

Survey Project  
Data Analysis Guide

I. Computing Scale Scores.

- In the data file that I have given you, I have already done the following.

- Reverse scored all of the appropriate items.

For: Aggression Questionnaire: items 15 (part of Anger Subscale) & 24 (part of Physical Aggression Subscale)

- A new variable was created for each of these so that a higher score indicates greater Anger and Physical Aggression, respectively.

- Select **Transform** from the pull down menu in the data editor window

- Transform => Compute

- Target Variable = ag15r

- Variable Label = aq15 reversed (6-aq15)

- Numeric Expression = 6-aq15

- Because the Aggression Questionnaire asks participants to rate each item using a 5 point numerical rating scale, subtracting each person's score from 6 turns all the 5s into 1s and all the 1s to 5s. This keeps the meaning of responses to these items consistent with the other items in the scale, where a higher score indicates greater aggressiveness.

- Calculated Cronbach's Alpha Coefficient (measure of internal consistency)

Bem Sex Role Inventory:

Masculinity - .88

Femininity - .84

Beck Depression Inventory: .81

Aggression Questionnaire:

Physical Aggression .86

Verbal Aggression .79

Anger .80

Hostility .69

Note: Report these alphas with the means, standard deviation, and ranges in the *Measures* section of the methods.

Remember that the Acceptable alphas are .70 or above. Hostility is a little low, but it is probably OK to use.

- Using the Compute commands, I averaged the items of each scale together to form a single score for each measure.

I computed the Bem Sex Role Inventory Masculinity score, which is the average of the Masculine items, by doing the following:

- Select **Transform** from the pull down menu in the data editor window

- Transform => Compute.

- Target Variable = masc

- Variable Label = Masculinity (BSRI - items averaged)

- Numeric Expression: mean(bsri1, bsri4, bsri7, bsri10, bsri13, bsri16, bsri19, bsri22, bsri25, bsri28, bsri31, bsri34, bsri37, bsri40, bsri43, bsri46, bsri49, bsri52, bsri55, bsri58) .

Note: The mean function averages all the responses on these items together for each subject. Also, for subjects with missing data it only averages the

items for which they have data (which essentially replaces the missing value with the mean all the remaining items).

- Click OK when you are done and the new variable is added to the end (right) of the data view spreadsheet (bottom of the variable view spreadsheet).

Bem Sex Role Inventory Femininity score: Average of Feminine Items

- Select **Transform** from the pull down menu in the data editor window
- Transform => Compute.
- Target Variable = fem
- Variable Label = Femininity (BSRI - items averaged)
- Numeric Expression:  $fem = \text{mean}(bsri2, bsri5, bsri8, bsri11, bsri14, bsri17, bsri20, bsri23, bsri26, bsri29, bsri32, bsri35, bsri38, bsri41, bsri44, bsri47, bsri50, bsri53, bsri56, bsri59)$

Beck Depression Inventory: Average of all scale items.

Note: the BDI is often scored using a total score rather than an average. We use an average here since we are not using this for clinical purposes and to easily deal with missing data.

Also Note that Item 20 was dropped due to a typo in the questionnaire.

- Select **Transform** from the pull down menu in the data editor window
- Transform => Compute.
- Target Variable = bdi
- Variable Label = Beck Depression Score (BDI - items averaged)
- Numeric Expression:  $\text{mean}(bdi1, bdi2, bdi3, bdi4, bdi5, bdi6, bdi7, bdi8, bdi9, bdi10, bdi11, bdi12, bdi13, bdi14, bdi15, bdi16, bdi17, bdi18, bdi19, bdi21)$  .

Aggression Questionnaire - Physical Aggression. Average of all Physical Aggression items.

- Select **Transform** from the pull down menu in the data editor window
- Transform => Compute.
- Target Variable = physagg
- Variable Label = Physical Aggression (AQ - items averaged)
- Numeric Expression:  $\text{mean}(aq1, aq5, aq9, aq13, aq17, aq21, aq24r, aq27, aq29)$  .

Aggression Questionnaire - Verbal Aggression. Average of all Verbal Aggression items.

