Errata Page, 1st Edition: Printing 1 and 2

Chapter 2

p. 33. First sentence under 2.2.3: "the estimate's likely size" should be "the anticipated size of its error"

p. 48. Last sentence before Further Reading: "more extreme t-ratios" should be "a t-ratio as or more extreme"

Chapter 3

p. 63. Line 12: "Alternatives" should be "Alternative."

p. 71. Line 1: After "medians of the respective populations" add "(or median of the ratios in the population of pairs)."

p. 76. The "na" in the data set of Display 3.10 is incorrectly listed as "-32768" in the file ex0325 on the data disk. (See DATA DISK, below).

p. 79. Answer 4: "data" should be "date."

p. 80. Answer 18 should read: (a) No. (b) Yes.

Chapter 4

p. 89. Fourth line from bottom: "minus 50 seconds" should be "plus 50 seconds"

p. 92. **Step 2**. Change the end from "with t-statistics 3.888, 3.888, and 5.952, respectively." to "with t-statistics 5.952, 3.888, and 3.888, respectively."

p. 96. The last sentence in the first paragraph under **Exact p-Value** should read: "...that provide a sum of positive ranks as extreme as or more extreme than the observed one, ..."

p. 97. First line beneath Display 4.12 should say: "...sum of negative ranks less than or equal to .95" (i.e. insert "or equal to"). Also the last sentence of that paragraph should have "...negative ranks less than or equal to 9.5,..."

p. 105. In problem 29 the citation year should be 1972, not 1927.

p. 106. In problem 30, the next to the last sentence, "Treat these data as if ..." should be deleted.

Chapter 5

p. 109. Last sentence: "N/N50" and "N/N40" should be "N/R50" and "N/R40"

p. 113. Summary of Statistical Findings, last sentence: Change "15.1 percentage points" to "15.0 percentage points" and change "9.7% to 20.4%" to "9.6% to 20.3%, using a technique described in Section 6.2.3."

p. 129. In the KW formula, "Mean Square" should be replaced by "Sum of Squares"

p. 130. l. -5: Delete "in which case ... about"

p. 132. l. 18: Change "This number" to "The square root of this number"

p. 140. In problem 25, l. 3: Replace "9" with "8" and replace "10" with "9"

Chapter 6

p. 149. Display 6.4 caption: Delte "4" after μ_4

p. 150. The equation in the middle of the page should have 0.2743-0.2800, not 0.2743 - 0/2800.

p. 155. l. 9 : q(α; I, d.f.) should be $q_{I,df}(1-\alpha)$.

p. 155. l. 16. q(α; I, n-I) should be $q_{I,n-I}(1-\alpha)$.

p. 155. Section 6.4.2, first line after formula: replace "based on the F-distribution" with "where $F_{(I-1),d.f.}(1-\alpha)$ is the $1-\alpha$ percentile of the F-distribution with I-1 and d.f. degrees of freedom."

p. 164. Ex. 17: "Display 5.20 on page 137" should be "Display 5.21 on page 138."

Chapter 7

p. 182. Display 7.10. s_x^2 should be 0.6344 (not 0.6244).

p. 193. Line 5. "page 78" should be "page 77."

p. 196. Problem 28: change "What is the mean height per story?" to "What is the change in mean height associated with an increase of one story?"

p. 197. Change the answer to 5.(a) to: "It is technically possible to fit the separate-means model. There would be 19 separate groups. In addition, since there are several nebula with the same velocities (X) there would be some degrees of feedom available for estimating the variance about the means. There is little merit, however, in such a model for describing any pattern in the mean

distance as a function of velocity, and therefore for testing the Big Bang Theory. The separate-means model *can* be useful in this problem as a check on the validity of the straight line regression (see exercise 3 on p. 218)."

p. 201. Summary of Statistical Findings, l. 3: "decreases" should be "changes."

Chapter 9

p. 227. Line 7: "replicated twice" should be "replicated."

p. 227. In the last sentence of the Summary of Statistical Findings, "5 degrees of freedom" should be "20 degrees of freedom."

p. 236. The heading over columns 6-11 should read "Light Level Indicators," not "Light Level Dedicators."

p. 249. Exercise 9. "Display 3.12" should be "Display 3.11."

p. 252. Exercise 15. The column lables "Rainfall" and "Yield" in the file EX0915 on the data disk are reversed.

p. 253. Exercise 17. "Display 7.16" should be"Display 7.14."

p. 254. Number 9. Change "($\beta_3$duration x queen)" to "β_3(duration x queen)"

Chapter 10

p. 261. Display 10.6. The t-statistic for CONSTANT should be -5.4880 (not 5.4880).

p. 262. Line 7. "3.881" should be ".3881"

p. 265. Display 10.7. The t-statistics for height^2 and for (height-250)^2 should both be negative.

p. 279. The variance for Constant should be .08250 (not .08520).

p. 285. Exercise 15. "Display 7.16" should be "Display 7.14."

