ERRATUM (FOR THE SECOND PRINTING OF "BAYESIAN MODELING USING WINBUGS")

The following corrections were spotted in both the first and second printings of the book and will be corrected in a possible future third printing.

Acknoledgements

Special thanks to Michael E. Meredith (Wildlife Conservation Society Malaysia Program, Malaysia) for sending a detailed report with comments, suggestions and errors that helped me to improve the book in the 3rd printing.

I would also like to thank Chengjin Chu for his queries on the "within-subject correlation", and Mark Chambers for noting a correction in page 313. Finally I would like to thank Phil Turk for his useful comments and corrections.

Corrections

Chapter 1

1. **Page 11, 2nd equation**: In the NG density, multiply by $c^{-1/2}$.
2. **Page 58, Table 2.7, 6th line of `R` code**: Change the code values to "`prop.s<-c(0.2,0.2)`".
3. **Page 59, caption of Figure 2.10**: At the end of the caption add that "($\overline{s}_{\beta_0} = \overline{s}_{\beta_1} = 0.2$)".

Chapter 2

1. **Page 53, equation in the 2nd line from the bottom**: The correct expression is

$$A = \log \frac{f(y|o')f(o')}{f(y|o)f(o)} + \log \frac{f_\Gamma\,(o; o'/b, 1/b)}{f_\Gamma\,(o'; o/b, 1/b)}$$

   [*the numerator of second term of A must change to o'/b from an o/b*].

2. **Page 62, Number 3 in the list**:

   3. Propose a new value $\boldsymbol{\beta}' = (\beta_0', \beta_1')^T$ from $N_2(\sout{\boldsymbol{\mu}_{\boldsymbol{\beta}}}\boldsymbol{\beta}, \boldsymbol{S}_{\boldsymbol{\beta}})$.

3. **Page 63, Table 2.8, line 7 in R code**:
   `> c.beta<- ~~1.75~~2.5`

4. **Page 63, Table 2.8, lines 21–23 in R code**:
   `+as.numeric( 0.5*log( det(~~cur.T~~prop.T) ) -0.5*t(current.beta-prop.beta) %*% prop.T %*% (current.beta-prop.beta)`

5. **Page 66, Table 2.9, line 6 in R code**:
   `> prop.s<-c(~~1.5,0.15~~1.75,0.2)`

6. **Page 68, caption of Figure 2.15**:
   Figure 2.15 MCMC moves and generated values for logistic regression parameters of Example 2.3 using a single-component random-walk algorithm. ~~; the contour on upper left of each graph refers to the proposal distribution at the initial $(0, 0)$ step.~~

Chapter 3

1. **Page 120, 2nd paragraph after bullets, line 6**: Change 0.1% to 1% which is a more realistic value.

Chapter 6

1. **Page 192, 2nd paragraph from the bottom**: Add "This is sensible since no observations are available for males and females living in a village and having high economic status; see Table 5.14." at the end of the paragraph.

2. **Page 202, 1st block of code**: "`beta1 x[i]`" → "`beta1*x[i]`".

3. **Page 202, 2nd block of code**: "`beta0.star[k]`" → "`beta0.star[l]`" and "`beta1.star[k]`" → "`beta1.star[l]`".

4. **Page 214, Table 6.12**: Caption must be replaced with "WinBUGS code for common intercept/different slopes model in Example 6.2".

5. **Page 214, Table 6.12, lines 17–23**: Remove comment sign # from the commands for flat priors (lines 21–23) and put it in the commands for the normal priors (lines 17–19).

6. **Page 215, caption of Table 6.13**: Must be replaced by "WinBUGS code for common intercept/different slopes model in Example 6.2 using design matrix approach and rescaled dose^a"

7. **Page 215, Table 6.13, lines 24–25**: Remove comment sign # from the commands for flat priors (line 25) and put it in the commands for the normal priors (line 24).

8. **Page 215, footnote of Table 6.14**: Must be replaced by "^{a}Results using code of Table 6.12 (flat priors)."

9. **Page 216, 2nd line of 2nd Paragraph**: "Thus we can infer that the clotting time is a posteriori expected to be equal to 72 seconds when ~~no dilution~~ no preparation is used but to be reduced by 4.9 seconds when we increase the dose of the standard treatment by the minimum quantity (1:40) of the experiment."

10. **Page 222, last block of code**: "`k + 1`" must be replaced by "`k`" in `equals`.

Chapter 7

1. **Page 242, 4th paragraph, 1st line**: "The link function can be enhanced facilitated by four link functions that are available in WinBUGS : . . . " → "Four link functions are available in WinBUGS:. . . " .

2. **Page 244, 2nd paragraph, line 9**: ". . . (i.e., $X_i = j$) . . . " → ". . . (i.e., $X_i = k$) . . . ".

3. **Page 246, last equation**: "$-0.18\,\text{bombload}_i$" → "$+0.18\,\text{bombload}_i$" (change minus to plus).

4. **Page 247, 3rd bullet**: "Every additional ~~year~~month . . . ".

