The Art of Bayesian Model Checking

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Outline

- Background
- Code: availability and dependencies
- Notation
- Example dataset
- Bayesian p-values
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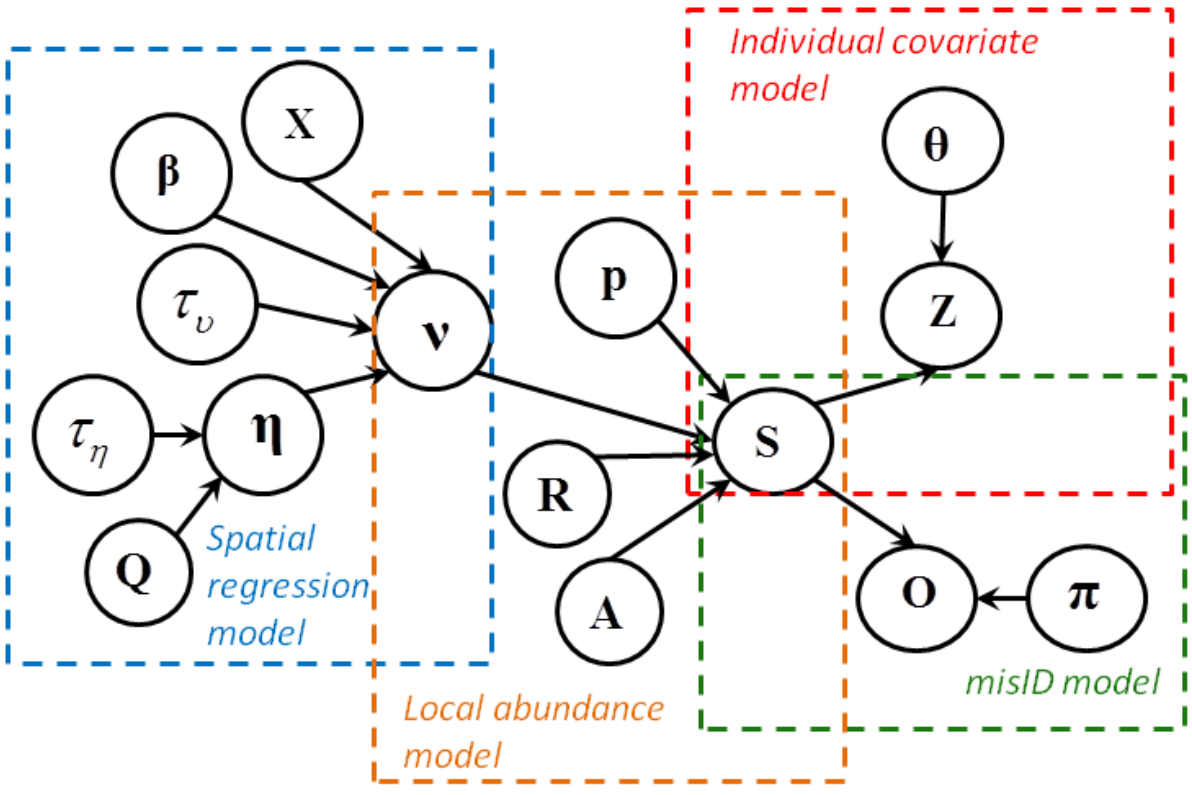
Background

- How do you go about assessing goodness-of-fit in a big hierarchical model?



Code and dependencies

-Presentation and rMarkdown code available at www.github.com/pconn/CAPAM_talk

-Some functions from HierarchicalGOF R package, install available via

```
devtools::install_github("pconn/HierarchicalGOF/Hierarchica
```

NB: This package accompanied Conn et al. (2018); never intended for production level use!

