

STA442F09 Final Exam Printouts

1. Bird Keeping Study (2 pages)
2. Eating Study (9 pages)
3. Dichotic Listening Study (11 pages)

Total = 23 pages
Including this cover page

Printout for the Bird Keeping Study

```
/****** birdlung.sas *****/
options linesize=79 noovp formdlim='-';
title 'Bird Lung Study';

proc format;
  value ynfmt 0 = "No" 1 = "Yes";
  value sexfmt 0 = "Male" 1 = "Female";
  value sesfmt 0 = "Low" 1 = "High";

data tweet;
  infile 'birdlung.dat';
  input cancer sex ses birdkeep age yrsmoke cigday;
  format sex sexfmt.;
  format ses sesfmt.;
  format cancer birdkeep ynfmt.;

proc logistic order=internal descending; /* Always use descending for 0-1 DV */
  model cancer = sex ses birdkeep age yrsmoke cigday;
  smoke: test yrsmoke=cigday=0;
  sexes: test sex=ses=0;
```

Bird Lung Data

1

The LOGISTIC Procedure

Model Information

Data Set	WORK.TWEET
Response Variable	cancer
Number of Response Levels	2
Number of Observations	147
Model	binary logit
Optimization Technique	Fisher's scoring

Response Profile

Ordered Value	cancer	Total Frequency
1	Yes	49
2	No	98

Probability modeled is cancer='Yes'.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	189.135	168.198
SC	192.126	189.131
-2 Log L	187.135	154.198

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	32.9367	6	<.0001
Score	27.9620	6	<.0001
Wald	22.5697	6	0.0010

The LOGISTIC Procedure

Analysis of Maximum Likelihood Estimates

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	-1.9375	1.8042	1.1531	0.2829
sex	1	0.5613	0.5312	1.1166	0.2907
ses	1	0.1054	0.4688	0.0506	0.8221
birdkeep	1	1.3626	0.4113	10.9766	0.0009
age	1	-0.0398	0.0355	1.2552	0.2626
yrsmoke	1	0.0729	0.0265	7.5677	0.0059
cigday	1	0.0260	0.0255	1.0390	0.3081

Odds Ratio Estimates

Effect	Point Estimate	95% Wald Confidence Limits	
sex	1.753	0.619	4.964
ses	1.111	0.443	2.785
birdkeep	3.906	1.745	8.747
age	0.961	0.896	1.030
yrsmoke	1.076	1.021	1.133
cigday	1.026	0.976	1.079

Linear Hypotheses Testing Results

Label	Wald Chi-Square	DF	Pr > ChiSq
smoke	11.9058	2	0.0026
sexses	1.1166	2	0.5722

Printout for Eating Study

```
/* eating.sas: Pliner's Yummy data */
options linesize=79 pagesize=500 noovp formdlim='_';
title "Eating Data";

proc format;
  value ffmt 1 = 'Friends' 2 = 'Strangers';
  value pfmt 1 = 'Large Plate' 2 = 'Small Plate';
  value sfmt 1 = 'Common Bowl' 2 = 'Separate bowls';

data chowtime;
  infile 'Eating.data' firstobs=2;
  input Friend Plate Share Hunger FoodSrv FoodEat;
  format Friend ffmt.;
  format Plate pfmt.;
  format Share sfmt.;

proc glm;
  class Friend Plate Share;
  model FoodSrv FoodEat = hunger Friend|Plate|Share;
  manova h = _all_;
  lsmeans Friend|Plate|Share;
```

Eating Data

1

The GLM Procedure

Class Level Information

Class	Levels	Values
Friend	2	Friends Strangers
Plate	2	Large Plate Small Plate
Share	2	Common Bowl Separate bowls

Number of Observations Read	57
Number of Observations Used	57

Eating Data

2

The GLM Procedure

Dependent Variable: FoodSrv

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	8	247157.8287	30894.7286	2.97	0.0087
Error	48	498824.3092	10392.1731		
Corrected Total	56	745982.1379			

