



Outline (*this is 1 of 2 – and quick!*)

- **Minor Options**
 - Avoid “Pie Charts”
 - Bar Charts, Stem & Leaf Plots
 - Time Series
- **Other Conventions**
 - Heatmaps
 - Sociograms (Social Network Analysis diagrams)
 - GIS Charts
- **Invention & Innovation**
 - Beer Graphs *et al*
- **Bad Graphs**
 - Misleading Patterns
 - Spurious Correlations
- **Second lecture ppt – SPSS intro**

SOC424 – Statistics w/ Dr. Ellis Godard

DATA DISPLAY:

Options, Conventions, Inventions, & Concerns

Stem and Leaf Diagrams

- Visualization of the actual numbers, using their digits
- The *stems* are the *leading* digit(s)
- The *leaves* are the *trailing* digits.
 - for a score of 83, the stem is 8 and the leaf is 3
 - for a score of 45, the stem is 4 and the leaf is 5.

Where we are...

| # | Date | Read (5th) | Due | Area | Lecture Topic | Lab # | Lab Assignment | T Lab | R Lab |
|----|------------|------------------|-----|-------------------|------------------------------------|-----------|------------------------|-----------------|-----------------|
| 1 | Tue Aug 25 | | | Orientation | Welcome & Orientation | | | | |
| 2 | Thu Aug 28 | 1.1 to 1.4 | | | Basic Terms | | | | |
| 3 | Tue Sep 2 | 2.1 & 2.5 | | | Measurement Issues | 1 | Levels / Age 3x | 1 | |
| 4 | Thu Sep 4 | | | | Data Organization | | | | |
| 5 | Tue Sep 9 | | | HW1 (Description) | Display & Analysis (Shapes & SPSS) | 3 | Total Miles | 2, 3 | |
| 6 | Thu Sep 11 | 3.2 & 3.5 | | | Central tendency | 4 | CI | | 3, 4 |
| 7 | Tue Sep 16 | 3.3 & 3.4 | | | Dispersion | 5 | Dispersion | 4, 5 | |
| 8 | Thu Sep 18 | 3.7 | | | Indices & Data Cleaning | 6 | Music Index | | 5, 6 |
| 9 | Tue Sep 23 | 4.2 | | | Probability & Z Scores | 7 | Standardizing Scores | 6, 7 | |
| 10 | Thu Sep 25 | 4.3 | | | Z & Pz | 8 | Table A | | 7, 8 |
| 11 | Tue Sep 30 | 3.6 & 5.1 | | HW2 | Parameters & Pt Estimation | 9 | Distances | 8, 9 | |
| 12 | Thu Oct 2 | 2.2 to 2.4 & 4.3 | | | The Central Limit Theorem | 11-EC | CI for Means (EC) | 10, 11* | 9, 10 |
| 13 | Tue Oct 7 | 4.4 to 4.6 | | | Confidence Intervals | 12 | CI for Intervals | | 11*, 12 |
| 14 | Thu Oct 9 | 5.3 | | | CI for Proportions | 13 | CI for Proportions | 12, 13 | |
| 15 | Tue Oct 14 | | | HW3 | Hypotesting & Zs | 14 | Writing Hypotheses | | 13, 14 |
| 16 | Thu Oct 16 | 6.1 & 6.4 | | | Hypotesting for Large ns | 15 | Two Tails | 14, 15 | |
| 17 | Thu Oct 23 | 6.3 & 6.8 | | HW4 | The “t” test, for small ns | 16 | CI & Test Ages | | 15, 16 |
| 18 | Tue Oct 28 | 6.4 | | | Sample Size Estimation | 17 | Estimating n Needed | 16, 17 | |
| 19 | Thu Oct 30 | 7.1, 7.3, & 10.1 | | | Differences in Means | 18 | Comparing Means | 17, 18 | |
| 20 | Tue Nov 4 | 7.2 | | HW5 | Differences in Proportions | 19 | Comparing Proportions | 18, 19 | |
| 21 | Thu Nov 6 | 12.1 | | | Analysis of Variance | 20, 21-EC | ANOVA (+ MODELS EC) | | 19, 20, 21 |
| 22 | Tue Nov 11 | | | | Scatterplots & Correlation | 22 | Grade Correlations | | |
| 23 | Thu Nov 13 | 9.4 & 9.5 | | | Regression | 23 | Regression Lab | 20, 21*, 22, 23 | |
| 24 | Tue Nov 18 | 8.1 to 9.3 | | HW6 | Multiple Regression | 24-EC | Multiple Reg (EC) | | 23, 24* |
| 25 | Thu Nov 20 | 10.2 & 11.1 | | | Crosstabulations | 25 | TBA (any) | 24*, 25 | |
| 26 | Tue Nov 25 | 8.1 | | HW7 | Dependence | 26, 27-EC | TBA (SCU) (& 27-EC) | 26, 27* | |
| 27 | Thu Dec 2 | 8.2 & p.233 | | | Association | 28-EC | Measures of Assoc (EC) | | 25, 26, 27*, 28 |
| 28 | Tue Dec 4 | pp.238 to 243 | | HW8 | | | | | |
| 29 | Thu Dec 9 | | | | | | | | |
| 30 | Tue Dec 15 | | | | | | | | |

Stem and Leaf Diagram

Percent of Liberal Stands

| Stem | Leaf |
|------|---------|
| 0 | 00000 |
| 1 | 215 |
| 2 | 09721 |
| 3 | 0313 |
| 4 | 3797 |
| 5 | 5281 |
| 6 | 5813195 |
| 7 | 93 |
| 8 | 40 |
| 9 | 151 |

Note that I am using a Courier Font for this Diagram instead of Time Roman. Why?









