where

$$(13)\qquad \begin{aligned} I &= \int_{-\infty}^{\infty} G(x)H(x)f(x)\,dx \\ &= \int_{-\infty}^{\infty} \{[xF(x) - Z(x)]^2 + (\mu - x)[xF(x) - Z(x)]\}f(x)\,dx. \end{aligned}$$

This integral can also be written as

$$(14)\qquad I = \int_{-\infty}^{\infty}\int_{-\infty}^{x}\int_{x}^{\infty} (x - y)(z - x)f(x)f(y)f(z)\,dx\,dy\,dz,$$

and, according to the distribution involved, formula (13) or (14) may be more convenient in the evaluation of var (g).

Comparing (12) with the formulae given by Nair it is easy to show that an additional term $(n - 3)\mu^2$ has been omitted in his final formula for I_1. However, the values of var (g) for normal, exponential and rectangular distributions given in [1] are correct and agree with those obtained from formula (12) above.

REFERENCES

[1] U. S. Nair, "The standard error of Gini's mean difference," *Biometrika*, Vol. 28 (1936), pp. 428–436.
[2] M. G. Kendall, *Advanced Theory of Statistics*, Vol. I, Charles Griffin and Co., London 1943.

CORRECTION TO "A NOTE ON THE POWER OF A NONPARAMETRIC TEST"

By F. J. Massey, Jr.

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In the paper mentioned in the title (*Annals of Math. Stat.*, Vol. 21 (1950), pp. 440–443) the proof of the biasedness of a test based on the maximum deviation between sample and population cumulatives is incorrect. A proof is given below. Also, on page 442, line 2, "greater" should be replaced by "less". The notation refers to Fig. 1 of the original article.

Above point b (note $F_1(b) = F_0(b)$), there will be certain possible heights for $S_n(x)$ to attain and still remain in the band. Call these heights $b_1 = 1/n$, $b_2, b_3, \cdots, b_k = k/n$, where $k/n < 2d/\sqrt{n}$. Locate the point $x = c$ $(c < b)$ close enough to $x = b$ so that $F_0(c) + d/\sqrt{n} > b_k$. Then consider

(i) $\qquad P_0 = P\{S_n(x) \text{ remain in band} \mid F(x) = F_0(x)\},$

(ii) $\qquad P_1 = P\{S_n(x) \text{ remain in band} \mid F(x) = F_1(x)\}.$

Now $P_j = \sum_{i=1}^{k} P\{S_n(x) \text{ passes through } b_i \text{ and remains in band} \mid F_j(x)\} = \sum_{i=1}^{k} P\{S_n(x) \text{ goes through } b_i \mid F_j(x)\} \cdot P\{S_n(x) \text{ stays in band for } x < b \mid F_j(x),$

$S_n(x)$ goes through $b_i\} \cdot P\{S_n(x)$ stays in band for $x > b \mid F_j(x)$, $S_n(x)$ goes through b_i and is in band for $x < b\}$. However the first and third of the factors is the same for $j = 0, 1$, and the second is unity for $j = 1$, and therefore $P_0 \leqq P_1$. If $\lambda/\sqrt{N} > 1/N$ (which is necessary if the test is not always going to reject) then at least for height b_k,

$$P\{S_n(x) \text{ inside the band for } x < b \mid S_n(b) = b_k,\ F_0(x)\} < 1.$$

Thus the test is biased.

I would like to thank Professor D. A. Darling for pointing out the error.

ABSTRACTS OF PAPERS

(Abstracts of papers presented at the East Lansing meeting of the Institute, September 2–5, 1952)

1. An Extension of Massey's Distribution of the Maximum Deviation between Two Sample Cumulative Step Functions. (Preliminary Report.) CHIA KUEI TSAO, Wayne University.

Let $x_1 < x_2 < \cdots < x_n$ and $y_1 < y_2 < \cdots < y_m$ be the ordered observations of two random samples from populations having cumulative distribution functions $F(x)$ and $G(x)$ respectively. Let $S_n(x) = k/n$ where k is the number of observations of X which are less than or equal to x and $S'_m(x) = j/m$ where j is the number of observations of Y which are less than or equal to x. The statistics $d_r = \max \mid S_n(x) - S'_m(x) \mid$ (max over $x < x_r$) and $d'_r = \max \mid S_n(x) - S'\ (x) \mid$ (max over $x < \max\ (x_r, y_r)$) can be used to test the hypothesis $F(x) \equiv G(x)$. For example, using d_r we would reject the hypothesis if the observed value of d_r is significantly large. In this paper, the methods of obtaining the distributions of d_r and d'_r (for small size samples) are similar to that in Massey's paper, and several short tables for equal size samples are included. (Work supported by the Office of Naval Research.)

2. Polynomial Correlation Coefficients. W. D. BATEN AND J. S. FRAME, Michigan State College.

In this paper is developed a formula for the correlation coefficient pertaining to predicting polynomials. It is shown, when the independent variates are approximately normally distributed, that the square of this correlation coefficient can be expressed as a finite sum involving the squares of the averages of the derivatives of the estimating polynomial, namely, $r^2 = \Sigma \overline{y^{(k)}}^2/k!$, where y represents the predicting polynomial. The proof is based upon manipulations of Bernoulli numbers.

3. Truncated Poisson Distributions. PAUL R. RIDER, Wright-Patterson Air Force Base and Washington University.

This paper gives a method for estimating the parameter of truncated Poisson distributions for which some of the data are missing, particularly those which are truncated at the lower end. Application to a number of actual distributions is discussed.

4. Frequency Distributions for Functions of Rectangularly Distributed Random Variables. STUART T. HADDEN, Socony-Vacuum Laboratories, Paulsboro, New Jersey.