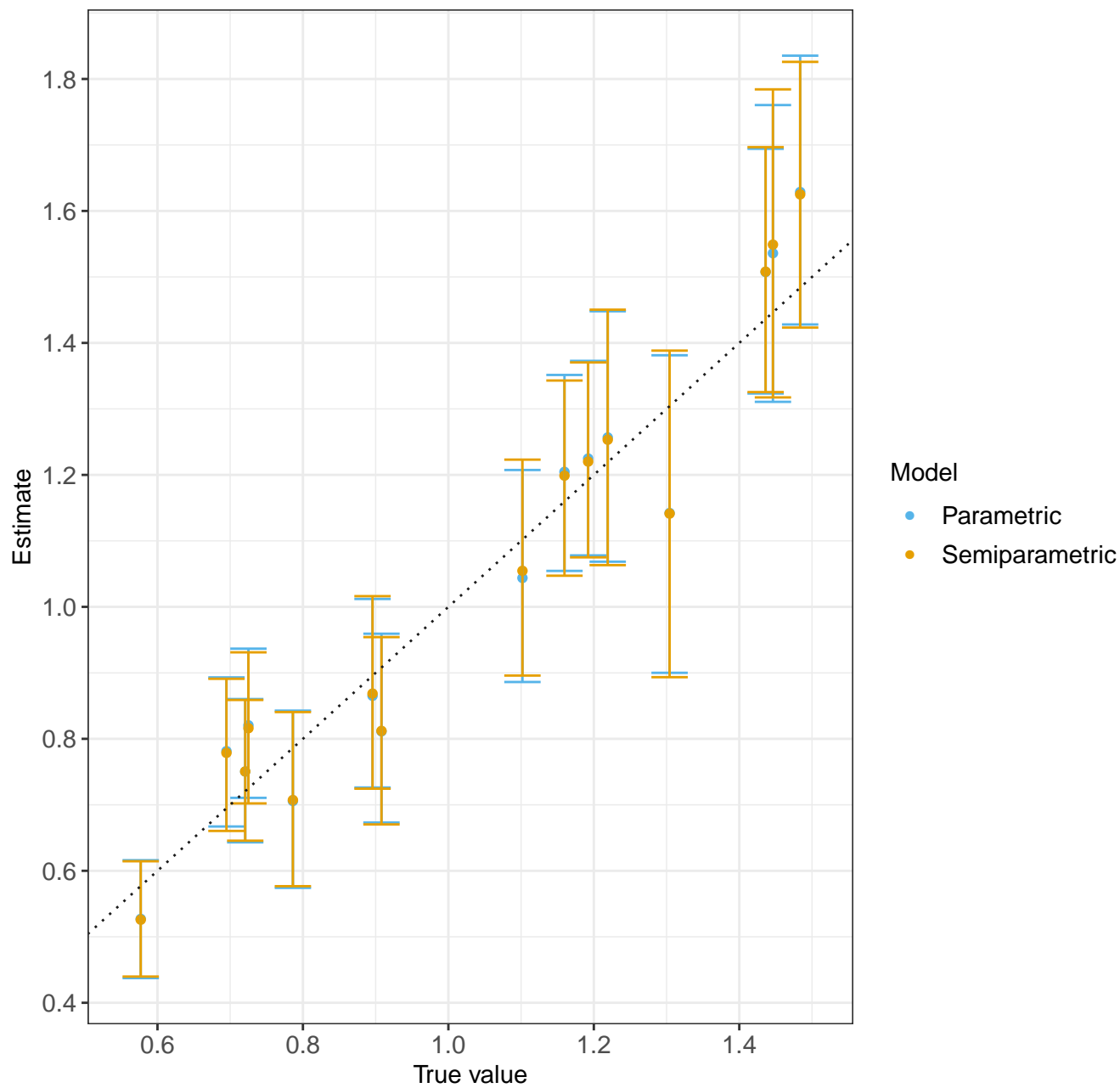
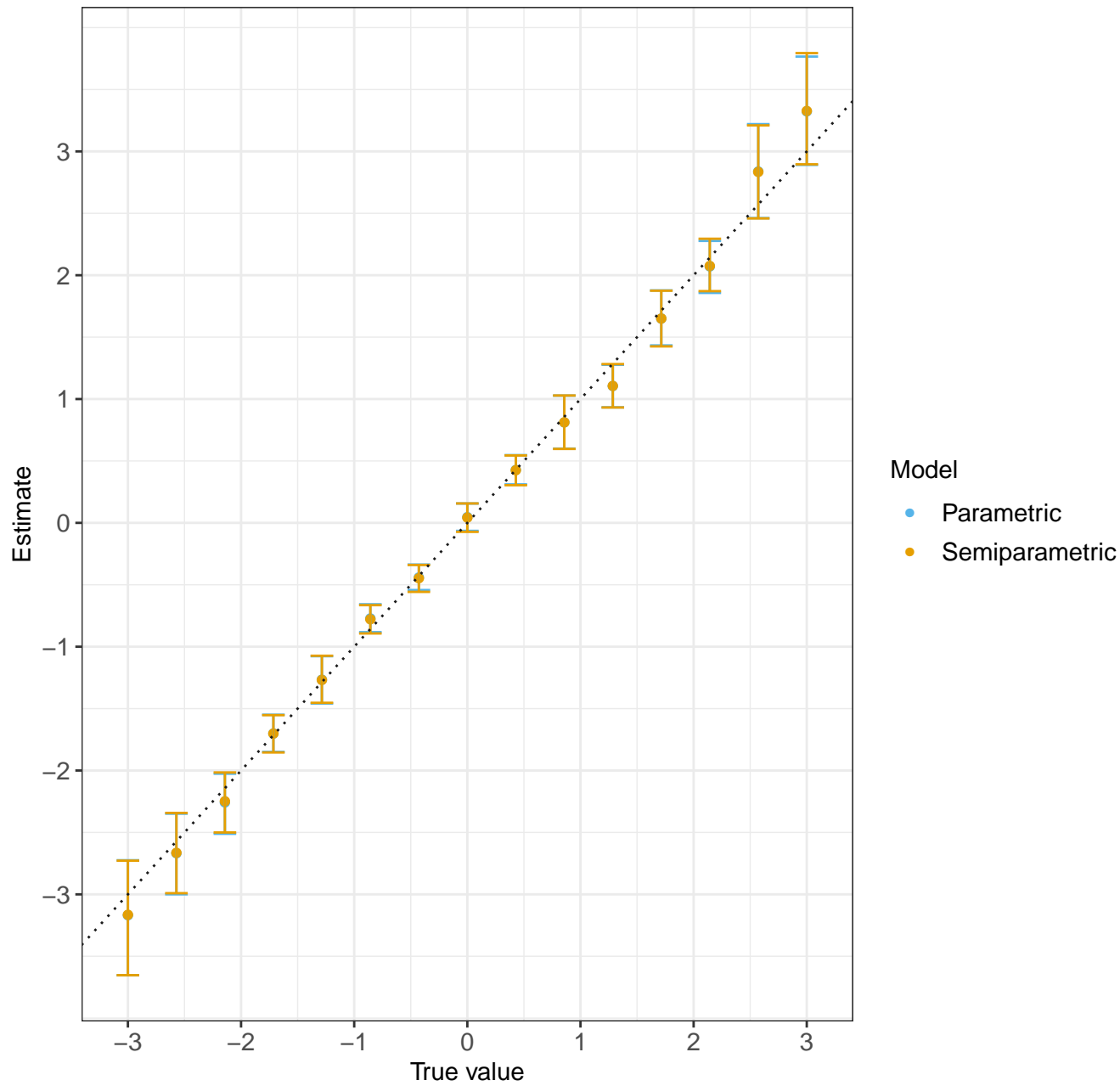