R-Square	Coeff Var	Root MSE	FoodSrv Mean
0.331319	23.36760	101.9420	436.2537

Source	DF	Type I SS	Mean Square	F Value	Pr > F
Hunger	1	64064.75136	64064.75136	6.16	0.0166
Friend	1	58889.57844	58889.57844	5.67	0.0213
Plate	1	12511.69338	12511.69338	1.20	0.2780
Friend*Plate	1	9950.85369	9950.85369	0.96	0.3327
Share	1	39207.81294	39207.81294	3.77	0.0580
Friend*Share	1	232.07441	232.07441	0.02	0.8818
Plate*Share	1	50525.55846	50525.55846	4.86	0.0323
Friend*Plate*Share	1	11775.50606	11775.50606	1.13	0.2924

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Hunger	1	8242.14175	8242.14175	0.79	0.3776
Friend	1	75213.88643	75213.88643	7.24	0.0098
Plate	1	13230.41227	13230.41227	1.27	0.2648
Friend*Plate	1	6940.34667	6940.34667	0.67	0.4178
Share	1	47995.34574	47995.34574	4.62	0.0367
Friend*Share	1	157.24354	157.24354	0.02	0.9026
Plate*Share	1	55315.60357	55315.60357	5.32	0.0254
Friend*Plate*Share	1	11775.50606	11775.50606	1.13	0.2924

The GLM Procedure

Dependent Variable: FoodEat

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	8	215056.3060	26882.0383	2.57	0.0203
Error	48	502109.4096	10460.6127		
Corrected Total	56	717165.7157			

R-Square	Coeff Var	Root MSE	FoodEat Mean
0.299870	24.11728	102.2771	424.0825

Source	DF	Type I SS	Mean Square	F Value	Pr > F
Hunger	1	67061.23143	67061.23143	6.41	0.0147
Friend	1	48734.93228	48734.93228	4.66	0.0359
Plate	1	5124.99555	5124.99555	0.49	0.4873
Friend*Plate	1	11886.26519	11886.26519	1.14	0.2918
Share	1	42825.98220	42825.98220	4.09	0.0486
Friend*Share	1	540.51108	540.51108	0.05	0.8211
Plate*Share	1	34885.13845	34885.13845	3.33	0.0740
Friend*Plate*Share	1	3997.24985	3997.24985	0.38	0.5394

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Hunger	1	16310.92742	16310.92742	1.56	0.2178
Friend	1	58466.31824	58466.31824	5.59	0.0222
Plate	1	4413.24880	4413.24880	0.42	0.5191
Friend*Plate	1	9396.68815	9396.68815	0.90	0.3480
Share	1	50998.56677	50998.56677	4.88	0.0321
Friend*Share	1	336.44991	336.44991	0.03	0.8584
Plate*Share	1	37062.36817	37062.36817	3.54	0.0659
Friend*Plate*Share	1	3997.24985	3997.24985	0.38	0.5394

The GLM Procedure
Multivariate Analysis of Variance

Characteristic Roots and Vectors of: E Inverse * H, where
H = Type III SSCP Matrix for Hunger
E = Error SSCP Matrix

Characteristic Root	Percent	Characteristic Vector V'EV=1	
		FoodSrv	FoodEat
0.07931675	100.00	-0.00497453	0.00574134
0.00000000	0.00	0.00414306	-0.00294511

MANOVA Test Criteria and Exact F Statistics for
the Hypothesis of No Overall Hunger Effect
H = Type III SSCP Matrix for Hunger
E = Error SSCP Matrix

S=1 M=0 N=22.5

Statistic	Value	F Value	Num DF	Den DF	Pr > F
Wilks' Lambda	0.92651207	1.86	2	47	0.1663
Pillai's Trace	0.07348793	1.86	2	47	0.1663
Hotelling-Lawley Trace	0.07931675	1.86	2	47	0.1663
Roy's Greatest Root	0.07931675	1.86	2	47	0.1663

Characteristic Roots and Vectors of: E Inverse * H, where
H = Type III SSCP Matrix for Friend
E = Error SSCP Matrix

Characteristic Root	Percent	Characteristic Vector V'EV=1	
		FoodSrv	FoodEat
0.18045073	100.00	0.00385573	-0.00261641
0.00000000	0.00	-0.00520042	0.00589840

MANOVA Test Criteria and Exact F Statistics for
the Hypothesis of No Overall Friend Effect
H = Type III SSCP Matrix for Friend
E = Error SSCP Matrix

