mcmc-ladder

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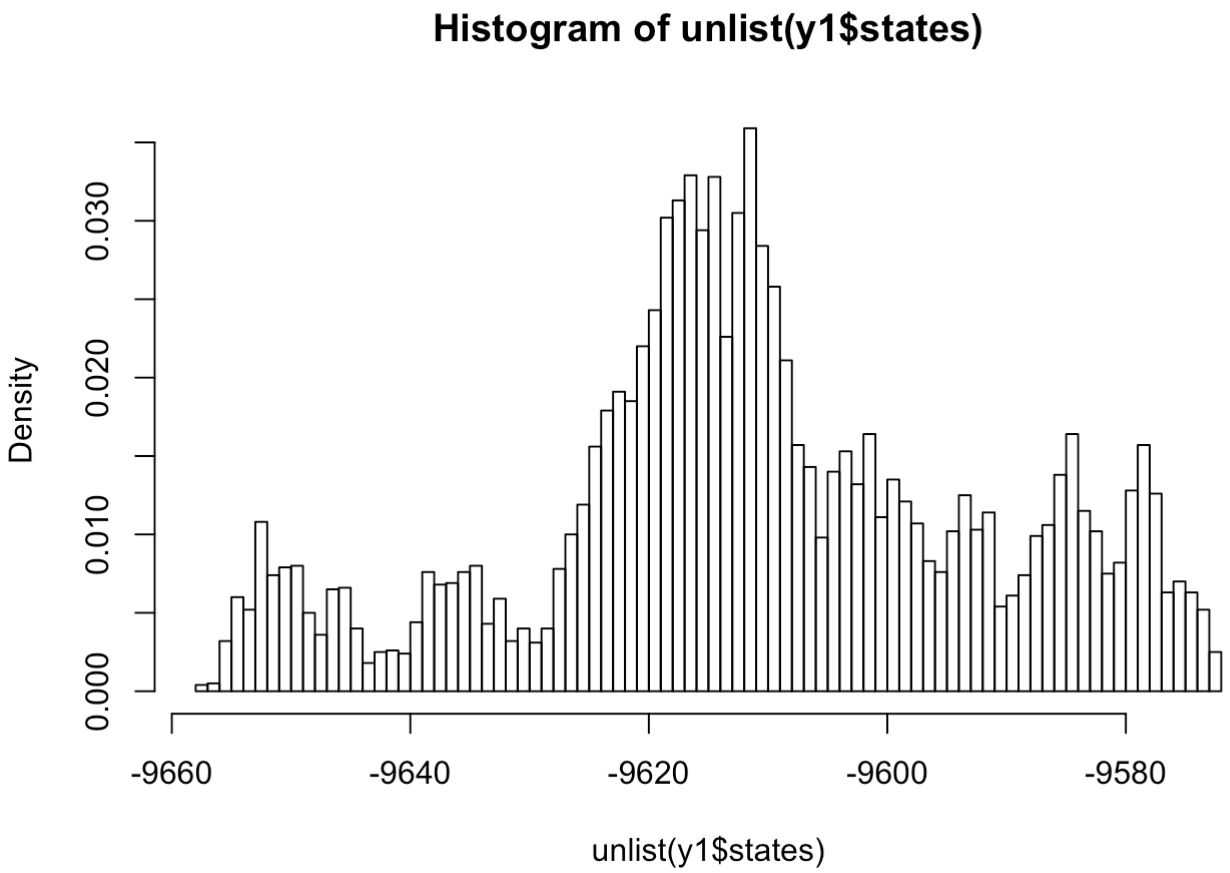
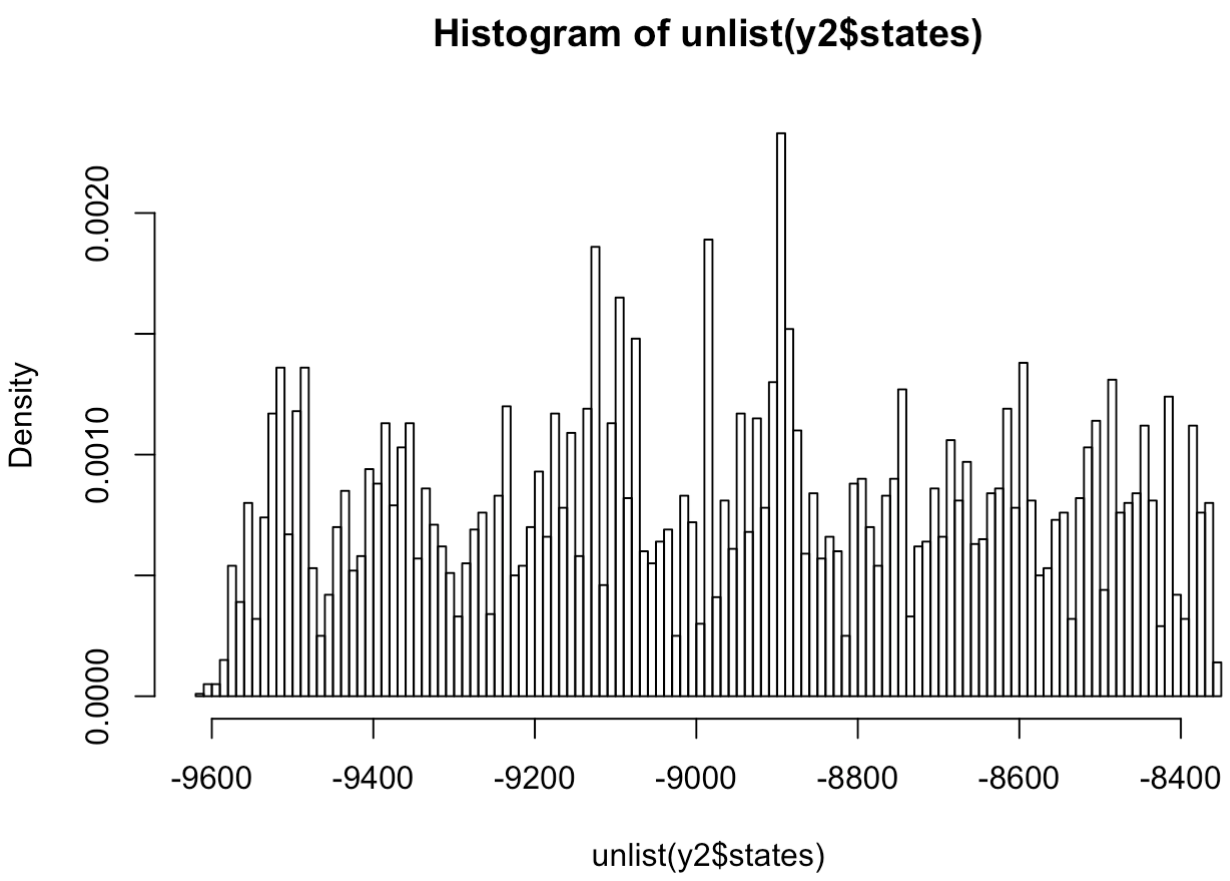
Let's sample from a normal distribution centered at 0 with sd = 1.

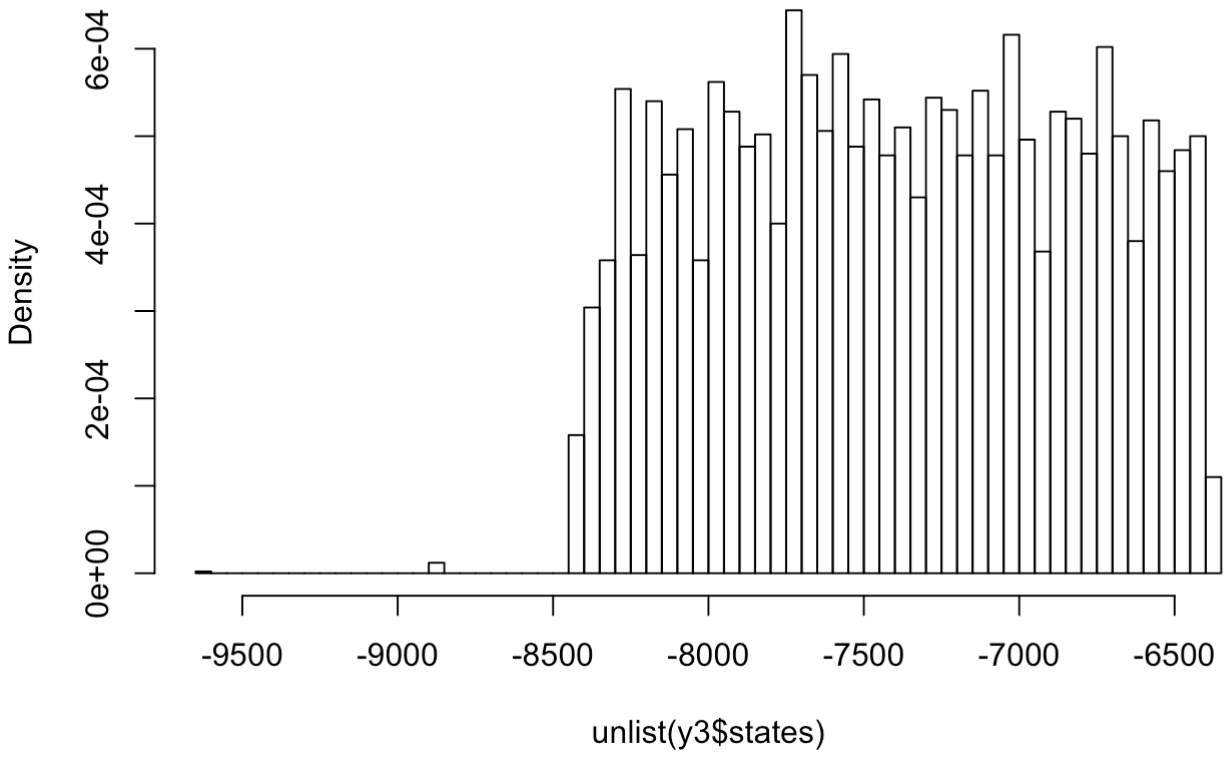
```
niters <- 10000
s0 <- rnorm(1, sd = 10000)

normdensity <- function(x){
  return(dnorm(x,0,1,log=TRUE))
}

sym_proposal_dis <- function(){
