

MCMC Diagnostics - IFLS data

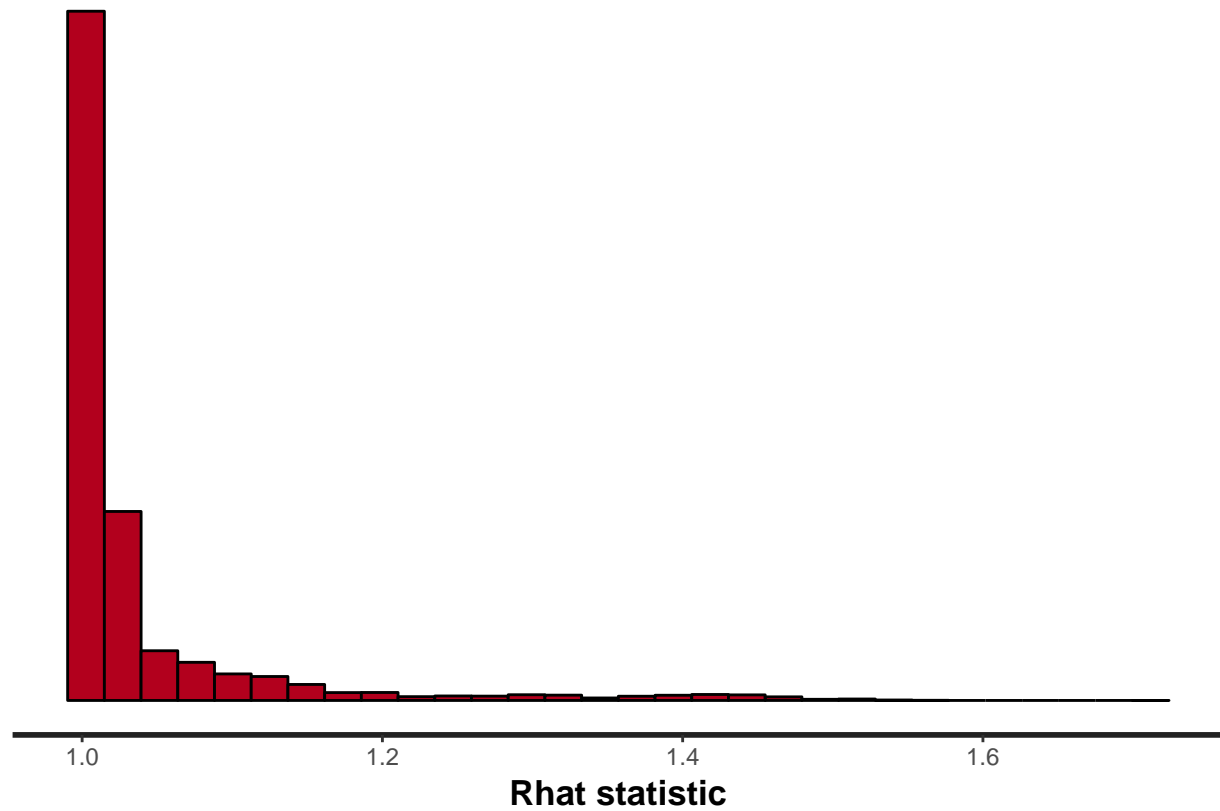
Sarah Teichman

07/26/2020

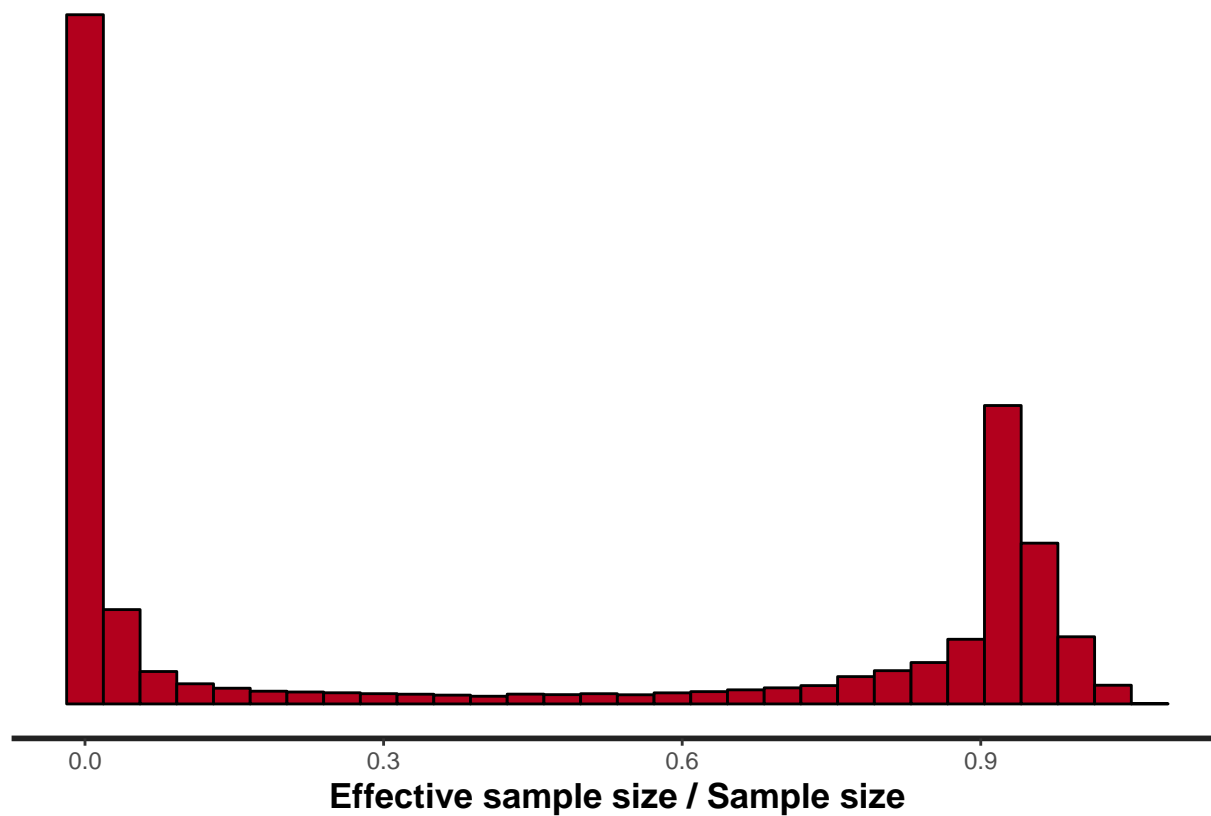
General MCMC diagnostic plots

Overall model diagnostics from rstan package.

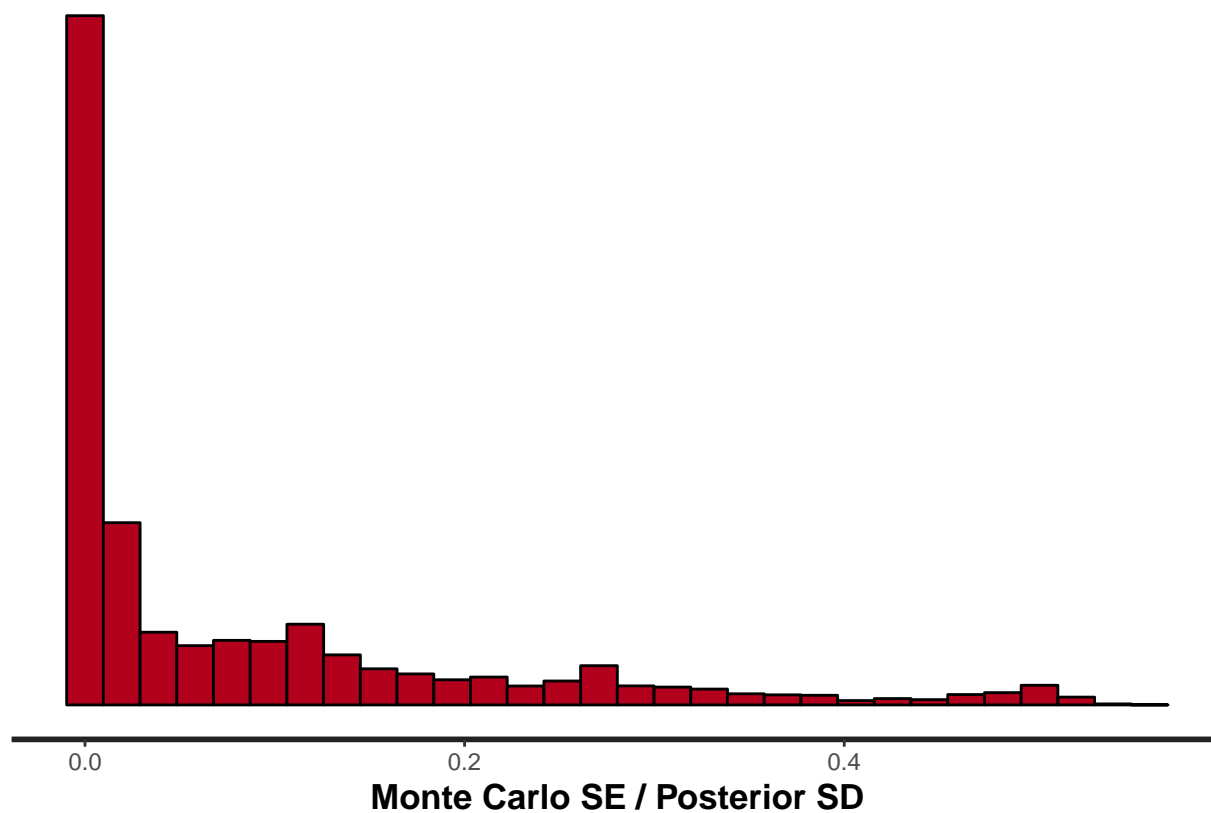
```
## `stat_bin()` using `bins = 30`. Pick better value with `binwidth`.
```