5. **Page 248, 2nd paragraph, line 5**: ". . . the minimum flying experience (50 ~~hours~~ months) corresponds to an expected number of 3.7 and . . . ".

6. **Page 258, Table 7.15, 1st equation**: $\pi = \frac{e^{\text{odds}}}{1+e^{\text{odds}}} = \frac{e^a}{1+e^a} \rightarrow \pi = \frac{\text{odds}}{1+\text{odds}} = \frac{a}{1+a}$.

7. **Page 258, Table 7.16, 4th bullet**: "The success odds when ~~Y=1~~X = 1 . . . ".

8. **Pages 265 and 266, computational notes**: Substitute x by η. A simpler syntax suggested by Mike Meredith (Malaysia) is the following

```
probit( p[i] ) <- max( min( eta[i], xi), -xi)
```

for the probit link and

```
cloglog( p[i] ) <- max( min( eta[i], xi2), xi1)
```

for the clog-log link.

Chapter 8

1. **Page 285, 2nd paragraph in "Results"**:

   > Dispersion indices of NB as well as DIC values indicate that the NB model is much better than the Poisson one. Concerning DIs, these range from 7.6 to 12.7 and from 9.3 to 15.8 for males and females, respectively, indicating a clear overdispersion. Moreover, DIC values for the NB model is much lower than the corresponding value for the Poisson model. ~~Note that, for the GLM approach DIC was not calculated by WinBUGS . For this reason the corresponding value was calculated outside WinBUGS using the posterior means of the deviance measure and π_j and r_j ($j = 1, 2$); see Sections 4.2.5 and 6.4.3 for details concerning the computation of DIC.~~

   since DIC can be calculated in WinBUGS for this model.

2. **Page 286, Table 8.5**:

   a. First line, 2nd column: "NB — simple" → "NB — GLM"

   b. First line, 3rd column: "NB — GLM" → "NB — simple"

   c. Last line, 2nd column: "2874.36" is substituted by "2873.85" (DIC value from WinBUGS). The two values are close and they differ due to Monte Carlo error and different parametrization used.

   d. The footnote must be now removed.

3. **Page 294, Table 8.7**: The actual values (2nd column) must be corrected by the following

   a. β_{12}: 0.0

   b. β_{13}: 0.1

   c. β_{24}: 0.0

   d. β_{25}: -0.5

Chapter 9

1. **Page 309, 1st line above equation 9.1***: "Thus, we can calculate the ~~within-subject~~ intrasubject (or within-subject) correlation by . . . "

2. **Page 313, 1st equation & Page 313, 2nd line from the bottom**: In "$Y_t \sim$ binomial(π_t, N)", substitute N by N_t.

3. **Page 326, 1st line after 2nd block of equations***: ". . . resulting in ~~within-subject~~ intrasubject (or within-subject) correlation of the latent measurement equal to . . . "

4. **Page 332, Caption of Table 9.16***: The phrase "(or intrasubject)" was added after "within-subject". Thus must be replaced by "Posterior means of within-subject (or intrasubject) correlations for random effects model, including intrasubscale variability for SPQ data of Example 9.7"

*The term intrasubject correlation is used to avoid confusion which may be caused by "within-subject" term which has different meaning when referring to variability. Additionally to the above changes, the term within-subject correlation also appears in pages 325, 330 and 331 which were not changed since (I believe) that can be understood by looking at the rest of the text.

5. **Page 334, 1st line after the 1st block of equations***: "From this expression, the ~~within subject~~ intrasubject (within-subject) correlation depends on the fixed linear predictor μ_{it} and therefore on the covariate values. Indicative values will be reported on the basis of sample means, sample minimums and maximums ~~values~~ of the observed covariates."

Chapter 11

1. **Page 403, equation after 11.6**: The correct expression is

$$f(\boldsymbol{y}|m) = \frac{\Gamma(a+n/2)}{\Gamma(a)}(2\pi)^{-n/2}b^a\, c^{-P_m}\left(\frac{|\widetilde{\boldsymbol{\Sigma}}_m|}{|\boldsymbol{V}_m|}\right)^{1/2}\left(\frac{1}{2}\mathrm{SS}_m + b\right)^{-n/2-a},$$

2. **Page 411, equation 11.25**: Must be changed to

$$\frac{f(\gamma_j = 1|\boldsymbol{y}, \boldsymbol{\gamma}_{\setminus j}, \boldsymbol{\beta})}{f(\gamma_j = 0|\boldsymbol{y}, \boldsymbol{\gamma}_{\setminus j}, \boldsymbol{\beta})} = k_j^{-d_j}\exp\left(-\frac{1}{2}\,(1-k_j^2)\boldsymbol{\beta}_j^T\boldsymbol{\Sigma}_j^{-1}\boldsymbol{\beta}_j\right), \qquad (5.1)$$

3. **Page 415, 2nd block of code, 1st line**: Add right parenthesis after 0.5.

4. **Page 416, 1st line**: Add right parenthesis after 0.5.

5. **Page 421, 1st line**: $\boldsymbol{\beta}'_{(m')} \rightarrow \boldsymbol{\beta}'_{m'}$.