARDIZER(SD)
 /CRITERIA=CI(.9500)
 /MISSING=ANALYSIS.
```

T-Test

Paired Samples Statistics

			Statistic	Bootstrap[a] Bias	Bootstrap[a] Std. Error
Pair 1	IDVowelSpace1	Mean	888984.1980	1897.7587	87291.0972
		N	10		
		Std. Deviation	290358.3573	-23204.89415	70045.44800
		Std. Error Mean	91819.37467		
	PDVowelSpace1	Mean	843058.0113	2735.3758	85481.3959
		N	10		
		Std. Deviation	271207.5697	-17396.77936	41640.81356
		Std. Error Mean	85763.36390		
Pair 2	IDVowelSpace1	Mean	888984.1980	1897.7587	87291.0972
		N	10		
		Std. Deviation	290358.3573	-23204.89415	70045.44800
		Std. Error Mean	91819.37467		
	ADVowelSpace1	Mean	560006.1115	915.5883	73191.8504
		N	10		
		Std. Deviation	230773.6877	-15119.86382	38759.85739
		Std. Error Mean	72977.04771		
Pair 3	PDVowelSpace1	Mean	843058.0113	2735.3758	85481.3959
		N	10		
		Std. Deviation	271207.5697	-17396.77936	41640.81356
		Std. Error Mean	85763.36390		
	ADVowelSpace1	Mean	560006.1115	915.5883	73191.8504
		N	10		
		Std. Deviation	230773.6877	-15119.86382	38759.85739
		Std. Error Mean	72977.04771		

Paired Samples Statistics

			Bootstrap[a]	
			95% Confidence Interval	
			Lower	Upper
Pair 1	IDVowelSpace1	Mean	703413.6738	1045198.785
		N		
		Std. Deviation	77208.59839	368259.8116
		Std. Error Mean		
	PDVowelSpace1	Mean	680669.8151	1018976.518
		N		
		Std. Deviation	166542.9945	328730.8539
		Std. Error Mean		
Pair 2	IDVowelSpace1	Mean	703413.6738	1045198.785
		N		
		Std. Deviation	77208.59839	368259.8116
		Std. Error Mean		
	ADVowelSpace1	Mean	403514.5887	705459.7038
		N		
		Std. Deviation	133678.6355	289987.1731
		Std. Error Mean		
Pair 3	PDVowelSpace1	Mean	680669.8151	1018976.518
		N		
		Std. Deviation	166542.9945	328730.8539
		Std. Error Mean		
	ADVowelSpace1	Mean	403514.5887	705459.7038
		N		
		Std. Deviation	133678.6355	289987.1731
		Std. Error Mean		

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

Paired Samples Correlations

		N	Correlation	Sig.	Bootstrap for ...[a]	
					Bias	Std. Error
Pair 1	IDVowelSpace1 & PDVowelSpace1	10	.496	.145	-.031	.276
Pair 2	IDVowelSpace1 & ADVowelSpace1	10	-.046	.899	.040	.361
Pair 3	PDVowelSpace1 & ADVowelSpace1	10	-.349	.323	.011	.287

Paired Samples Correlations

		Bootstrap for Correlation[a]	
		95% Confidence Interval	
		Lower	Upper
Pair 1	IDVowelSpace1 & PDVowelSpace1	-.140	.900
Pair 2	IDVowelSpace1 & ADVowelSpace1	-.668	.786
Pair 3	PDVowelSpace1 & ADVowelSpace1	-.845	.327

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

Bootstrap for Paired Samples Test

		Mean	Bootstrap[a]		
			Bias	Std. Error	Sig. (2-tailed)
Pair 1	IDVowelSpace1 - PDVowelSpace1	45926.18676	-837.61710	84128.50542	.588
Pair 2	IDVowelSpace1 - ADVowelSpace1	328978.0865	982.17042	120253.6874	.026
Pair 3	PDVowelSpace1 - ADVowelSpace1	283051.8997	1819.78752	134473.1891	.074

Bootstrap for Paired Samples Test

		Bootstrap[a]	
		95% Confidence Interval	
		Lower	Upper
Pair 1	IDVowelSpace1 - PDVowelSpace1	-116767.807	215679.8893
Pair 2	IDVowelSpace1 - ADVowelSpace1	86646.04794	571066.3591
Pair 3	PDVowelSpace1 - ADVowelSpace1	23779.98304	580495.5493

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

Paired Samples Effect Sizes

			Standardizer[a]	Point Estimate	95% ... Lower
Pair 1	IDVowelSpace1 - PDVowelSpace1	Cohen's d	282431.8790	.163	-.466
		Hedges' correction	294922.9183	.156	-.446
Pair 2	IDVowelSpace1 - ADVowelSpace1	Cohen's d	379171.4803	.868	.116
		Hedges' correction	395940.9962	.831	.111
Pair 3	PDVowelSpace1 - ADVowelSpace1	Cohen's d	412927.3534	.685	-.023
		Hedges' correction	431189.7813	.656	-.022

Paired Samples Effect Sizes

			95% ... Upper
Pair 1	IDVowelSpace1 - PDVowelSpace1	Cohen's d	.782
		Hedges' correction	.749
Pair 2	IDVowelSpace1 - ADVowelSpace1	Cohen's d	1.586
		Hedges' correction	1.519
Pair 3	PDVowelSpace1 - ADVowelSpace1	Cohen's d	1.364
		Hedges' correction	1.307

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.