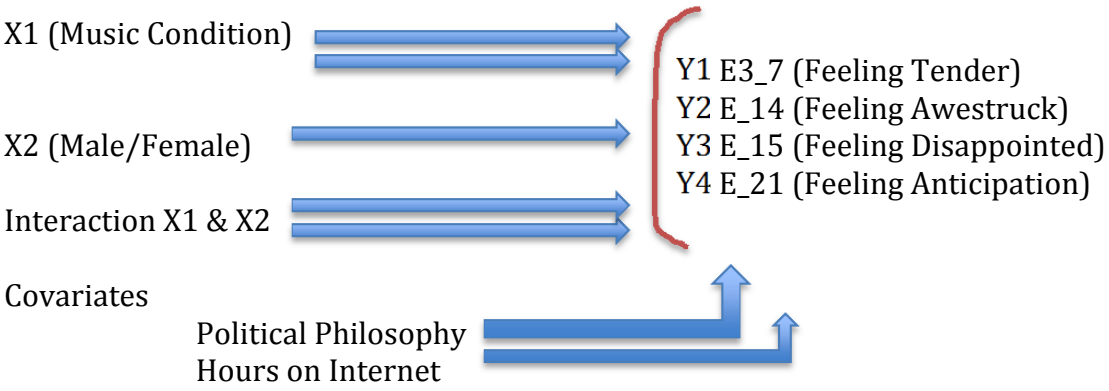
MANCOVA
COM 631/731, Spring 2013
Daniel Dunchack

I. Model

From the Music and Film Experiment 2011 (Neuendorf et al.)



Variable Descriptions

Independent Variables
Music Condition (Nominal, 3 categories [Rock Music (1), Classical(2), and None(3)], musiccond SPSS label)
Male/Female (Nominal, 2 categories [Female(1), and Male(2)], SocDem_1_MaleOrFemale SPSS label)

Dependent Variables
All of the dependent variables are metric with 0 = Not at All to 10 = Very Much.

Feeling Tender (E3_7_SG_ExtentYouFeltTender)
Feeling Awestruck (E3_14_SG_ExtentYouFeltAwestruck)
Feeling Disappointed (E3_15_SG_ExtentYouFeltDisappointed)
Feeling Anticipation (E3_21_SG_ExtentYouFeltAnticipation)

Covariates

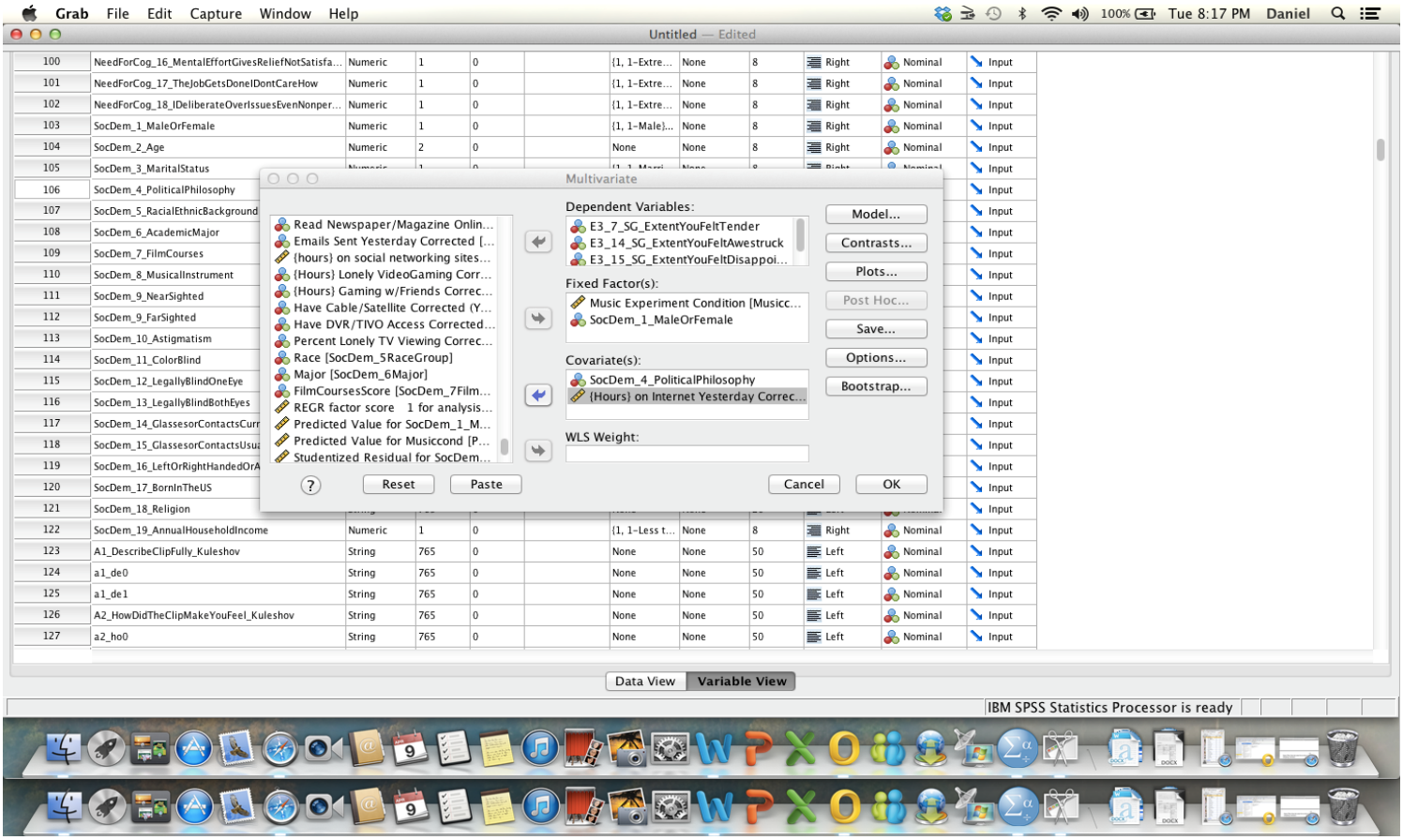
Political Philosophy (5 categories [Strong Conservative(1), Lean to Conservative(2), Middle of the Road(3), Lean to Liberal(4), and Strong Liberal(5)], SocDem_4_PoliticalPhilosophy SPSS label)
Hours on the Internet (Metric [0 = 0 hours to 10 = 10 hours], Media_16_HoursonInternetYesterdayCorrected)