Chapter 11

p. 296. Display 11.5: -2 and -3 on the y-axis are reversed.

p. 296. Summary of Statistical Findings, line 5: remove "two-sided."

p. 305. First sentence under **Example**: "The observed value..." should read "For the fit of the regression of metabolism on gastric activity, sex indicator, and their interaction, the observed value ..."

p. 308. Five lines above Display 11.12, "their" should be "there."

p. 309. line 11-12: The F-statistic is 0.06 with 2 and 26 degrees of freedom (not 0.56 with 2 and 28 degrees of freedom).

p. 311. Partial Residuals, line 2: "β_3 *lgest*" should be "β_2 *lgest*."

p. 312. In the sentence under "Example--Blood-Brain Barrier," "Display 11.7" should be "Display 11.6," and "Exercise 11.17" should be "Exercise 11.18."

p. 314. Display 11.16. The estimate for Constant should be -4.302 (not -3.505). It's standard error should be 0.205 (not 0.195), and the t-Statistic should be -21.01 (not -17.94). The estimate for the Indicator for time=3 should be 1.134 (not 1.341).

p. 317, ex 3: "third-order" should be "three-factor."

Chapter 12

p. 332, Sect. 12.2.1, l. -2: "many" should be "may."

p. 326. Line 1: "Aptitude" should be "Achievement."

p. 334. the sentence that includes the formula should end as: "...R-squared term from a regression of X_j on the other explanatory variables in the model (that is, treating X_j as if it were a response variable), expressed as a proportion (not a percentage).

p. 353, l.4: "prediction" is misspelled.

Chapter 13

p. 366. The last line of the data set in page Display 13.3 has been cut off. It should be 10 83.7 63.7 77.7. The data file on the diskette is complete.

p. 376. Line 1: "model's" should be "model."

p. 376. Section 13.3.4 Title: "Contrasts" should be "Linear Combinations."

p. 395. Ex. 18, middle of paragraph: "..only eight children belonged to combination 2" should be "...only eight children belonged to combination 3."

p. 396. Display 13.24: The labels should be "High-High, High-Low, Low-High, Low-Low" (The 2nd and 3rd labels for SES of Adoptive parents are transposed.)

Chapter 14

p. 401. [Note: there are some major problems with the numerical results for the 14.1.2 case study; the necessary changes are documented

For Forrest:
Ozone-by-sulfur dioxide: change 14.9% to 10.4%; 0.2% to 0.05%; 1,450.0% to 2,205.2%
Ozone-by-water stress: change 430.3% to 446.0%; 9.2% to 9.2% (no change); 20,140.0% to 21,664.6%
For Williams:
Ozone-by-sulfur dioxide: 40.8% to 34.5%; 1.4% to 0.7%; 1,197.5% to 1,754.4%
Ozone-by-water stress: 23.8% to 23.5%; 1.5% to 1.4%; 385.6% to 384.5%

Add before "Note": The model used to estimate ozone-by-sulfur dioxide interaction is ozone*sulfur + water", for both cultivars (sulfur being numerical). The model ued to estimate ozone-by-water stress interaction is "ozone*water + sulfur."

p. 408. First line after first formula: "q(.05;I,d.f.)" should be "$q_{I,d.f.}(.05)$."

p. 411. Display 14.13 caption: "second-order" should be "two-factor."

p. 412. Display 14.14: 2nd column of panels should all have SO_2: 0.0170 (not 0.0239). Also R^2 for panel 2,2 should be 15.7% (not 76.2%).

p. 412. Delete the sentence "The full model...these three."

p. 413. Display 14.15: In the display caption add: "The sums of squares presented are *extra* sums of squares, as follows:

