Hackathon Data

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How does overall positivity about life affect cognitive performance?

We ask 200 participants to rate their general affect a total of 20 occasions with EMA. On each occasion, they are given a prompt about how then feel and they need to respond on the following 4-point scale: "great", "good", "ehh", "piss off".

Participants also perform a process dissociation task (50 include trials; 50 exclude trials) and a Stroop RT task (50 congruent, 50 incongruent). What is the correlation among the three tasks and how well do you know them?

Setup

General-Affect Team. The goal of this team is to model the EMA likert data. The output is a single parameter θ_{i1}, $i = 1, \ldots, I$ for each person. The "1" is for your task. You should have one leader, one person implement stan and another implement jags.

$$\mathcal{M}_1 : \boldsymbol{Y} \sim \text{Model}(\boldsymbol{\theta}_1, \boldsymbol{\eta})$$

- be sure to agree on the model
- data in `datEMA.RDS`

Process Dissociation Team. The goal of this team is to model the process dissociation data. The output is a parameter pair per person, θ_{i2} is the recollection; θ_{i3} is the familiarity. You should have one leader, one person implement stan and another implement jags.

$$\mathcal{M}_2 : \boldsymbol{Y} \sim \text{Model}(\boldsymbol{\theta}_2, \boldsymbol{\theta}_3)$$

- be sure to agree on the model
- data in `datPD.RDS`

Stroop Team. The goal of this team is to model the Stroop data. The output is a parameter pair per person, θ_{i4} is overall speed; θ_{i5} is the Stroop effect. You should have one leader, one person implement stan and another implement jags.

$$\mathcal{M}_3 : \boldsymbol{Y} \sim \text{Model}(\boldsymbol{\theta}_4, \boldsymbol{\theta}_5, \boldsymbol{\eta})$$

- be sure to agree on the model
- data in `datRT.RDS`

Multivariate Team. Your job is to develop a model to estimate correlations from multivariate data. You are the hierarchical backend. Your input is $\boldsymbol{\theta}_i = (\theta_{i1}, \ldots, \theta_{i5})'$, the vector of five true scores. You provide the multivariate model. You should have one leader, one person implement stan and another implement jags.

- Let's agree on a model
- Let's simulate data to develop it while we wait

Presentations

Teams will work together, interactively to provide an assessment of correlations, and, importantly, a measure of uncertainty in these correlations.

Each team will prove a 20 minute talk at 3:00. I will use the balance of the time thereafter to talk about a different approach to Bayesian analysis that emphasizes updating rather than posterior outputs.