II. Running SPSS

ANALYZE➔GENERAL LINEAR MODEL➔MULTIVARIATE

PUT IN YOUR DEPENDENT VARIABLES
PUT IN YOUR FIXED FACTORS
PUT IN YOUR COVARIATES (IT MAKES IT MANCOVA)

NOTE THAT THIS IS THE ONLY DIFFERENCE IN SPSS FROM MANOVA.



III. SPSS OUTPUT

```
GLM E3_7_SG_ExtentYouFeltTender E3_14_SG_ExtentYouFeltAwestruck E3_15_SG_ExtentYouFeltDisappointed
E3_21_SG_ExtentYouFeltAnticipation BY Musiccond SocDem_1_MaleOrFemale WITH SocDem_4_PoliticalPhilosophy
Media_16_HoursonInternetYesterdayCorrected
  /METHOD=SSTYPE(3)
  /INTERCEPT=INCLUDE
  /SAVE=PRED SRESID
  /PLOT=PROFILE(Musiccond*SocDem_1_MaleOrFemale)
  /EMMEANS=TABLES(Musiccond) WITH(SocDem_4_PoliticalPhilosophy=MEAN
Media_16_HoursonInternetYesterdayCorrected=MEAN)
  /EMMEANS=TABLES(SocDem_1_MaleOrFemale) WITH(SocDem_4_PoliticalPhilosophy=MEAN
Media_16_HoursonInternetYesterdayCorrected=MEAN)
  /EMMEANS=TABLES(Musiccond*SocDem_1_MaleOrFemale) WITH(SocDem_4_PoliticalPhilosophy=MEAN
Media_16_HoursonInternetYesterdayCorrected=MEAN)
  /EMMEANS=TABLES(OVERALL) WITH(SocDem_4_PoliticalPhilosophy=MEAN
Media_16_HoursonInternetYesterdayCorrected=MEAN)
  /PRINT=DESCRIPTIVE ETASQ OPOWER HOMOGENEITY
  /CRITERIA=ALPHA(.05)
  /DESIGN=SocDem_4_PoliticalPhilosophy Media_16_HoursonInternetYesterdayCorrected Musiccond
SocDem_1_MaleOrFemale Musiccond*SocDem_1_MaleOrFemale.
```

GENERAL LINEAR MODEL

Between-Subjects Factors

		Value Label	N
Music Experiment Condition	1.00	1-Rock Music	32
	2.00	2-Classical Music	28
	3.00	3-No Music	28
SocDem_1_MaleOrFemale	1	1-Male	45
	2	2-Female	43

Descriptive Statistics

	Music Experiment Condition	SocDem_1_Male OrFemale	Mean	Std. Deviation	N
E3_7_SG_Extent YouFeltTender	1-Rock Music	1-Male	2.44	2.220	16
		2-Female	1.44	2.190	16
		Total	1.94	2.228	32
	2-Classical Music	1-Male	3.07	2.814	14
		2-Female	3.43	3.131	14
		Total	3.25	2.927	28
	3-No Music	1-Male	3.60	3.757	15
		2-Female	3.31	3.449	13
		Total	3.46	3.554	28
	Total	1-Male	3.02	2.958	45
		2-Female	2.65	3.007	43
		Total	2.84	2.971	88
E3_14_SG_Extent YouFeltAwestruck	1-Rock Music	1-Male	1.69	2.272	16
		2-Female	1.38	2.446	16
		Total	1.53	2.328	32
	2-Classical Music	1-Male	3.00	2.935	14
		2-Female	3.43	3.275	14
		Total	3.21	3.059	28
	3-No Music	1-Male	3.13	3.204	15
		2-Female	3.54	3.843	13
		Total	3.32	3.454	28
	Total	1-Male	2.58	2.832	45
		2-Female	2.70	3.277	43
		Total	2.64	3.041	88
E3_15_SG_Extent YouFeltDisappointed	1-Rock Music	1-Male	5.25	3.152	16
		2-Female	4.94	3.678	16
		Total	5.09	3.373	32
	2-Classical Music	1-Male	6.29	2.164	14
		2-Female	7.79	1.847	14
		Total	7.04	2.117	28
	3-No Music	1-Male	6.20	3.212	15
		2-Female	6.54	3.992	13
		Total	6.36	3.530	28
	Total	1-Male	5.89	2.878	45
		2-Female	6.35	3.450	43