S=1 M=0 N=22.5

Statistic	Value	F Value	Num DF	Den DF	Pr > F
Wilks' Lambda	0.84713404	4.24	2	47	0.0203
Pillai's Trace	0.15286596	4.24	2	47	0.0203
Hotelling-Lawley Trace	0.18045073	4.24	2	47	0.0203
Roy's Greatest Root	0.18045073	4.24	2	47	0.0203

Characteristic Roots and Vectors of: E Inverse * H, where
H = Type III SSCP Matrix for Plate
E = Error SSCP Matrix

Characteristic Root	Percent	Characteristic Vector	
		FoodSrv	V'EV=1 FoodEat
0.11530034	100.00	-0.00622222	0.00566205
0.00000000	0.00	-0.00178743	0.00309482

MANOVA Test Criteria and Exact F Statistics for
the Hypothesis of No Overall Plate Effect
H = Type III SSCP Matrix for Plate
E = Error SSCP Matrix

S=1 M=0 N=22.5

Statistic	Value	F Value	Num DF	Den DF	Pr > F
Wilks' Lambda	0.89661947	2.71	2	47	0.0770
Pillai's Trace	0.10338053	2.71	2	47	0.0770
Hotelling-Lawley Trace	0.11530034	2.71	2	47	0.0770
Roy's Greatest Root	0.11530034	2.71	2	47	0.0770

Characteristic Roots and Vectors of: E Inverse * H, where
H = Type III SSCP Matrix for Friend*Plate
E = Error SSCP Matrix

Characteristic Root	Percent	Characteristic Vector	
		FoodSrv	V'EV=1 FoodEat
0.02375900	100.00	-0.00298306	0.00415380
0.00000000	0.00	-0.00574563	0.00493789

MANOVA Test Criteria and Exact F Statistics for
the Hypothesis of No Overall Friend*Plate Effect
H = Type III SSCP Matrix for Friend*Plate
E = Error SSCP Matrix

S=1 M=0 N=22.5

Statistic	Value	F Value	Num DF	Den DF	Pr > F
Wilks' Lambda	0.97679239	0.56	2	47	0.5759
Pillai's Trace	0.02320761	0.56	2	47	0.5759
Hotelling-Lawley Trace	0.02375900	0.56	2	47	0.5759
Roy's Greatest Root	0.02375900	0.56	2	47	0.5759

Characteristic Roots and Vectors of: E Inverse * H, where
H = Type III SSCP Matrix for Share
E = Error SSCP Matrix

Characteristic Root	Percent	Characteristic Vector V'EV=1	
		FoodSrv	FoodEat
0.10158182	100.00	-0.00007377	0.00148290
0.00000000	0.00	-0.00647345	0.00627995

MANOVA Test Criteria and Exact F Statistics for
the Hypothesis of No Overall Share Effect
H = Type III SSCP Matrix for Share
E = Error SSCP Matrix

S=1 M=0 N=22.5

Statistic	Value	F Value	Num DF	Den DF	Pr > F
Wilks' Lambda	0.90778549	2.39	2	47	0.1029
Pillai's Trace	0.09221451	2.39	2	47	0.1029
Hotelling-Lawley Trace	0.10158182	2.39	2	47	0.1029
Roy's Greatest Root	0.10158182	2.39	2	47	0.1029

Characteristic Roots and Vectors of: E Inverse * H, where
H = Type III SSCP Matrix for Friend*Share
E = Error SSCP Matrix

Characteristic Root	Percent	Characteristic Vector V'EV=1	
		FoodSrv	FoodEat
0.00184743	100.00	-0.00516814	0.00587641
0.00000000	0.00	0.00389889	-0.00266543

MANOVA Test Criteria and Exact F Statistics for
the Hypothesis of No Overall Friend*Share Effect
H = Type III SSCP Matrix for Friend*Share
E = Error SSCP Matrix

S=1 M=0 N=22.5

Statistic	Value	F Value	Num DF	Den DF	Pr > F
Wilks' Lambda	0.99815597	0.04	2	47	0.9576
Pillai's Trace	0.00184403	0.04	2	47	0.9576
Hotelling-Lawley Trace	0.00184743	0.04	2	47	0.9576
Roy's Greatest Root	0.00184743	0.04	2	47	0.9576

Characteristic Roots and Vectors of: E Inverse * H, where
H = Type III SSCP Matrix for Plate*Share
E = Error SSCP Matrix