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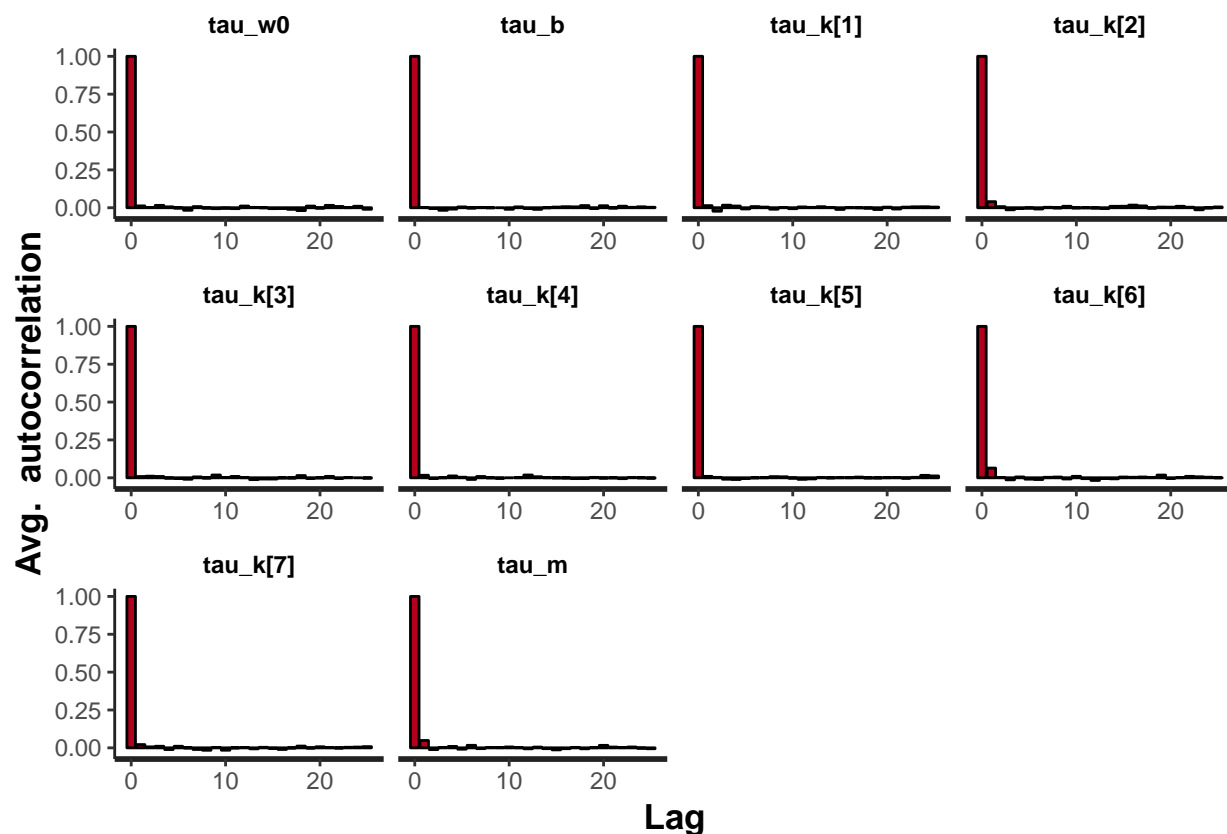
```
## `stat_bin()` using `bins = 30`. Pick better value with `binwidth`.
```

