Hands-on training session 3

Hui-Walter models with more than two diagnostic tests

Matt Denwood Giles Innocent Sonja Hartnack

2020-02-08

Introduction

Overview

Date/time:

- 20th February 2020
- 14.00 - 15.30

Teachers:

- Matt Denwood (presenter)
- Giles Innocent
- Sonja Hartnack

Recap

Important points from sessions 1 and 2

Session 3a: Hui-Walter models for multiple tests with conditional indepdendence

Model specification

Exercise

Session 3b: Hui-Walter models for multiple tests with conditional depdendence

Model specification

Being careful!

Give them my function

Exercise

Session 3c: Model selection

Methods of selecting models

DIC works fine for hierarchical normal models

Bayes factors work well if you can count them

WAIC works better for a wide range of models, although perhaps not these unless specifying the model in a different way (loop over individuals)

Models tend to be sensitive to priors

Simulating data and testing that your model recovers the parameters is a good idea

Exercise

Session 3 (1 hour 30 mins: Developing skills)

3 tests 1 population
Conditional independence

```
# R code simulating data
# Jags/R code analysing data
# R code to produce appropriate output
```

3 tests 1 population: conditional dependence
How do we code conditional dependence?

```
# R code simulating data
# Jags/R code analysing data
# R code to produce appropriate output
```


Model Selection