Characteristic Root	Percent	Characteristic Vector	
		FoodSrv	V'EV=1 FoodEat
0.17018728	100.00	0.00487169	-0.00380877
0.00000000	0.00	-0.00426351	0.00520865

MANOVA Test Criteria and Exact F Statistics for
the Hypothesis of No Overall Plate*Share Effect
H = Type III SSCP Matrix for Plate*Share
E = Error SSCP Matrix

S=1 M=0 N=22.5

Statistic	Value	F Value	Num DF	Den DF	Pr > F
Wilks' Lambda	0.85456406	4.00	2	47	0.0249
Pillai's Trace	0.14543594	4.00	2	47	0.0249
Hotelling-Lawley Trace	0.17018728	4.00	2	47	0.0249
Roy's Greatest Root	0.17018728	4.00	2	47	0.0249

Characteristic Roots and Vectors of: E Inverse * H, where
H = Type III SSCP Matrix for Friend*Plate*Share
E = Error SSCP Matrix

Characteristic Root	Percent	Characteristic Vector	
		FoodSrv	V'EV=1 FoodEat
0.10063658	100.00	-0.00621253	0.00564535
0.00000000	0.00	-0.00182082	0.00312519

MANOVA Test Criteria and Exact F Statistics for the
Hypothesis of No Overall Friend*Plate*Share Effect
H = Type III SSCP Matrix for Friend*Plate*Share
E = Error SSCP Matrix

S=1 M=0 N=22.5

Statistic	Value	F Value	Num DF	Den DF	Pr > F
Wilks' Lambda	0.90856511	2.36	2	47	0.1050
Pillai's Trace	0.09143489	2.36	2	47	0.1050
Hotelling-Lawley Trace	0.10063658	2.36	2	47	0.1050
Roy's Greatest Root	0.10063658	2.36	2	47	0.1050

The GLM Procedure
Least Squares Means

Friend		FoodSrv LSMEAN	FoodEat LSMEAN
Friends		476.288291	459.474409
Strangers		399.704253	391.952903

Plate		FoodSrv LSMEAN	FoodEat LSMEAN
Large Plate		421.637672	416.265683
Small Plate		454.354872	435.161629

Friend	Plate	FoodSrv LSMEAN	FoodEat LSMEAN
Friends	Large Plate	471.172417	463.108264
Friends	Small Plate	481.404164	455.840553
Strangers	Large Plate	372.102926	369.423101
Strangers	Small Plate	427.305579	414.482705

Share		FoodSrv LSMEAN	FoodEat LSMEAN
Common Bowl		467.487383	456.113444
Separate bowls		408.505160	395.313867

Friend	Share	FoodSrv LSMEAN	FoodEat LSMEAN
Friends	Common Bowl	507.470277	492.347545
Friends	Separate bowls	445.106304	426.601272
Strangers	Common Bowl	427.504490	419.879343
Strangers	Separate bowls	371.904016	364.026462

Plate	Share	FoodSrv LSMEAN	FoodEat LSMEAN
Large Plate	Common Bowl	483.349917	473.039931
Large Plate	Separate bowls	359.925426	359.491434
Small Plate	Common Bowl	451.624849	439.186958
Small Plate	Separate bowls	457.084894	431.136300

Friend	Plate	Share	FoodSrv LSMEAN	FoodEat LSMEAN
Friends	Large Plate	Common Bowl	549.411222	530.999536
Friends	Large Plate	Separate bowls	392.933613	395.216993
Friends	Small Plate	Common Bowl	465.529332	453.695554
Friends	Small Plate	Separate bowls	497.278996	457.985551
Strangers	Large Plate	Common Bowl	417.288613	415.080326
Strangers	Large Plate	Separate bowls	326.917240	323.765875
Strangers	Small Plate	Common Bowl	437.720366	424.678361
Strangers	Small Plate	Separate bowls	416.890792	404.287049