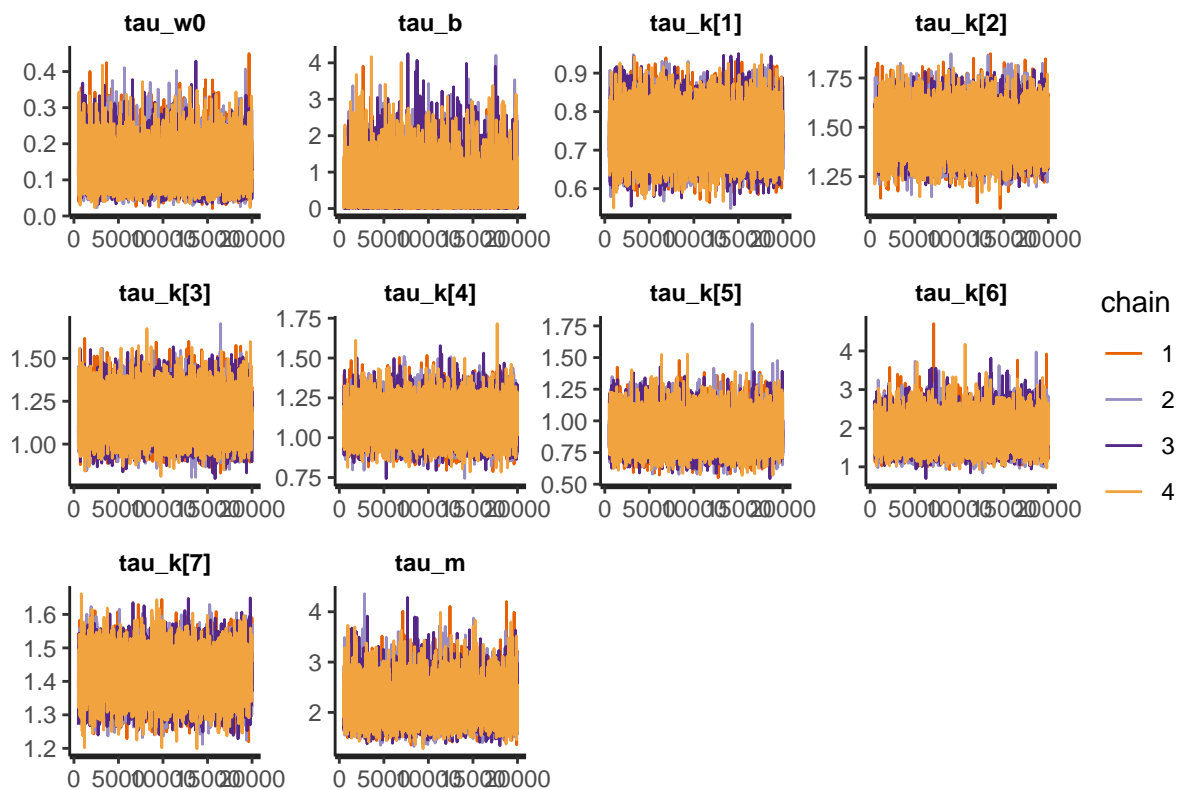


Individual Parameter Diagnostics

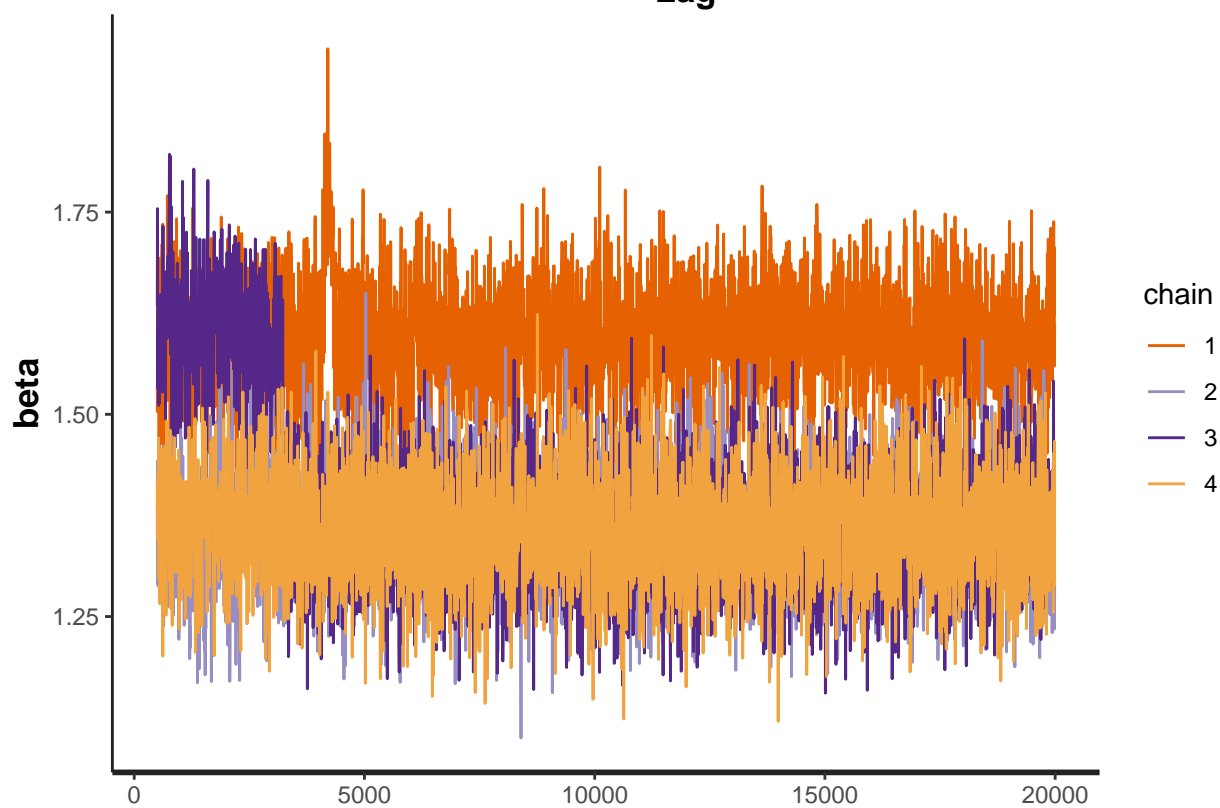
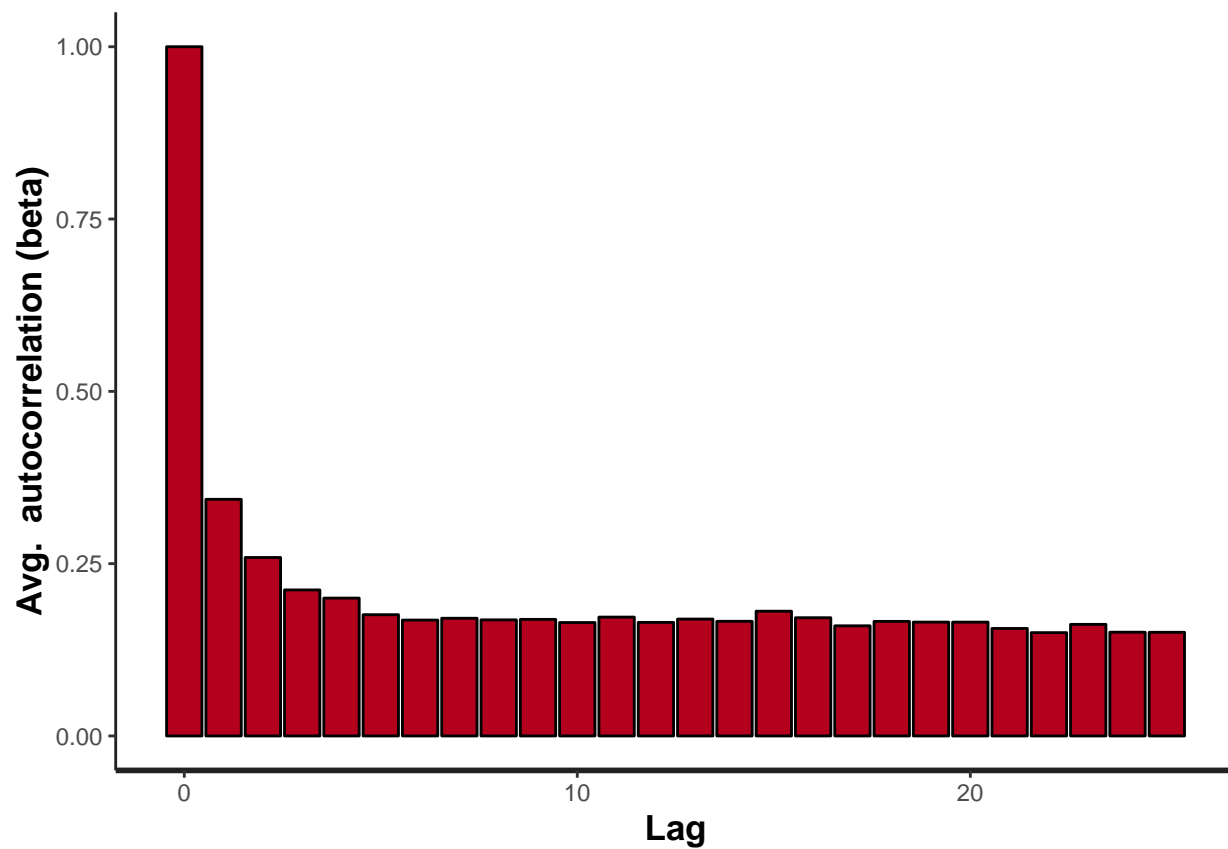
Individual parameter plots. Autocorrelation and trace plots for individual parameters, and histograms of posterior medians for group parameters.

