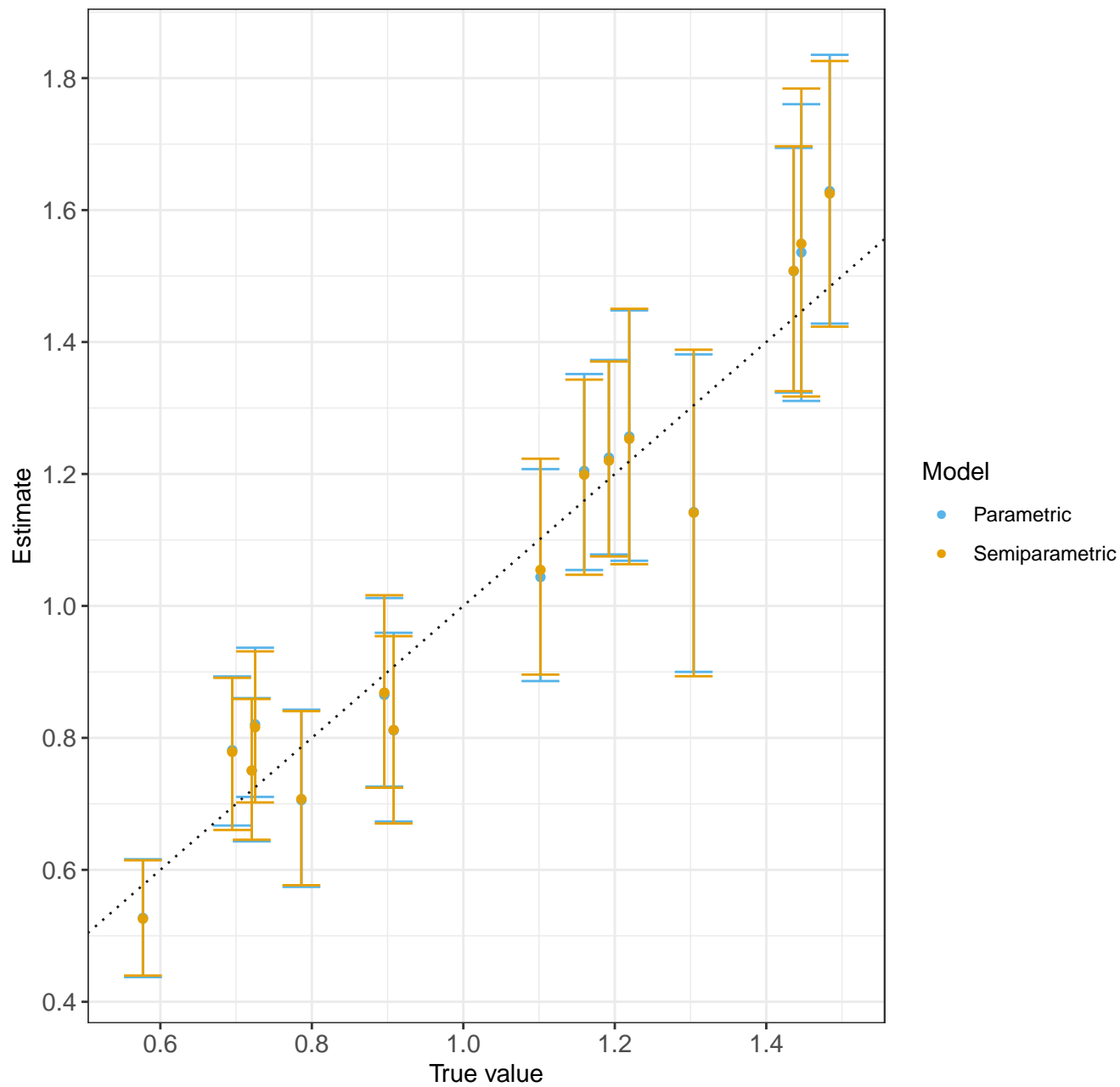
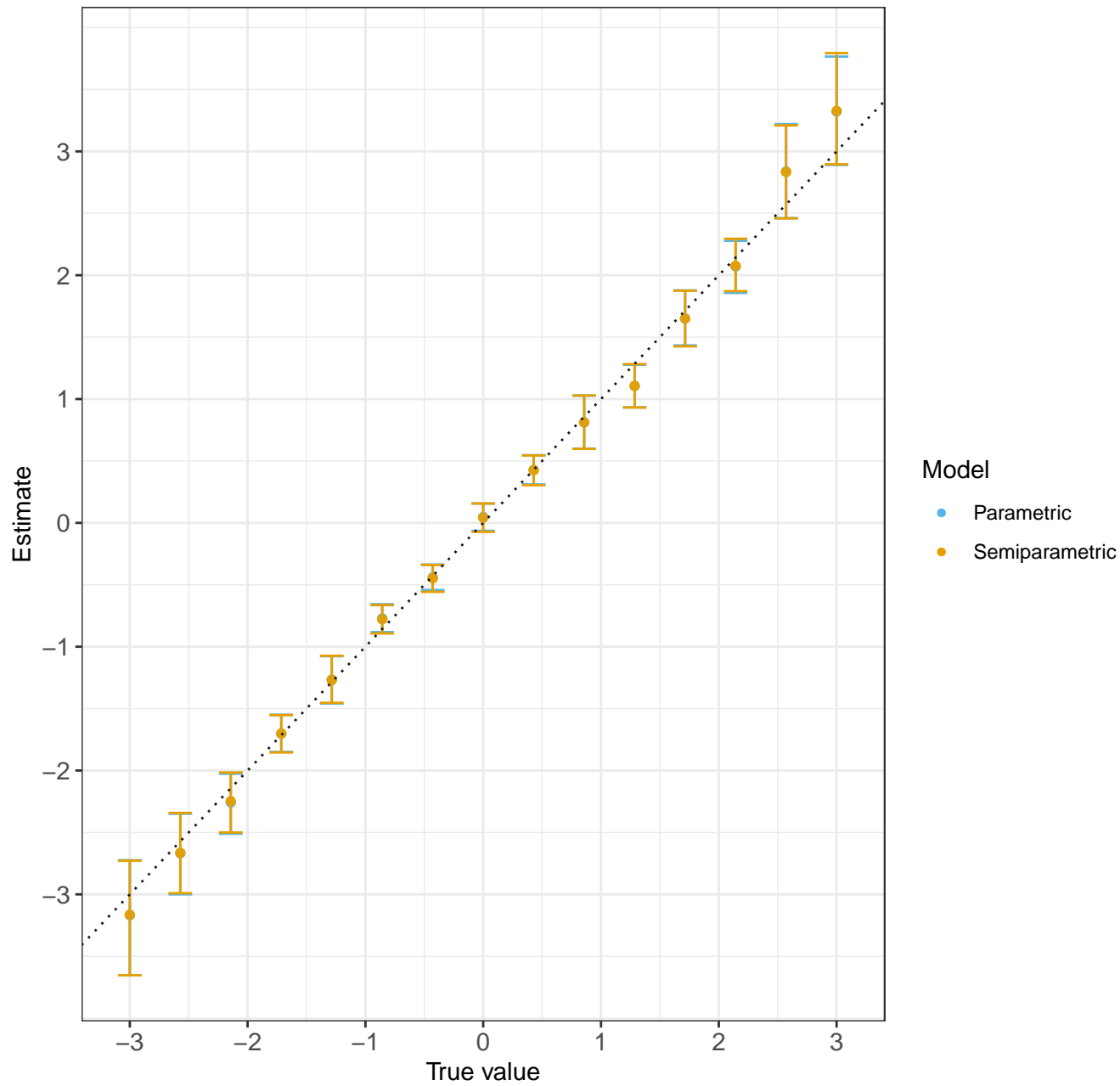