# Discrimination parameters

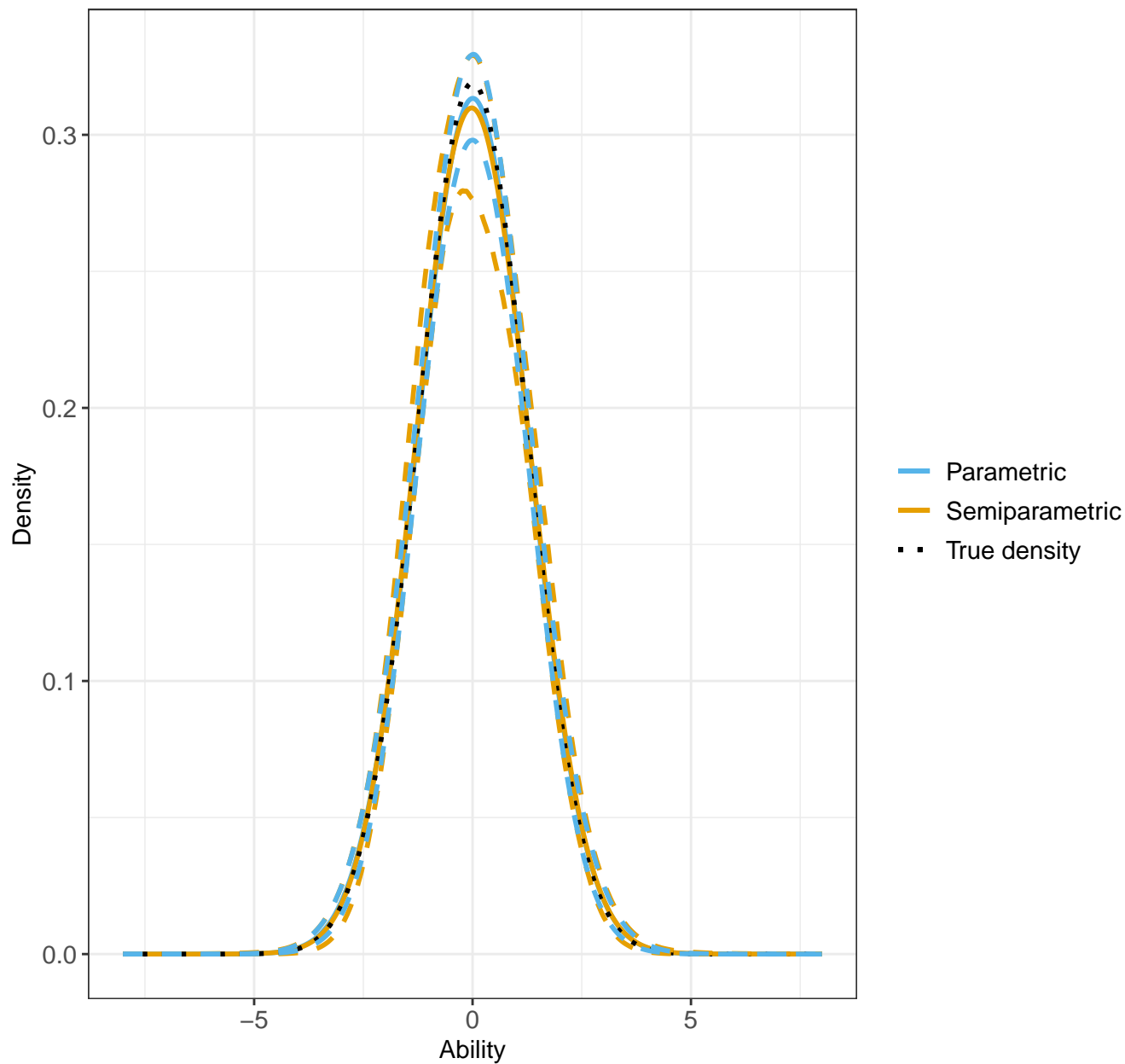


Difficulty parameters

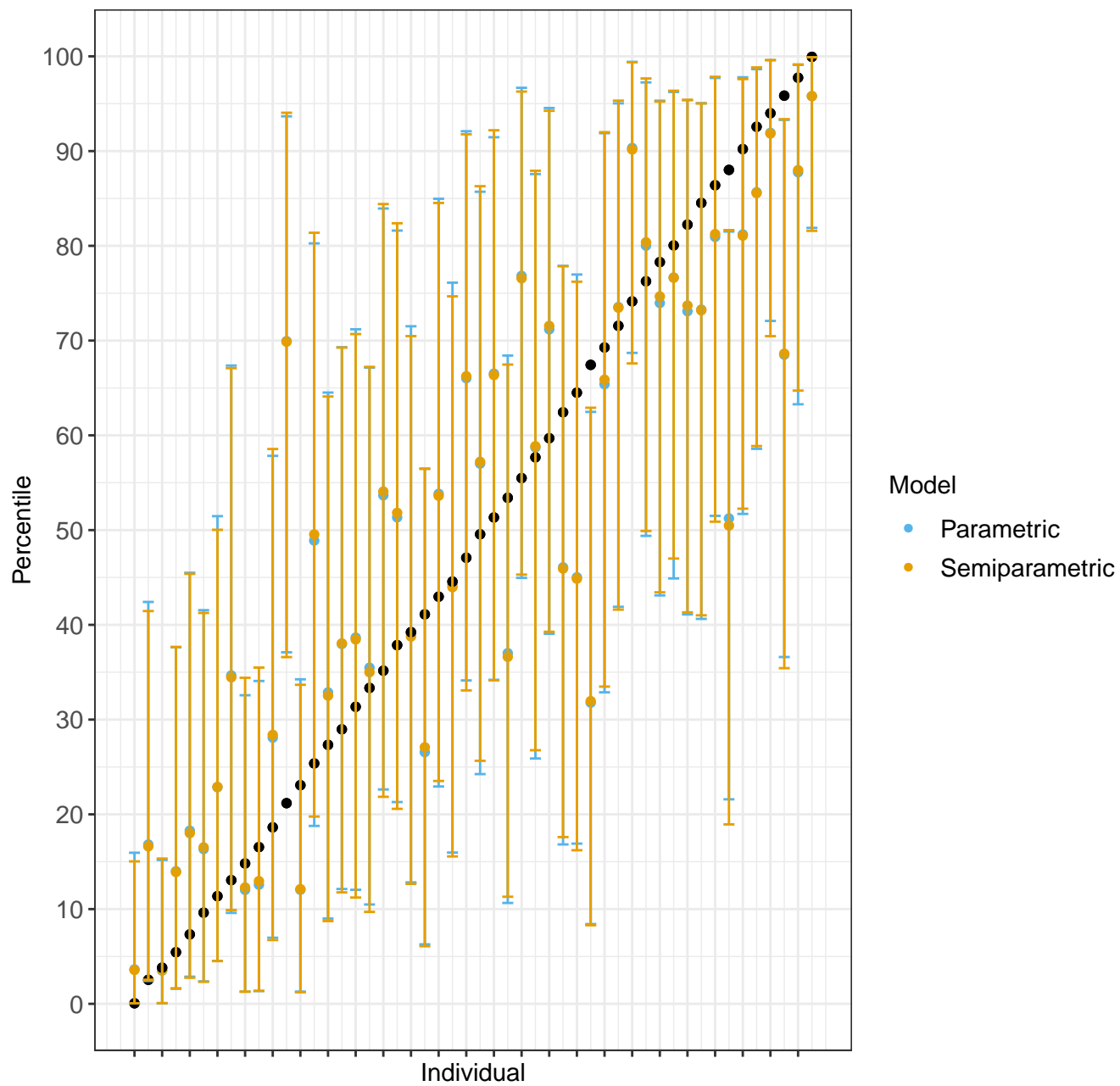


# Unimodal simulation

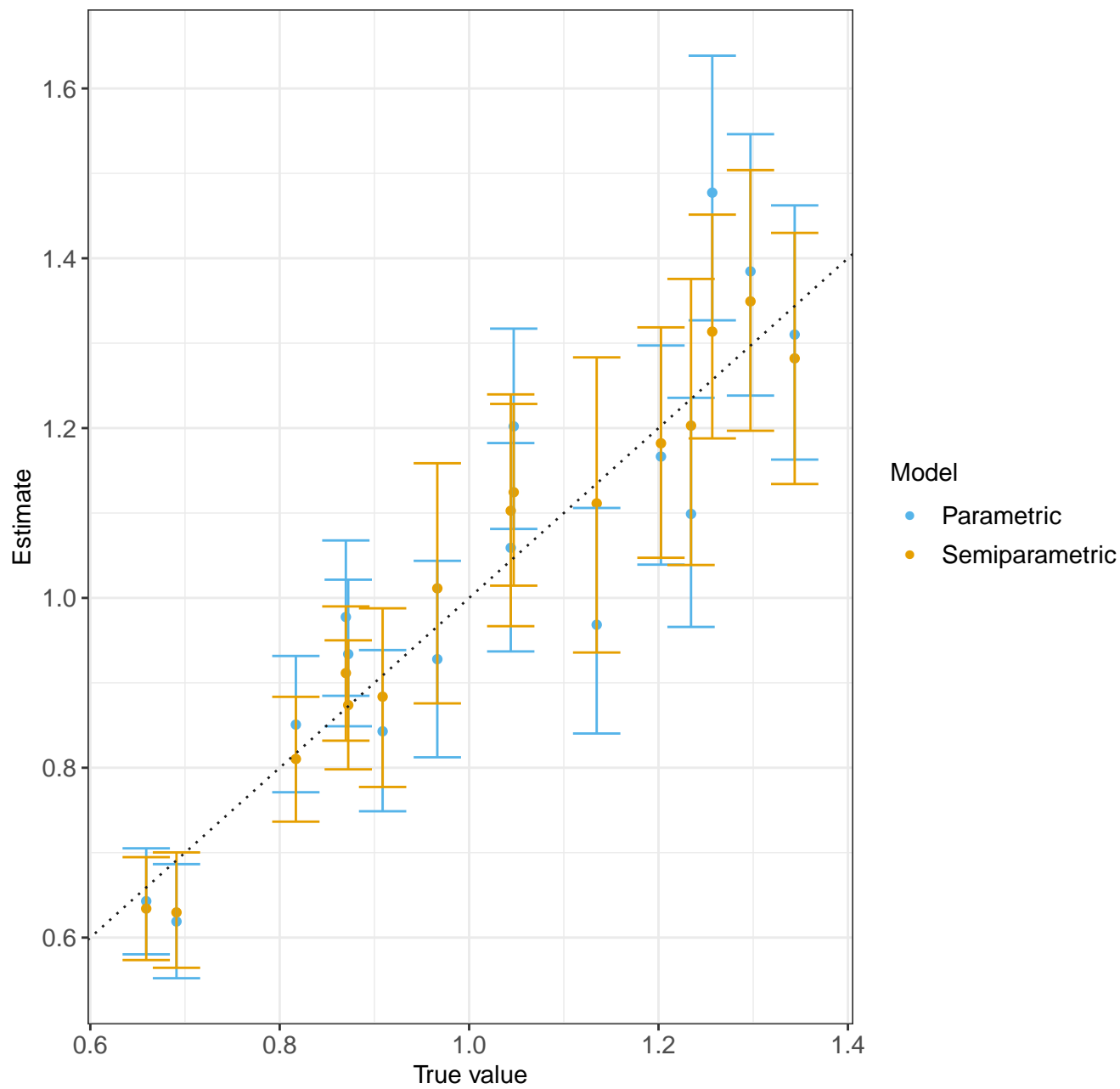
## Estimate of distribution of abilities