Printout for the Dichotic Listening Study

```
/* dichotic2.sas */
options linesize=79 pagesize=500 noovp formdlim='_' nodate;
title 'Dichotic listening Experiment: Version 2';

data ear;
  infile 'dichotic.data' firstobs=7;
  input id test11 test12 test13
        test21 test22 test23
        test31 test32 test33;
  left  = (test11+test12+test13)/3;
  right = (test21+test22+test23)/3;
  both  = (test31+test32+test33)/3;
  hiphop = (test11+test21+test31)/3;
  classc = (test12+test22+test32)/3;
  radio  = (test13+test23+test33)/3;
  /* d stands for difference */
  d1 = test11-test12; d2 = test12-test13; d3 = test13-test21;
  d4 = test21-test22; d5 = test22-test23; d6 = test23-test31;
  d7 = test31-test32; d8 = test32-test33;
  d9 = left-right;    d10 = right-both;    d11 = left-both;
  d12 = hiphop-classc; d13 = classc-radio; d14 = hiphop-radio;

proc reg;
  title2 'Test 1';
  model d1-d8 = ;
  mtest intercept=0;
proc glm;
  title2 'The easy way';
  model test11 -- test33 = ;
  repeated Presentation 3, NoiseType 3 / short summary nouni nou mean;
proc means n mean stddev t probt;
  title2 'Some single degree of freedom tests';
  var d9-d14;
```

Skipping the univariate output from “Test 1” ...

Dichotic listening Experiment: Version 2
Test 1

9

The REG Procedure
Model: MODEL1
Multivariate Test 1

Multivariate Statistics and Exact F Statistics

Statistic	Value	F Value	Num DF	Den DF	Pr > F
Wilks' Lambda	0.71432058	3.65	8	73	0.0013
Pillai's Trace	0.28567942	3.65	8	73	0.0013
Hotelling-Lawley Trace	0.39993167	3.65	8	73	0.0013
Roy's Greatest Root	0.39993167	3.65	8	73	0.0013

Dichotic listening Experiment: Version 2 10
The easy way

The GLM Procedure

Number of Observations Read 81
Number of Observations Used 81

Dichotic listening Experiment: Version 2 11
The easy way

The GLM Procedure

Dependent Variable: test11

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	7225.000000	7225.000000	748.70	<.0001
Error	80	772.000000	9.650000		
Uncorrected Total	81	7997.000000			

R-Square	Coeff Var	Root MSE	test11 Mean
0.000000	32.89177	3.106445	9.444444

Source	DF	Type I SS	Mean Square	F Value	Pr > F
Intercept	1	7225.000000	7225.000000	748.70	<.0001

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Intercept	1	7225.000000	7225.000000	748.70	<.0001

Parameter	Estimate	Standard Error	t Value	Pr > t
Intercept	9.444444444	0.34516055	27.36	<.0001

Dependent Variable: test12

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	7453.444444	7453.444444	698.58	<.0001
Error	80	853.555556	10.669444		
Uncorrected Total	81	8307.000000			

R-Square	Coeff Var	Root MSE	test12 Mean
0.000000	34.05139	3.266412	9.592593

Source	DF	Type I SS	Mean Square	F Value	Pr > F
Intercept	1	7453.444444	7453.444444	698.58	<.0001

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Intercept	1	7453.444444	7453.444444	698.58	<.0001

Parameter	Estimate	Standard Error	t Value	Pr > t
Intercept	9.592592593	0.36293462	26.43	<.0001

Dependent Variable: test13

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	6852.160494	6852.160494	726.21	<.0001
Error	80	754.839506	9.435494		
Uncorrected Total	81	7607.000000			

R-Square	Coeff Var	Root MSE	test13 Mean
0.000000	33.39728	3.071725	9.197531

Source	DF	Type I SS	Mean Square	F Value	Pr > F
Intercept	1	6852.160494	6852.160494	726.21	<.0001

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Intercept	1	6852.160494	6852.160494	726.21	<.0001

Parameter	Estimate	Standard Error	t Value	Pr > t
Intercept	9.197530864	0.34130277	26.95	<.0001

Dependent Variable: test21

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	6724.000000	6724.000000	674.09	<.0001
Error	80	798.000000	9.975000		
Uncorrected Total	81	7522.000000			

R-Square	Coeff Var	Root MSE	test21 Mean
0.000000	34.66451	3.158322	9.111111

Source	DF	Type I SS	Mean Square	F Value	Pr > F
Intercept	1	6724.000000	6724.000000	674.09	<.0001

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Intercept	1	6724.000000	6724.000000	674.09	<.0001

Parameter	Estimate	Standard Error	t Value	Pr > t
Intercept	9.111111111	0.35092470	25.96	<.0001

