Applied Bayesian Modeling, ICSPR 2014
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Assignment 5: Tuesday, July 8, 2014

Due: Thursday, July 10, 2014
Please email your work to the TAs, put `[bayeshw5]` in the subject line of the email and submit your work in a PDF file. Thank you!

Estimate a binary logit regression in WinBUGS or JAGS.

Using the file `hainmueller.hiscox.2006.csv` in the folder `Homework/HW 5` on in `z:/karreth/Applied Bayesian Modeling/`, write code and fit a Bayesian logit model. Be sure to assess convergence and supply a brief interpretation of the model results. Present your results as you would in a scholarly article: make a results table with the important quantities of interest (posterior estimates, credible intervals), and also convert the logit coefficients into "something more interpretable" of your choice. *Please include all code you used to complete this assignment.*

The dataset is a cleaned up and modified version of the 1996 American National Election studies as used in Hainmueller and Hiscox (2006). This study investigated the determinants of individuals' support for free trade or protectionist policies. The outcome variable is a dummy `protectionist`—coded as 1 if a respondent expressed a preference for more protectionist policies, and coded as 0 if a respondent favored free trade. The explanatory variables are (see Table A2 in Hainmueller and Hiscox (2006) for more details):

- `age`: the incumbent's age.
- `female`: a binary indicator for female respondents.
- `marginal`: a binary indicator for trade union members.
- `partyid`: the respondent's party identification: coded from 0 "strong Democrat" to 6 "strong Republican".
- `ideology`: the respondent's ideology: coded 0 if conservative, 1 if moderate, and 2 if liberal.
- `schooling`: years of full-time education completed.

You will need to import the data from to WinBUGS, JAGS, or R. For WinBUGS, you can open the data in R and then use the `writeDatafileR` function to transform the data into BUGS format. For JAGS and R, you can follow the examples given in the tutorial at `http://www.jkarreth.net/bayes2014.html` and that you learned in the previous labs. You may also need to recode or transform some variables.

Have fun!!

Reference

Hainmueller, J. and Hiscox, M. J. (2006). Learning to Love Globalization: Education and Individual Attitudes Toward International Trade. *International Organization*, 60(2):469–498.