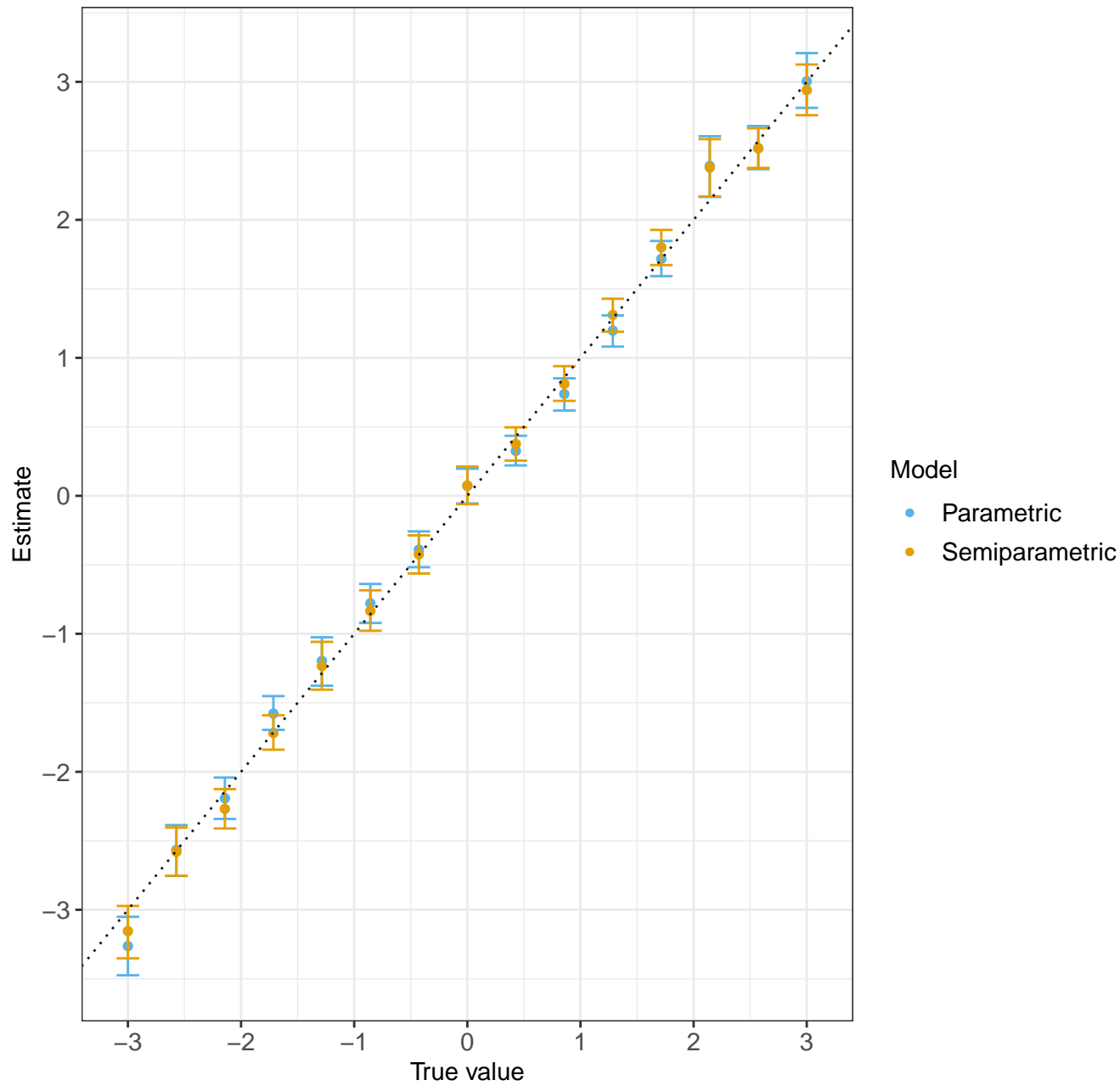
# Unimodal simulation



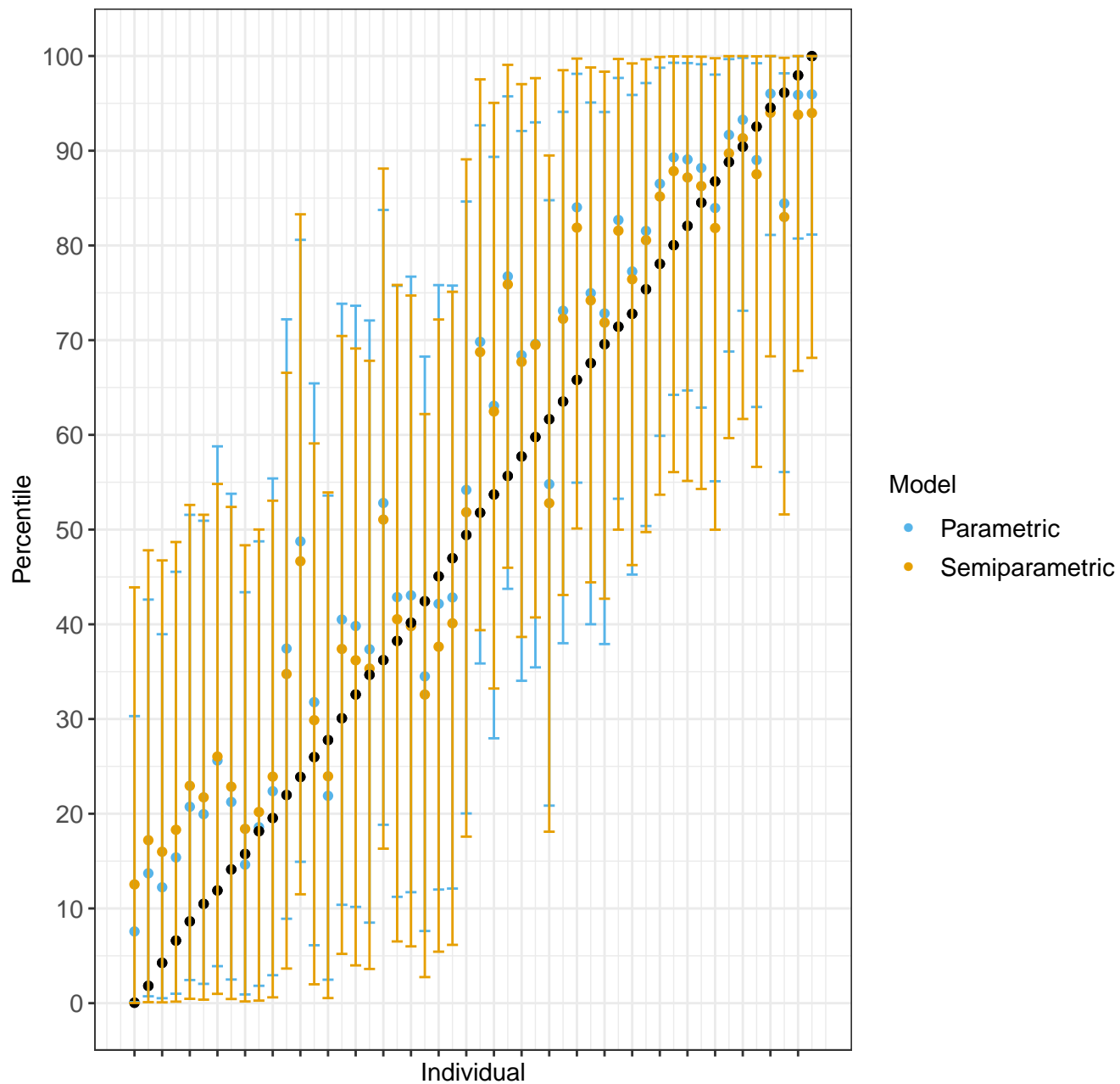
Discrimination parameters



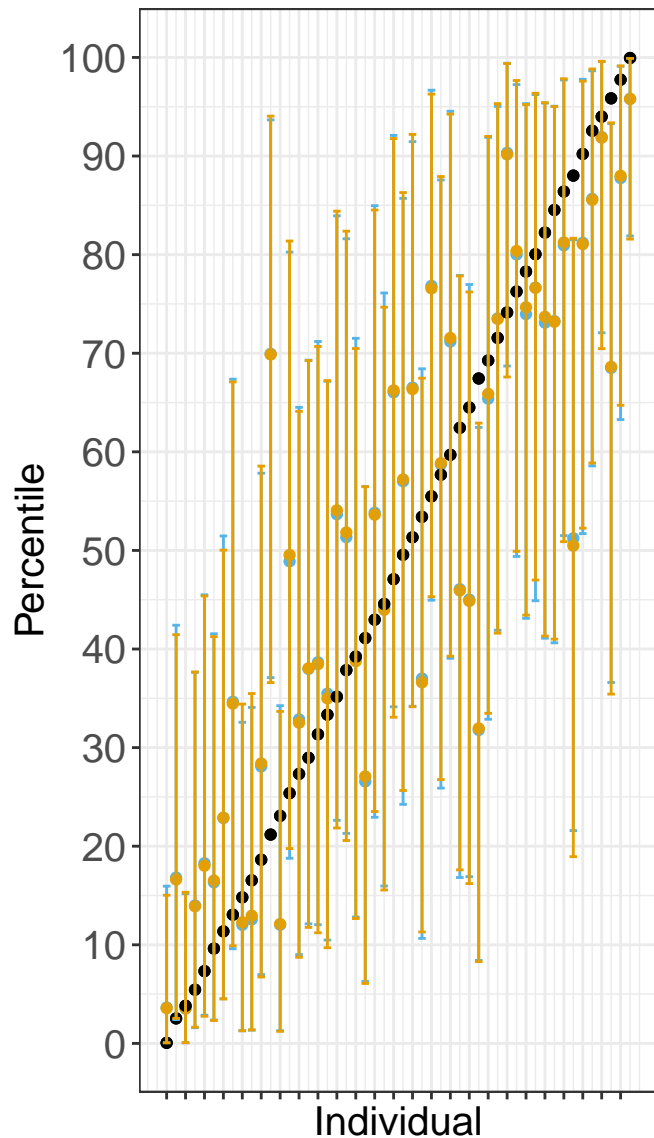
Difficulty parameters



