Errata for


Most recent update: March 4, 2009

Please send information about any errors in the book to Dr. Rebecca Warner at rmw@unh.edu

Back cover: The instructor resource materials are not posted on the companion study site at www.sagepub.com/warnerstudy. However, this site has email contact information to request a CD-ROM with datasets in Excel and SPSS formats, answers to all comprehension questions, and PowerPoint presentations.

Chapter 3
p. 107, second paragraph
The second paragraph, line 6, presently says: "Statistical power corresponds to (1-β), where β is the risk of committing a Type I error." This sentence should instead state that β is the risk of committing a **Type II** error.

Chapter 4
Page 151, Figure 4.26 (Preliminary Data Screening):
The skewness value in the top panel of Figure 4.26 is for the distribution shown in Figure 4.19 (a histogram of approximately normally distributed heart rates). The skewness values in the bottom panel of Figure 4.26 describe the positively skewed and negatively skewed distributions (shown in Figures 4.20 and 4.21).
Chapter 4
Replacement for Figure 4.48 on page 171
The only change is in the X axis tick mark labels. I have added Kg as the unit for the top line of values and added the base 10 values below.

Chapter 5
Page 209, fourth line: this should read “Thus, using $\alpha = .05…$”

Chapter 6
Page 236, equation 6.28, should be modified. In the divisor for the t test, $MS_{within}$ should be multiplied by 2 as shown below. On page 240, in Equation 6.29, the factor of 2 does not appear because Tukey multiplied his q (studentized range statistic) values by the square root of two in order to simplify the formula.

$$t = \frac{M_a - M_b}{\sqrt{2 * MS_{within}/n}}$$
(corrected version of Equation 6.28)
Chapter 7,

Page 261: There is a typographic error in Table 7.1. For “Length of the dating relationship” the code 4 for relationship length represents 2 years, not 12 years.

Page 285: 

Below is a replacement for Figure 7.20 on page 285
The only change: Y axis value labels have been changed. It seemed odd to some readers that the scores on drug use could be negative, and the scale used was arbitrary; I changed the scale on the Y axis to begin at 0 in all three of the graphs included in Figure 7.20
Figure 7.20 Scatter Plot for Interaction between Gender and EI as Predictors of Drug Use
“Different slopes for different folks”

Correlation between EI and Drug Use for entire sample: $r(243) = -0.60$, $p < .001$
Correlation within female subgroup (closed square markers): $r(112) = -0.11$, ns
Correlation within male subgroup (open triangular markers): $r(131) = -0.73$, $p < .001$

EI and Drug Use, Entire Sample:
Replacement for Figure 7.22

The arrows in the middle panel of Figure 7.22 did not appear correctly in the most recent PDF proofs. See the figure below; only the center panel among the three panels has been changed, but I also added more numerical values for \( Z_x \) and \( Z'_y \) in order to make it clearer how values of \( Z_x \) map onto values of \( Z'_y \).

<table>
<thead>
<tr>
<th>( r = +1.00 )</th>
<th>( r = +.50 )</th>
<th>( r = .00 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>( Z'_y )</td>
<td>( Z_x )</td>
<td>( Z'_y )</td>
</tr>
<tr>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
</tr>
<tr>
<td>2.5</td>
<td>2.5</td>
<td>2.5</td>
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<td>1.0</td>
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<td>.5</td>
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<td>0</td>
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<td>0</td>
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<tr>
<td>-.5</td>
<td>-.5</td>
<td>-.5</td>
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<tr>
<td>-1.0</td>
<td>-1.0</td>
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<tr>
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<tr>
<td>-3.0</td>
<td>-3.0</td>
<td>-3.0</td>
</tr>
</tbody>
</table>

Chapter 7, end note, page 304:
The alternate formula for Pearson \( r \) in Note 1 at the bottom of page 1 should be corrected as follows:

Footnote 1: One version of the formula to calculate Pearson \( r \) from the raw scores on \( X \) and \( Y \) is as follows

\[
r_{xy} = \frac{\sum (XY) - (\sum X)(\sum Y)}{N} \quad \sqrt{\frac{\sum X^2 - (\sum X)^2}{N}} \cdot \frac{\sum Y^2 - (\sum Y)^2}{N}
\]

(Note to Sage: In the existing text, the \( \Sigma X \) and \( \Sigma Y \) terms in the numerator were shown as squared; please correct this equation so it appears as shown above).
Chapter 8, Correction to formula for Spearman r on page 317:

(Corrected Equation 8.2) \( r_s = 1 - \frac{6 \times \sum (d_i)^2}{n(n^2 - 1)} \)

Chapter 8, Table 8.7 on page 327

Note that the value of “13” in part (a) of this table (the sum of E = 5.9 and E = 8.1 under the Column headed “No”) should be replaced by 14 as shown in the revised table below.