		Total	6.11	3.160	88
		1-Male	3.75	2.769	16
	1-Rock Music	2-Female	2.13	3.202	16
		Total	2.94	3.058	32
		1-Male	3.14	3.371	14
	2-Classical Music	2-Female	2.57	3.298	14
E3_21_SG_ExtentYouFeltAnticipation		Total	2.86	3.285	28
		1-Male	4.93	4.026	15
	3-No Music	2-Female	4.85	3.671	13
		Total	4.89	3.794	28
		1-Male	3.96	3.418	45
	Total	2-Female	3.09	3.504	43
		Total	3.53	3.467	88

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

Box's M	46.561
F	.813
df1	50
df2	11829.369
Sig.	.825

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

a. Design: Intercept + SocDem_4_PoliticalPhilosophy + Media_16_HoursonInternetYesterdayCorrected + Musiccond + SocDem_1_MaleOrFemale + Musiccond * SocDem_1_MaleOrFemale

Multivariate Tests[a]

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[d]
SocDem_4_PoliticalPhilosophy	Pillai's Trace	.033	.652[b]	4.000	77.000	.627	.033	2.608	.204
	Wilks' Lambda	.967	.652[b]	4.000	77.000	.627	.033	2.608	.204
	Hotelling's Trace	.034	.652[b]	4.000	77.000	.627	.033	2.608	.204

	Roy's Largest Root	.034	.652[b]	4.000	77.000	.627	.033	2.608	.204
Media_16_HoursonInternetYesterdayCorrected	Pillai's Trace	.077	1.595[b]	4.000	77.000	.184	.077	6.380	.470
	Wilks' Lambda	.923	1.595[b]	4.000	77.000	.184	.077	6.380	.470
	Hotelling's Trace	.083	1.595[b]	4.000	77.000	.184	.077	6.380	.470
	Roy's Largest Root	.083	1.595[b]	4.000	77.000	.184	.077	6.380	.470
Musiccond	Pillai's Trace	.154	1.630	8.000	156.000	.120	.077	13.040	.703
	Wilks' Lambda	.852	1.609[b]	8.000	154.000	.126	.077	12.875	.696
	Hotelling's Trace	.167	1.589	8.000	152.000	.132	.077	12.709	.689
	Roy's Largest Root	.088	1.721[c]	4.000	78.000	.154	.081	6.884	.504
SocDem_1_MaleOrFemale	Pillai's Trace	.042	.852[b]	4.000	77.000	.497	.042	3.408	.260
	Wilks' Lambda	.958	.852[b]	4.000	77.000	.497	.042	3.408	.260
	Hotelling's Trace	.044	.852[b]	4.000	77.000	.497	.042	3.408	.260
	Roy's Largest Root	.044	.852[b]	4.000	77.000	.497	.042	3.408	.260
Musiccond * SocDem_1_MaleOrFemale	Pillai's Trace	.034	.341	8.000	156.000	.949	.017	2.731	.161
	Wilks' Lambda	.966	.338[b]	8.000	154.000	.950	.017	2.702	.159
	Hotelling's Trace	.035	.334	8.000	152.000	.952	.017	2.672	.158
	Roy's Largest Root	.026	.511[c]	4.000	78.000	.728	.026	2.044	.166

a. Design: Intercept + SocDem_4_PoliticalPhilosophy + Media_16_HoursonInternetYesterdayCorrected + Musiccond + SocDem_1_MaleOrFemale + Musiccond * SocDem_1_MaleOrFemale

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 =

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

	F	df1	df2	Sig.
E3_7_SG_ExtentYouFeltTender	4.479	5	82	.001
E3_14_SG_ExtentYouFeltAwestruck	2.112	5	82	.072
E3_15_SG_ExtentYouFeltDisappointed	2.453	5	82	.040
E3_21_SG_ExtentYouFeltAnticipation	1.385	5	82	.239

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + SocDem_4_PoliticalPhilosophy + Media_16_HoursonInternetYesterdayCorrected + Musiccond + SocDem_1_MaleOrFemale + Musiccond * SocDem_1_MaleOrFemale

Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[e]
SocDem_4_PoliticalPhilo	E3_7_SG_ExtentYouFeltTender	4.777	1	4.777	.555	.458	.007	.555	.114

sophy	E3_14_SG_ExtentYouFeltAwestruck	11.477	1	11.477	1.294	.259	.016	1.294	.203
	E3_15_SG_ExtentYouFeltDisappointed	9.491	1	9.491	.969	.328	.012	.969	.163
	E3_21_SG_ExtentYouFeltAnticipation	1.287	1	1.287	.110	.741	.001	.110	.062
	E3_7_SG_ExtentYouFeltTender	24.632	1	24.632	2.863	.095	.035	2.863	.387
Media_16_HoursonInternetYesterdayCorrected	E3_14_SG_ExtentYouFeltAwestruck	20.508	1	20.508	2.313	.132	.028	2.313	.324
	E3_15_SG_ExtentYouFeltDisappointed	.148	1	.148	.015	.903	.000	.015	.052
	E3_21_SG_ExtentYouFeltAnticipation	6.616	1	6.616	.564	.455	.007	.564	.115
	E3_7_SG_ExtentYouFeltTender	23.782	2	11.891	1.382	.257	.033	2.764	.289
Musiccond	E3_14_SG_ExtentYouFeltAwestruck	39.258	2	19.629	2.214	.116	.052	4.428	.439
	E3_15_SG_ExtentYouFeltDisappointed	48.177	2	24.088	2.460	.092	.058	4.921	.481
	E3_21_SG_ExtentYouFeltAnticipation	78.615	2	39.307	3.349	.040	.077	6.698	.617
	E3_7_SG_ExtentYouFeltTender	.116	1	.116	.013	.908	.000	.013	.052
SocDem_1_MaleOrFemale	E3_14_SG_ExtentYouFeltAwestruck	3.299	1	3.299	.372	.544	.005	.372	.093

	E3_15_SG_ExtentYouFeltDisappointed	6.133	1	6.133	.626	.431	.008	.626	.122
	E3_21_SG_ExtentYouFeltAnticipation	16.340	1	16.340	1.392	.242	.017	1.392	.214
	E3_7_SG_ExtentYouFeltTender	11.361	2	5.680	.660	.520	.016	1.320	.157
Musiccond * SocDem_1_MaleOrFemale	E3_14_SG_ExtentYouFeltAwestruck	4.039	2	2.019	.228	.797	.006	.456	.085
	E3_15_SG_ExtentYouFeltDisappointed	11.033	2	5.516	.563	.572	.014	1.127	.140
	E3_21_SG_ExtentYouFeltAnticipation	8.615	2	4.308	.367	.694	.009	.734	.107
	E3_7_SG_ExtentYouFeltTender	688.398	80	8.605					
	E3_14_SG_ExtentYouFeltAwestruck	709.336	80	8.867					
Error	E3_15_SG_ExtentYouFeltDisappointed	783.252	80	9.791					
	E3_21_SG_ExtentYouFeltAnticipation	938.940	80	11.737					
	E3_7_SG_ExtentYouFeltTender	1478.000	88						
	E3_14_SG_ExtentYouFeltAwestruck	1416.000	88						
Total	E3_15_SG_ExtentYouFeltDisappointed	4158.000	88						

	E3_21_SG_ExtentYouFeltAnticipation	2145.000	88						
	E3_7_SG_ExtentYouFeltTender	767.773	87						
	E3_14_SG_ExtentYouFeltAwestruck	804.364	87						
Corrected Total	E3_15_SG_ExtentYouFeltDisappointed	868.864	87						
	E3_21_SG_ExtentYouFeltAnticipation	1045.898	87						

a. R Squared = .103 (Adjusted R Squared = .025)
b. R Squared = .118 (Adjusted R Squared = .041)
c. R Squared = .099 (Adjusted R Squared = .020)
d. R Squared = .102 (Adjusted R Squared = .024)
e. Computed using alpha =

ESTIMATED MARGINAL MEANS

1. Music Experiment Condition

Dependent Variable	Music Experiment Condition	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
E3_7_SG_ExtentYouFeltTender	1-Rock Music	2.142[a]	.531	1.086	3.198
	2-Classical Music	3.105[a]	.562	1.986	4.223
	3-No Music	3.369[a]	.560	2.255	4.483
E3_14_SG_ExtentYouFeltAwestruck	1-Rock Music	1.735[a]	.539	.663	2.807
	2-Classical Music	3.047[a]	.571	1.911	4.182
	3-No Music	3.272[a]	.568	2.141	4.403
E3_15_SG_ExtentYouFeltDisappointed	1-Rock Music	5.146[a]	.566	4.019	6.272
	2-Classical Music	6.951[a]	.600	5.758	8.145
	3-No Music	6.391[a]	.597	5.203	7.579
E3_21_SG_ExtentYouFeltAnticipation	1-Rock Music	2.832[a]	.620	1.598	4.065
	2-Classical Music	2.933[a]	.657	1.626	4.239
	3-No Music	4.934[a]	.654	3.632	6.235

a. Covariates appearing in the model are evaluated at the following values: SocDem_4_PoliticalPhilosophy = 3.30, {Hours} on Internet Yesterday Corrected = 2.45499.