Discrimination parameters

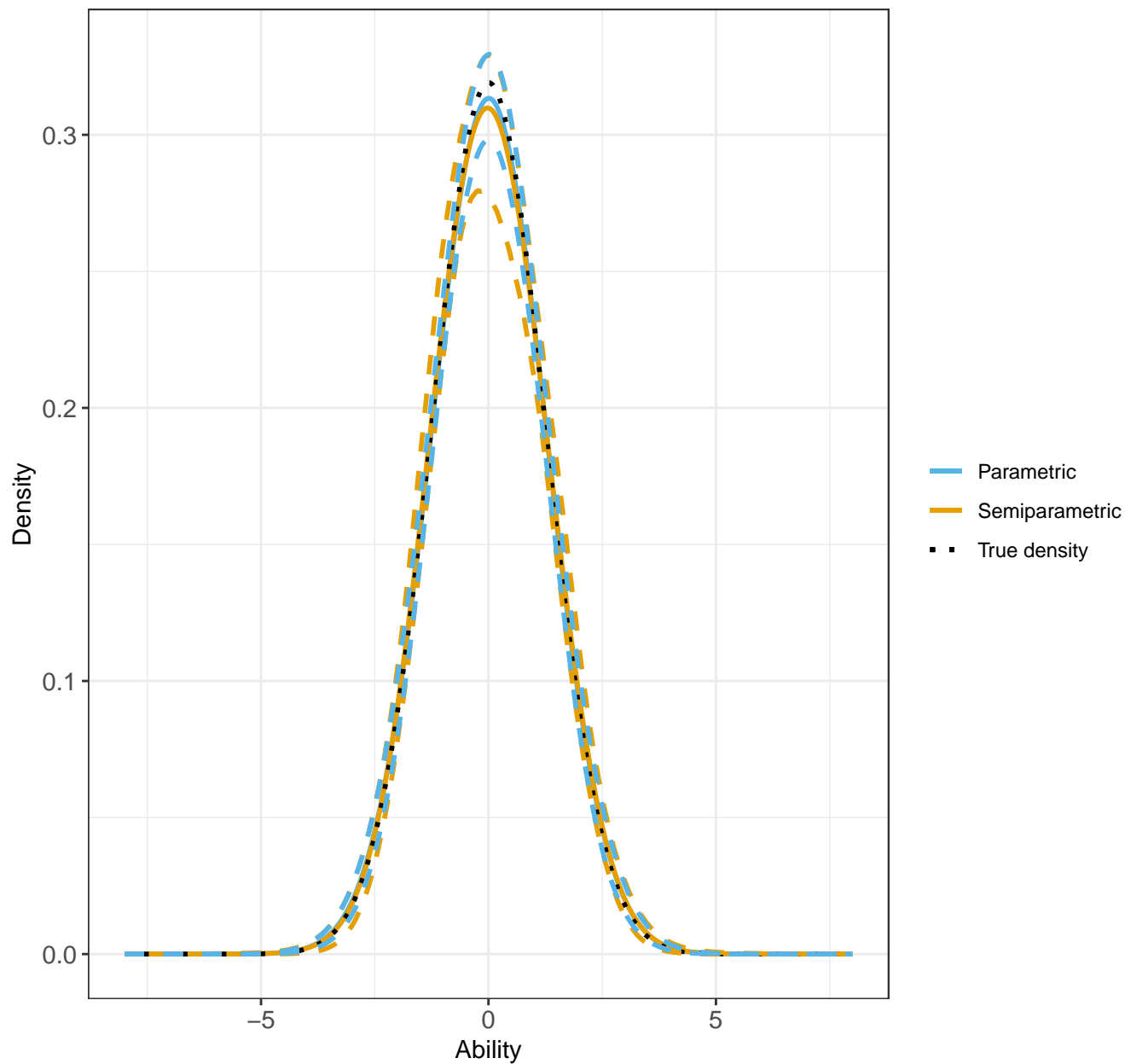


# Difficulty parameters

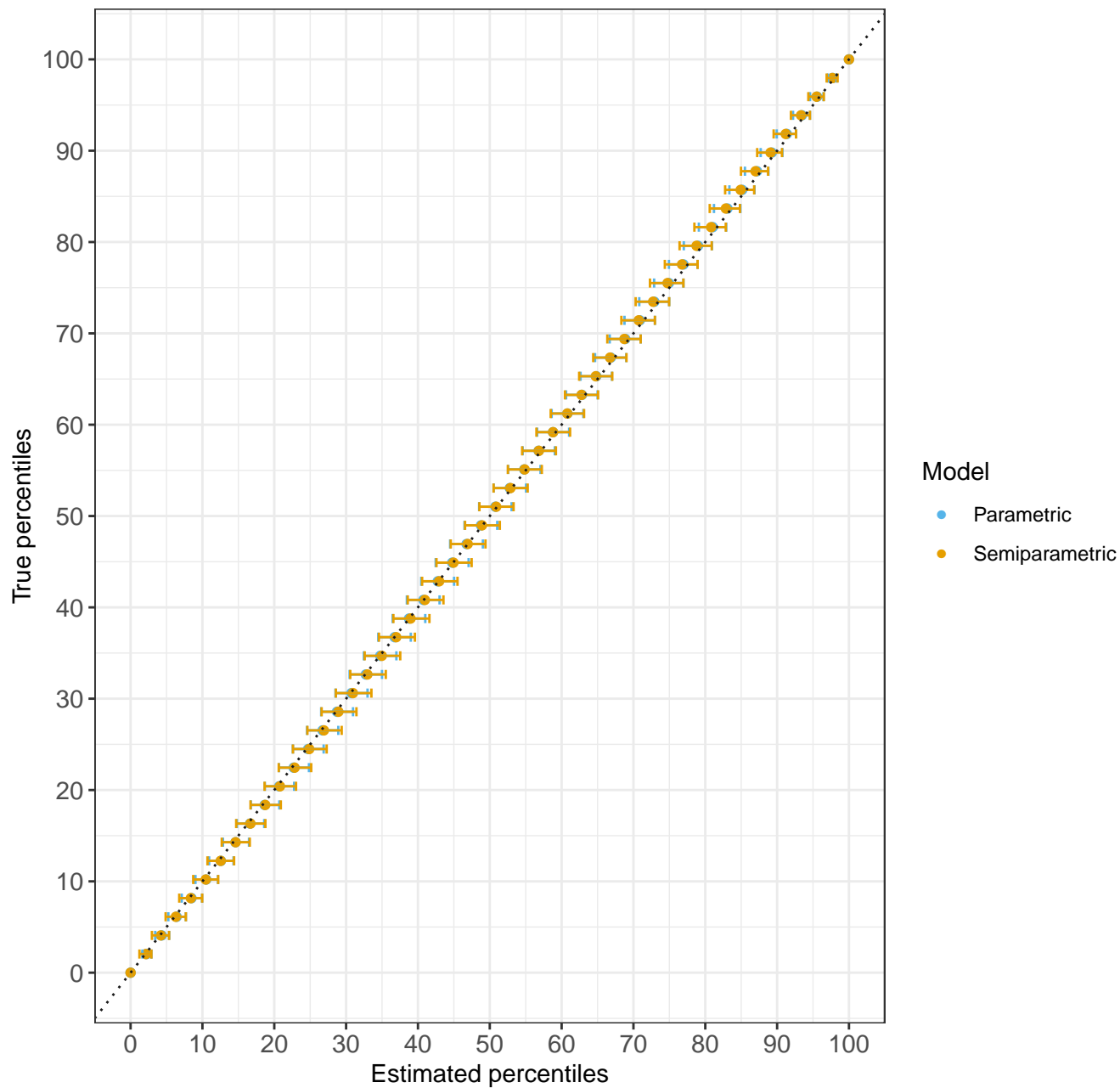


# Unimodal simulation

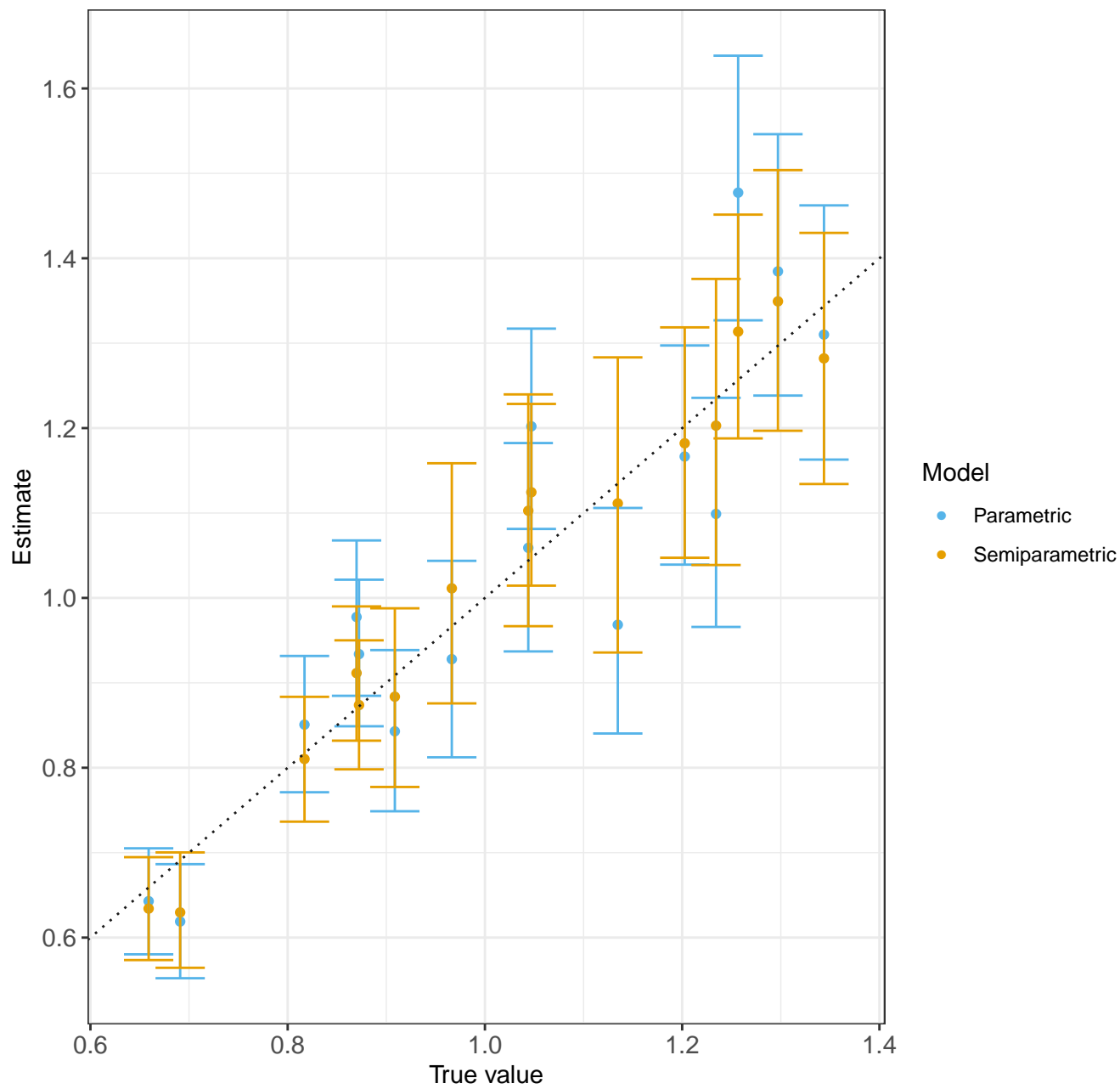
## Estimate of distribution of abilities



