comes to the same thing in view of unbiassedness—some multiple of the mean square of the estimator. We find that

$$p^2E(\{\varphi w^*\}^2) = \lambda^2 \int_0^\infty \varphi(y)^2 f(y)\, dy + (1 - \lambda)^2 \int_0^\infty \frac{f(y)}{f(-y)} \varphi(y)^2 f(y)\, dy$$

$$= \lambda^2 J_1 + (1 - \lambda)^2 J_2,$$

say, which is minimized by setting

$$\lambda = J_2/(J_1 + J_2).$$

In case f is symmetric $J_1 = J_2$ and optimum $\lambda = 1/2$; here the naive procedure of rejecting negative x's corresponds to $\lambda = 1$ and maximizes the mean square! However, if $f(-y) = 0$ over a stretch in which $f(y) > 0$ then $J_2 = \infty$, and we must take $\lambda = 1$, adopt the naive solution, in order to obtain finite variance of estimate. Finally, in case $\varphi(y)$ and $f(-y)/f(y)$ have large similar peaks near some $y_0 > 0$ then J_1 may be very much larger than J_2 and optimum λ very close to 0.

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TABLES FOR TYPE A CRITICAL REGIONS

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1. This note provides tables connected with work by Neyman [1] and Johnson [2] on testing hypotheses, expanding the table given in [2]. This table, as expanded provides solutions for the values of A satisfying,

$$\frac{1}{2\pi} \int_{-\infty}^{\infty} \int_{A-Bu^2}^{\infty} e^{-\frac{1}{2}u^2-\frac{1}{2}v^2}\, dv\, du = \alpha$$

for $\alpha = .01$, $.05$, and $B = 0(.1)5, 5(1)10, 10(10)100$.
When $\alpha = .05$ set $A = 3.8414588B + \rho_{.05}$, and when
$\alpha = .01$ set $A = 6.6348966B + \rho_{.01}$

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