Term tested	Full Model	Reduced Model
ozone	ozone+SULFUR+water	SULFUR + water
SULFUR	ozone+SULFUR+water	ozone + water
water	ozone+SULFUR+water	ozone + SULFUR
ozone x SULFUR	all main effects+ 2-factor interactions	all main effects + 2-factor interactions, except ozone x SULFUR
ozone x water	all main effects+ 2-factor interactions	all main effects + 2-factor interactions, except ozone x water
SULFUR x water	all main effects+ 2-factor interactions	all main effects + 2-factor interactions, except SULFUR x water
ozone x SULFUR x water	all main effects + 2-factor interactions + 3-factor interaction	all main effects+ 2-factor interactions

The table is correct up through the mean square column (except that the mean square for ozone in Williams should be carried out one more digit to 1.1496). however, the F-statistics should be as follows:

------------------------------- ---Forrest ---------- Williams---

	F-stat	P-value	F-stat	P-value
ozone	30.05	<.0001	86.799	<.00001
SULFUR	1.356	.2827	10.495	.0010
water	0.343	.5651	17.943	.0005
ozone x SULFUR	0.370	.6959	0.140	.8702
ozone x water	0.583	.4552	0.964	.3392
SULFUR x water	0.610	.5543	0.994	.3896
ozone x water x SULFUR	1.461	.2583	0.352	.7079

p.414. Display 14.16 should be:

	FORREST			WILLIAMS	
	Coef.	Std. error	p-value	Coef.	Std. error
CONST	8.6082	0.0796		8.8239	0.0578
ozone	-5.4361	0.9360	<.0001	-6.856	0.6801
sulfur	-1.8695	1.1448	.1145	-4.1088	0.8319
water	0.0935	0.1525	.5451	0.5086	0.1108

p. 414. Last paragraph: -29.517 should be -35.120; 35.544 should be 40.3395; (-29.517)(0.0645) = -1.904 should be replaced with -2.265; -6.484 to + 2.676 should be -7.6240 to +3.094; ".149 times (14.9% of)" should be ".104 (10.4% of)"; "0.002 (0.2%)" should be "0.005 (0.5%)"; and "14.525 (1,450.0%)" should be "22.00 (2,200%)."

Chapter 15

p. 427. First paragraph of Section 15.2: the phrase "block effects" should be "cluster effects."

p. 431. The summation in the expression for c_0 should go from $t = 1$ to n.

p. 434. Display 15.7: Change the estimate and standard error in the Constant row from -.10011 and .01096 to -.3432 and .0221.

Chapter 16

p. 469. Equation for F-statistic: F-statistic $= \{(n-2)/[2(n-1)]\}T^2$ (i.e. omit the space before T^2).

p. 470. Text in the bubble for item 6 in Display 16.10: "both mean effects are not zero" should be "at least one mean is non-zero."

Chapter 17

p. 487. The columns of data on the data disk corresponding to Display 17.2 are are in a different order than in the display. See the note under DATA DISK CASE1702, below.

p. 494. Display 17.7, second panel: "-200" should be "200."

p. 500. Add to the caption for Display 17.10: "(Circles in panel D indicate the number of couples with the corresponding values of CW and HC)"

Chapter 18

p. 535. Problem 10: Change "For the data in Exercise 7" to "For the data in Exercise 8"

Chapter 20

p. 567. The data in Display 20.2 are not the data upon which the calculations of the chapter are based. Corrections to the data set/analysis will be posted here soon.

p. 568. Summary of Staistical Findings. "4.1" should be "3.8"; "1.8 to 9.1" should be "1.7 to 8.5"' and ".0004" should be ".0008"

p. 578. l. -9: The formula should be $l_i(\pi_i) = \log(\pi_i)$ if $y_i = 1$ and $\log(1 - \pi_i)$ if $y_i = 0$

p. 582. In the list of variables under bubble 1 of Display 20.8, "YTR" should be "YR."

p. 582. Display 20.8, change the numbers as follows:
panel 1:

Variable	Coefficient	Standard Error	z-statistic	Two-sided p-Value
CONSTANT	-1.4063	1.7173	-0.8189	.4128
FM	0.5213	0.5296	0.9844	.3249
AG	-0.0463	0.0349	-1.3263	.1847
SS	0.1321	0.4642	0.2846	.7760
YR	0.0829	0.0249	3.3335	.0009
BK	1.3349	0.4091	3.2627	.0011

Deviance = 155.24 **Degrees of freedom** = 141

panel 2:

Variable	Coefficient	Standard Error	z-statistic	Two-sided p-Value
CONSTANT	0.1031	1.5762	0.0653	.9479
FM	0.7214	0.5027	1.4349	.1513
AG	-0.0632	0.0337	-1.8733	.0610
SS	-0.0564	0.4367	-0.1293	.8971
YR	0.0873	0.0248	3.5174	.0004

Deviance = 166.53 **Degrees of freedom** = 142

panel 3: Change 165.42 to 166.53, -153.01 to -155.24; 12.41 to 11.29

panel 4; Change "12.41" to "11.29" and ".0004" to ".0008"

p. 588. par. 1: Change .9093 to "5615". Change "CD term" to "YR term". Change "YR term" to "CD term"

p. 588. Display 20.13: Change the numbers as follows:

Variable	Coefficient	Standard Error	z-statistic	Two-sided p-Value

CONSTANT	-0.5922	2.2835	-0.2593	.7954
FM	0.7974	0.5175	1.5359	..1246
AG	-0.0568	0.0376	-1.5097	.1311
SS	-0.0173	0.4440	-0.0390	.9689
YR	0.0278	0.0921	0.3023	.7624
CD	0.1306	0.0994	1.3143	.1887
YR^2	0.0011	0.0019	0.6083	.5430
CD^2	-0.0016	0.0020	-0.8006	.4234
YR x CD	-0.0013	0.0023	-0.5806	.5615

Deviance = 164.49 **Degrees of freedom** = 138

p. 589. First paragraph: Change "12.41" to "11.29". Second paragraph: Change "1.4014" to "1.3349". Change "1.34" to "1.3349". Change "4.1" to "3.80". change "0.5937 to 2.2091" to "0.5330 to 2.1368". Change "1.8 to 9.1" to "1.70 to 8.47".

p. 593. Seventh line from the bottom. "log(CK)-squared" is intended to mean $[\log(CK)]^2$.

p. 597. Problem 3: 0.78age should be 0.078age.

Chapter 21

p. 603. Display 21.4, top place names: Change "*Clegry Mawr*" to "*Clergy Mawr*"

Chapter 22

p. 658. l.2: insert "log of" before observation

Chapter 24

p. 684. Display 24.1. "Ambysoma" should be "Ambystoma." "Varieganus" should be "variegatus."

p. 691. Display 24.4. In the bubble, change "average" to "mean."

p. 696. The "28" in the Display 24.7 title should be "2^8".

p. 696. Display 24.7: d.f. for Two-factor interactions should be "28" and d.f. for Residual should be 91.

References

p. 724. The Daniel and Wood reference is 1980, not 1990.

Answer Section

p. 728. Number 4.21. Change ".0314" to ".00314"

Index

p. 741. Last column: Indent "practical and statistical 97".

SOLUTIONS MANUAL

Chapter 3

problem 3.20(b): "-0.295" should be "0.295." (c): "exp(-0.295) = 0.745..." should be "exp(0.295) = 1.343 estimates the multiplicative effect on time to breakdown of changing voltage level from 28 kV to 26 kV."

problem 3.22(c): Add at the end: "(A 95% confidence interval for the ratio of median starting salaries (F/M) is from 1/1.21 to 1/1.10, or .82 to .91.)"

problem 3.30(b): "(1.41,2,23)" should be "(1.41,2.23)."

Chapter 4

problem 4.25. Welch's t should have 97, not 93 d.f.

Chapter 6

problem 6.19; paragraph 1, last sentence: change "no transformation" to "none of these transformations."

Chapter 13

problem 13.18: 7.8 points should be 15.6 points (confidence interval 7.0 to 24.2 points). 5.8 points should be 11.6 ponts (confidence interval 7.1 to 24.1 points). The last two sentences should read: "It is

evident that there is a slightly larger estimated effect of biological parents--15.58 points as compared to 11.6 points for the adoptive parents' effect."

DATA DISK

CASE1702: The order of the columns in the data file is not the same as in Display 17.2. The data set has the Display columns in this order: 1,5,3,7,2,6,5,8. In other words the three letter code for the column names in the file has the first letter indicating the respondent (h for husband, w for wife), the second letter indicates the type of love (p for passionate, c for compassionate), and the third letter indicates the person who the love is perceived for (s for spouse, y for yourself).

EX0325: The missing value that is listed as "na" in Display 3.10 (p. 76) is coded as "-32768" in the data file.

EX0915: The column labels for rainfall and yield have been reversed.