<table>
<thead>
<tr>
<th>Dog Ownership</th>
<th>Survival Status</th>
<th>No</th>
<th>Yes</th>
<th>Row Total, N</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Expected cell frequencies (E)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td></td>
<td>( E = 5.9 )</td>
<td>( E = 33.1 )</td>
<td>39</td>
</tr>
<tr>
<td>Yes</td>
<td></td>
<td>( E = 8.1 )</td>
<td>( E = 44.9 )</td>
<td>53</td>
</tr>
<tr>
<td>Column total N</td>
<td></td>
<td><strong>14</strong></td>
<td>78</td>
<td>92</td>
</tr>
<tr>
<td>(b) Observed – expected cell frequencies (O – E)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td></td>
<td>((11 - 5.9) = +5.1)</td>
<td>((28 - 33.1) = -5.1)</td>
<td>0</td>
</tr>
<tr>
<td>Yes</td>
<td></td>
<td>((3 - 8.1) = -5.1)</td>
<td>((50 - 44.9) = +5.1)</td>
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<tr>
<td>Column total N</td>
<td></td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>
Chapter 10, page 397, Figure 10.15
There is a stray letter “e” below the X axis in this diagram that should be removed.

Chapter 12
Insert a footnote on p. 470 in section on unequal ns in data screening. Unequal numbers in groups make the interpretation of b coefficients for dummy variables more complex. For additional information about issues that should be considered when using dummy or effect codes to represent groups of unequal size, see Hardy, 199x, Dummy Variables in Regression. Thousand Oaks: CA, Sage Publications.

Page 477: There is an error in the text immediately below Figure 12.6. The sentence presently reads as follows: “This contrast was statistically significant: t(47) = -2.058, p = .036” …

It should be corrected to read thus:
“This contrast was statistically significant: t(47) = -2.082, p = .043”, that is, the t ratio for the Assume Equal Variances test should have been reported.

On page 490 and the first line of p. 491 replace the crossed out block of text with the new material that appears below:
We can add a term to the regression equation to represent a potential interaction between D and X by creating a new predictor variable that is the product between X (the quantitative predictor variable) and D (the dummy variable). Two steps are required. First, to reduce correlation or multicollinearity among predictors, we need to center the scores on both X and D, that is, subtract the mean of X from each X score and the mean of D from each D score. Then, we create a product term to represent the interaction by multiplying the centered X score by the centered D score for each person. Let \( X' = (X - M_x) \), that is, \( X \) – the mean of the \( X \) scores; and \( D' = (D - M_d) \), that is, \( D \) – the mean of the D scores. The new variable GenYears below is the product of \( D' \) with \( X' \) for each participant. See Jaccard & Turissi (2003) for further discussion of interaction terms in regression models. (It may be convenient to use centered scores also for the main effects of years; however, centering has no effect on the statistical significance or effect size for main effect terms in an interaction model.)

The SPSS Transform/Compute procedure can be used to create these centered scores and form the product of these centered scores. The regression equation to predict scores on Y from scores on D, X, and a D by X interaction then appears as follows:

\[
Y' = b_0 + b_1 D + b_2 X + b_3(D' \times X').
\]

(12.11)

In this empirical example, X or Years had a mean of 7, and therefore Years centered (\( X' \)) was computed by subtracting 7 from the score on Years. D or Geneff (effect coded scores for gender with -1 = female and +1 = male) had a mean of .2 (due to the unequal number...
of male and female participants); therefore the centered score on gender D’ was obtained by subtracting .2 from the effect codes for gender (geneff = -1, +1)) to obtain new codes (-1.2 for females and +.8 for males). Finally, Genyears was computed by forming the product of D’ times X’; or in this example, Genyears = gender centered multiplied by years centered. For the prediction of salary from gender and years of experience and an interaction between years and gender, the equation becomes:

Salaries = b₀ + b₁ x Geneff + b₂ x Yearscentered + b₃ x Genyears.

Replace this block of text on page 491:

Overall

\[
\text{Salary'} = b₀ + b₁ \times \text{Geneff} + b₂ \times \text{Yearscentered} + b₃ \times \text{Genyears},
\]

Salaries = 45.64 + 1.872 x Geneff + 1.391 x Yearscentered + .129 x Genyears.

For females (gender = 0 and genyears = 0) this prediction equation becomes

\[
\text{Salary'} = b₀ + b₁ \times 0 + b₂ \times \text{Years} + b₃ \times (0 \times \text{Years})
\]

\[
= b₀ + b₂ \times \text{Years}
\]

\[
= 35.12 + 1.24 \times \text{Years}.
\]

That is, for females, the predicted “starting salary” for a person with 6 years of experience is 35.12, and each one point increase in years of experience predicts a 1.24 increase annual salary (in thousands of dollars).