2. SocDem_1_MaleOrFemale

Dependent Variable	SocDem_1_MaleOrFemale	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
E3_7_SG_ExtentYouFeltTender	1-Male	2.909[a]	.444	2.026	3.792
	2-Female	2.835[a]	.453	1.932	3.737
E3_14_SG_ExtentYouFeltAwestruck	1-Male	2.486[a]	.451	1.589	3.383
	2-Female	2.883[a]	.460	1.967	3.799
E3_15_SG_ExtentYouFeltDisappointed	1-Male	5.892[a]	.473	4.950	6.834
	2-Female	6.434[a]	.484	5.471	7.396
E3_21_SG_ExtentYouFeltAnticipation	1-Male	4.008[a]	.518	2.977	5.040
	2-Female	3.124[a]	.530	2.070	4.178

a. Covariates appearing in the model are evaluated at the following values: SocDem_4_PoliticalPhilosophy = 3.30, {Hours} on Internet Yesterday Corrected = 2.45499.

3. Music Experiment Condition * SocDem_1_MaleOrFemale

Dependent Variable	Music Experiment Condition	SocDem_1_MaleOrFemale	Mean	Std. Error	95% Confidence Interval	
					Lower Bound	Upper Bound
E3_7_SG_ExtentYouFeltTender	1-Rock Music	1-Male	2.593[a]	.742	1.117	4.069
		2-Female	1.690[a]	.749	.199	3.181
	2-Classical Music	1-Male	2.666[a]	.815	1.043	4.289
		2-Female	3.543[a]	.793	1.965	5.122
	3-No Music	1-Male	3.468[a]	.769	1.938	4.998
		2-Female	3.270[a]	.814	1.651	4.890
E3_14_SG_ExtentYouFeltAwestruck	1-Rock Music	1-Male	1.813[a]	.753	.314	3.311
		2-Female	1.657[a]	.760	.144	3.170
	2-Classical Music	1-Male	2.595[a]	.828	.948	4.242
		2-Female	3.498[a]	.805	1.896	5.101
	3-No Music	1-Male	3.050[a]	.781	1.497	4.603
		2-Female	3.494[a]	.826	1.850	5.139
E3_15_SG_ExtentYo	1-Rock Music	1-Male	5.227[a]	.791	3.652	6.801
		2-Female	5.064[a]	.799	3.474	6.655

uFeltDisappointed	2-Classical Music	1-Male	6.181[a]	.870	4.450	7.912
		2-Female	7.722[a]	.846	6.038	9.405
	3-No Music	1-Male	6.267[a]	.820	4.635	7.900
		2-Female	6.514[a]	.868	4.787	8.242
	1-Rock Music	1-Male	3.669[a]	.866	1.945	5.393
		2-Female	1.994[a]	.875	.253	3.735
E3_21_SG_ExtentYouFeltAnticipation	2-Classical Music	1-Male	3.353[a]	.952	1.458	5.248
		2-Female	2.512[a]	.926	.668	4.356
	3-No Music	1-Male	5.002[a]	.898	3.214	6.789
		2-Female	4.865[a]	.951	2.974	6.757

a. Covariates appearing in the model are evaluated at the following values: SocDem_4_PoliticalPhilosophy = 3.30, {Hours} on Internet Yesterday Corrected = 2.45499.

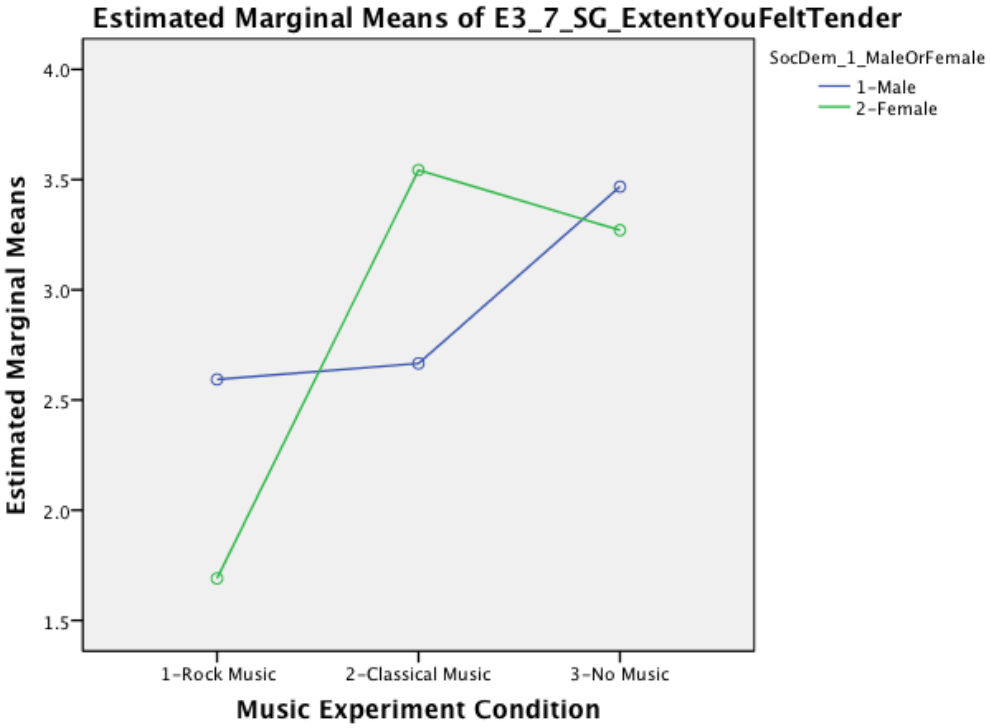
4. Grand Mean

Dependent Variable	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
E3_7_SG_ExtentYouFeltTender	2.872[a]	.314	2.248	3.496
E3_14_SG_ExtentYouFeltAwestruck	2.685[a]	.318	2.051	3.318
E3_15_SG_ExtentYouFeltDisappointed	6.163[a]	.335	5.497	6.828
E3_21_SG_ExtentYouFeltAnticipation	3.566[a]	.366	2.837	4.295

a. Covariates appearing in the model are evaluated at the following values: SocDem_4_PoliticalPhilosophy = 3.30, {Hours} on Internet Yesterday Corrected = 2.45499.