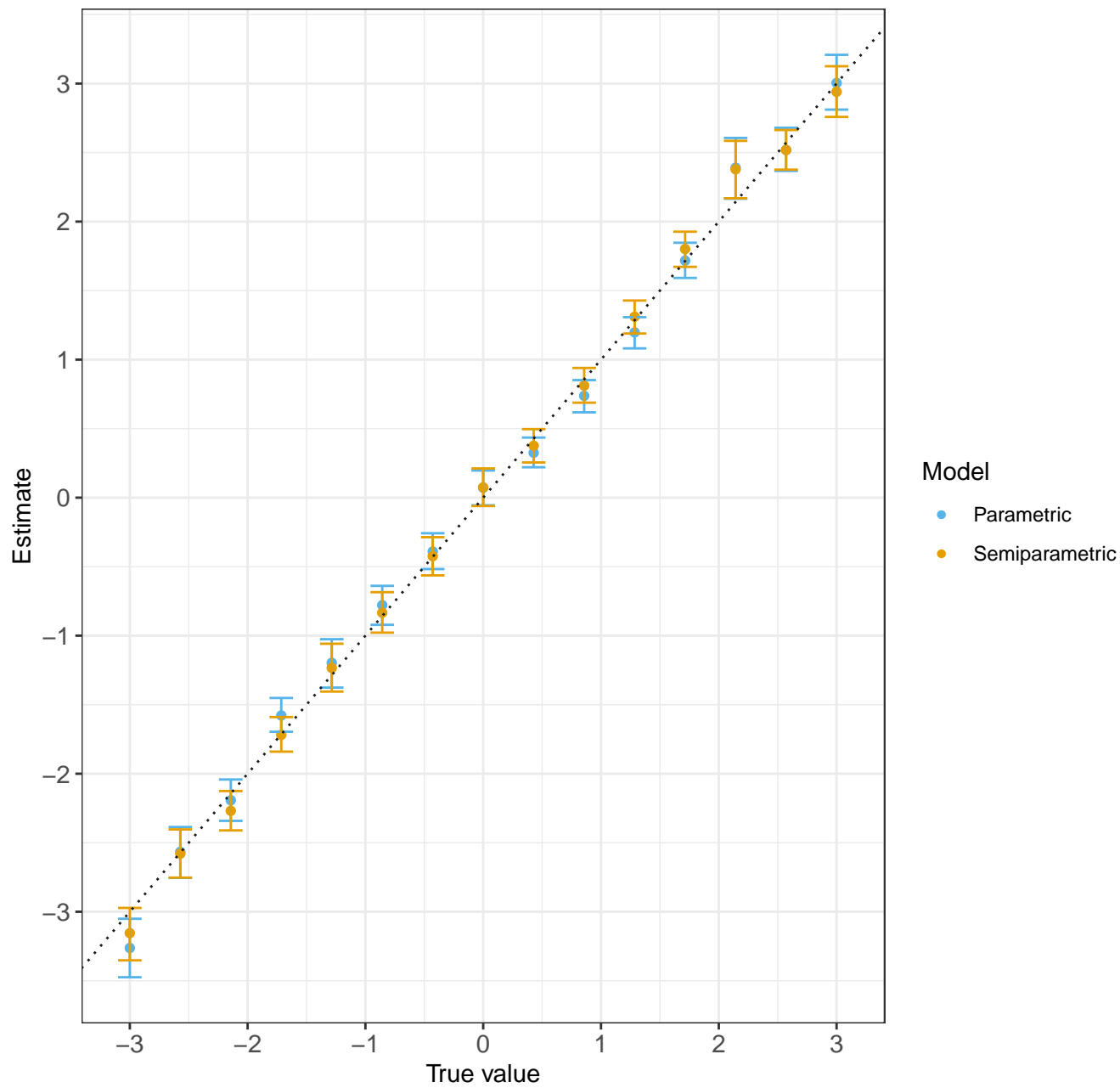
# Unimodal simulation



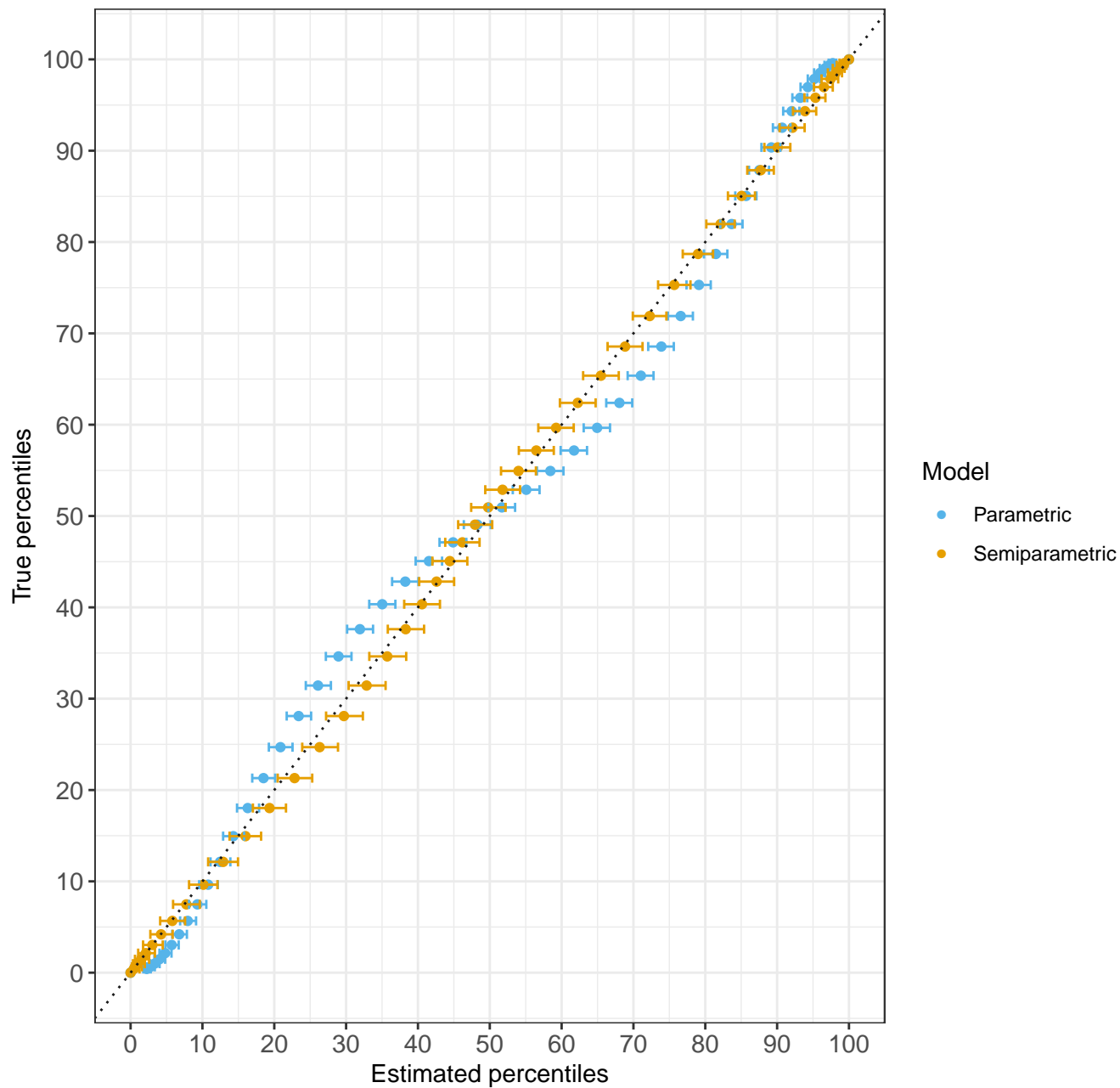
Discrimination parameters



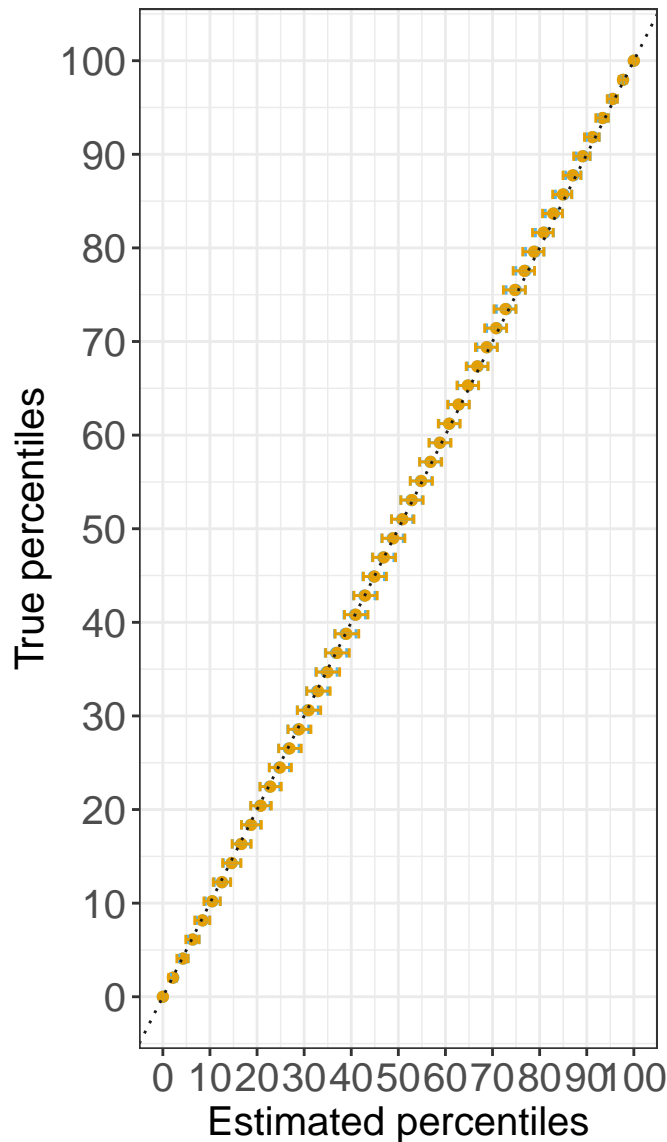
Difficulty parameters



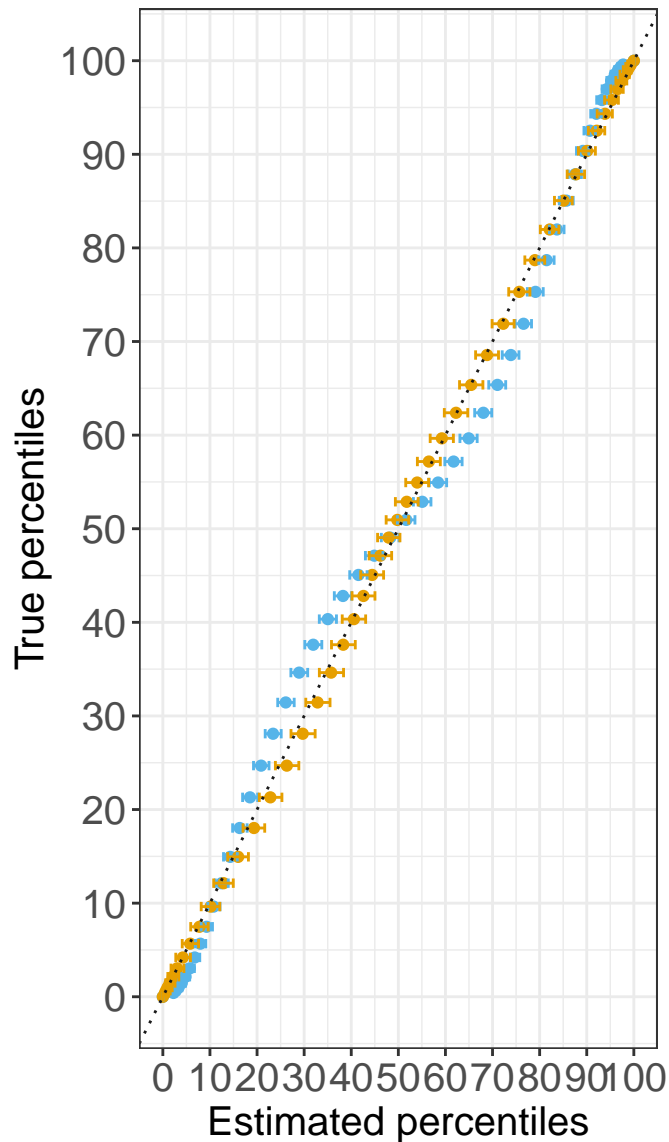
Bimodal simulation