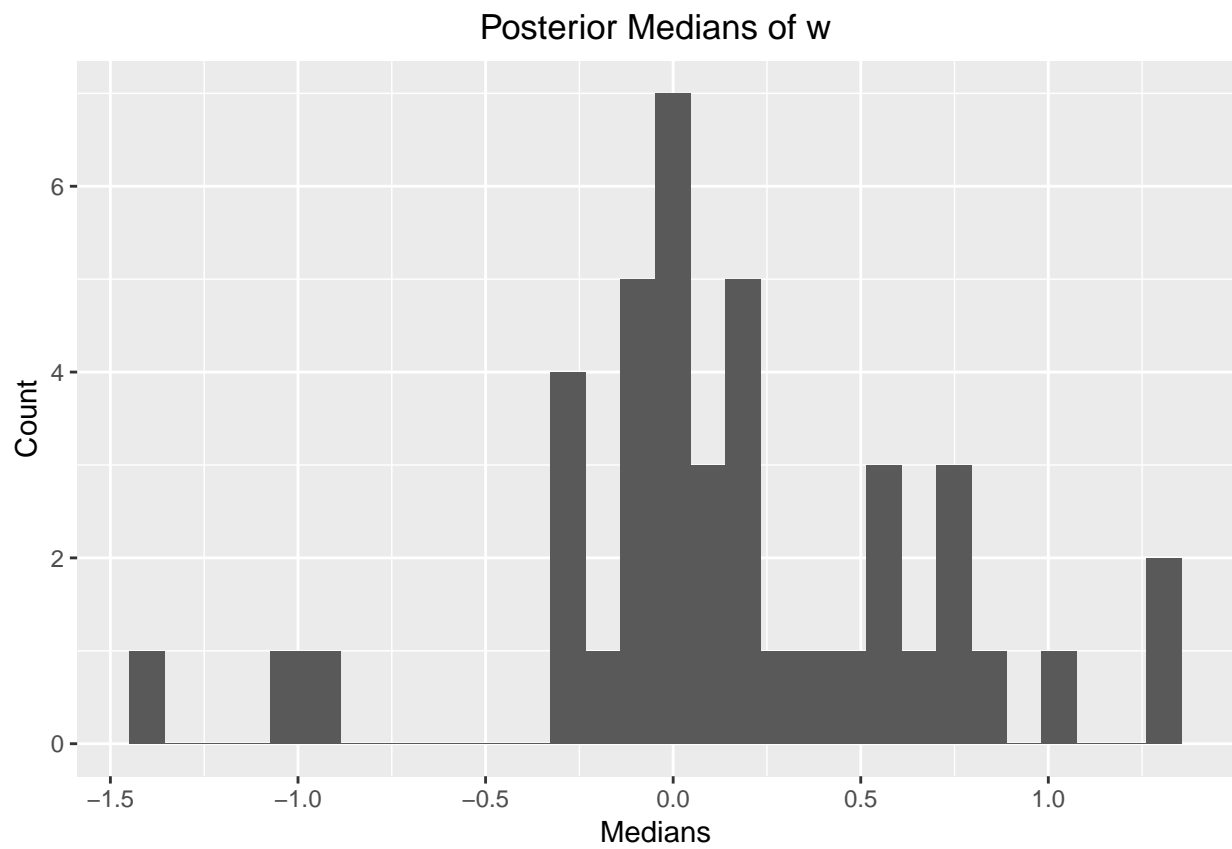
| ## | | mean | se_mean | sd | 25% | 50% | 75% |
|----|----------|-----------|--------------|------------|-----------|-----------|-----------|
| ## | tau_w0 | 0.1399729 | 0.0005302844 | 0.05292387 | 0.1017513 | 0.1334729 | 0.1709609 |
| ## | tau_b | 0.5018895 | 0.0040268077 | 0.49895468 | 0.1464846 | 0.3464797 | 0.6961236 |
| ## | tau_k[1] | 0.7384209 | 0.0004572450 | 0.05634444 | 0.6995779 | 0.7369710 | 0.7755393 |
| ## | tau_k[2] | 1.4763476 | 0.0008473609 | 0.10179683 | 1.4056489 | 1.4727609 | 1.5430126 |
| ## | tau_k[3] | 1.1605932 | 0.0009242369 | 0.11228967 | 1.0837408 | 1.1546510 | 1.2319515 |
| ## | tau_k[4] | 1.1035031 | 0.0008443621 | 0.10380241 | 1.0320168 | 1.0987918 | 1.1695719 |
| ## | tau_k[5] | 0.9131468 | 0.0010121234 | 0.12521178 | 0.8244749 | 0.9026902 | 0.9915875 |
| ## | tau_k[6] | 1.8281238 | 0.0031863046 | 0.37460617 | 1.5642252 | 1.7871106 | 2.0472921 |
| ## | tau_k[7] | 1.4139378 | 0.0005026507 | 0.06046693 | 1.3729222 | 1.4131749 | 1.4534429 |
| ## | tau_m | 2.1433367 | 0.0028909736 | 0.34497575 | 1.8979651 | 2.1009120 | 2.3363878 |
| ## | | n_eff | Rhat | | | | |
| ## | tau_w0 | 9960.60 | 1.0043138 | | | | |
| ## | tau_b | 15353.25 | 1.0031554 | | | | |
| ## | tau_k[1] | 15184.63 | 1.0000756 | | | | |
| ## | tau_k[2] | 14432.17 | 0.9998952 | | | | |
| ## | tau_k[3] | 14760.91 | 1.0000398 | | | | |
| ## | tau_k[4] | 15113.23 | 1.0001682 | | | | |
| ## | tau_k[5] | 15304.65 | 1.0000004 | | | | |
| ## | tau_k[6] | 13822.14 | 0.9998919 | | | | |
| ## | tau_k[7] | 14471.16 | 0.9999640 | | | | |
| ## | tau_m | 14239.31 | 0.9999195 | | | | |



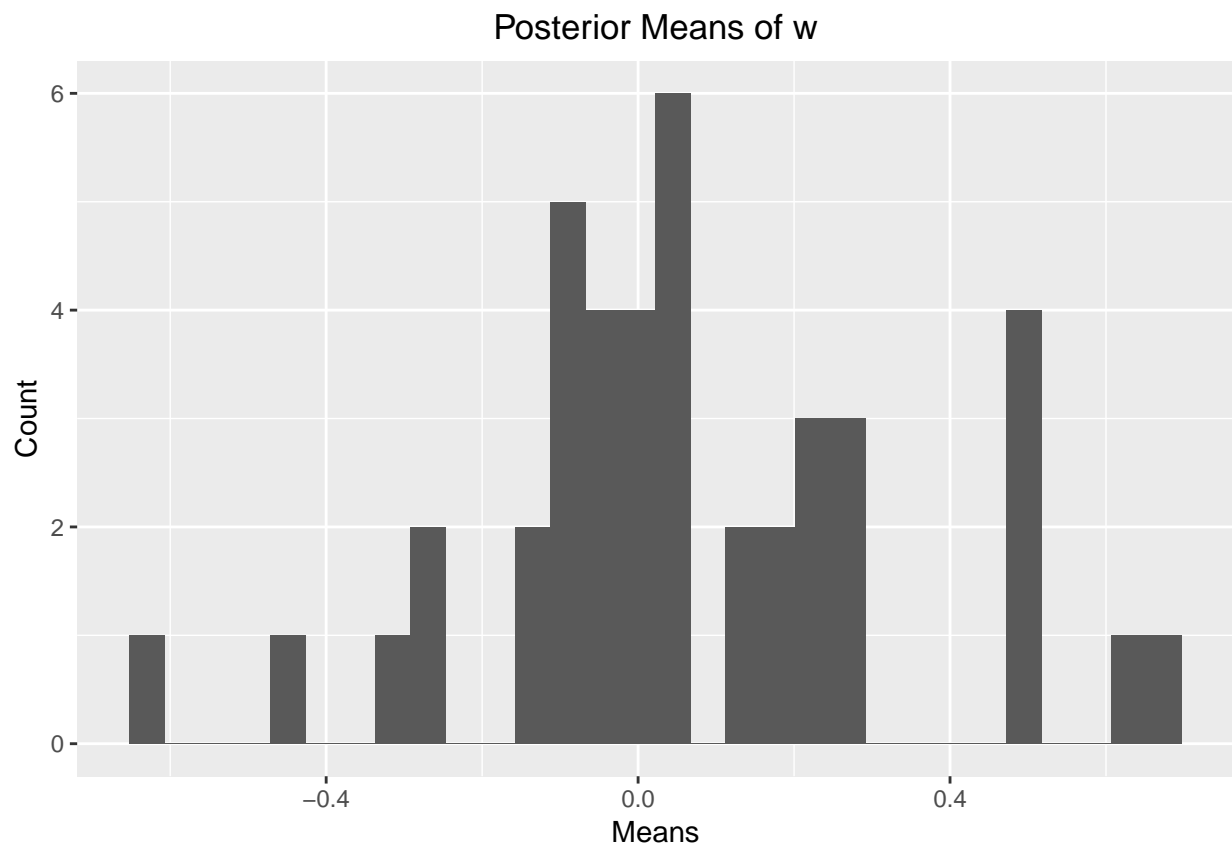


```
##          mean    se_mean      sd    25%    50%    75%   n_eff
## beta  1.425563  0.07152138 0.1257732 1.331904 1.392607 1.523531 3.09246
##          Rhat
## beta  1.708898
```