- Select **Transform** from the pull down menu in the data editor window
- Transform => Compute.
- Target Variable = verbagg
- Variable Label = Verbal Aggression (AQ - items averaged)
- Numeric Expression:  $\text{mean}(aq2, aq6, aq10, aq14, aq18)$  .

Aggression Questionnaire - Anger. Average of all Anger items.

- Select **Transform** from the pull down menu in the data editor window
- Transform => Compute.
- Target Variable = anger
- Variable Label = Anger (AQ - items averaged)
- Numeric Expression:  $\text{mean}(aq3, aq7, aq11, aq15r, aq19, aq22, aq25)$  .

Aggression Questionnaire - Hostility. Average of all Hostility items.

- Select **Transform** from the pull down menu in the data editor window
- Transform => Compute.
- Target Variable = hostile
- Variable Label =Hostility (AQ - items averaged)
- Numeric Expression: mean(aq4, aq8, aq12, aq16, aq20, aq23, aq26, aq28) .

## II Descriptive Analyses

- Some of this information should be presented in the *Participants* section of the Methods. The rest will be reported in the *Measures* section of the Methods.

### A. Descriptive Analyses for Demographic Variables

#### 1. Frequencies for Discrete Variables.

- Analyze —> Descriptive Statistics—>Frequencies
  - Variable(s) = sex ethnic relstat order.
- Do not request any statistics or charts
- Paste to Syntax Sheet

#### FREQUENCIES

```
VARIABLES=sex ethnic relstat order  
/ORDER= ANALYSIS .
```

Report =

- *Participants* = Total number of Participants (n=?). Gender = % Male, % Female; Ethnicity %'s, Relationship Status %
- *Procedures* = Packet Order %

#### 2. Descriptive Statistics for Continuous Variables

- Analyze —> Descriptive Statistics—>Descriptives
  - Variable(s) = age, gpacur, gpahs
- Request all statistics = Mean, Sum, Kurtosis, Skewness, Standard Deviation, Variance, Range, Minimum, Maximum, Standard Error of the Mean.
- Paste to Syntax Sheet

#### DESCRIPTIVES

```
VARIABLES=age gpacur gpahs  
/STATISTICS=MEAN SUM STDDEV VARIANCE RANGE MIN MAX SEMEAN KURTOSIS SKEWNESS .
```

Report =

- *Participants* = Age range (Minimum age - Maximum age), Mean Age, Mean and standard deviation for current GPA

### B. Descriptive Analyses for Main Variables

#### 1. Descriptive Statistics for Continuous Variables

- Analyze —> Descriptive Statistics—>Descriptives
  - Variable(s) = masc, fem, bdi, physagg, verbagg, anger, hostile.
- Request all statistics = Mean, Sum, Kurtosis, Skewness, Standard Deviation, Variance, Range, Minimum, Maximum, Standard Error of the Mean.
- Paste to Syntax Sheet

#### DESCRIPTIVES

VARIABLES=masc fem bdi physagg verbagg anger hostil  
/STATISTICS=MEAN SUM STDDEV VARIANCE RANGE MIN MAX SEMEAN KURTOSIS SKEWNESS .

Report =

- *Measures* = For each measure (Masculinity, Femininity, Depression, Physical Aggression, Verbal Aggression, Anger, and Hostility), provide separate paragraphs describing each measure (type and number of items), what it asks participants to do (e.g. characteristics of the rating scale), sample items, how it is scored (summed vs averaged), and what a high/low score indicates. Also, at the end of each paragraph present the *M*, *SD*, *Range* and Cronbach's Alpha for each scale.
- Descriptive data could also be reported in a single table.

### III. Demographic Analyses

- Should be reported as the first sub-section of the Results section.
- Age and GPA x Main Variables (masc, fem, bdi, physagg, verbagg, anger, hostil)
  - Analyze => Correlate => Bivariate
  - Variables = masc, fem, bdi, physagg, verbagg, anger, hostil, age, gpacur, gpahs
  - Paste.

