# 6.3 Estimation

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The full list of posterior probability masses provides a complete estimate of the parameter values.

The mean of θ is just the sum of the available parameter values weighted by the probability the occur, which can be formally expressed as

$$\bar{\theta}|D = \sum_{\theta} \theta p(\theta|D)$$

where the sum is over discrete values of θ is its grid points, and $p(\theta|D)$ is the probability mass at each of grid point. The value is plotted as below:
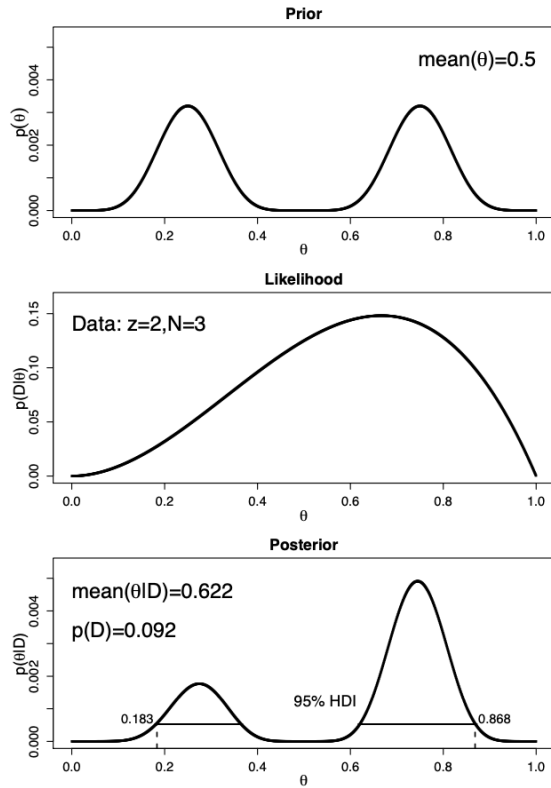
The 95% HDI of the posterior is split across more two distinct subintervals. Only the extreme left and right ends of the HDIs are marked in the plot, but the unmarked internal divisions are also endpoints of the split HDI region.