As Bayesian models usually generate a lot of samples (*iterations*), one could want to plot them as well, instead (or along) the posterior “summary” (with indices like the 90% HDI). This can be done quite easily by extracting all the iterations in get\_predicted from the psycho package.

**The Model**

# Load packages

library(tidyverse)

library(psycho)

# Import data

df <- psycho::affective

# Fit a logistic regression model

fit <- rstanarm::stan\_glm(Sex ~ Adjusting, data=df, family = "binomial")

We fitted a Bayesian logistic regression to predict the sex (*W / M*) with one’s ability to flexibly adjust to his/her emotional reaction.

**Plot**

To visualize the model, the most neat way is to extract a “reference grid” (*i.e.*, a theorethical dataframe with balanced data). Our refgrid is made of equally spaced predictor values. With it, we can make predictions using the previously fitted model. This will compute the median of the posterior prediction, as well as the 90% credible interval. However, we’re interested in keeping all the prediction samples (iterations). Note that get\_predicted automatically transformed log odds ratios (the values in which the model is expressed) to probabilities, easier to apprehend.

# Generate a new refgrid

refgrid <- df %>%

dplyr::select(Adjusting) %>%

psycho::refdata(length.out=10)

# Get predictions and keep iterations

predicted <- psycho::get\_predicted(fit, newdata=refgrid, keep\_iterations=TRUE)

# Reshape this dataframe to have iterations as factor

predicted <- predicted %>%

tidyr::gather(Iteration, Iteration\_Value, starts\_with("iter"))

# Plot all iterations with the median prediction

ggplot(predicted, aes(x=Adjusting)) +

geom\_line(aes(y=Iteration\_Value, group=Iteration), size=0.3, alpha=0.01) +

geom\_line(aes(y=Sex\_Median), size=1) +

ylab("Probability of being a man\n") +

theme\_classic()