Unimodal simulation



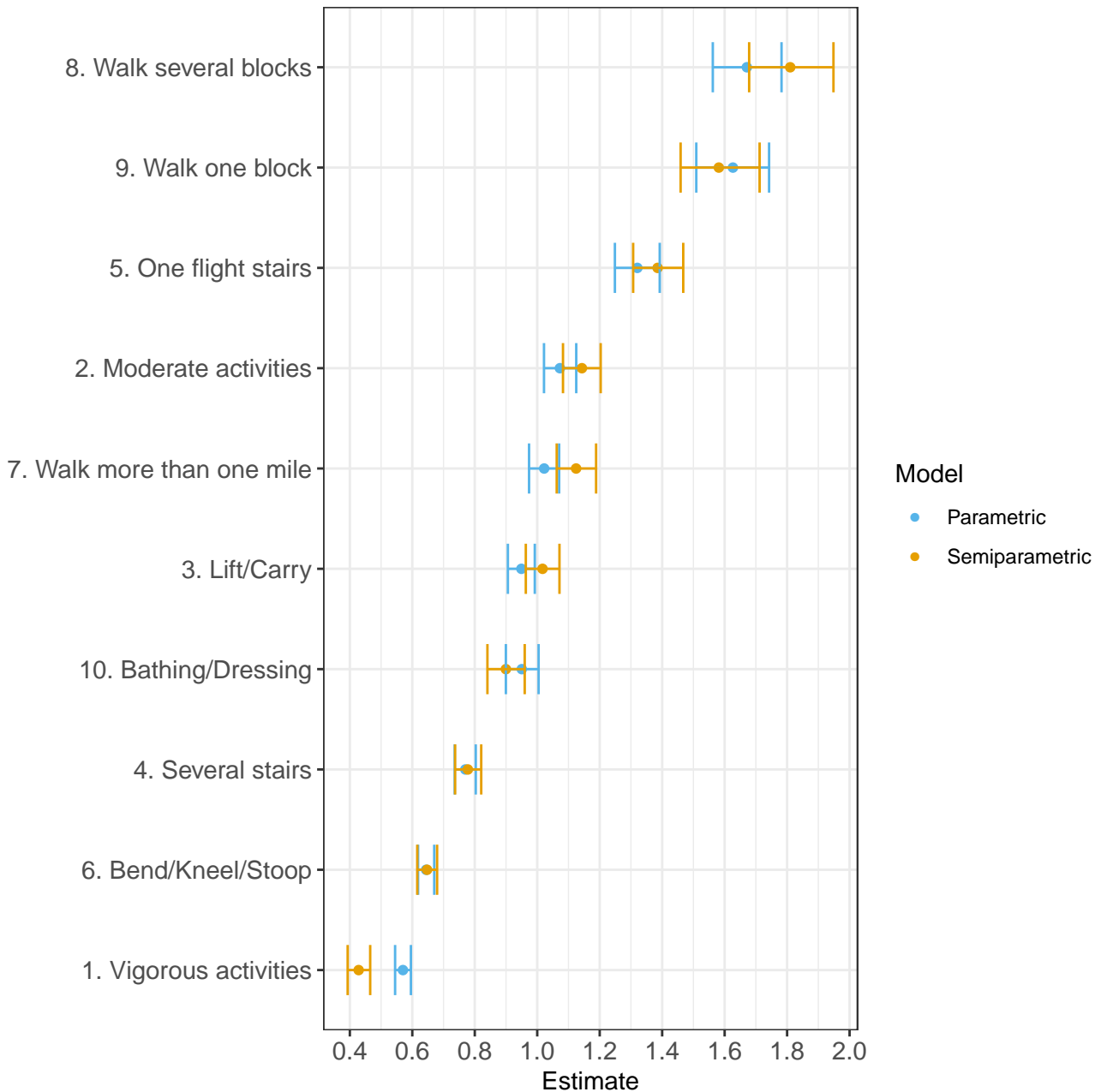
Bimodal simulation



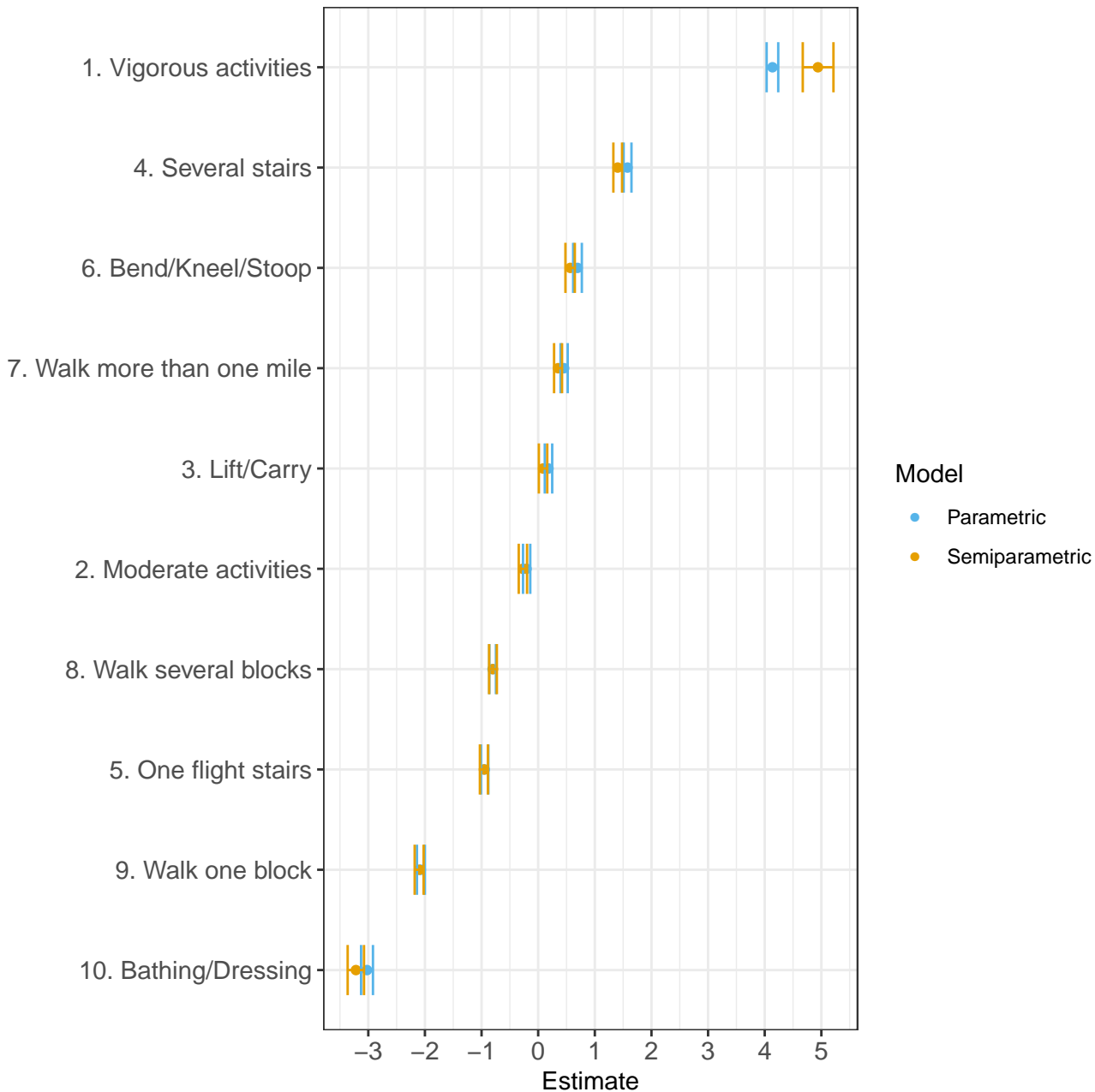
• Parametric • Semiparametric



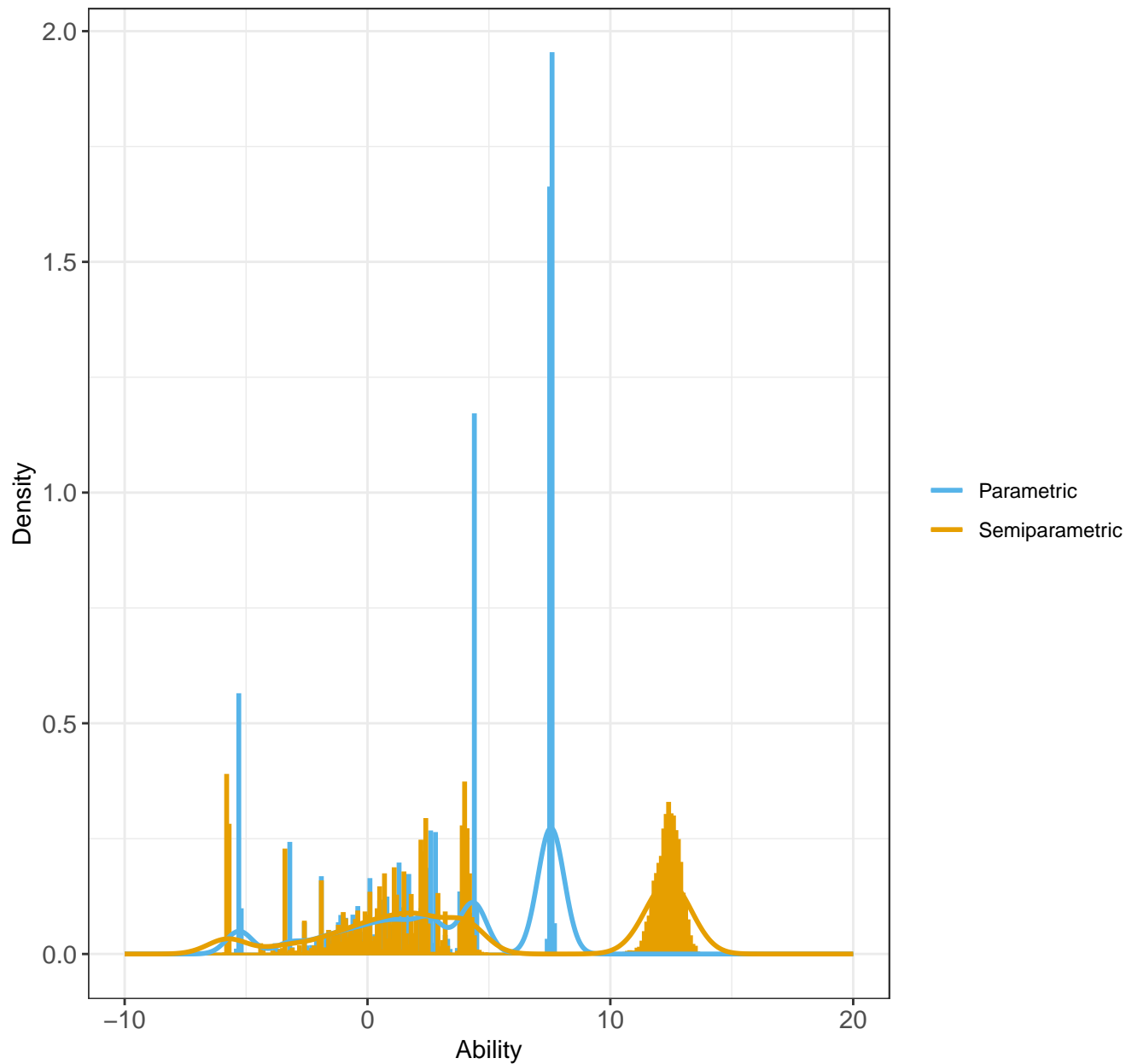
## Discrimination parameters



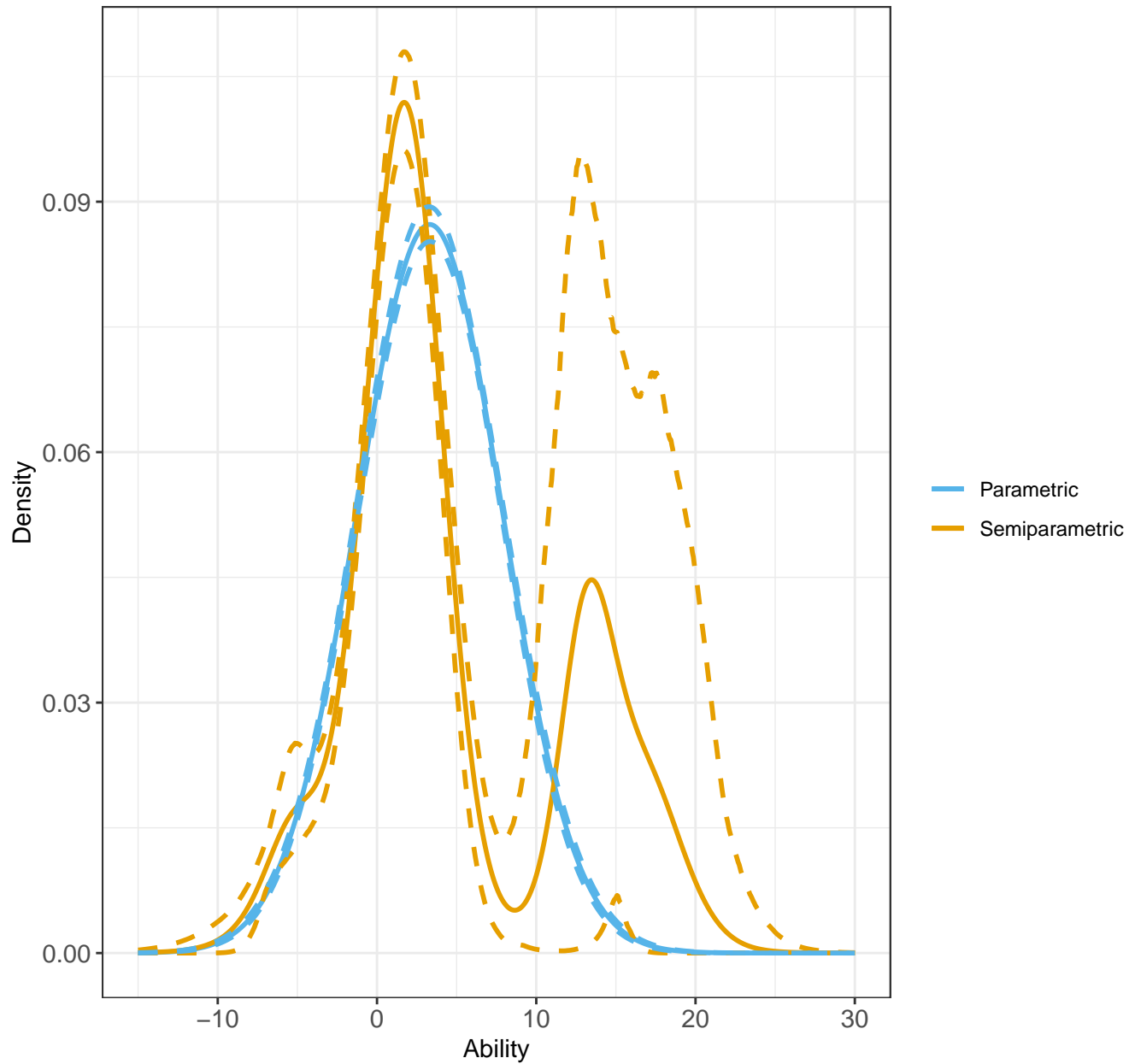
