Notes for Sessions 1, 4, 5

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Basic Terms

- HTML: HyperText Markup Language: Displays content. Not case sensitive.
- CSS: Cascading Style Sheets: Formats the Content
- JavaScript: Programming language ≠ Java, but some similarities to Java that is used to create dynamic content. Runs Client Side. Interpreted by Browser. Case-sensitive: x ≠ X, caT ≠ cat.
- Server Side: Server software (e.g. Apache), CGI = Common Gateway Interface scripting. Perl = Practical Extraction and Reporting Language; PhP = PersonalHomePage Hyptertext Preprocessor. For more: see Birnbaum & Reips (2005), Reips & Birnbaum (2011), Göritz & Birnbaum (2005), W3 Schools.

Goals for First Session

- Students sign up for free Web site at neocities.org.
- Assign Basic HTML tutorial at Neocities.
- Basic HTML: Bare bones Web page. Basic HTML tags.
- Concept of forms. Radio buttons, text box, and hidden input types. Submit button.
- Introduction to CSS
- FactorWiz: Heider Study (also do liking (adjectives) and logic test)
- Intro to data cleaning, organization, & analysis with Excel.
- * Additive and Multiplicative models' predictions; graphing data.
- * Fit Multiplicative Model with Excel's Solver. [Install Solver (Add-ins)]
- * Analyze class data to test additive (or constant-weight averaging) model.

HTML: Bare Bones Web Page

```
<html>
<head>
<title>
My title goes here
</title>
</head>
<body>
The body of the Web page goes here
</body>
</html>
```

Save Bare Bones Page

- Short file name, no spaces, attend to capitalization: e.g., bare_bone.htm (use underscore instead of space for easy read)
- Open in browser. Edit in text editor. Save and Reload in browser to see editing changes.
- Upload to your Website. View and edit in the Neocities site. Note the editor will highlight the tags and will show errors.
- Dedicated HTML editing software.

Session 4: Basics II (Data Analysis)

- How to Import a .csv file to Excel using *Text to Columns*
- How to Separate data using Autofilters in Excel
- How to find means in Excel, use *Paste Special* and *Paste Link*
- How to draw line graph and scatterplot line graph with multiple rows.
- How to make a PivotTable.
- How to name cells, write equations, & plot predictions.
- Additive model → parallel lines; no crossovers. No interaction.
- Multiplicative model → curves that cross in single point. Bilinear.

Session 4: Basics II (Continued)

- Use SUMXMY2 to find sum of squared deviations between arrays.
- How to use the Solver to fit a model to data.
- How to look for systematic violations of a model and assess the compatibility of a model (don't emphasize fit numbers, but properties of the data that are diagnostic of differences among theories.)
- Results of Heider Experiment: Even with 14 Ss, we could replicate the crossover pattern, which was consistent with a multiplicative model. We can REJECT the additive model. We can RETAIN the multiplicative model that extends Heider's Balance Theory.

Session 5

- Data Analysis of the Liking Task (combinations of adjectives) shows we can REJECT the following model:
- P1: row and column adjectives have independent values: s(i) = f(adjective i); t(j) = g(adjective j)
- P2: subjective impression of liking is the sum of the component values (or a constant weight average of the values):

$$\Psi(i,j) = s(i) + s(j) \text{ or}$$
$$\Psi(i,j) = [w_0 s + w_1 s(i) + w_2 t(j)]/[w_0 + w_1 + w_2]$$

- P3: $R(i,j) = a\Psi(i,j) + b$

Two Rival Theories Remaining

- Theory 1: Premise 2 is False; instead there is a real interaction between the adjectives when they are combined. Suppose the lower-valued item gets greater configural weight.
- Theory 2: Premise 2 can be retained if we replace Premise 3 with the idea that the response is NOT a linear function of subjective value, but instead, the judgment function is not linear:
- P3*: $R(i,j) = J[\Psi(i,j)]$, where J is positively accelerated, monotonic function.
- These two theories can be tested against each other by other experiments. Theory 2 was rejected; Theory 1 could be retained.