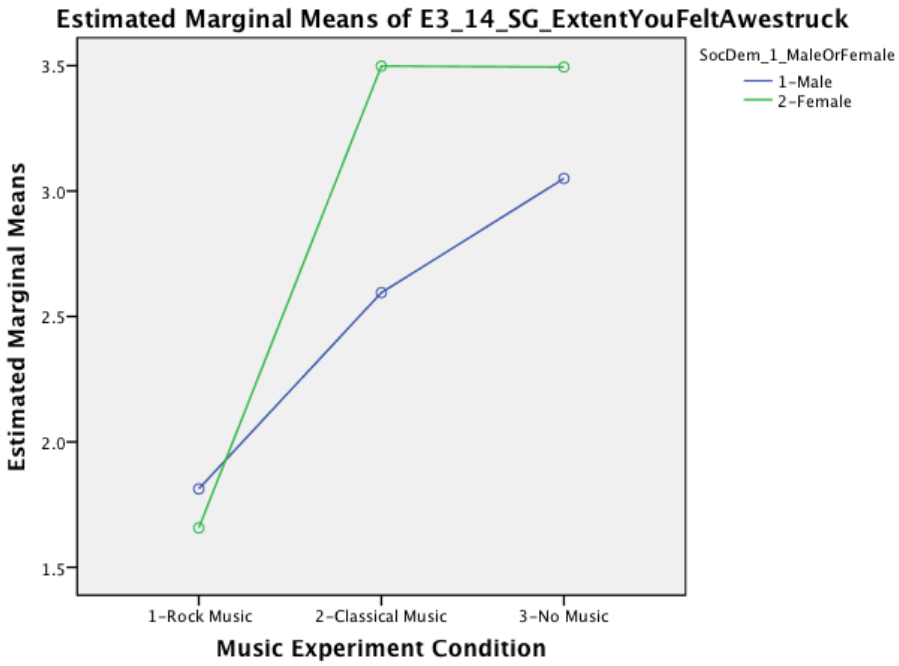
PROFILE PLOTS

E3_7_SG_ExtentYouFeltTender



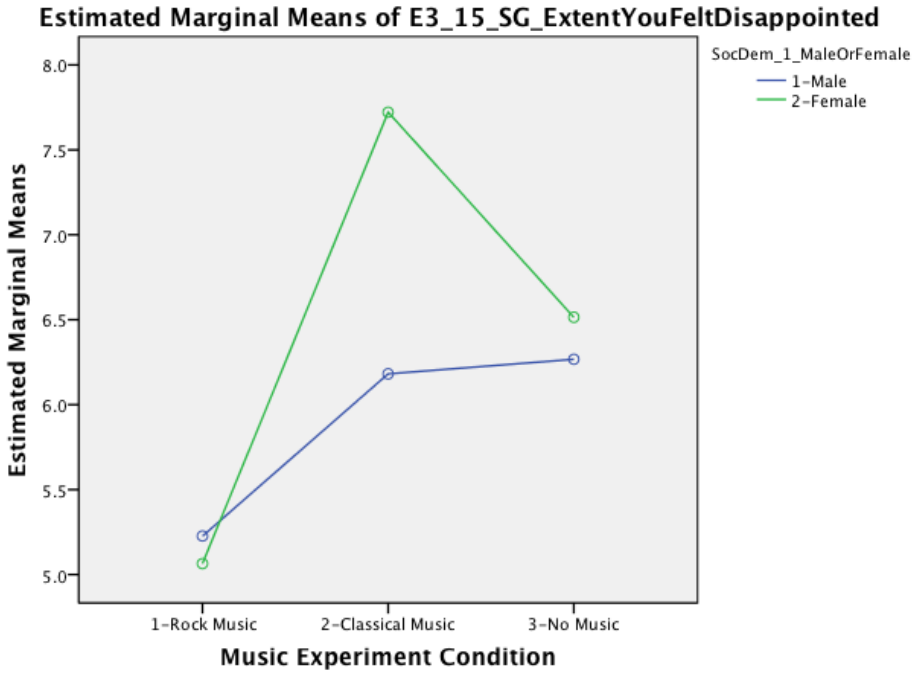
Covariates appearing in the model are evaluated at the following values:
SocDem_4_PoliticalPhilosophy = 3.30, {Hours} on Internet Yesterday Corrected = 2.45499