# Difficulty parameters



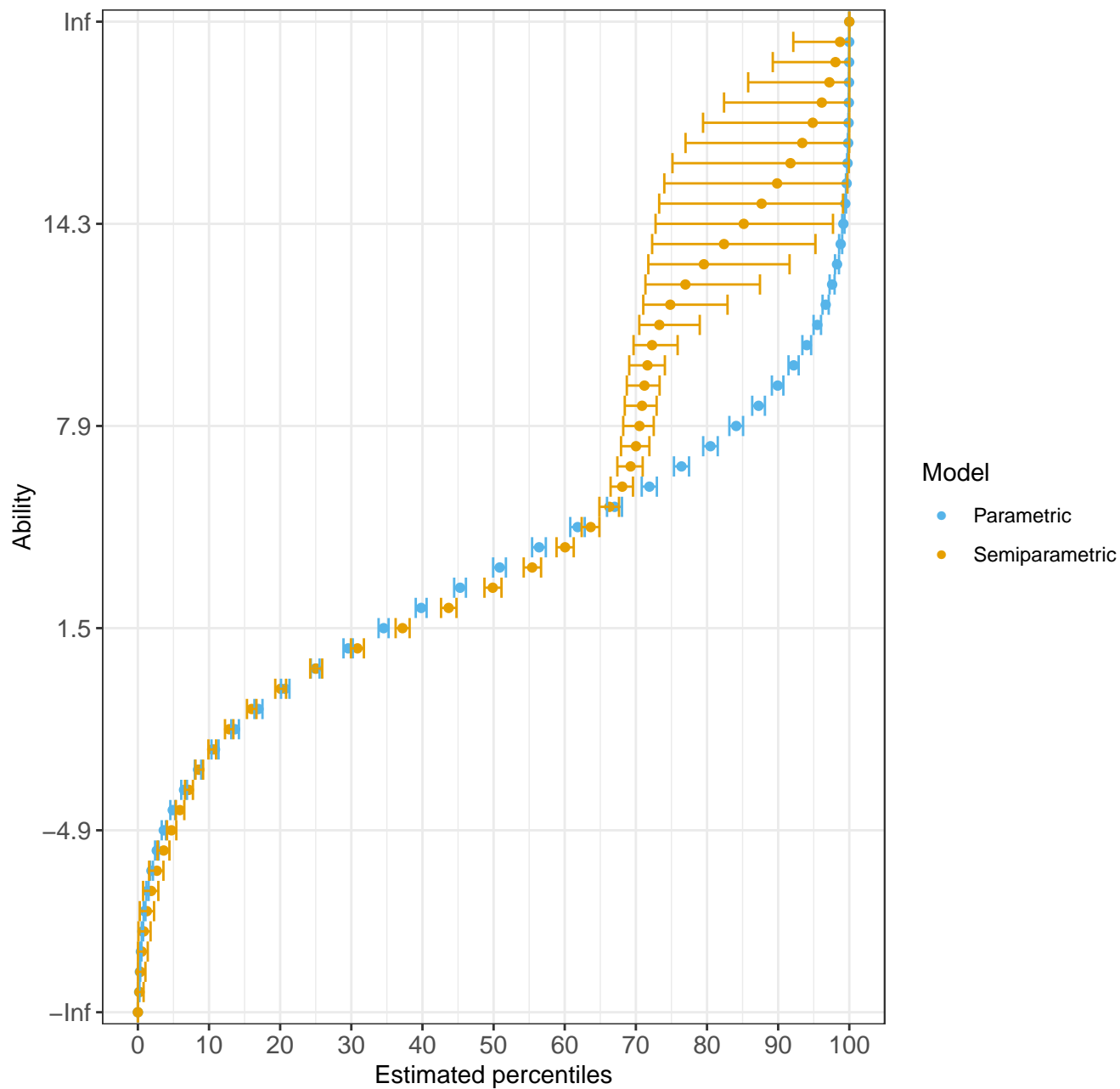
Health data  
Distribution of individual posterior mean abilities



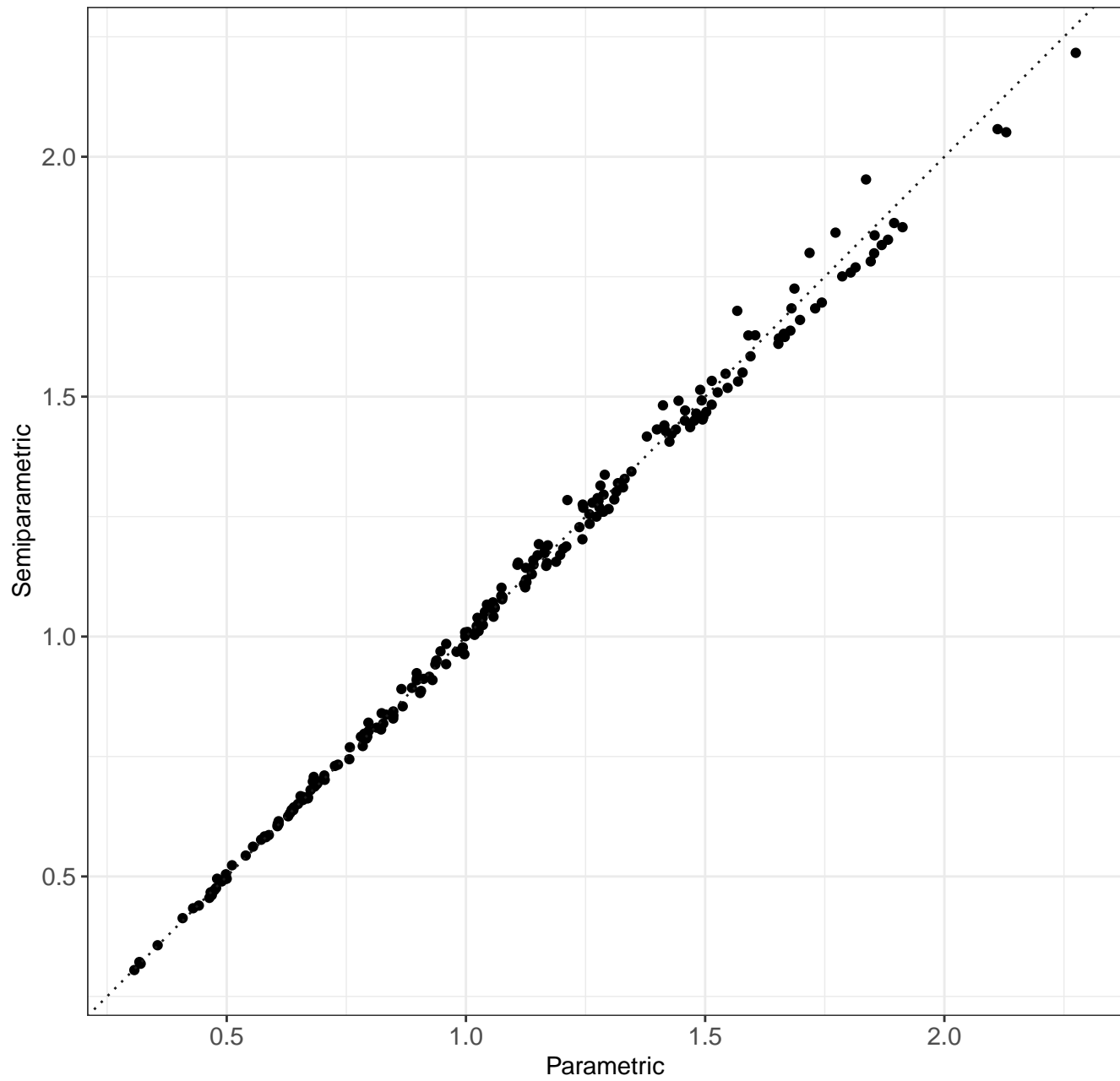
Health data  
Estimate of distribution of abilities