For males (gender = 1 and genyears = years), this prediction equation becomes

\[
\text{Salary'} = b₀ + (b₁ \times 1) + b₂ \times \text{Years} + b₃ \times (1 \times \text{Years})
\]

\[
= b₀ + b₁ \times \text{Years} + (b₂ + b₃) \times \text{Years}
\]

\[
= 35.12 + 1.94 + (1.24 + .26) \times \text{Years}
\]

\[
= 37.06 + 1.30 \times \text{Years}.
\]

With the following new material:

Overall

\[
\text{Salary'} = b₀ + b₁ \times \text{Geneff} + b₂ \times \text{Yearscentered} + b₃ \times \text{Genyears},
\]

\[
\text{Salary'} = 45.64 + 1.872 \times \text{Geneff} + 1.391 \times \text{Yearscentered} + .129 \times \text{Genyears}
\]

For females (with values of Geneff = -1 and Genyears = -1.2 x Yearscentered), this prediction equation becomes:

\[
\text{Salary'} = b₀ + b₁ \times (-1) + b₂ \times \text{Yearscentered} + b₃ \times \text{Genyears},
\]
Salary’ = 45.637 - 1.872 + 1.391 x Yearscentered + .129 x (-1.2) x YearsCentered

Salary’ = 43.765 + 1.236 x Yearscentered

That is, for females, the predicted starting salary for a woman with 0 years of experience (and a score of -7 on Yearscentered) becomes 35.11 and each one point increase in years of experience predicts a 1.236 increase in annual salary (in thousands of dollars).

For males (with values of Geneff = +1 and Genyears = +.8 x Yearscentered), this prediction equation becomes:

Salary’ = b_0 + b_1 x (+1) + b_2 * Yearscentered + b_3 x Genyears,

Salary’ = 45.637 + 1.872 + 1.391 x Yearscentered + .129 x (.8 x YearsCentered)

Salary’ = 47.51 + 1.49 x Yearscentered
Replace the bottom or fourth panel (Coefficients) in Figure 12.13 on page 492 with this new material:

<table>
<thead>
<tr>
<th>Model</th>
<th>B</th>
<th>Std. Error</th>
<th>Beta</th>
<th>t</th>
<th>Sig.</th>
<th>Zero-order</th>
<th>Partial</th>
<th>Part</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (Constant)</td>
<td>45.637</td>
<td>.773</td>
<td>.190</td>
<td>59.063</td>
<td>.000</td>
<td>.462</td>
<td>.336</td>
<td>.168</td>
</tr>
<tr>
<td>geneff</td>
<td>1.872</td>
<td>.773</td>
<td>.190</td>
<td>2.423</td>
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<td>.866</td>
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<td>.668</td>
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<td>yearscentered</td>
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<td>.145</td>
<td>.779</td>
<td>9.614</td>
<td>.000</td>
<td>.262</td>
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<td>.056</td>
</tr>
<tr>
<td>genbyyear</td>
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<td>.160</td>
<td>.062</td>
<td>.808</td>
<td>.423</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Coeficientsa

Model 1

<table>
<thead>
<tr>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
<th>Zero-order</th>
<th>Partial</th>
<th>Part</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td>t</td>
<td>Sig.</td>
<td>Zero-order</td>
<td>Partial</td>
</tr>
<tr>
<td>45.637</td>
<td>.773</td>
<td>.190</td>
<td>59.063</td>
<td>.000</td>
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<td>.336</td>
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<tr>
<td>1.872</td>
<td>.773</td>
<td>.190</td>
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<td>.866</td>
<td>.817</td>
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<tr>
<td>1.391</td>
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<td>.779</td>
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<td>.000</td>
<td>.262</td>
<td>.118</td>
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<tr>
<td>.129</td>
<td>.160</td>
<td>.062</td>
<td>.808</td>
<td>.423</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Chapter 14 Tables 14.3, 14.4 and 14.6

There are typographical errors in these two tables for regression results: Table 14.3 on page 576, Table 14.4 on page 582, and Table 14.6 on page 590. In all three of these tables, the second column of regression coefficients should have a heading label \( \beta \) instead of \( b \) as I have indicated on the marked copy of the first table below.

Chapter 14, page 598.

In the matrix algebra that follows the sentence:

“To check, we multiply \( FF^{-1} \) to make sure that the product is \( I \).”
The second row, first column element of $F^{-1}$ should be $-1/2$ (as shown in the earlier results).

Chapter 15
Pages 638 and 639 (Analysis of Covariance):
When looking at the unnumbered table on page 638 entitled "Unadjusted $\alpha_i$ Effect for Group", the $\alpha_{yi}$ for Group 1 is listed at -6.47, but on the next page (639) at the little unnumbered table entitled "Adjusted Y Deviation or Effect "Removing Part of the Y Mean that is Related to X_c", the Group 1 $\alpha_{yi}$ is listed at -6.48. This minor discrepancy is due to rounding error.

Chapter 17
Page 721 (Multivariate Analysis of Variance): In the first new paragraph below Figure 17.1, a sentence presently reads "… the Box M test was requested; using $\alpha = .10$ as the criterion for statistical significance…". For reasons discussed in Chapter 16, in this situation, it is reasonable to set a lower alpha level for Box M. According, this sentence on p. 721 should be corrected to read: "… the Box M test was requested; using $\alpha = .01$ as the criterion for statistical significance…”

Chapter 18
Page 771, last line on the page (Principal Components and Factor Analysis):
Currently reads: "An example of a scree plot appears in Figure 18.26". The scree plot is actually Figure 18.27.