Note: in the syntax of the correlation you will need to insert the word "with" in the list of variables between **hostil** and **age**. This will break the correlations up so that you get a 2 x 7 matrix of correlations instead of a 9 x 9 list of correlations. It really makes reading the output much easier, though it will not show you the correlations between age and gpacur and gpahs, nor will it show the correlations between the main variables (e.g., masc with bdi).

### CORRELATIONS

/VARIABLES=masc fem bdi physagg verbagg anger hostil with age gpacur gpahs  
/PRINT=TWOTAIL NOSIG  
/MISSING=PAIRWISE .

- Sex x Main Variables
  - Analyze => Compare Means => Independent Samples T Test
  - Test Variables = masc, fem, bdi, physagg, verbagg, anger, hostil
  - Grouping Variable = sex
    - Define Groups: Use Specified Values: Group 1 = 1, Group 2 = 2.
  - Paste.

### T-TEST

GROUPS = sex(1 2)  
/MISSING = ANALYSIS  
/VARIABLES=masc fem bdi physagg verbagg anger hostil  
/CRITERIA = CI(.95) .

- Ethnicity, Relationship Status, & Order x Main Variables
  - Normally you would need to test all of the demographic variables with the main variables of interest. However, I have already done these and none of them are significant. As the analyses below will not be covered until you take 202, you do not have to run them. However, if you decide to do them, they can be completed by following the steps below.
  - Analyze => Compare Means => One Way Anova
  - Dependent List =masc, fem, bdi, physagg, verbagg, anger, hostil
  - Factor = ethnic
  - Post Hoc = LSD
  - Options = Descriptives

- Paste

Once you paste the syntax for the Ethnicity Anova, just copy it and paste it and replace **ethnic** with **relstat**. Then paste it again and replace **ethnic** with **order**. So you will end up with three separate Oneway syntax commands.

ONEWAY

```
masc fem bdi physagg verbagg anger hostile BY ethnic
/STATISTICS DESCRIPTIVES
/MISSING ANALYSIS
/POSTHOC = LSD ALPHA(.05).
```

ONEWAY

```
masc fem bdi physagg verbagg anger hostile BY relstat
/STATISTICS DESCRIPTIVES
/MISSING ANALYSIS
/POSTHOC = LSD ALPHA(.05).
```

ONEWAY

```
masc fem bdi physagg verbagg anger hostile BY order
/STATISTICS DESCRIPTIVES
/MISSING ANALYSIS
/POSTHOC = LSD ALPHA(.05).
```

### Reporting Results

- For the demographic analyses section, only report the statistical information for analyses that are significant.

## IV. Main Analyses

- Correlations between Gender/Sex Roles, Depression, and Aggression Scales
  - Analyze => Correlate => Bivariate
  - Variables = bdi physagg verbagg anger hostile masc fem
  - Paste and insert “with” between **hostile** and **masc** before you run them.

CORRELATIONS

```
/VARIABLES=bdi physagg verbagg anger hostile with masc fem
/PRINT=TWOTAIL NOSIG
/MISSING=PAIRWISE .
```

- Report

- I would like for you to report the correlations in a table and in the text of the Main analyses section. (Though normally you would do one or the other, but you need the practice)
- The format for reporting a correlation is  $r(df) = .??, p < .0?$ .
- If the correlation is non-significant then  $r(df) = .??, p > .05$ . Or  $r(df) = .??, p < .??, ns$ .
- Remember, for each analysis, restate the hypothesis, tell how it was tested (Pearson's Product Moment Coefficient or Pearson's  $r$ ), tell whether it was significant and report the statistic, and then tell the reader what it means with respect to people and their behaviors (see the paper writing guides for examples)

The table should look something like the one below (it should be on its own page after the references)

Table 1

*Correlations between Masculinity and Femininity and Depression and Aggression Subscales*

BSRI	Depression	Aggression Subscales			
		Physical Aggression	Verbal Aggression	Anger	Hostility
Masculinity	.??**	.??**	.??**	.??**	.??**
Femininity	.??**	.??**	.??**	.??**	.??**

Note. \* =  $p < .05$ , \*\* =  $p < .01$ , \*\*\* =  $p < .001$ .