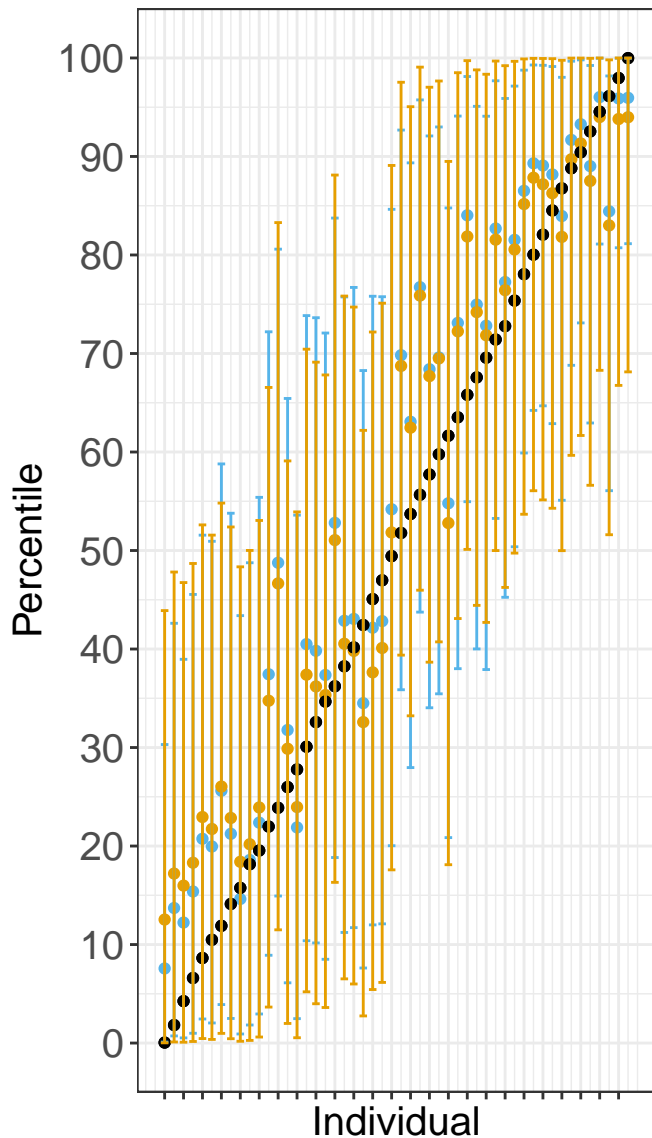
# Unimodal simulation



Unimodal simulation



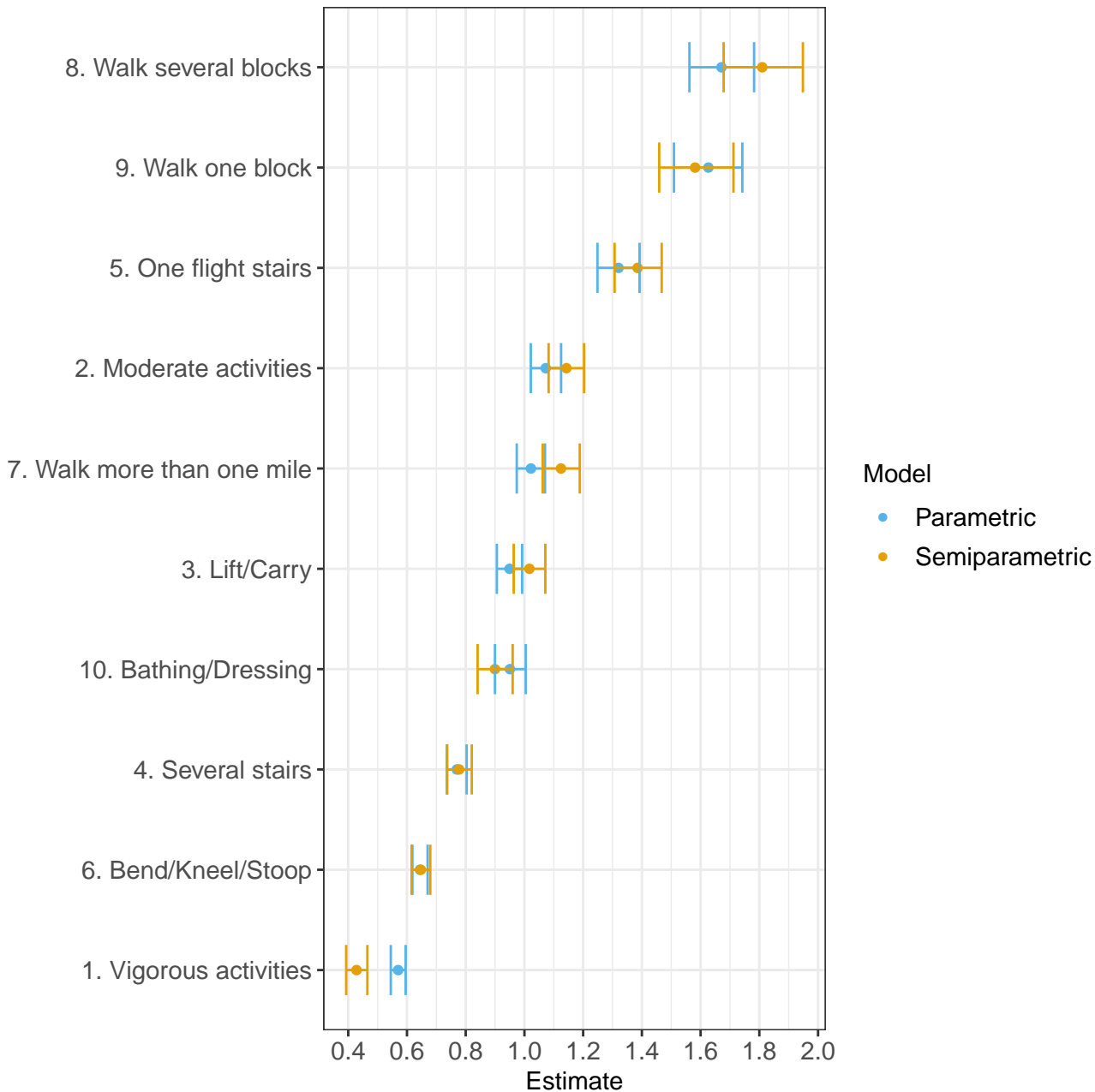
Unimodal simulation



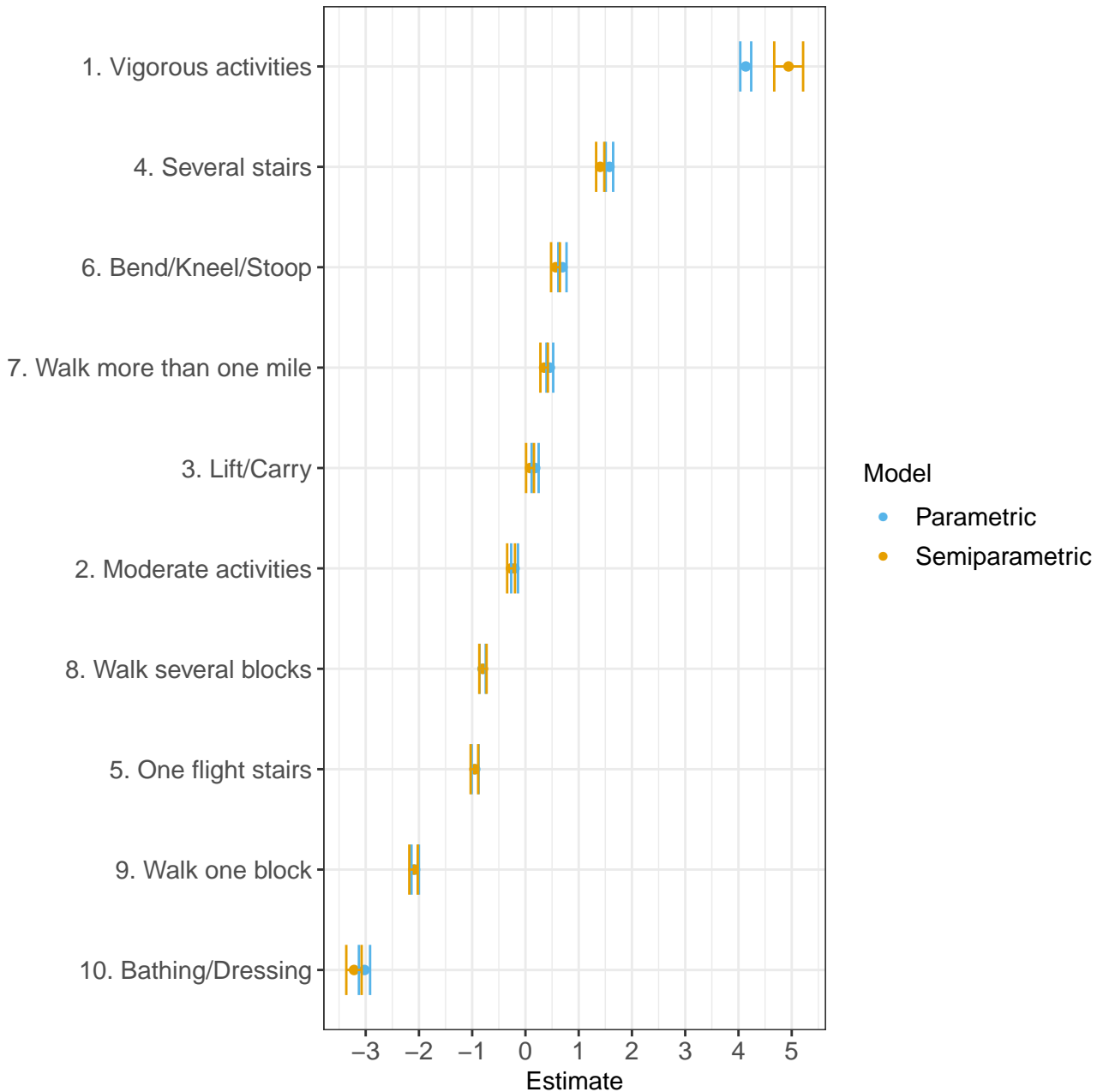