Dependent Variable: test22

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	7549.679012	7549.679012	738.07	<.0001
Error	80	818.320988	10.229012		
Uncorrected Total	81	8368.000000			

R-Square	Coeff Var	Root MSE	test22 Mean
0.000000	33.12799	3.198283	9.654321

Source	DF	Type I SS	Mean Square	F Value	Pr > F
Intercept	1	7549.679012	7549.679012	738.07	<.0001

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Intercept	1	7549.679012	7549.679012	738.07	<.0001

Parameter	Estimate	Standard Error	t Value	Pr > t
Intercept	9.654320988	0.35536475	27.17	<.0001

Dependent Variable: test23

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	6489.197531	6489.197531	655.64	<.0001
Error	80	791.802469	9.897531		
Uncorrected Total	81	7281.000000			

R-Square	Coeff Var	Root MSE	test23 Mean
0.000000	35.14880	3.146034	8.950617

Source	DF	Type I SS	Mean Square	F Value	Pr > F
Intercept	1	6489.197531	6489.197531	655.64	<.0001

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Intercept	1	6489.197531	6489.197531	655.64	<.0001

Parameter	Estimate	Standard Error	t Value	Pr > t
Intercept	8.950617284	0.34955935	25.61	<.0001

Dependent Variable: test31

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	6346.777778	6346.777778	762.12	<.0001
Error	80	666.222222	8.327778		
Uncorrected Total	81	7013.000000			

R-Square	Coeff Var	Root MSE	test31 Mean
0.000000	32.60096	2.885789	8.851852

Source	DF	Type I SS	Mean Square	F Value	Pr > F
Intercept	1	6346.777778	6346.777778	762.12	<.0001

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Intercept	1	6346.777778	6346.777778	762.12	<.0001

Parameter	Estimate	Standard Error	t Value	Pr > t
Intercept	8.851851852	0.32064322	27.61	<.0001

Dependent Variable: test32

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	7018.716049	7018.716049	693.82	<.0001
Error	80	809.283951	10.116049		
Uncorrected Total	81	7828.000000			

R-Square	Coeff Var	Root MSE	test32 Mean
0.000000	34.16797	3.180574	9.308642

Source	DF	Type I SS	Mean Square	F Value	Pr > F
Intercept	1	7018.716049	7018.716049	693.82	<.0001

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Intercept	1	7018.716049	7018.716049	693.82	<.0001

Parameter	Estimate	Standard Error	t Value	Pr > t
Intercept	9.308641975	0.35339708	26.34	<.0001

Dependent Variable: test33

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	5946.123457	5946.123457	648.19	<.0001
Error	80	733.876543	9.173457		
Uncorrected Total	81	6680.000000			

R-Square	Coeff Var	Root MSE	test33 Mean
0.000000	35.35021	3.028771	8.567901

Source	DF	Type I SS	Mean Square	F Value	Pr > F
Intercept	1	5946.123457	5946.123457	648.19	<.0001

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Intercept	1	5946.123457	5946.123457	648.19	<.0001

Parameter	Estimate	Standard Error	t Value	Pr > t
Intercept	8.567901235	0.33653017	25.46	<.0001

The GLM Procedure
Repeated Measures Analysis of Variance

Repeated Measures Level Information

Dependent Variable	test11	test12	test13	test21	test22	test23
Level of Presentation	1	1	1	2	2	2
Level of NoiseType	1	2	3	1	2	3

Repeated Measures Level Information

Dependent Variable	test31	test32	test33
Level of Presentation	3	3	3
Level of NoiseType	1	2	3

MANOVA Test Criteria and Exact F Statistics
for the Hypothesis of no Presentation Effect
H = Type III SSCP Matrix for Presentation
E = Error SSCP Matrix

S=1 M=0 N=38.5

Statistic	Value	F Value	Num DF	Den DF	Pr > F
Wilks' Lambda	0.90318116	4.23	2	79	0.0179
Pillai's Trace	0.09681884	4.23	2	79	0.0179
Hotelling-Lawley Trace	0.10719759	4.23	2	79	0.0179
Roy's Greatest Root	0.10719759	4.23	2	79	0.0179

MANOVA Test Criteria and Exact F Statistics
for the Hypothesis of no NoiseType Effect
H = Type III SSCP Matrix for NoiseType
E = Error SSCP Matrix