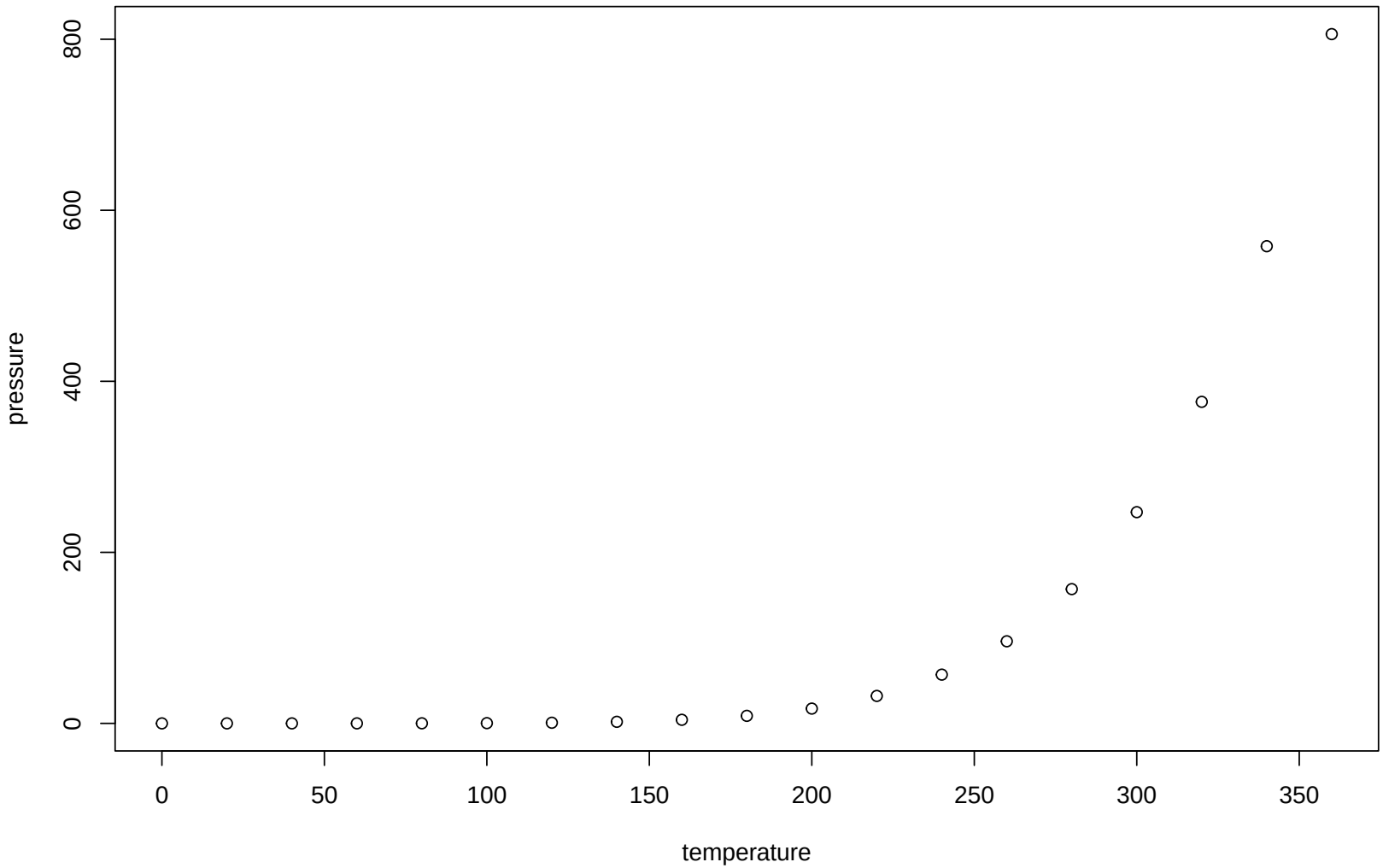
-I will also make some use of the DHARMa package

Slide with R Output

```
summary(cars)
```

```
##      speed           dist       
##  Min.   : 4.0   Min.   :  2.00  
##  1st Qu.:12.0   1st Qu.: 26.00  
##  Median :15.0   Median : 36.00  
##  Mean   :15.4   Mean   : 42.98  
##  3rd Qu.:19.0   3rd Qu.: 56.00  
##  Max.   :25.0   Max.   :120.00
```

Slide with Plot



Conn, Paul B, Devin S Johnson, Perry J Williams, Sharon R Melin, and Mevin B Hooten. 2018. “A Guide to Bayesian Model