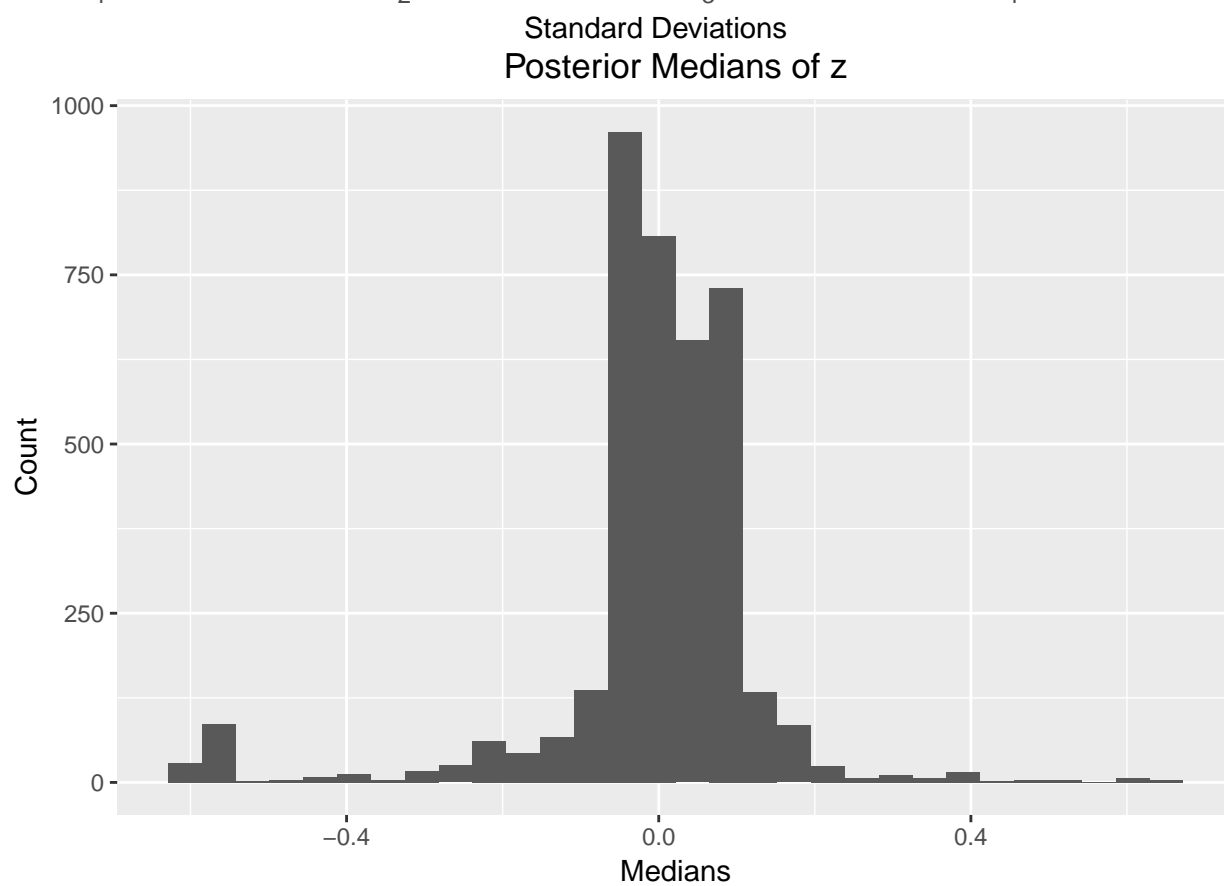
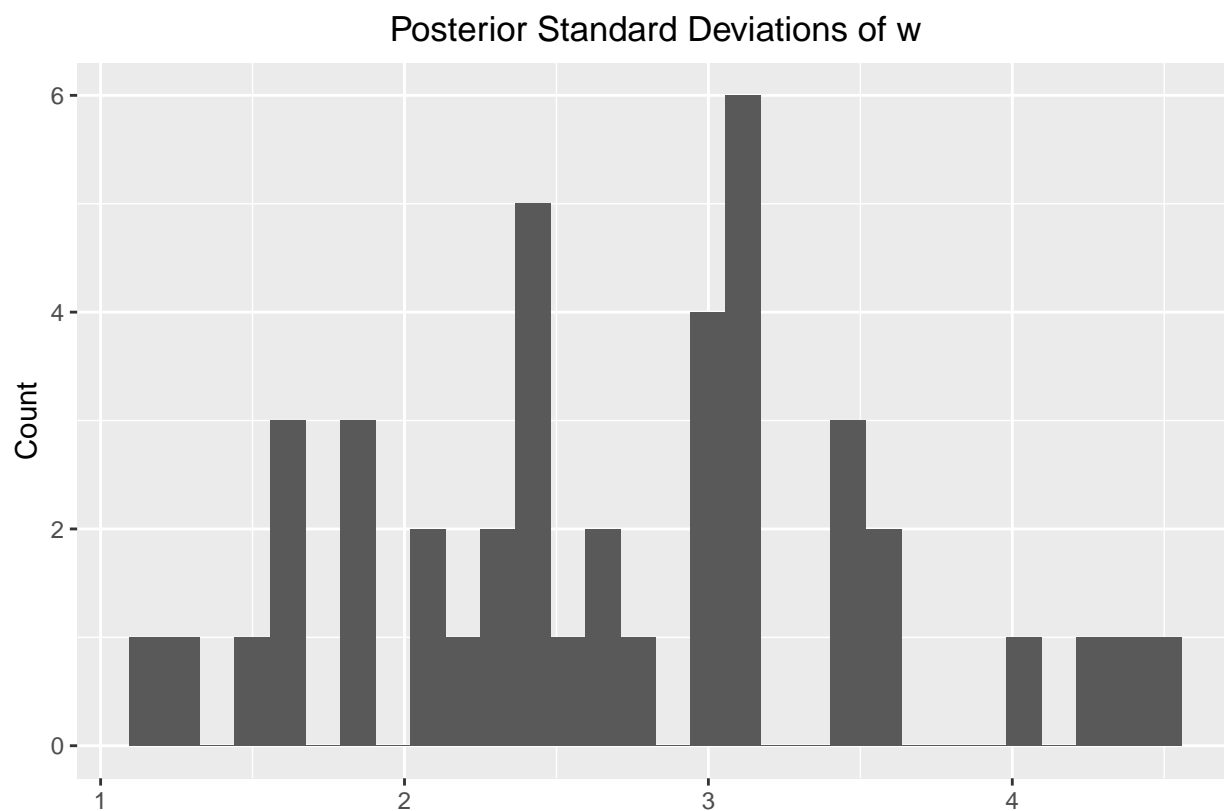