S=1 M=0 N=38.5

Statistic	Value	F Value	Num DF	Den DF	Pr > F
Wilks' Lambda	0.81606728	8.90	2	79	0.0003
Pillai's Trace	0.18393272	8.90	2	79	0.0003
Hotelling-Lawley Trace	0.22538916	8.90	2	79	0.0003
Roy's Greatest Root	0.22538916	8.90	2	79	0.0003

MANOVA Test Criteria and Exact F Statistics for
the Hypothesis of no Presentati*NoiseType Effect
H = Type III SSCP Matrix for Presentati*NoiseType
E = Error SSCP Matrix

S=1 M=1 N=37.5

Statistic	Value	F Value	Num DF	Den DF	Pr > F
Wilks' Lambda	0.98049597	0.38	4	77	0.8202
Pillai's Trace	0.01950403	0.38	4	77	0.8202
Hotelling-Lawley Trace	0.01989200	0.38	4	77	0.8202
Roy's Greatest Root	0.01989200	0.38	4	77	0.8202

The GLM Procedure
Repeated Measures Analysis of Variance
Analysis of Variance of Contrast Variables

Presentation_N represents the contrast between the nth level of Presentation and the last

Contrast Variable: Presentation_1

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Mean	1	183.753086	183.753086	8.56	0.0045
Error	80	1718.246914	21.478086		

Contrast Variable: Presentation_2

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Mean	1	79.012346	79.012346	3.41	0.0683
Error	80	1850.987654	23.137346		

Contrast Variable: NoiseType_1

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Mean	1	38.716049	38.716049	1.66	0.2008
Error	80	1861.283951	23.266049		

Contrast Variable: NoiseType_2

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Mean	1	274.086420	274.086420	15.86	0.0001
Error	80	1382.913580	17.286420		

The GLM Procedure
Repeated Measures Analysis of Variance
Analysis of Variance of Contrast Variables

Present_N represents the contrast between the nth level of Presentation and the last

NoiseTy_N represents the contrast between the nth level of NoiseType and the last

Contrast Variable: Present_1*NoiseTy_1

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Mean	1	0.1111111	0.1111111	0.01	0.9202
Error	80	880.8888889	11.0111111		

Contrast Variable: Present_1*NoiseTy_2

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Mean	1	9.679012	9.679012	0.72	0.3980
Error	80	1072.320988	13.404012		

Contrast Variable: Present_2*NoiseTy_1

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Mean	1	1.2345679	1.2345679	0.14	0.7091
Error	80	704.7654321	8.8095679		

Contrast Variable: Present_2*NoiseTy_2

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Mean	1	0.1111111	0.1111111	0.01	0.9243
Error	80	978.8888889	12.2361111		

Dichotic listening Experiment: Version 2
The easy way

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The GLM Procedure
Repeated Measures Analysis of Variance

Means of Within Subjects Effects

Level of Presentation	N	Mean	Std Dev
1	243	9.41152263	3.14054250
2	243	9.23868313	3.16890652
3	243	8.90946502	3.03696798

Level of NoiseType	N	Mean	Std Dev
1	243	9.13580247	3.04953493
2	243	9.51851852	3.20553928
3	243	8.90534979	3.08074736

Level of Presentation	Level of NoiseType	N	Mean	Std Dev
1	1	81	9.44444444	3.10644491
1	2	81	9.59259259	3.26641155
1	3	81	9.19753086	3.07172489
2	1	81	9.11111111	3.15832234
2	2	81	9.65432099	3.19828272
2	3	81	8.95061728	3.14603415
3	1	81	8.85185185	2.88578894
3	2	81	9.30864198	3.18057375
3	3	81	8.56790123	3.02877150

Dichotic listening Experiment: Version 2
Some single degree of freedom tests

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The MEANS Procedure

Variable	N	Mean	Std Dev	t Value	Pr > t
d9	81	0.1728395	1.4221571	1.09	0.2773
d10	81	0.3292181	1.6033765	1.85	0.0683
d11	81	0.5020576	1.5448152	2.92	0.0045
d12	81	-0.3827160	1.3271849	-2.60	0.0112
d13	81	0.6131687	1.3858980	3.98	0.0001
d14	81	0.2304527	1.6078298	1.29	0.2008