• Parametric • Semiparametric



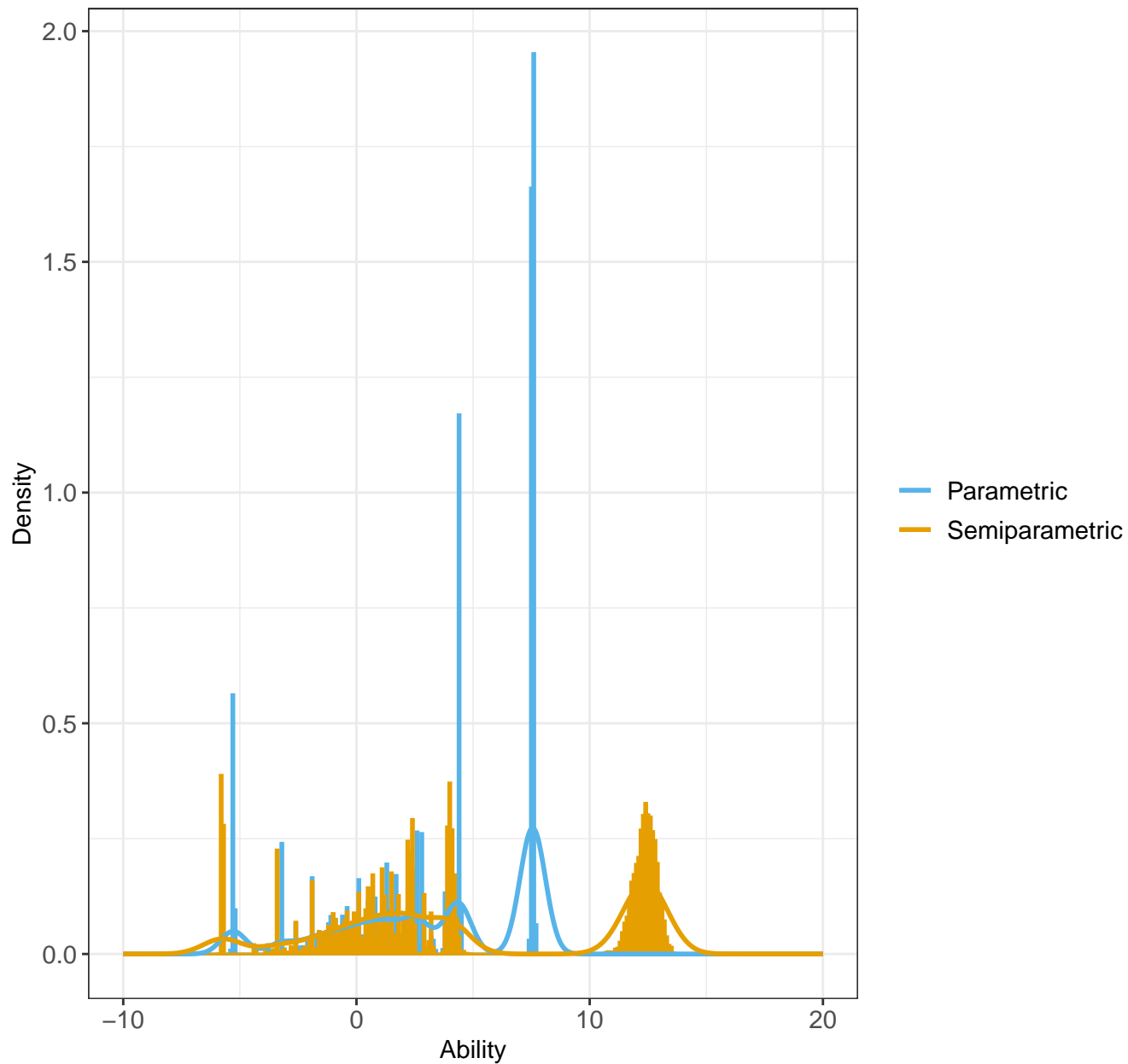
## Discrimination parameters



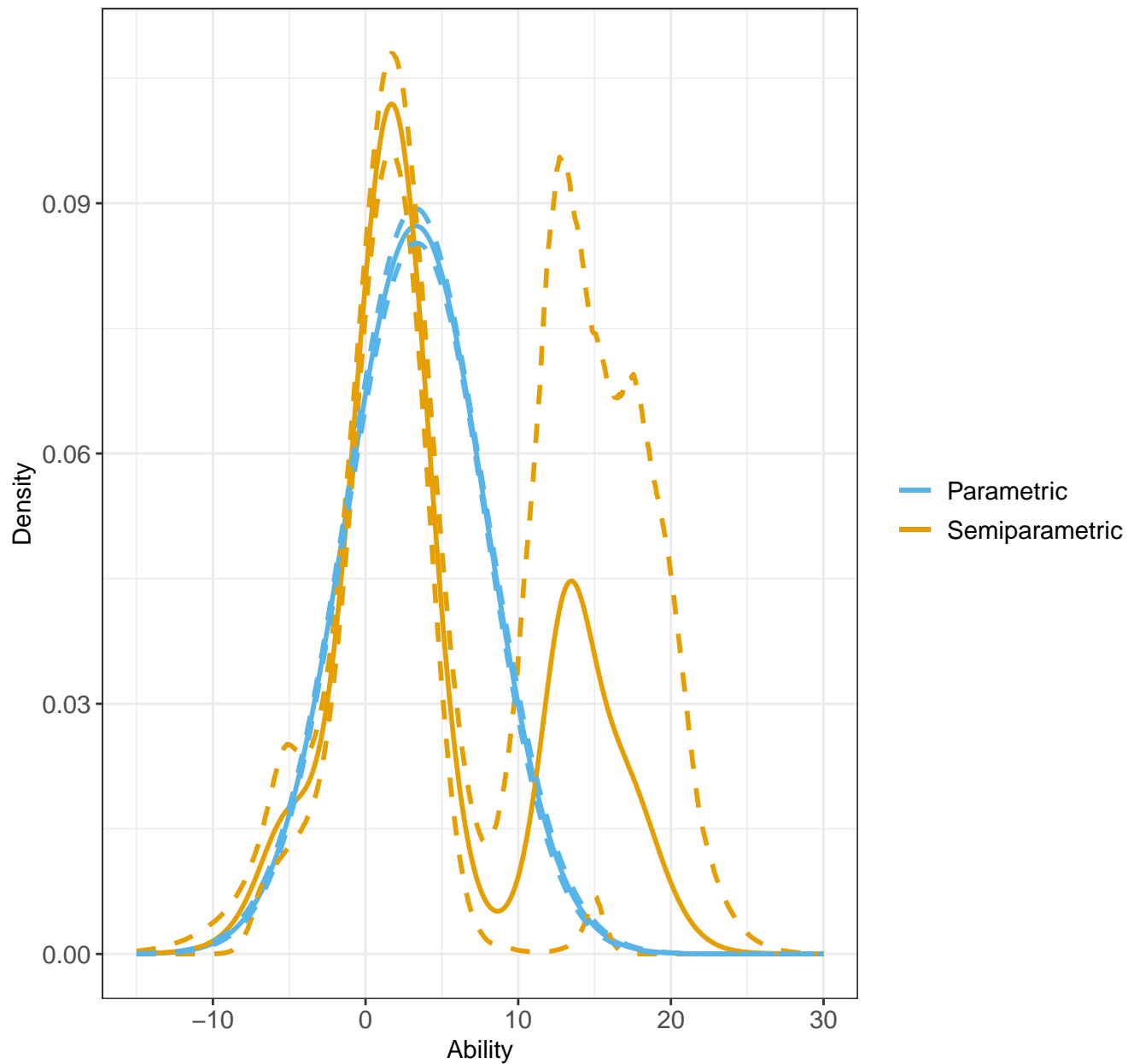
# Difficulty parameters



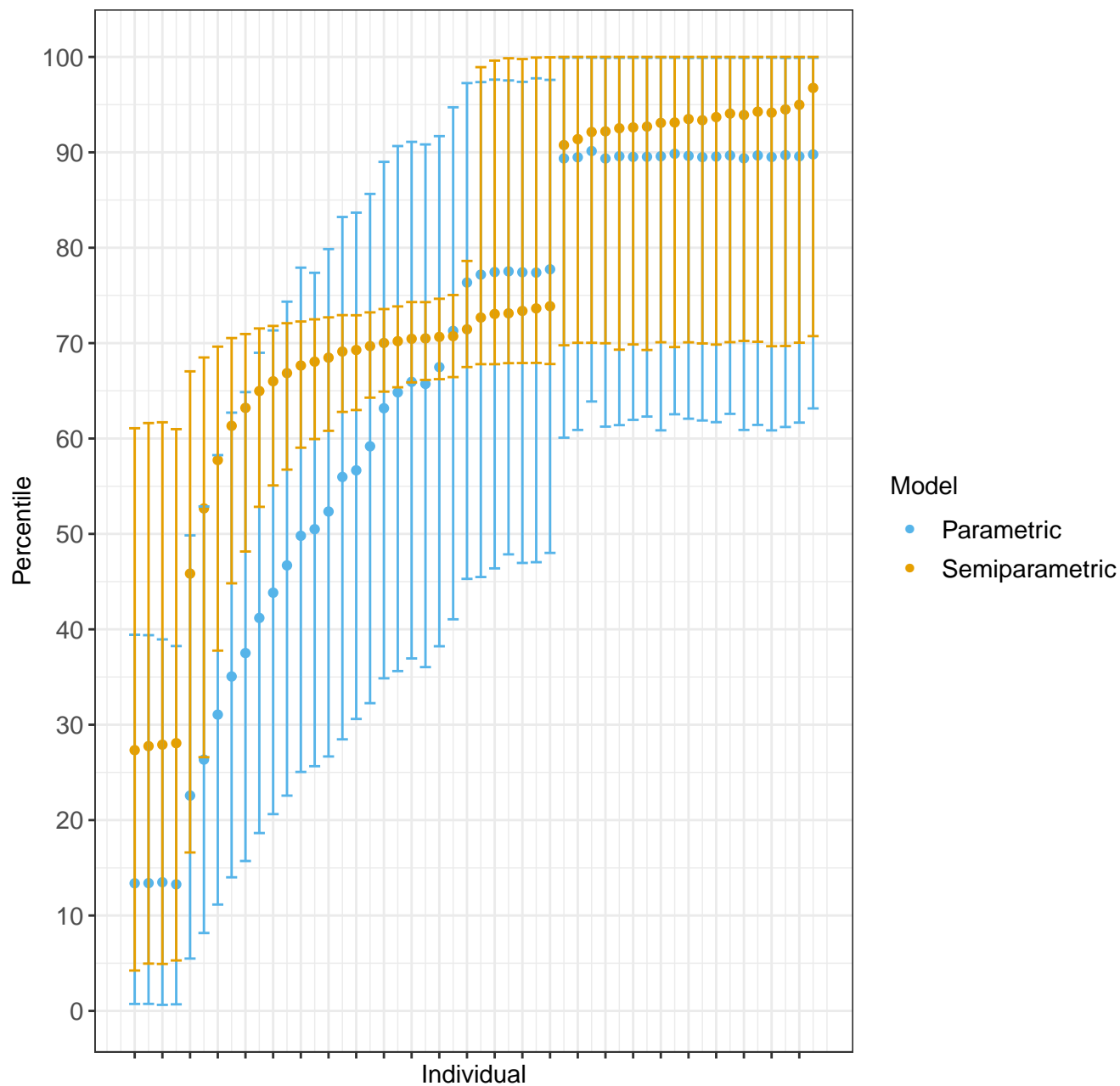