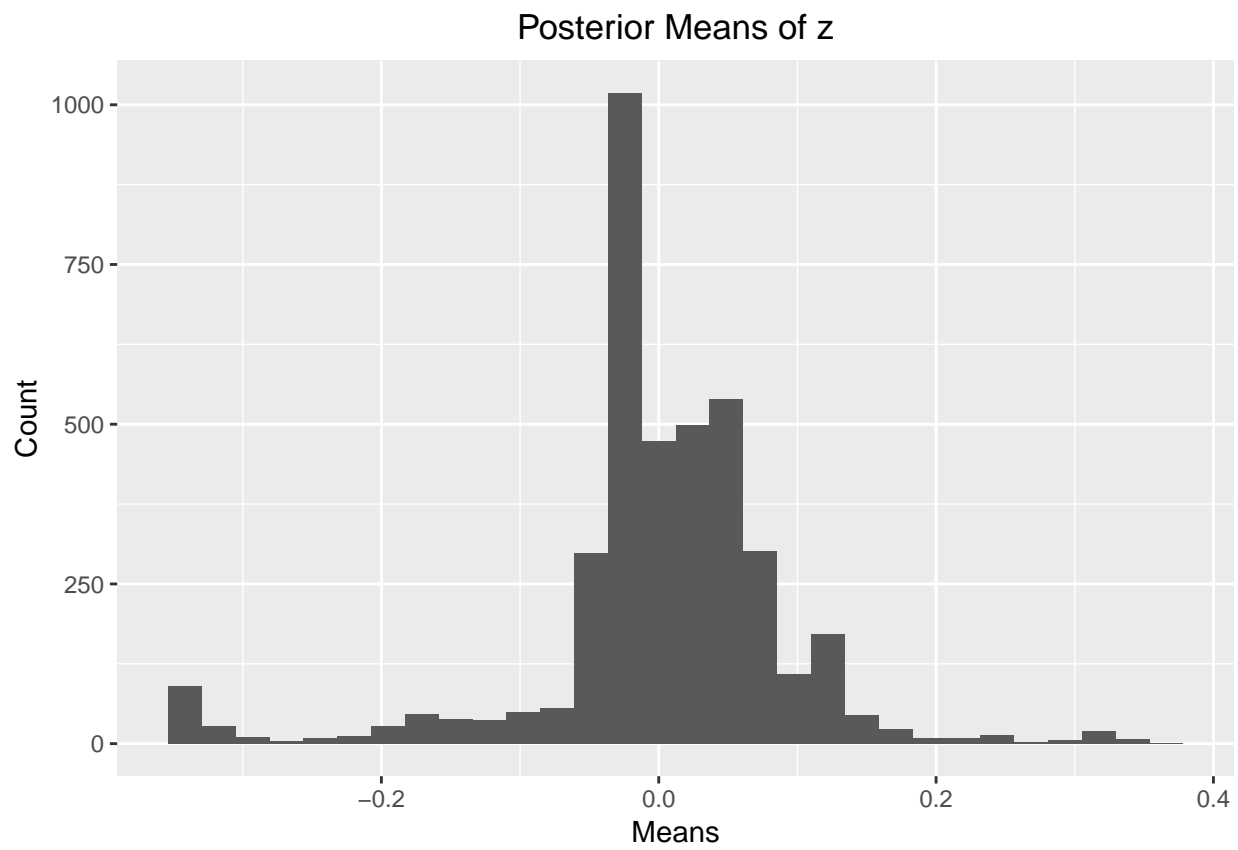
```
## [1] " "
```



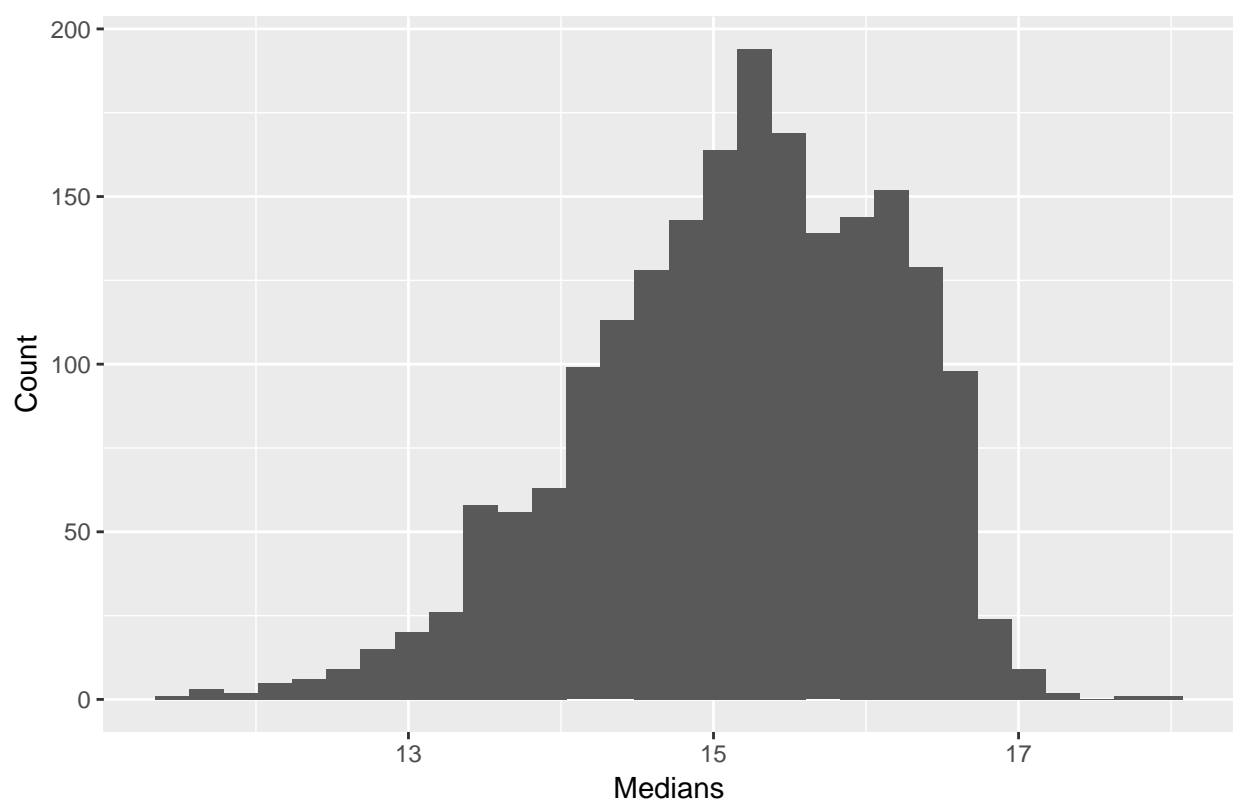
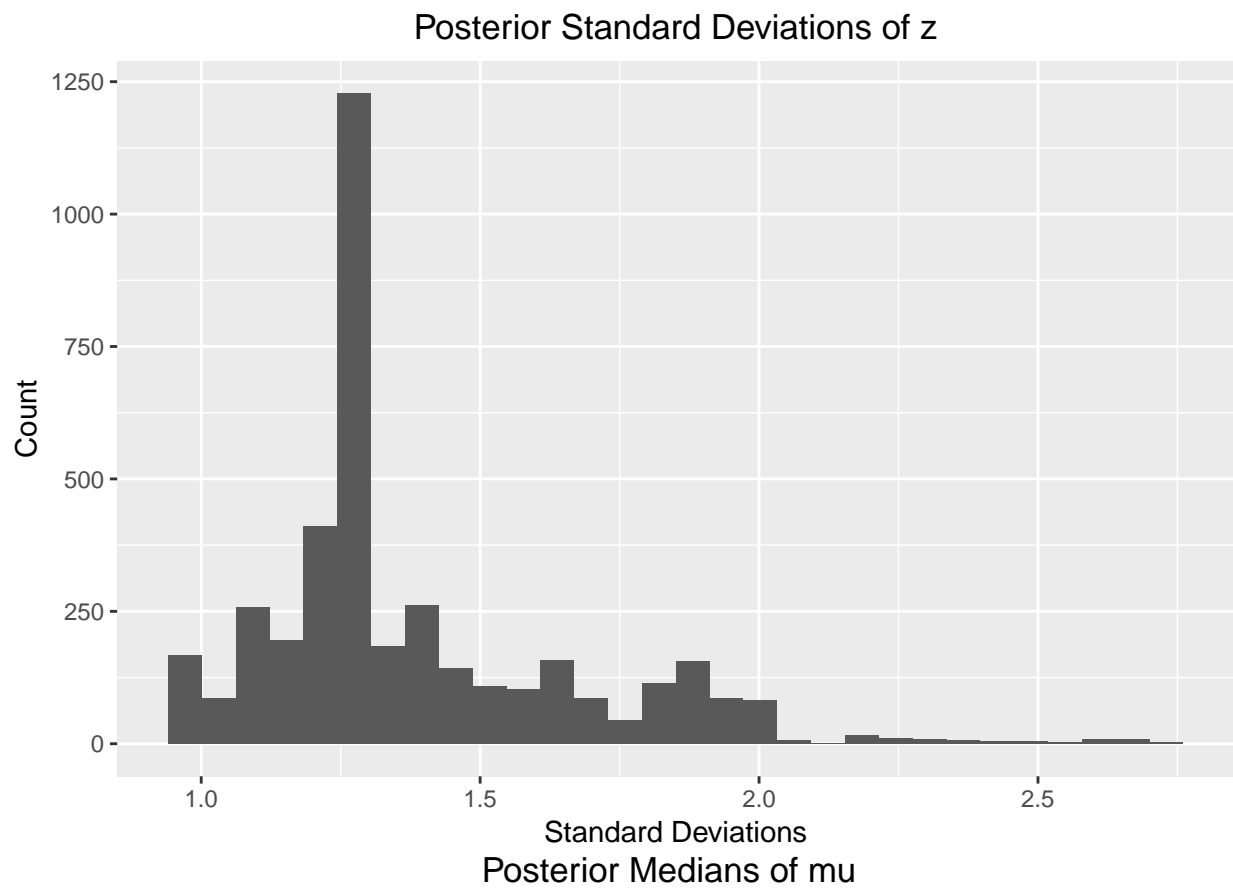
```
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```



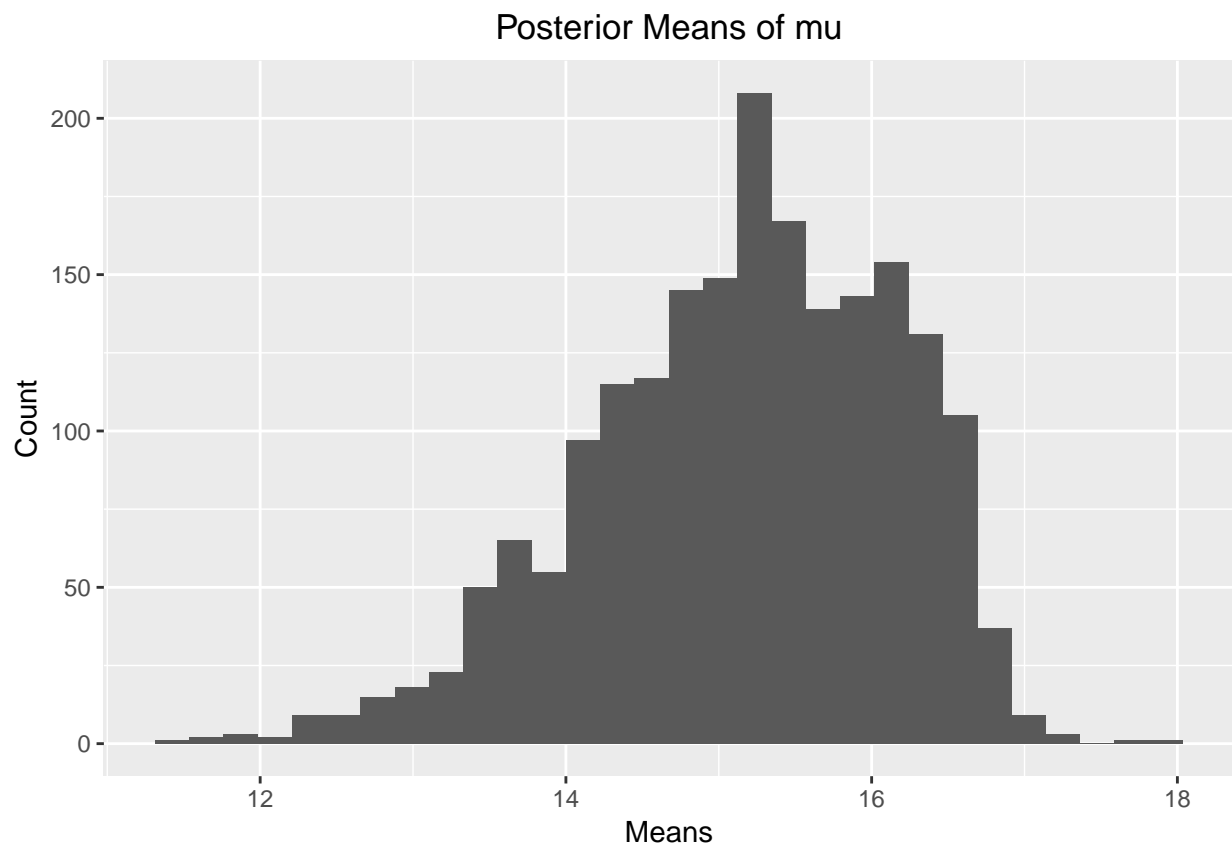