E3_14_SG_ExtentYouFeltAwestruck



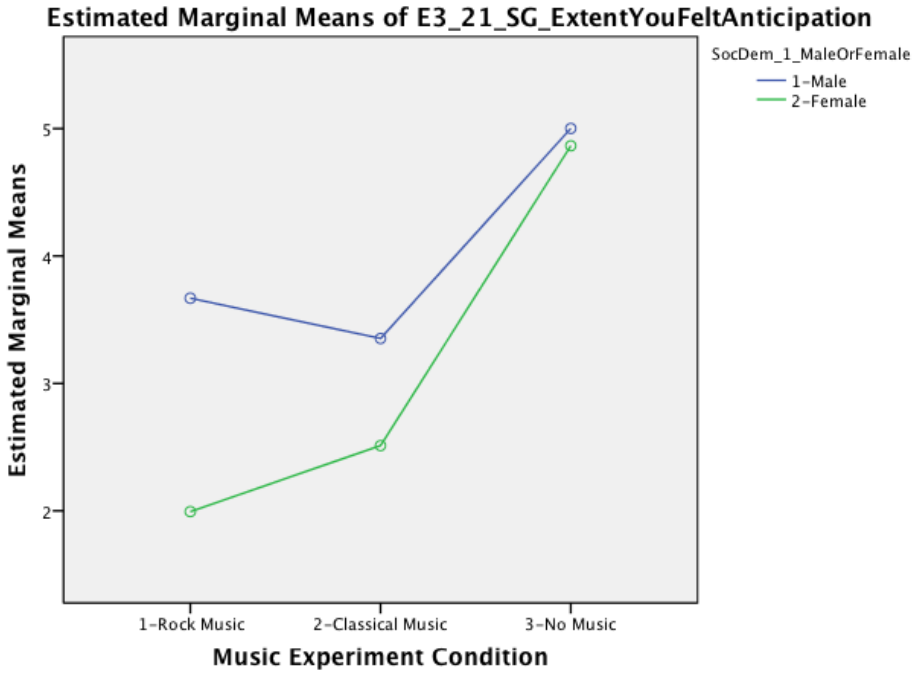
Covariates appearing in the model are evaluated at the following values:
SocDem_4_PoliticalPhilosophy = 3.30, {Hours} on Internet Yesterday Corrected = 2.45499

E3_15_SG_ExtentYouFeltDisappointed



Covariates appearing in the model are evaluated at the following values:
SocDem_4_PoliticalPhilosophy = 3.30, {Hours} on Internet Yesterday Corrected = 2.45499

E3_21_SG_ExtentYouFeltAnticipation



Covariates appearing in the model are evaluated at the following values:
SocDem_4_PoliticalPhilosophy = 3.30, {Hours} on Internet Yesterday Corrected = 2.45499

IV. TABLING RESULTS

Table 1 Multivariate Tests for MANCOVA

Effect		Value	F-Value	Sig.	Power
Political Philosopy (Covariate)	Pillai's Trace	.033	.652[b]	.627	.204
	Wilks' Lambda	.967	.652[b]	.627	.204
	Hotelling's Trace	.034	.652[b]	.627	.204
	Roy's Largest Root	.034	.652[b]	.627	.204
Hours on Internet (Covariate)	Pillai's Trace	.077	1.595[b]	.184	.470
	Wilks' Lambda	.923	1.595[b]	.184	.470
	Hotelling's Trace	.083	1.595[b]	.184	.470
	Roy's Largest Root	.083	1.595[b]	.184	.470
Music Condition (main effect)	Pillai's Trace	.154	1.630	.120	.703
	Wilks' Lambda	.852	1.609[b]	.077	.696
	Hotelling's Trace	.167	1.589	.132	.689
	Roy's Largest Root	.088	1.721[c]	.154	.504
Sex (main effect)	Pillai's Trace	.042	.852[b]	.497	.260
	Wilks' Lambda	.958	.852[b]	.497	.260
	Hotelling's Trace	.044	.852[b]	.497	.260
	Roy's Largest Root	.044	.852[b]	.497	.260
Music Condition*Sex (interaction)	Pillai's Trace	.034	.341	.949	.161
	Wilks' Lambda	.966	.338[b]	.950	.159
	Hotelling's Trace	.035	.334	.952	.158
	Roy's Largest Root	.026	.511[c]	.728	.166

a. Exact statistic
b. Computed using alpha = .05
c. The statistic is an upper bound on F that yields a lower bound on the significance level.

ANCOVA TABLES

Table 2: DV Feeling Tender(E3_7_SG_ExtentYouFeltTender)

	Means	Sum of Squares	Df	Mean Square	F	Sig.	Power
Political Philosopy (C)	**-**	**4.777**	**1**	**4.777**	**.555**	**.458**	**.114**
Internet Hours (C)	**-**	**24.632**	**1**	**24.632**	**2.863**	**.095**	**.387**
Music Condition		**23.782**	**2**	**11.891**	**1.382**	**.257**	**.289**
1=Rock Music	**1.94**						
2=Classical Music	**3.25**						
3=No Music	**3.46**						
Sex		**.116**	**1**	**.116**	**.013**	**.908**	**.052**
1=Male	**3.02**						
2=Female	**2.65**						
Music Condition* Sex	**-**	**11.361**	**2**	**5.680**	**.660**	**.520**	**.157**
Error	**-**	**688.398**	**80**	**8.605**	**-**	**-**	**-**
Corrected Total	**-**	**767.773**	**87**	**-**	**-**	**-**	**-**

