Chapter 9

Running BUGS from R

Advantages of running BUGS from R

- Avoid all the point and click!.
- Can generate data within R (for simulations, say).
- Facilitate convergence diagnostics
- Full use of R graphics for displaying output
- Implementation of posterior predictive checks.

R2WinBUGS and BRugs

R2WinBUGS creates a script file and calls WinBUGS from R. See the Schools example in Sturtz et al. (2005)

BRugs accesses the component API's of OpenBUGS (without using the user interface). The structure of a BRugs program is similar to that of the BUGS script.

Sturtz et al. (2005) write:

"As OpenBugs becomes more reliable, it is planned to merge BRugs and R2WinBUGS into one R package."

R2WinBUGS: Schools Example

See Sturtz et al. (2005).

BRugs: Schools Example

```
#Use File > Change dir… to find required folder

library(BRugs) #Load BRugs package

modelCheck("SchoolsBugs.txt")
modelData("SchoolsData.txt")

nChains=1
modelCompile(numChains=nChains)
modelInits(rep("SchoolsInits.txt",nChains))

modelUpdate(1000) #Burn in
samplesSet(c("theta","mu.theta","sigma.theta"))
modelUpdate(10000,thin=10)
samplesStats("*")
plotDensity("mu.theta",las=1)
samplesCoda("*","Schools") #Write coda format files

library(coda) #Load convergence diagnosis package
coda.menu()
```