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```



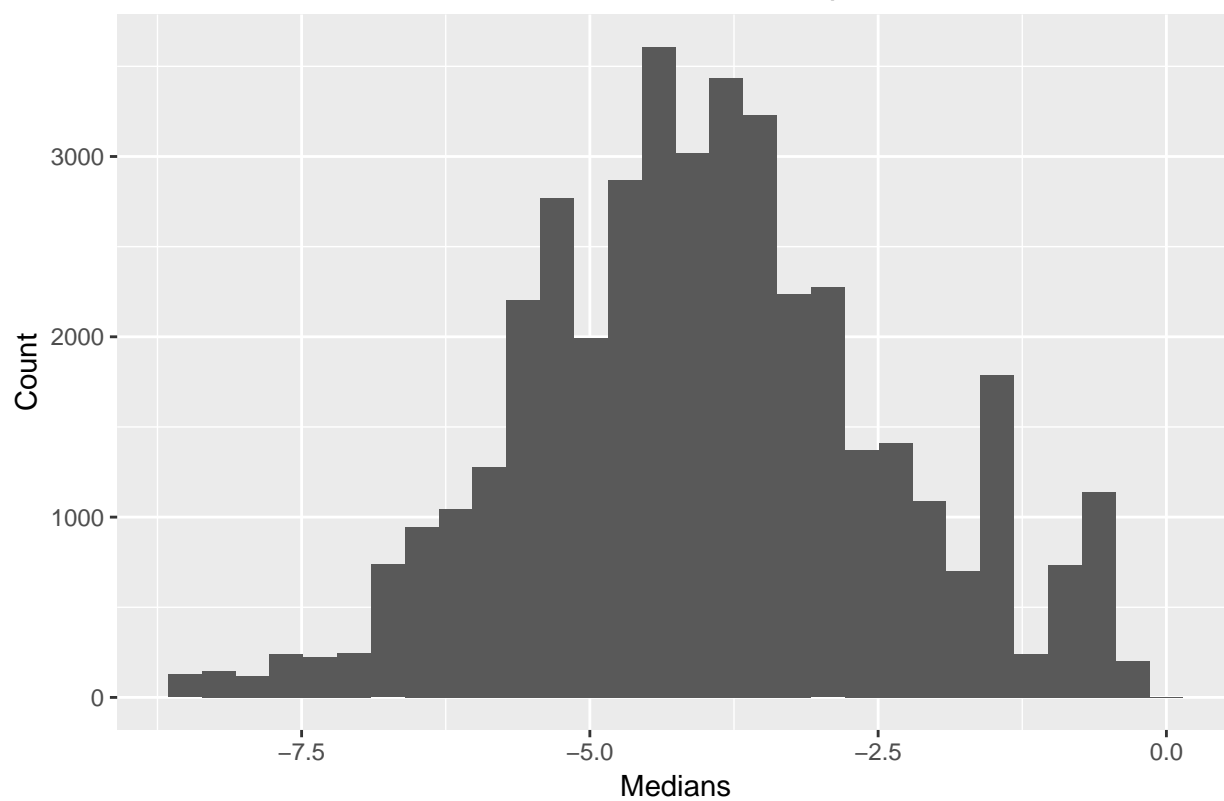
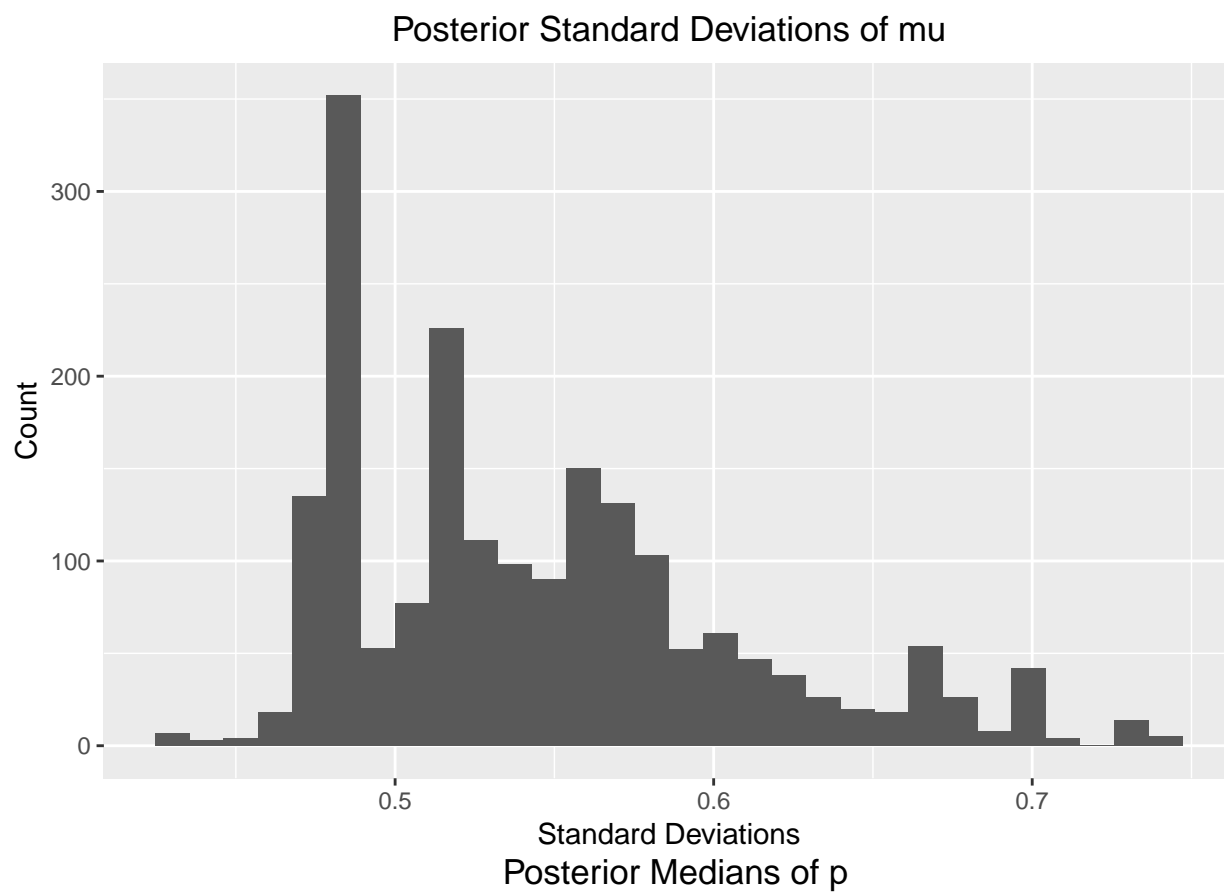
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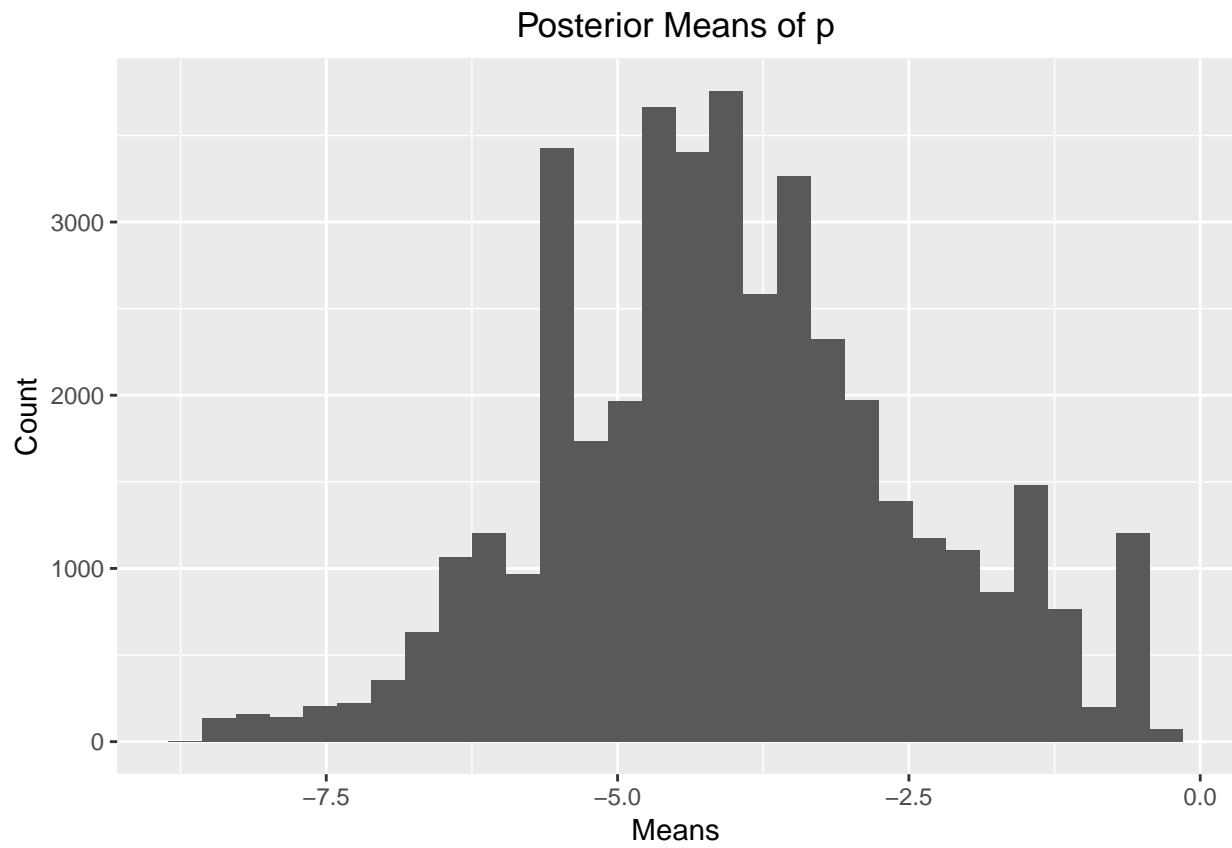
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## [1] " "
```



