Bayesian Hierarchical Modeling

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March 22, 2015

goals (suggested)

- explain why we need (Bayesian) hierarchical modeling
- provide an overview of the flexibility using this approach (JAGS, e.g. nonlinear models)
- run simulations demonstrating the benefit over classical estimation (e.g. small N, asymptotics)
- discuss the problems of calculating Bayes factors

primary literature (suggested):

- Chapters 16 & 17 of Gelman & Hill (2006)
- Rouder, Morey, & Pratte (in press)

secondary literature (suggested):

- Baayen, Davidson, & Bates (2008)
- Judd, Westfall, & Kenny (2012)
- Barr, Levy, Scheepers, & Tily (2013)
- Browne, Draper, & others (2006)
- Fahrmeir et al. (2013)

References (see also bib/bibliography.bib)

Baayen, R. H., Davidson, D. J., & Bates, D. M. (2008). Mixed-effects modeling with crossed random effects for subjects and items. *Journal of Memory and Language*, *59*(4), 390–412.

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Browne, W. J., Draper, D., & others. (2006). A comparison of Bayesian and likelihood-based methods for fitting multilevel models. *Bayesian Analysis*, *1*(3), 473–514.

Fahrmeir, L., Kneib, T., Lang, S., Scott, M., Simonoff, J., & Marx, B. (2013). Bayesian multilevel models. *The SAGE Handbook of Multilevel Modeling*, 53.

Gelman, A., & Hill, J. (2006). *Data analysis using regression and multilevel/hierarchical models*. Cambridge University Press.

Judd, C. M., Westfall, J., & Kenny, D. A. (2012). Treating stimuli as a random factor in social psychology: A new and comprehensive