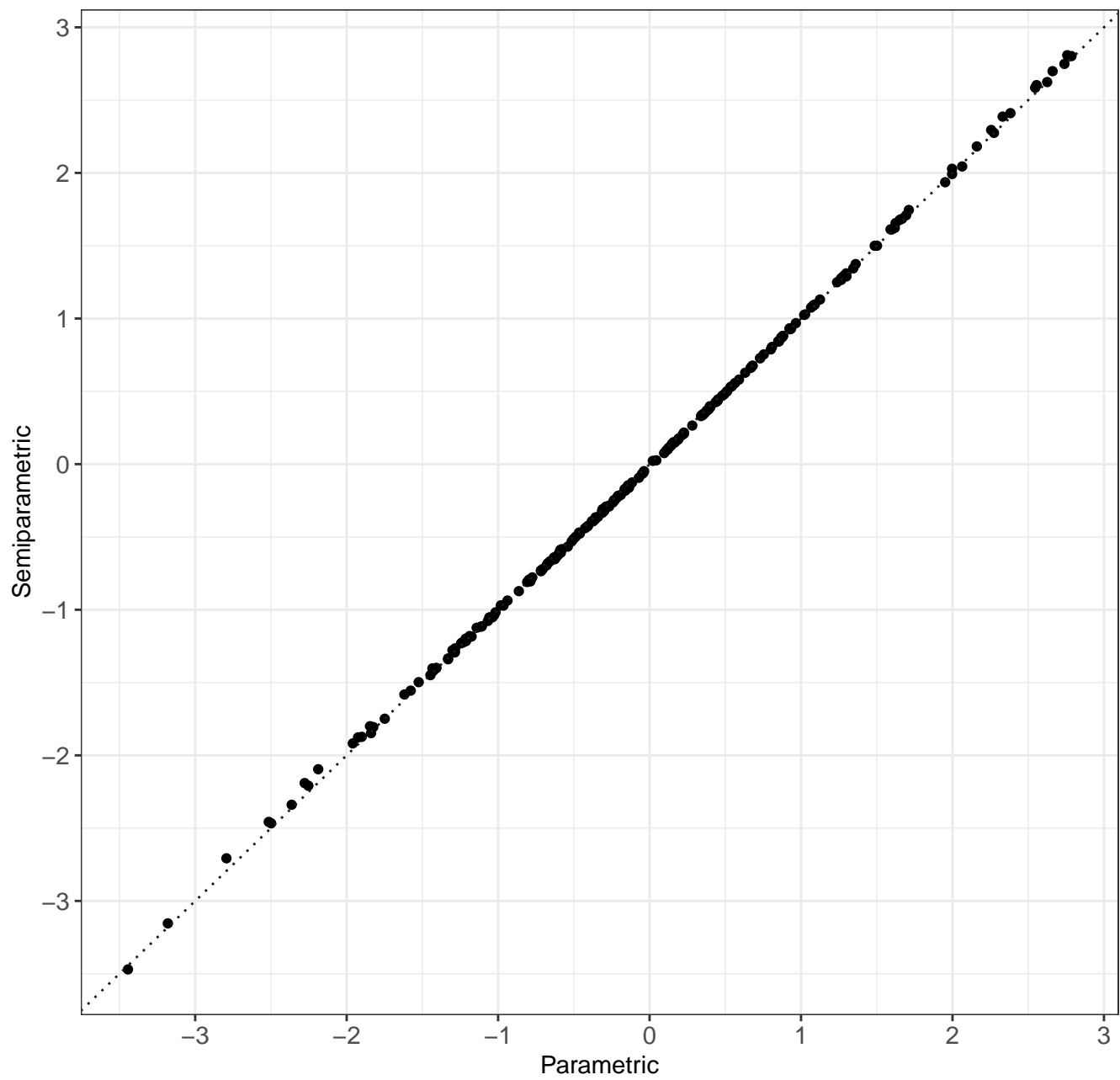
Health data



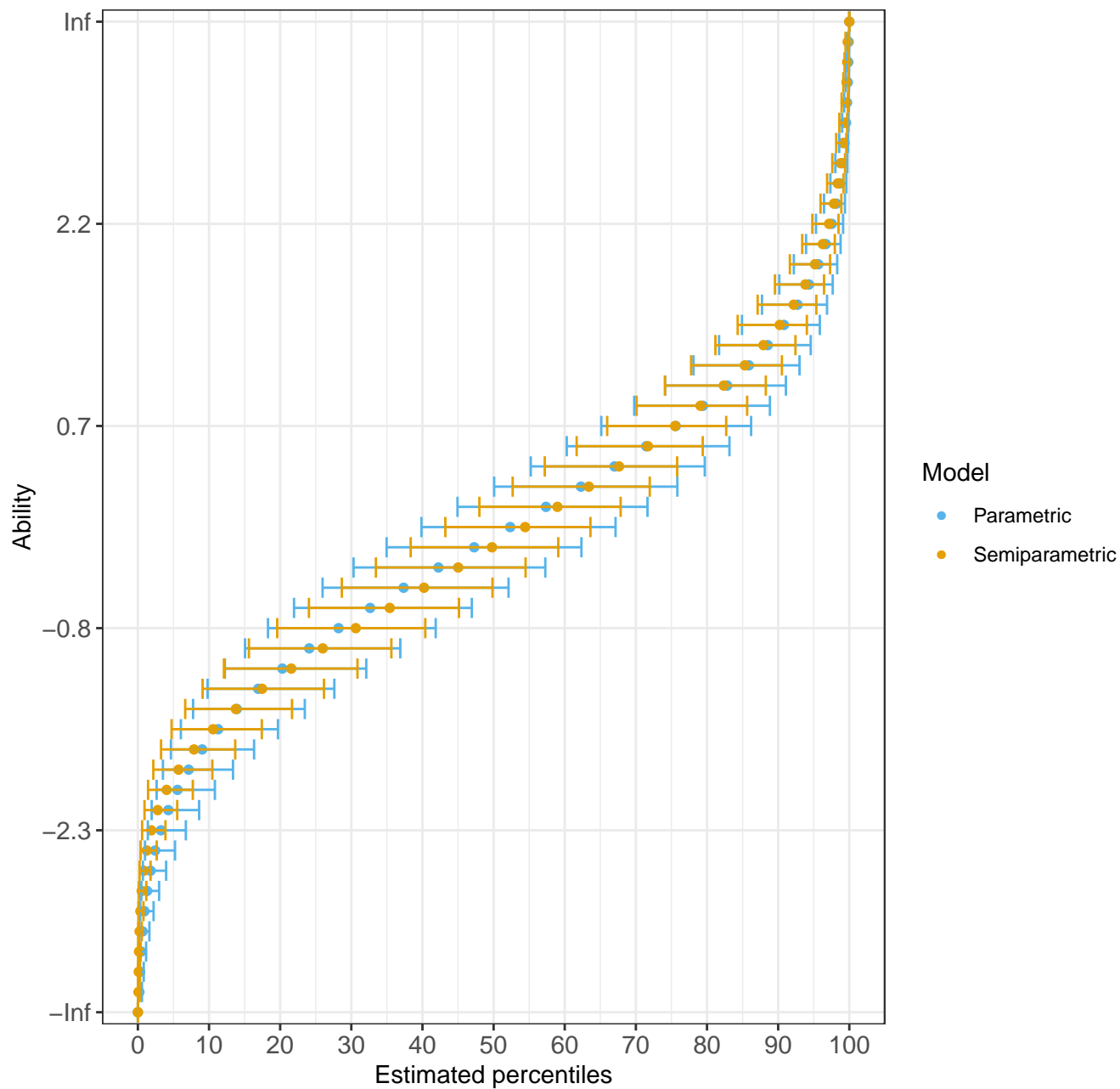
Discrimination parameters



Difficulty parameters



Timss data

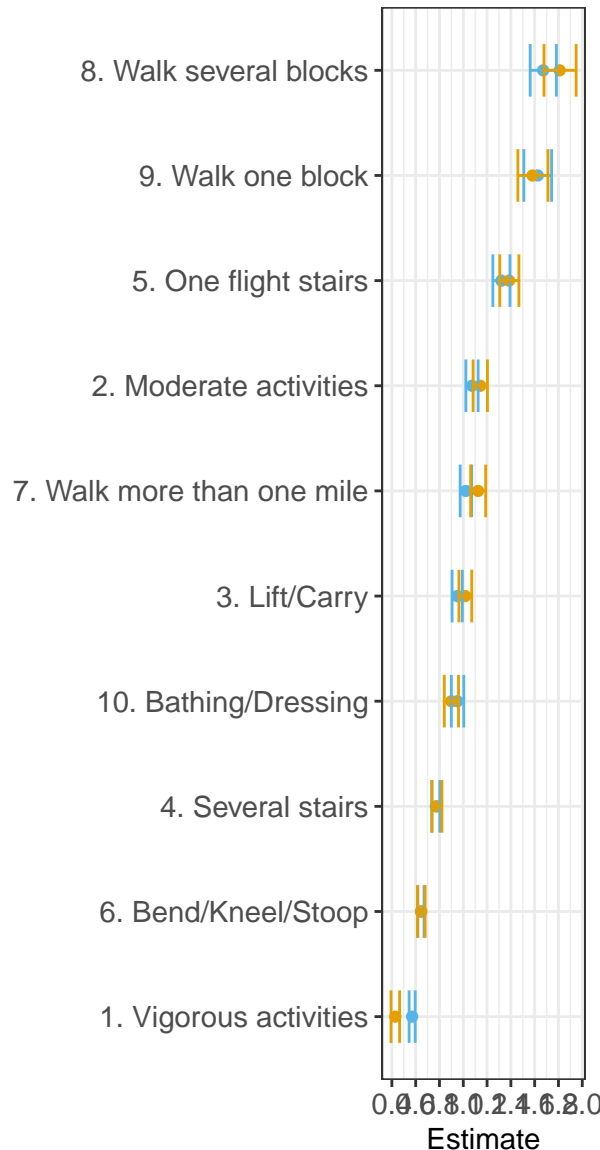




Difficulty parameters

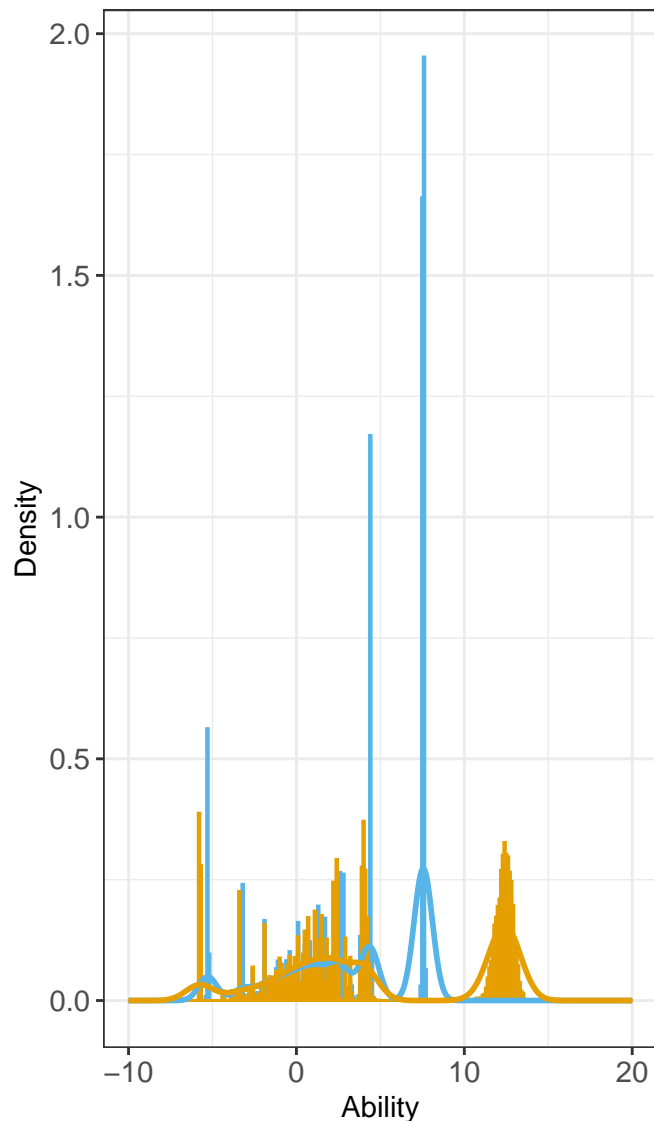


Discrimination parameters

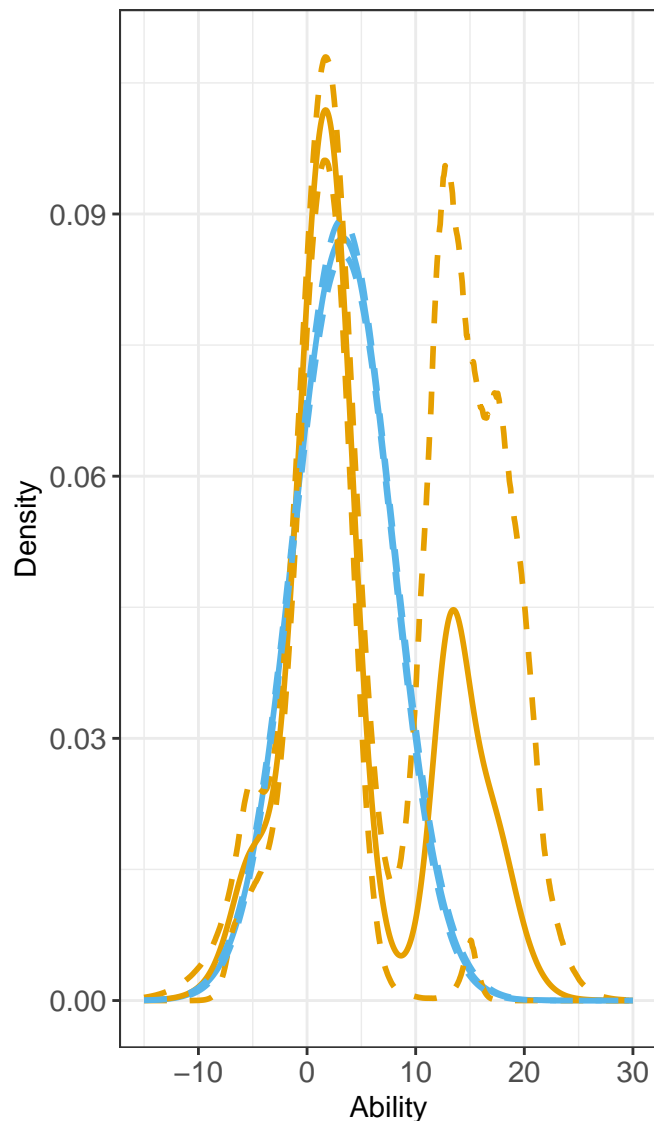


