41. Convergence of the Empiric Distribution Function on Half-Spaces—J. Wolfowitz
42. Analysis of Two-factor Classifications With Respect to Life Tests—M. Zelen.*

The five editors are to be congratulated for assembling and presenting this volume in an excellent manner.

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45[K].—Shanti S. Gupta & Milton Sobel, "Selecting a subset containing the best of several binomial populations," p. 224–248, *Contributions to Probability and Statistics, Essays in Honor of Harold Hotelling*, edited by Olkin et al., Stanford University Press, 1960. [See preceding review.]

Given k binomial populations with unknown probabilities of success p_1, p_2, $\cdots p_k$, a procedure R is studied by the authors which selects a subset that guarantees with preassigned probability P^* that, regardless of the true unknown parameter values, it will include the best population; i.e., the one with the highest parameter value. Procedure R for equal sample sizes is given as follows. Retain in the selected subset only those populations for which $x_i \geqq x_{max} - d$, where $d = d(n, k, P^*)$ is a non-negative integer, and x_i denotes number of successes based on n observations from the ith population. Table 2 gives the values of d for $k = 2(1)20, 20(5)50$; $n = 1(1)20, 20(5)50, 50(10)100, 100(25)200, 200(50)500$; $P^* = .75, .90, .95, .99$ (a trial and error procedure R is given for large, unequal sample sizes).

Table 3 gives the expected proportion of populations retained in the selected subset by procedure R (for the special case $p_1 = p_2 = \cdots = p_{k-1} = p$, $p_k = p + \delta$, $0 \leqq \delta \leqq 1, 0 \leqq p \leqq 1 - \delta$) for $n = 5(5)25$; $p^* = .75, .90, .95$; $\delta = .00, .10, .25, .50$; and $p + \delta = .50, .75, .95, 1.00$.

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46[K].—Maurice Henri Quenouille, "Tables of random observations from standard distributions," *Biometrika*, v. 46, 1959, p. 178–202. Egon Sharpe Pearson, "Note on Mr. Quenouille's Edgeworth Type A transformation," *Biometrika*, v. 46, 1959, p. 203–204.

Quenouille offers a random sample of 1000 each from the normal distribution and seven specified non-normal distributions. While a sample of 1000 is too small for much serious Monte Carlo work, the method of construction of the present tables, where the normal sample uniquely and monotonely determines the 7 non-normal samples, makes it suitable for pilot studies of the sensitivity of statistical procedures to departures from normality.

Specifically, let x_1 be a unit normal deviate from the tables of Wold [1]. Define

$$y = (2\pi)^{-1/2} \int_{-\infty}^{x_1} \exp\left(-\tfrac{1}{2}x^2\right) dx,$$

$$x_2 = 3^{1/2}[2y - 1],$$

$$x_3 = 0.46271\, e^{x_1} - 0.76287,$$
$$x_4 = -1 - \log_e (1 - y),$$
$$\begin{cases} 124416\, x_5 = -9552 + 127225\, x_1 + 7824\, x_1^2 - 40\, x_1^3 + 576\, x_1^4 - 252\, x_1^5, & x_1 > -2.5, \\ x_5 = -1.86,\ x_1 \leqq -2.5, & \end{cases}$$
$$1536\, x_6 = 1411\, x_1 + 56\, x_1^3 - 3\, x_1^5,$$
$$124416\, x_7 = -12144 + 122878\, x_1 + 14304\, x_1^2 - 1066\, x_1^3 - 720\, x_1^4 + 261\, x_1^5,$$
$$\begin{cases} x_8 = -2^{-1/2} \log_e [2 - 2y], & x_1 > 0 \\ x_8 = 2^{1/2} \log_e 2y & x_1 \leqq 0. \end{cases}$$

Then, for $i = 1(1)8$, $E(x_i) = 0$, $E(x_i^2) = 1$. Here x_2 is a rectangular random variate; x_3, a log-normal variate; x_4, a one-tailed exponential variate; x_8, a two-tailed exponential variate; x_5, x_6, x_7 are Cornish-Fisher expansions with specified κ_3 and κ_4. A short table on p. 179 shows that the specifications are not met precisely; Pearson's note shows that this failure is negligible for samples of 1000.

The main table, p. 183–202, gives 1000 values of x_i, $i = 1(1)8$, to 2 D, with Σx and Σx^2 in blocks of 50. Auxiliary tables on p. 180–182 give the first and second sample moments of the x_i; their theoretical κ_3, κ_4, κ_5, κ_6; frequency distributions of the 8 samples; x_5, x_6, x_7 to 3 D for $x_1 = -3.2(.1) + 3.2$. The italic headlines on p. 181–182 should be interchanged.

It is not clear why random normal numbers were used as the basis for this table rather than random rectangular numbers, nor why the 2 D deviates of Wold [1] were chosen over the 3 D deviates of Rand Corp. [2].

Reprints may be purchased from the Biometrika Office, University College, London, W.C. 1, under the title "Tables of 1000 standardized random deviates from certain non-normal distributions." Price: Two Shillings and Sixpence. Order New Statistical Tables, No. 27.

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1. HERMAN A. O. WOLD, *Random Normal Deviates*. Tracts for Computers, no. 25, Cambridge Univ. Press, 1954.
2. THE RAND CORPORATION, *A Million Random Digits With 100,000 Normal Deviates*. The Free Press, Glencoe, Illinois, 1955. [*MTAC*, v. 10, 1956, p. 39–43].

47[K].—ALFRED WEISSBERG & GLENN H. BEATTY, *Tables of Tolerance-Limit Factors for Normal Distributions*, Battelle Memorial Institute, 1959, 42 p., 28 cm. Available from the Battelle Publications Office, 505 King Avenue, Columbus 1, Ohio.

The abstract of the booklet reads as follows: "Tables of factors for use in computing two-sided tolerance limits for the normal distribution are presented. In contrast to previous tabulations of the tolerance-limit factor K, we tabulate the factors $r(N, P)$ and $u(f, \gamma)$, whose product is equal to K. This results in greatly increased compactness and flexibility. The mathematical development is discussed, including methods used to compute the tabulated values and a study of the accuracy of the basic approximation. A number of possible applications are discussed and examples given."

Since the mean μ and the standard deviation σ are frequently unknown, the toler-