

This Stata program generates 10,000 data sets of 2014 draws from a homogenous Poisson distribution. The mean event rate is 1 in 3 before 1945 and 1 in 10 after, in order to simulate a "long peace." (1/3 is my guess at the mean event rate in the Cirillo and Taleb analysis.) A Poisson model is fit that allows the rate to depend on a post-1945 dummy. In addition, serial correlations of the inter-arrival gap are computed for lag distances 1 through 20 and aggregated into a χ^2 statistic also called the "portmanteau" Q statistic. A histogram is plotted of the associated p values, which are for the null hypothesis of no serial correlation.

The Poisson model including a post-1945 dummy easily detects the structural break but the serial correlation-based method has no power to do so. Thus it appears that the latter cannot adjudicate between the competing hypotheses of the presence and absence of a long peace.

```

program define sim, rclass
    drop _all
    set obs 2014
    gen int t = _n
    gen byte D = t>=1945
    gen byte x = rpoisson(1/cond(D, 10, 3))
    poisson x D
    return scalar Poissonp = 2*normal(-abs(_b[D])/_se[D])
    ereturn clear
    keep if x
    expand x
    sort t
    gen byte gap = t - t[_n-1]
    gen int n = _n
    tsset n
    wntestq gap, lag(20)
    return scalar Qp = r(p)
end

simulate, reps(10000) seed(987654321): sim
histogram Qp          , width(.05) frac name(Qp          , replace) ylabel(0(.01).06)
histogram Poissonp, width(.05) frac name(Poissonp, replace) xlabel(0(.2)1)

```

