

monastery

Chris Parrish

June 29, 2016

Contents

monastery	1
different exposures	1
map	1

monastery

reference: McElreath, Statistical Rethinking, chap 10, p.321

```
library(rethinking)
library(ggplot2)
```

monastery

different exposures

```
## R code 10.51
num_days <- 30
y <- rpois( num_days , 1.5 )

## R code 10.52
num_weeks <- 4
y_new <- rpois( num_weeks , 0.5*7 )

## R code 10.53
y_all <- c( y , y_new )
exposure <- c( rep(1,30) , rep(7,4) )
monastery <- c( rep(0,30) , rep(1,4) )
d <- data.frame( y=y_all , days=exposure , monastery=monastery )

## R code 10.54
# compute the offset
d$log_days <- log( d$days )
```

map

```
# fit the model
m10.15 <- map(
  alist(
    y ~ dpois( lambda ),
    log(lambda) <- log_days + a + b*monastery,
    a ~ dnorm(0,100),
    b ~ dnorm(0,1)
```

```
),  
  data=d )  
  
## R code 10.55  
post <- extract.samples( m10.15 )  
lambda_old <- exp( post$a )  
lambda_new <- exp( post$a + post$b )  
precis( data.frame( lambda_old , lambda_new ) )  
  
##           Mean StdDev |0.89 0.89|  
## lambda_old 1.65   0.24  1.28  2.02  
## lambda_new 0.59   0.14  0.37  0.81
```