Health data  
Distribution of individual posterior mean abilities



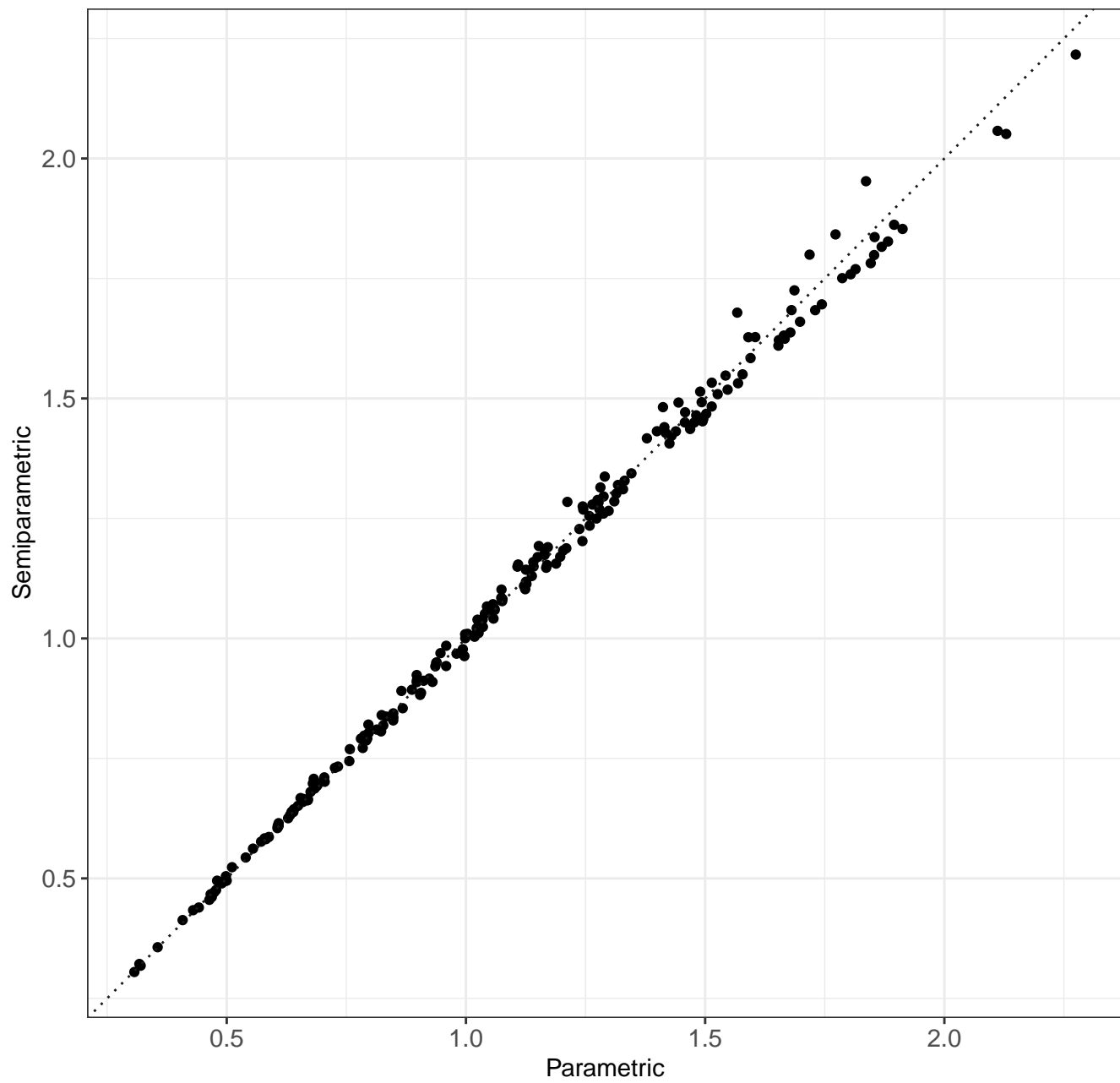
Health data  
Estimate of distribution of abilities