  return(rnorm(1, mean = 0, sd = 1))
}

y1 <- run_mcmc(niters, 1000000, prev.chain = list(states=vector(),temp=0), s0, pi = norm
density, sym_proposal_dis)
hist(unlist(y1$states),prob=TRUE, 100)
```



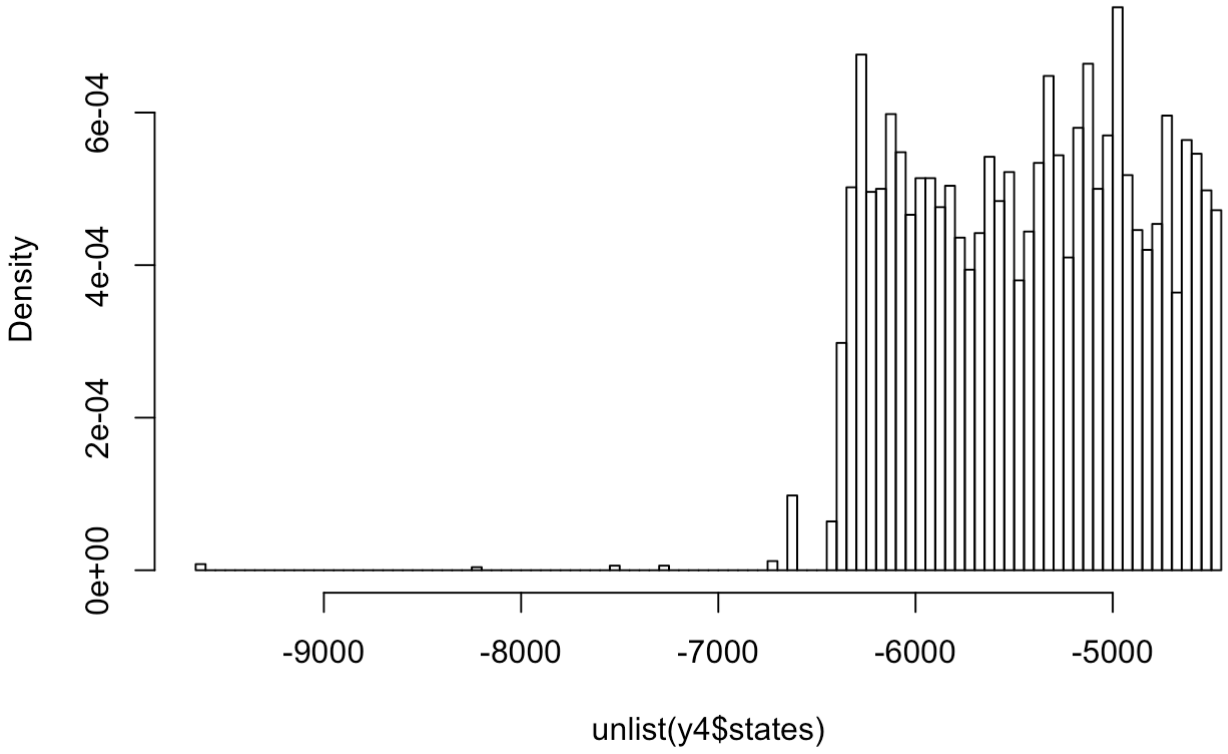
```
#sym_proposal_dis <- function(){
#  return(rnorm(1, 0, sd = 10000))
#}

y2 <- run_mcmc(niters, 10000, prev.chain = y1, s0, pi = normdensity, sym_proposal_dis)