• Parametric • Semiparametric

Health data  
Distribution of individual posterior mean

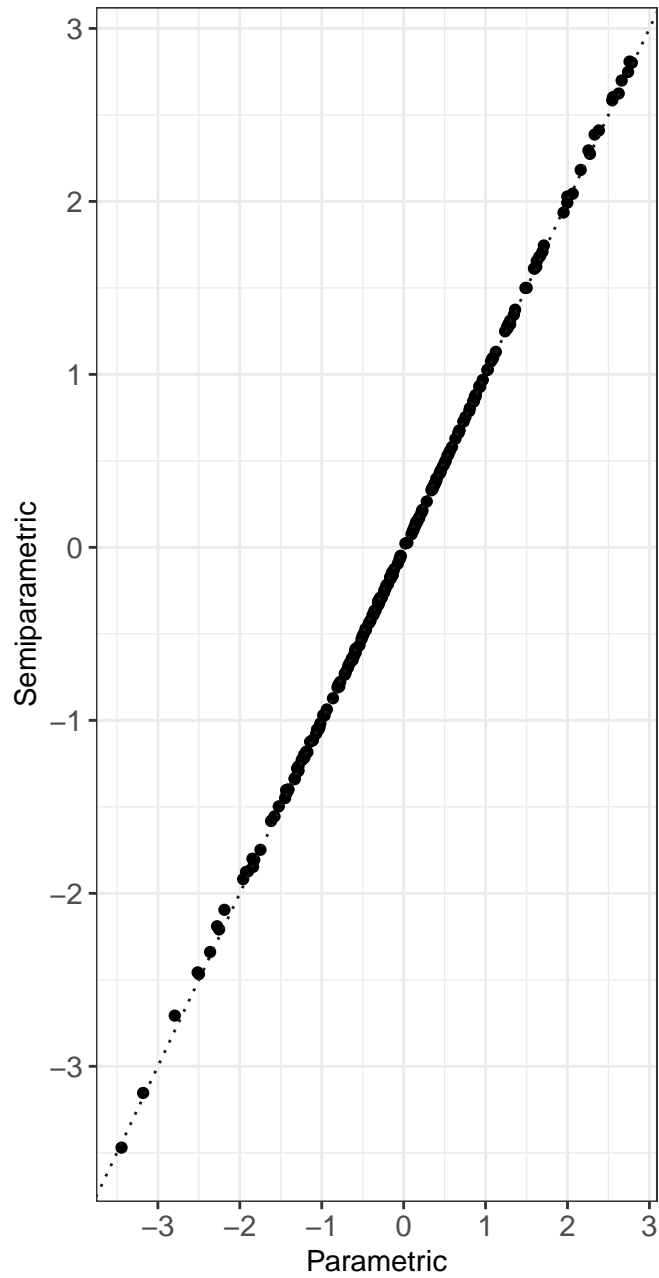


Health data  
Estimate of distribution of abilities

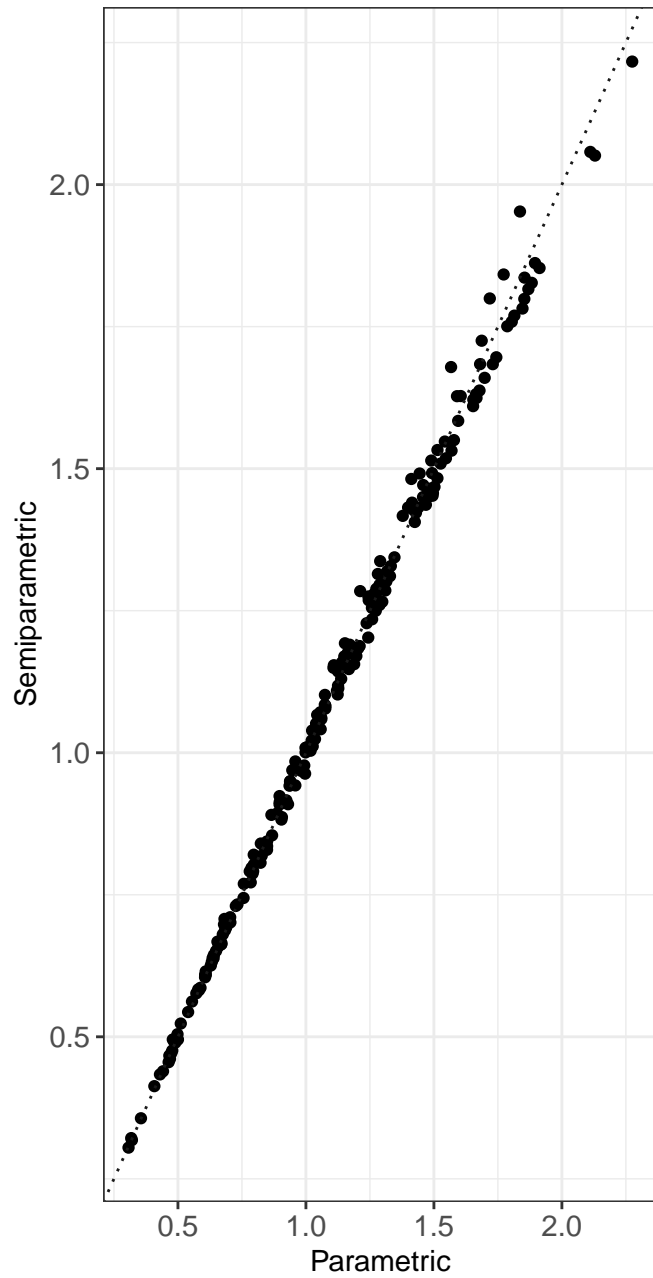


Parametric Semiparametric

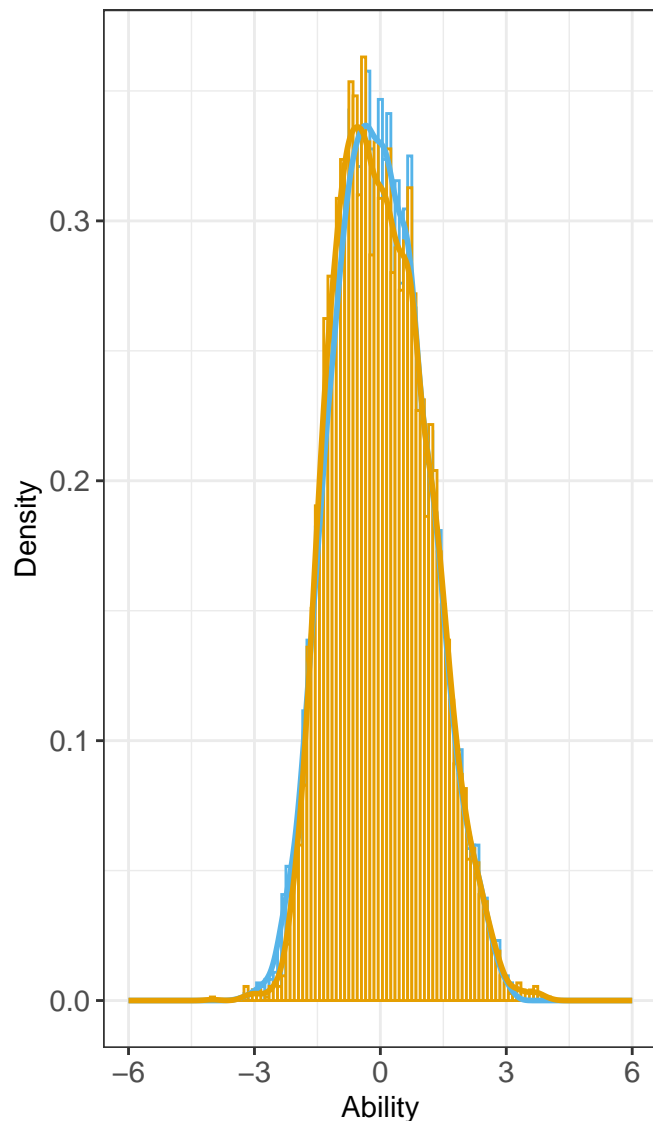
Difficulty parameters



