Errata and Clarifications

Wickens, T. D.: *Elementary Signal Detection Theory* Oxford University Press: 2002

The following list contains the errors and corrections I have identified. Please notify me at `twickens@socrates.berkeley.edu` if you find any others. In the list below, paragraphs that start on a page are numbered ¶1, ¶2, etc., and ¶0 refers to a paragraph that continues from the previous page. Lines are numbered $\ell 1$, $\ell 2$, etc. Negative line numbers count up from the bottom of the page or paragraph. Material that needs to be corrected is underlined in quotations.

Page	Location	Correction
iii		My current affiliation is the University of California, Berkeley.
vii	¶3, $\ell-1$	My current web page is `socrates.berkeley.edu/~twickens`.
ix	$\ell 12$	My current email address is `twickens@socrates.berkeley.edu`.
12	¶0, $\ell 1$–2	"In other versions,".
23	$\ell 17$	"$\widehat{\lambda}$ must be 0.915 units below $\widehat{d'}$. Rounding to two places,".
43	¶1, $\ell 3$–4	"and of constant λ_{center} (right)."
61	Fig. 4.1	The axis labels z_H and z_F on the Gaussian plot are exchanged.
61	$\ell 4$	"which implies that $\sigma_s^2 > \sigma_n^2$."
65	Eq. 4.3	Because x_0 is negative, the formula based on it should include a minus sign: $d_a = \cdots = \dfrac{-\sqrt{2}x_0y_0}{\sqrt{x_0^2+y_0^2}}$.
68	Eq. 4.7	Same as above correction: $\Phi\left(\dfrac{-x_0y_0}{\sqrt{x_0^2+y_0^2}}\right)$.
82	Prb. 4.4	The frequency of misses in the *Balanced* table should be 78 instead of 88, so that the row frequencies sum to 200 as they do in the other tables.
87	¶2, $\ell 5$	"The inadequacy of the equal-variance model . . . ".
92	Prb. .5.2c	"Summarize the subject's recognition performance. . . ".
100	Fig. 6.3	The labels "Say FIRST" and "Say SECOND" are reversed.
162	Eq. 9.17	The equation above the numbered line should have a subscript s on σ. Also, the final plus signs should be minuses: $\left[\log\dfrac{1}{\sqrt{2\pi}} - \log\sigma_s - \ldots\right] - \left[\log\dfrac{1}{\sqrt{2\pi}} - \frac{1}{2}x^2\right]$. The final equation is correct.
170	Prb. 9.5b	"base a decision on the quantity $y = (\mu_n+\mu_s)x^2 - 2\mu_n\mu_s x$.
177	¶1, $\ell 8$	The inequality is reversed. It should read "lies in the regions where $f_s(\mathbf{x}) < f_n(\mathbf{x})$,".
178	Eq. 10.3	The denominator of the third term in the equation should have a square root: $\dfrac{\sum\mu_i^2 - 0}{\sqrt{\sum\mu_i^2}}$.
193	Prb. 10.1	Assume that the observers in make their choices without preference for a YES or NO response when the original signal intensities were set.
193	Prb. 10.4	Should read "Find the decision...". [The curious text here is an index tag that misfired. It should have produced an entry on p. 260 under *likelihood-ratio observer*.
209	l.3 ff.	An incorrect value for the number of old items identified as OLD propagates through the example. "As there were $45 + 21 = 66$ OLD responses to the 120 items, an estimate of the probability of saying OLD is $p = 66/120 = 0.55$, corresponding to a criterion set at $\widehat{\lambda} = -Z(p) = -0.126$." The numerical portions of the three displayed calculations below should be $\dfrac{0.55\times 0.45}{60} = 0.004125$, $\dfrac{2\times 0.004125}{(0.396)^2} = 0.05266$, and $\dfrac{1.06-0}{\sqrt{0.05266}} = 4.62$. The conclusion to the example does not change.
210	$\ell 4$	The hit rate for Session 2 should be 0.550 (as in Example 2.2), not 0.055.
224	Prb. 11.9	The text should read "in Problem 11.6 was repeated on a total of eight days." To be consistent with the other entries and with Problem 11.6, the data for Day 1 should read 127, 23, 48, and 102 for observer A and, 125, 25, 34, and 116 for observer B. Finally, changing the C.R. entry for observer A on day 6 to 137 makes number of trials identical to those for the other observations.
257	¶1, $\ell 3$	"...listed in the reference section".
235	Eq. A.34	The final term in both parts of the equation should have the coefficient 2: $\text{var}(W) = a^2\,\text{var}(X) + b^2\,\text{var}(Y) + 2ab\,\text{cov}(X,Y) = a^2\sigma_X^2 + b^2\sigma_Y^2 + 2ab\sigma_X\sigma_Y$.
244	¶1, $\ell 8$	$Q_{\mathbf{\Sigma}}(\mathbf{x}) = \dfrac{1}{1-\rho^2}\left[\dfrac{x_1^2}{\sigma_1^2} - 2\rho\dfrac{x_1x_2}{\sigma_1\sigma_2} + \dfrac{x_2^2}{\sigma_2^2}\right]$. Note the change in sign of the middle term.
244	Note 4	$C_{\mathbf{\Sigma}} = [(2\pi)^d\lvert\mathbf{\Sigma}\rvert]^{-1/2}$. Alternatively, replace $\lvert\mathbf{\Sigma}\rvert$ by $\sqrt{\lvert\mathbf{\Sigma}\rvert}$ in existing equation.

I would like to thank Drs. Yasuharu Okamoto and John R. Vokey for pointing out several of these errors.

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