hist(unlist(y2$states),prob=TRUE, 100)
```



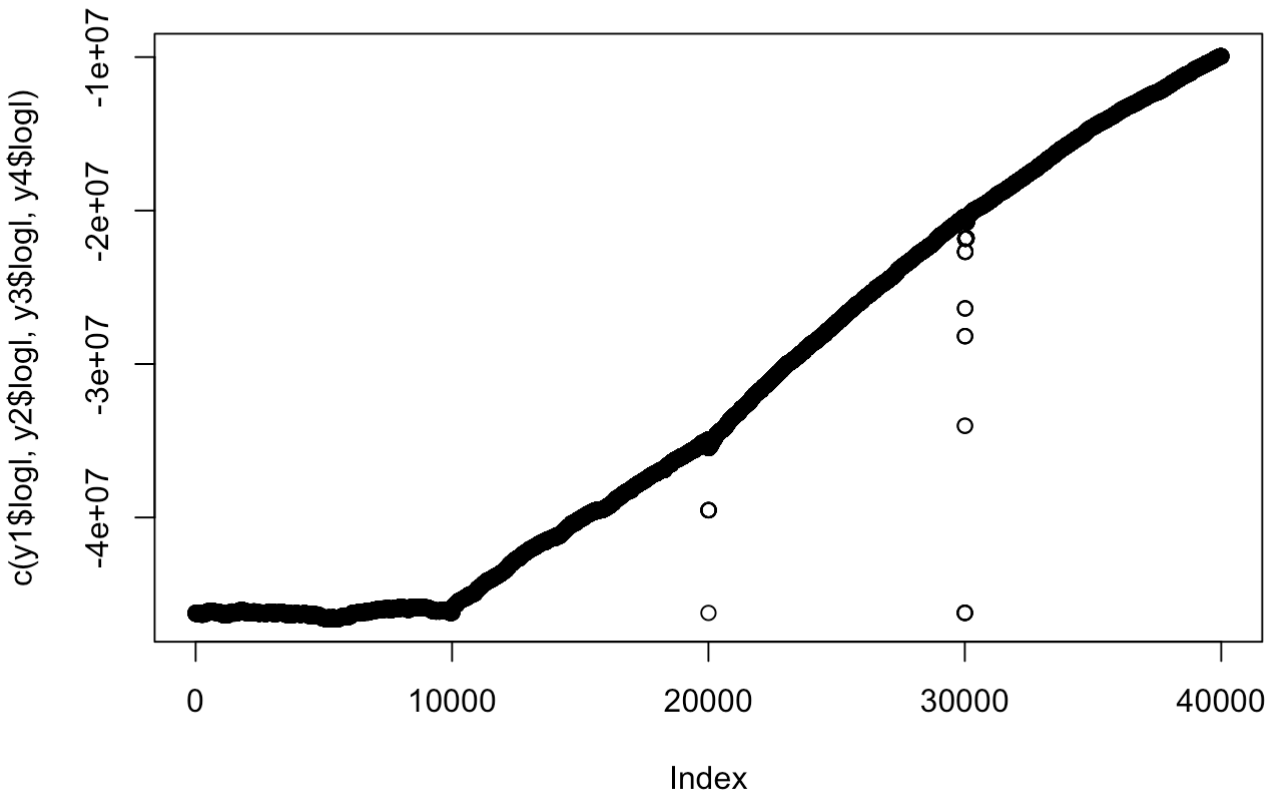

```
#sym_proposal_dis <- function(){
#  return(rnorm(1, 0, sd = 10000))
#}

y3 <- run_mcmc(niters, 100, prev.chain = y2, s0, pi = normdensity, sym_proposal_dis)
hist(unlist(y3$states),prob=TRUE, 100)
```




```
#sym_proposal_dis <- function(){
#  return(rnorm(1, 0, sd = 10000))
#}

y4 <- run_mcmc(niters, 1, prev.chain = y3, s0, pi = normdensity, sym_proposal_dis)
hist(unlist(y4$states),prob=TRUE, 100)

x = seq(-100,100,length=1000)
lines(x,exp(unlist(lapply(x,normdensity))),type="l", col = "red")
```




```
plot(c(y1$logl, y2$logl, y3$logl, y4$logl))
```


c(y1$logl, y2$logl, y3$logl, y4$logl)
-4e+07
-3e+07
-2e+07
-1e+07
0
10000
20000
30000
40000
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