CORRECTION NOTES AND ACKNOWLEDGMENT OF PRIORITY

CORRECTIONS TO
"SOME EXTENSIONS OF THE WISHART DISTRIBUTION"

By T. W. Anderson and M. A. Girshick

AND

"THE NON-CENTRAL WISHART DISTRIBUTION AND CERTAIN PROBLEMS OF MULTIVARIATE STATISTICS"

By T. W. Anderson

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The main results of these two papers (*Ann. Math. Statist.* **15** (1944) 345–357 and **17** (1946) 409–431) have been derived more recently and by different methods by several authors. Nevertheless, it seems worthwhile to correct some errors in the papers because they continue to be referred to.

Equation (29) of the first paper and (8) of the second paper should be

$$|T - \lambda \sum A^{-1} \sum| = 0.$$

The noncentral Wishart density for rank two [(32) in the first paper and (7) in the second] is written in terms of the two nonzero roots, u_1 and u_2, of this equation; the integral expression for the density for arbitrary rank t (Theorem 3 of the second paper) involves the t nonzero roots of this equation. The corresponding correction in the density for rank one is to replace $\sum_{i,j=1}^{p} \sum_{\alpha=1}^{N} a_{ij}(\mu_{i\alpha} - \bar{\mu}_i) \cdot (\mu_{j\alpha} - \bar{\mu}_j)$ in (31) in the first paper and $\sum_{i,j} a_{ij}\tau_{ij}$ in (6) in the second paper by $\sum_{i,j,k,h=1}^{p} a_{ij}\sigma^{jk}\tau_{kh}\sigma^{hi}$ (two places in each density). In (31) $\sum_{i=1}^{p-1}$ should be replaced by $\prod_{i=1}^{p-1}$, and $\frac{1}{2}$ should be replaced by $-\frac{1}{2}$ in the second exponential.

The transformation in the second paragraph of page 418 of the second paper should be stated as follows: There is a $p \times p$ matrix H and a $t \times t$ orthogonal matrix Q such that $H'B^{-1}H = I$ and $H'KQ = W = \|w_i \delta_{i\eta}\|$, where w_i^2 are the t nonzero roots of $|K_i^2 \delta_{ij} - \lambda b^{ij}| = 0$; make the transformation to Z by $Y = HZQ$. (An equivalent transformation was made correctly in the first paper.) The correction of the transformation has no effect on the subsequent development. In the line below (26) on page 18 Z^1 and Z_1 should be replaced by Z_1 and Z_2, respectively.

In (24) of Theorem 1 of the second paper n in line 2 should be replaced by N and σ^{jh} in line 3 should be replaced by σ^{jk}.

Several other minor typographical errors remain. A complete list of errata is

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available from T. W. Anderson, Department of Mathematical Statistics, Columbia University, New York 27, New York.

CORRECTIONS TO
"SOME RESULTS ON THE DISTRIBUTION OF TWO RANDOM MATRICES USED IN CLASSIFICATION PROCEDURES"

By D. G. Kabe

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Although the main results of the above paper (*Ann. Math. Statist.* **34** (1963) 181–185) are correct, I regret the following mistakes which I now correct. I am grateful to Professor B. K. Shah for calling these errors to my attention.

On page 182, Section 2, Equation (2.1), the determinant $|D - VV'|$ should be replaced by $|\Delta'D\Delta - VV'|$, where Δ is a $p \times p$ orthogonal matrix such that $\Delta'(\Sigma^{-1}\mu\mu'\Sigma^{-1})\Delta$ is a diagonal matrix. The result (2.1) holds when $n \geqq p + t$.

On page 182, sixth line from the bottom, instead of $(B - VV')$ is positive semidefinite read $(\Delta'D\Delta - VV')$ is positive semidefinite.

On page 184, Equation (3.5), the determinant $|M - ZZ'|$ should be replaced by $|\Omega'M\Omega - ZZ'|$, where Ω is a 2×2 orthogonal matrix such that $\Omega'(\xi'\Sigma^{-1}B\Sigma^{-1}\xi)\Omega$ is a diagonal matrix.

The above mistakes (entirely mine) of omitting an appropriate orthogonal matrix occurred, as for deriving the concerned results I used the transformation given by Anderson in the second paragraph of page 418 (Reference [2] in my paper). In that transformation unfortunately the appropriate orthogonal matrix is omitted. This has been pointed out by Anderson in his correction note above.

I also correct the following mistake: On page 184, Equation (3.12), $|B|^{(n-p-1)/2}$ should be $|B|^{(n-p+1)/2}$.

CORRECTION TO
"COMBINATORIAL RESULTS IN FLUCTUATION"

By Charles Hobby and Ronald Pyke

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In the above titled article (*Ann. Math. Statist.* **34** (1963) 1233–1242), the captions on the four parts of Figure 1, p. 1235, are in error. They should read:

Upper Left: "This path $(x_1, \cdots, x_8)$ is of type (3,1). The smallest increment is x_4."

Upper Right: "*Shrink* x_4 until type changes, namely, until $s_6 = 0$."

Lower Left: "*Switch* the first 6 steps of the path as shown."

Lower Right: "*Continue shrinking*, and the path returns to type (3,1)."