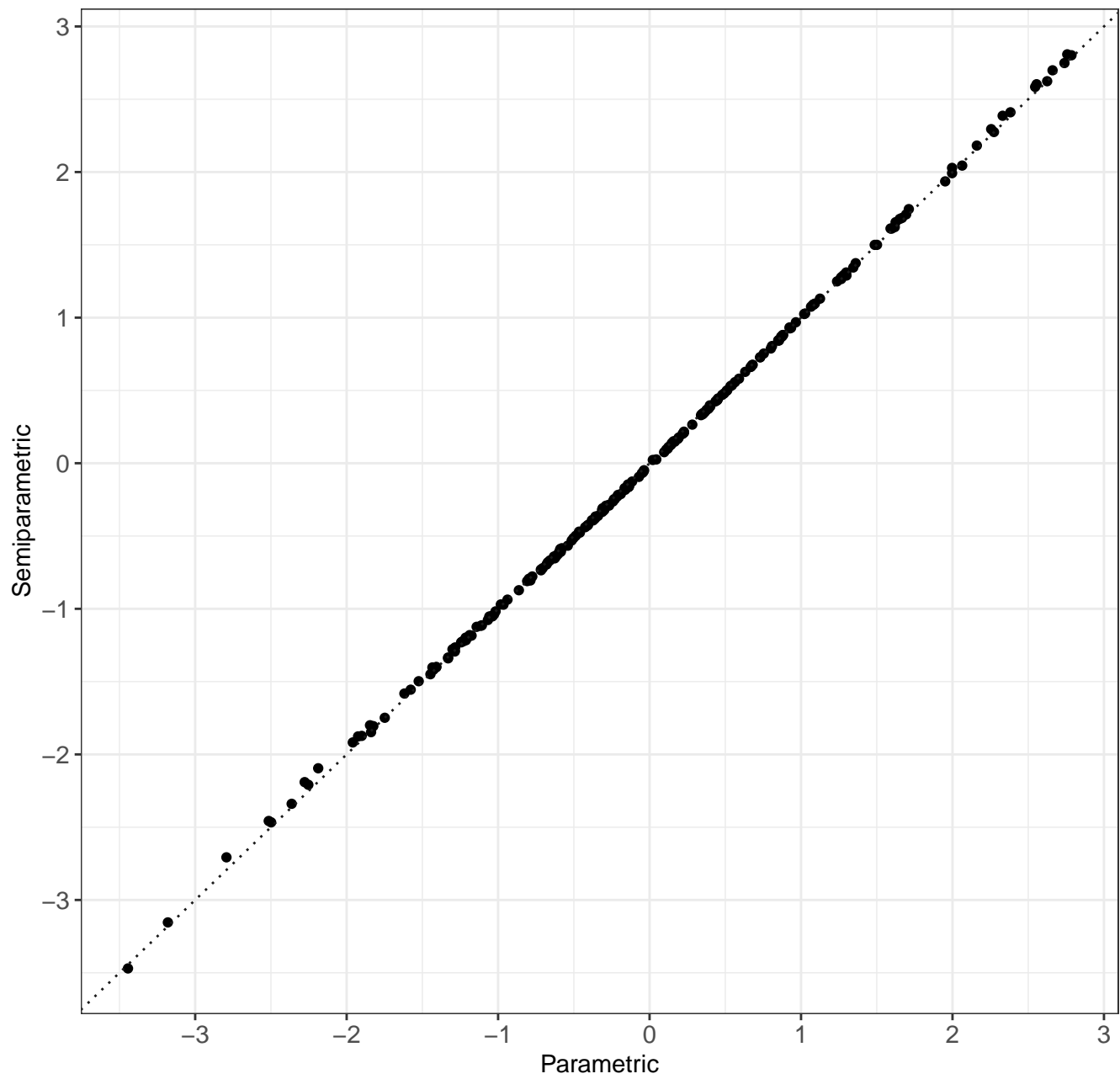
Health data



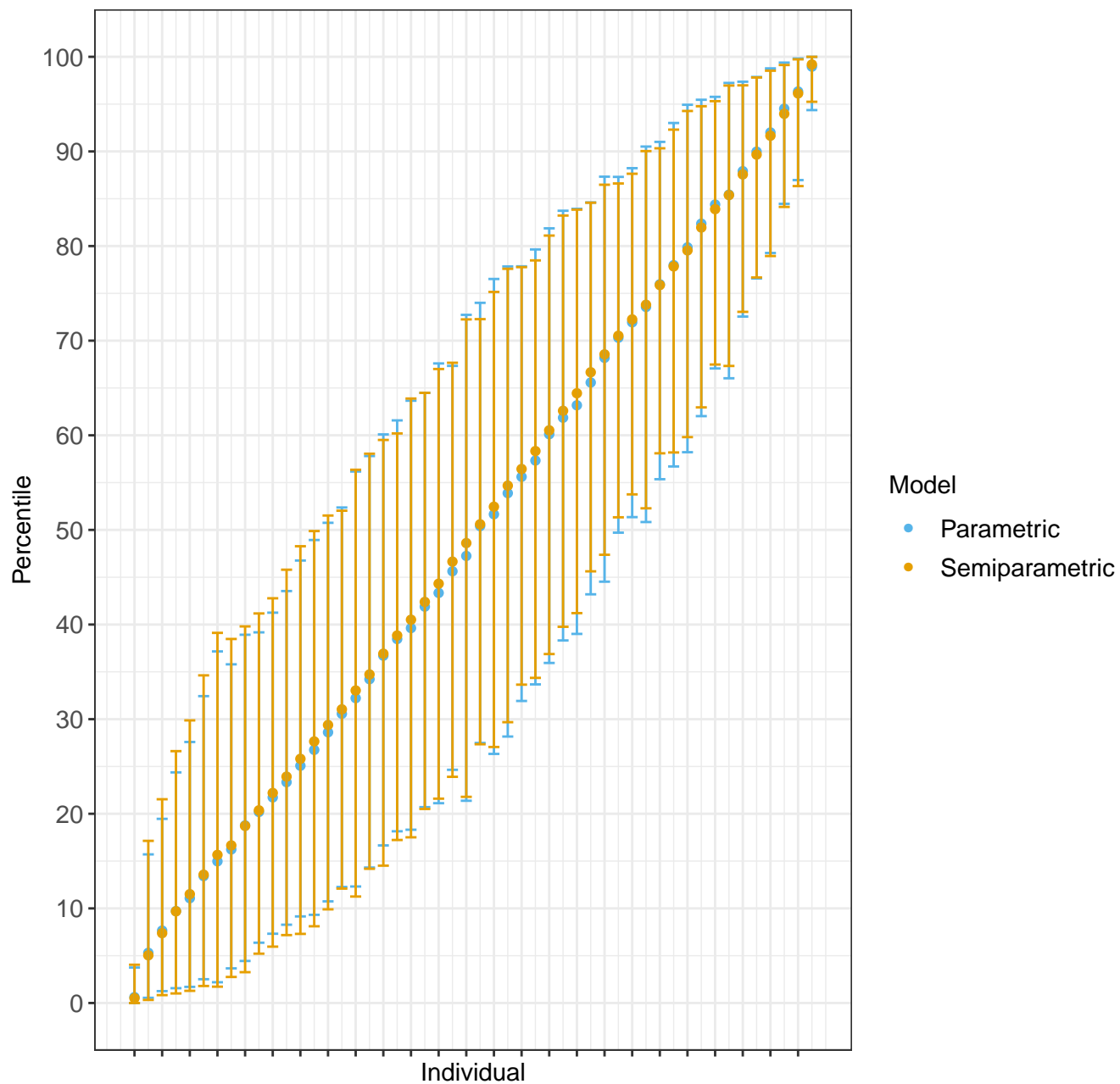
Discrimination parameters



Difficulty parameters



Timss data

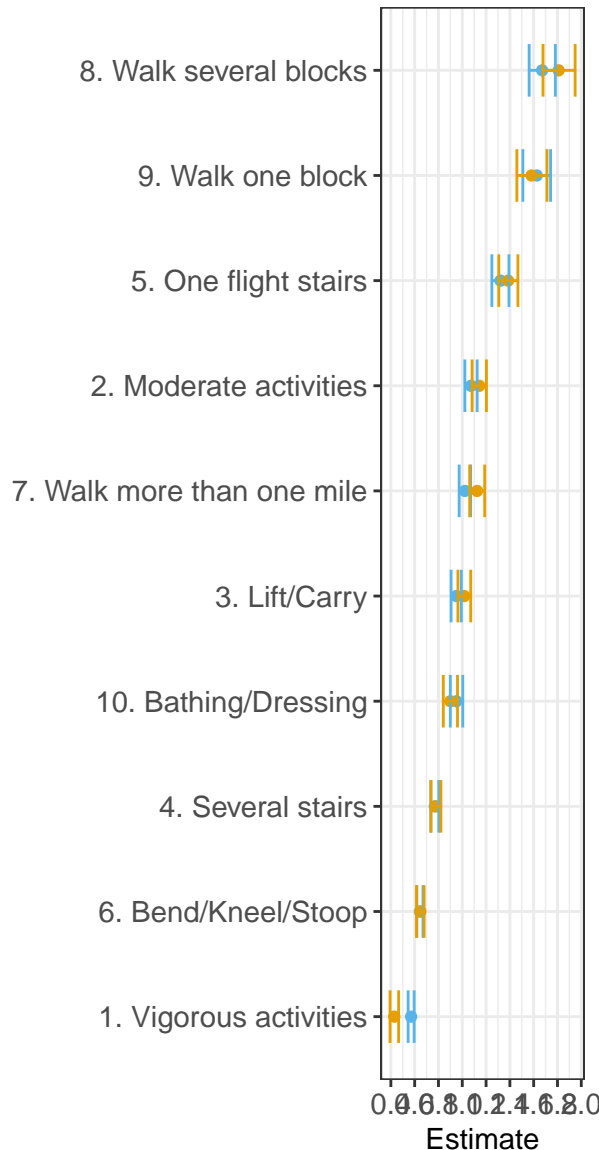




Difficulty parameters

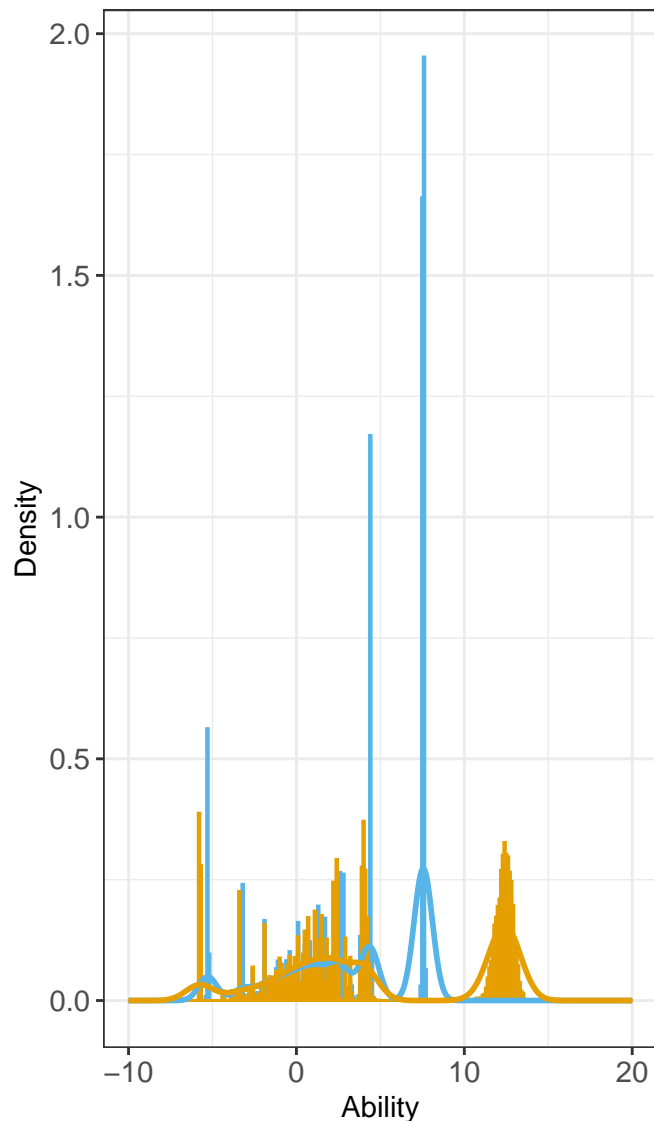


Discrimination parameters