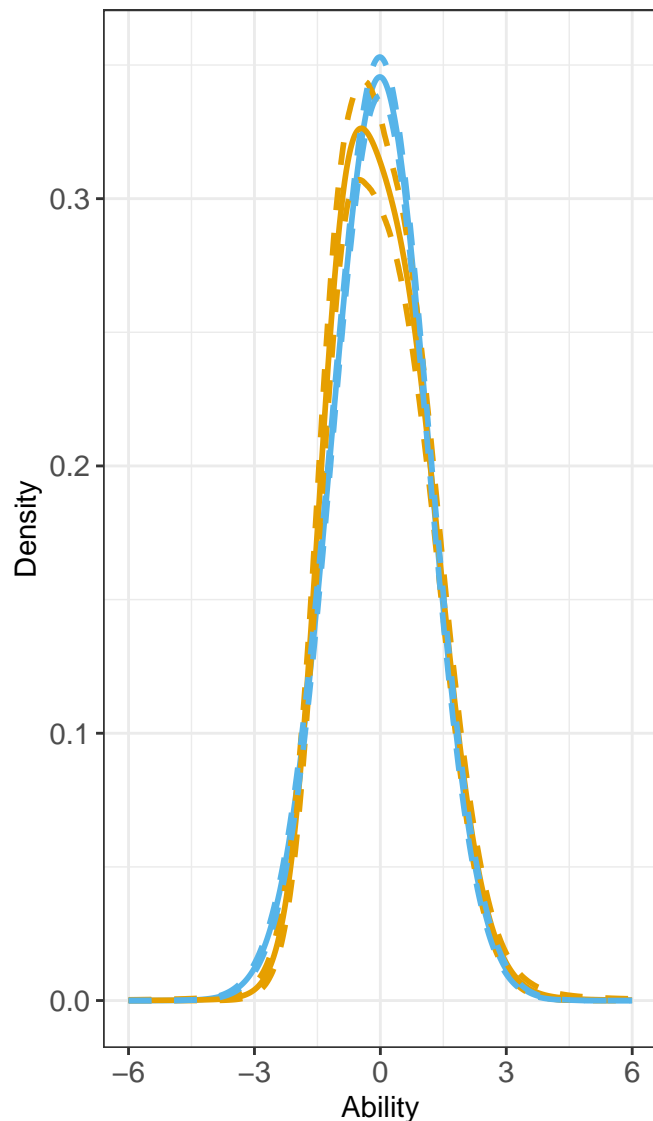
Discrimination parameters



Timss data  
Distribution of individual posterior mean

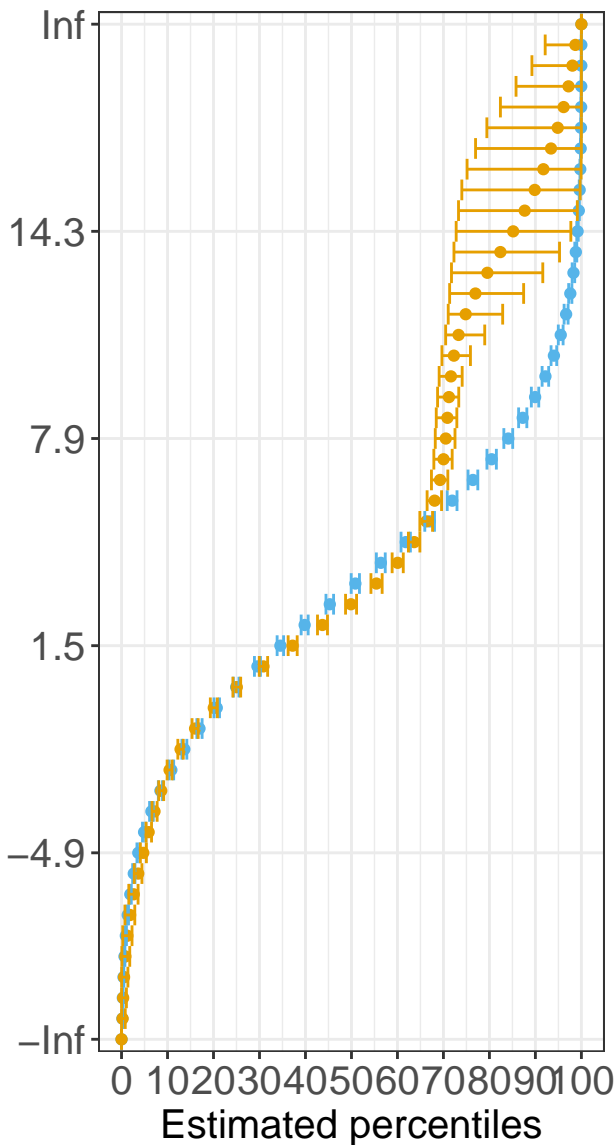


Timss data  
Estimate of distribution of abilities

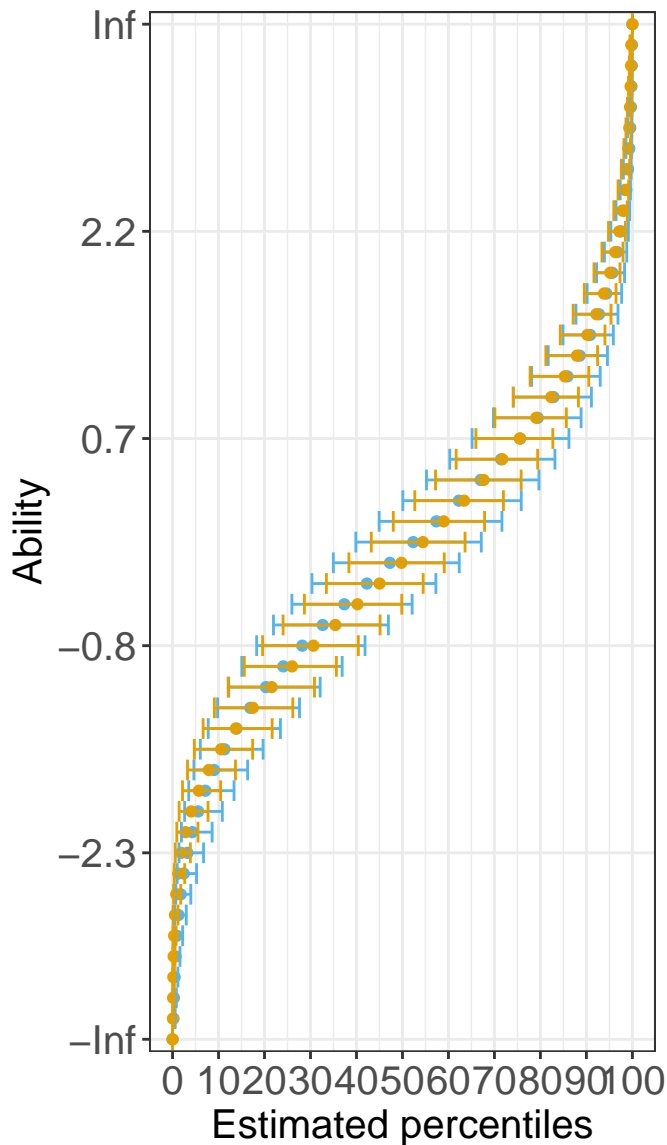


— Parametric — Semiparametric

Health data



Timss data



• Parametric • Semiparametric