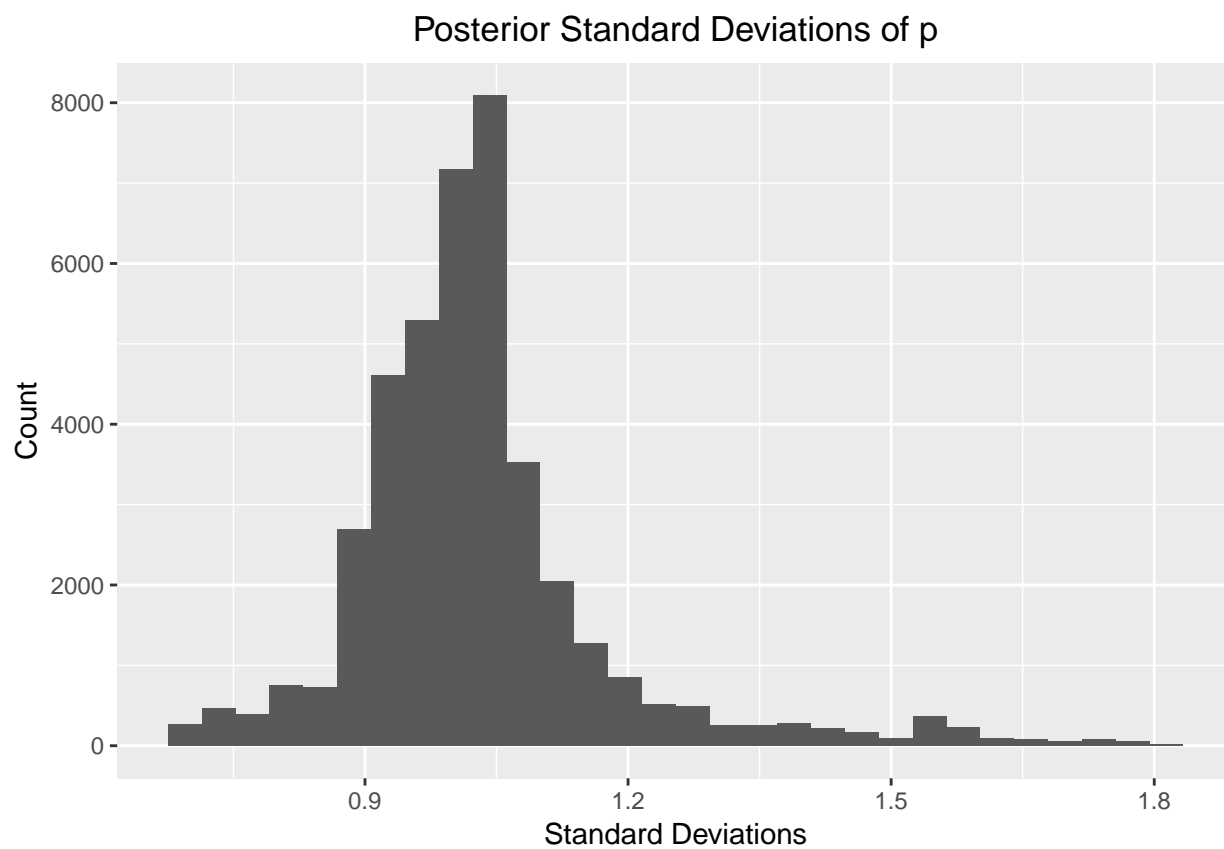
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Histograms for β values and w , and z posterior means across chains.