

Transformation Method

An alternative method, and one we recommend, of calculating a *CI* is to first transform onto a scale which more closely follows a Normal distribution. It can be shown that complementary logarithmic transformation of $S(t)$ or $\log\{-\log[S(t)]\}$ has an approximately Normal distribution, with *SE* given by

$$SE_{Tr}[S(t)] = \frac{\left[-\sum_{j=0}^{t-1} \log\left(\frac{n_j}{n_j - d_j}\right) \right]}{\left[\sum_{j=0}^{t-1} \frac{d_j}{n_j(n_j - d_j)} \right]^{1/2}}$$

Use of equation (2.9) then gives, on this transformed scale, a 95% *CI* of $\log\{-\log[S(t)]\} - 1.96SE_{Tr}$ to $\log\{-\log[S(t)]\} + 1.96SE_{Tr}$