C = Covariate
NOTE: Rock Music (n=32), Classical Music (n=28), No Music (n=28), Male (n=45), Female (n=43)

Table 3: DV Feeling Awestruck(E3_14_SG_ExtentYouFeltAwestruck)

	Means	Sum of Squares	Df	Mean Square	F	Sig.	Power
Political Philosopy (C)	**-**	**11.477**	**1**	**11.477**	**1.294**	**.259**	**.203**
Internet Hours (C)	**-**	**20.508**	**1**	**20.508**	**2.313**	**.132**	**.324**
Music Condition		**39.258**	**2**	**19.629**	**2.214**	**.116**	**.439**
1=Rock Music	**1.53**						
2=Classical Music	**3.21**						
3=No Music	**3.32**						
Sex		**3.299**	**1**	**3.299**	**.372**	**.544**	**.093**
1=Male	**2.58**						
2=Female	**2.70**						
Music Condition* Sex	**-**	**4.039**	**2**	**2.019**	**.228**	**.797**	**.085**
Error	**-**	**709.336**	**80**	**8.867**	**-**	**-**	**-**
Corrected Total	**-**	**804.364**	**87**	**-**	**-**	**-**	**-**

C = Covariate

Table 4: DV Feeling Disappointed(E3_15_SG_ExtentYouFeltDisappointed)

	Means	Sum of Squares	Df	Mean Square	F	Sig.	Power
Political Philosopy (C)	**-**	**9.491**	**1**	**9.491**	**.969**	**.328**	**.163**
Internet Hours (C)	**-**	**.148**	**1**	**.148**	**.015**	**.903**	**.052**
Music Condition		**48.177**	**2**	**24.088**	**2.460**	**.092**	**.481**
1=Rock Music	**5.09**						
2=Classical Music	**7.04**						
3=No Music	**6.36**						
Sex		**6.133**	**1**	**6.133**	**.626**	**.431**	**.122**
1=Male	**5.89**						
2=Female	**6.35**						
Music Condition* Sex	**-**	**11.033**	**2**	**5.516**	**.563**	**.572**	**.140**
Error	**-**	**783.252**	**80**	**9.791**	**-**	**-**	**-**
Corrected Total	**-**	**868.864**	**87**	**-**	**-**	**-**	**-**

C = Covariate

Table 5: DV Feeling Anticipation(E3_21_SG_ExtentYouFeltAnticipation)

	Means	Sum of Squares	Df	Mean Square	F	Sig.	Power
Political Philosopy (C)	**-**	**1.287**	**1**	**1.287**	**.110**	**.741**	**.062**
Internet Hours (C)	**-**	**6.616**	**1**	**6.616**	**.564**	**.455**	**.115**
Music Condition		**78.615**	**2**	**39.307**	**3.349**	**.040**	**.617**
1=Rock Music	**2.94**						
2=Classical Music	**2.86**						
3=No Music	**4.89**						
Sex		**16.340**	**1**	**16.340**	**1.392**	**.242**	**.214**
1=Male	**3.96**						
2=Female	**3.09**						
Music Condition* Sex	**-**	**8.615**	**2**	**4.308**	**.367**	**.694**	**.107**
Error	**-**	**938.940**	**80**	**11.737**	**-**	**-**	**-**
Corrected Total	**-**	**1045.898**	**87**	**-**	**-**	**-**	**-**

C = Covariate

V. WRITEUP OF RESULTS

I entered two covariates to the initial MANOVA conducted by classmate Congrong. I added the following variables: political philosophy and hours spent on the Internet. Political philosophy variable put subjects into five categories from strong conservative to strong liberal. Hours spent on the Internet variable, measured via an open-ended item, was recoded by the authors to metric with a range from 0 hours to 10 hours. These covariates are controls for the MANCOVA.

After controlling for these additional covariates, none of the independent variables were significant. In the previous MANOVA, the researcher was able to find significance in music condition under Pillai's Trace (p = .044), Wilk's Lambda (.047), and Hotelling's Trace (.050). The researcher also found near-significance with Roy's Largest Root (.054). After MANCOVA was completed, no significance was found under the four measurements. SPSS shows the following statistics with their significance level: Pillai's Trace (p = .120), Wilk's Lambda (.077), Hotelling's Trace (.132), and Roy's (.154). Due to this, we are under no obligation to examine the ANCOVA tables since nothing is significant.

For giggles, I compared the ANOVA tables from the previous MANOVA with my ANCOVA tables for my MANCOVA. Interestingly, the independent variables lost significance for every dependent variable when controlling for political philosophy and hours on the Internet, although these two covariates were not significant contributors to the dependent variables.

Ultimately, there is probably an underlying condition that is not noted in this model. A hint comes for the Levene Test which shows a p = .001 significance for Feeling Tender and a .040 for Feeling Disappointed, indicating unequal error (residual) variances across the independent variable groups. You are looking for nonsignificance but in this case we have it.