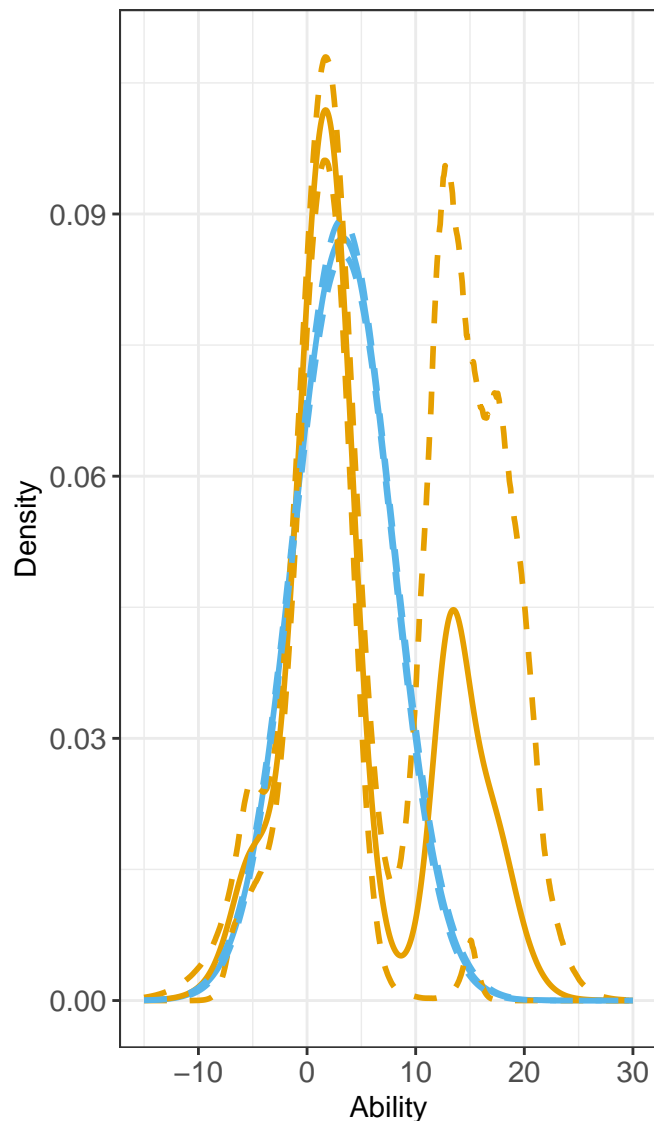


• Parametric • Semiparametric

Health data  
Distribution of individual posterior mean

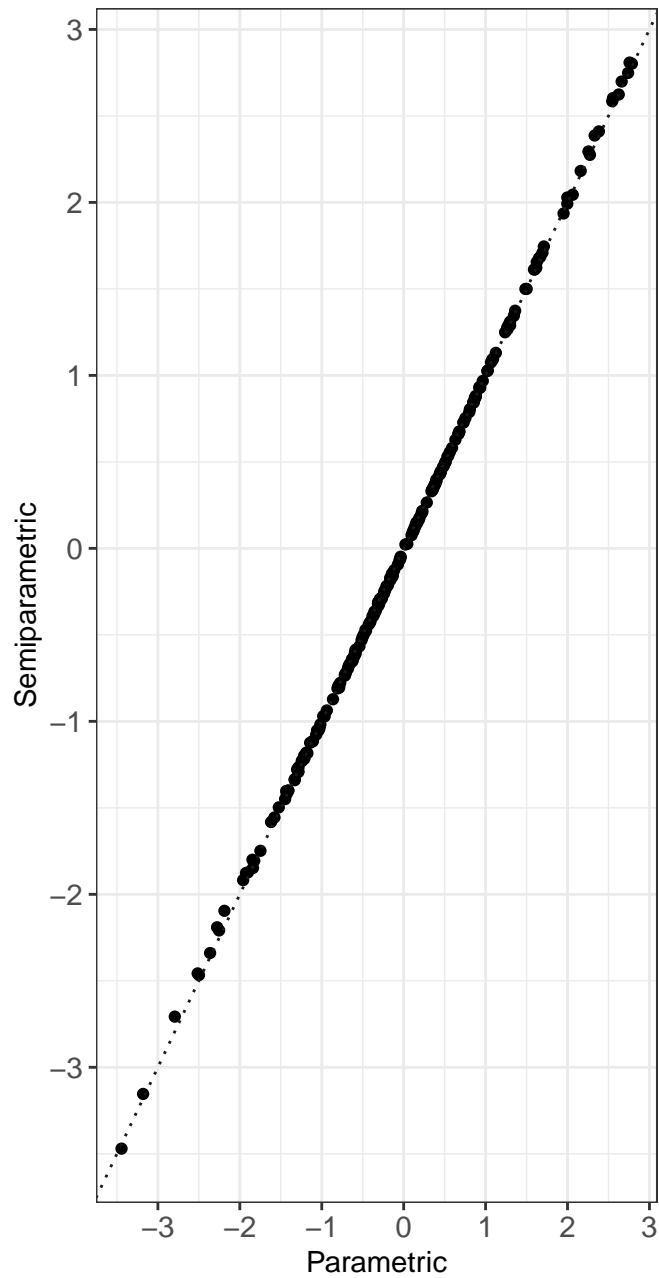


Health data  
Estimate of distribution of abilities

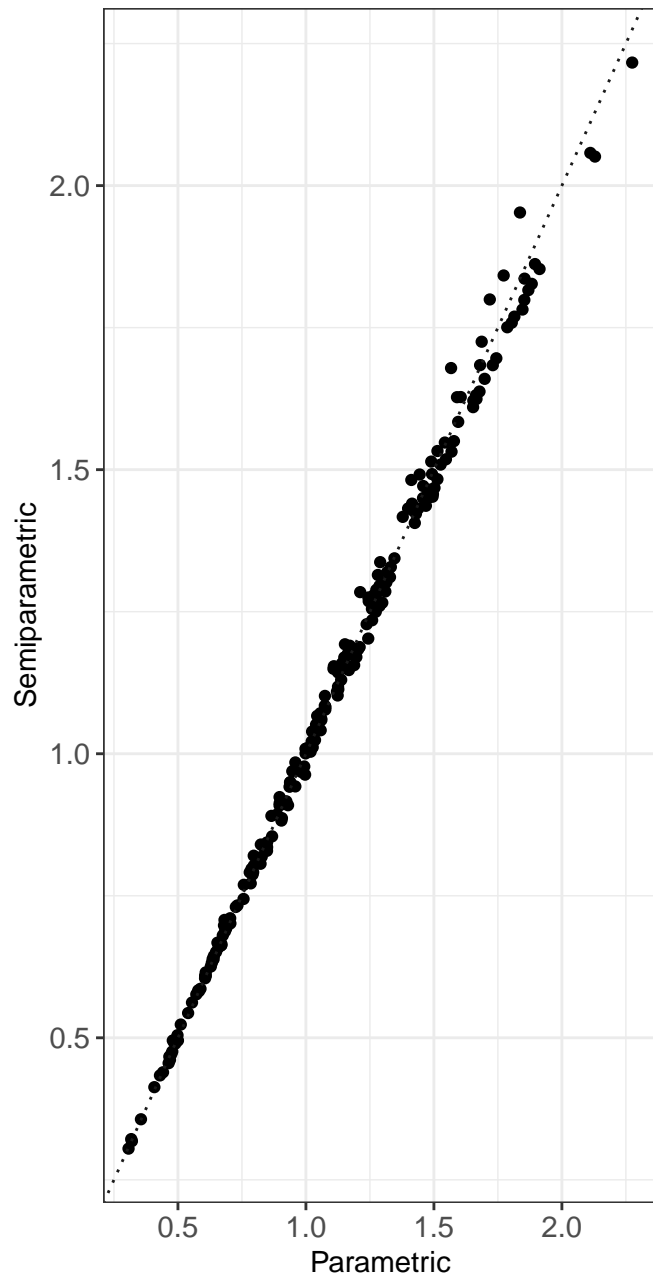


— Parametric — Semiparametric

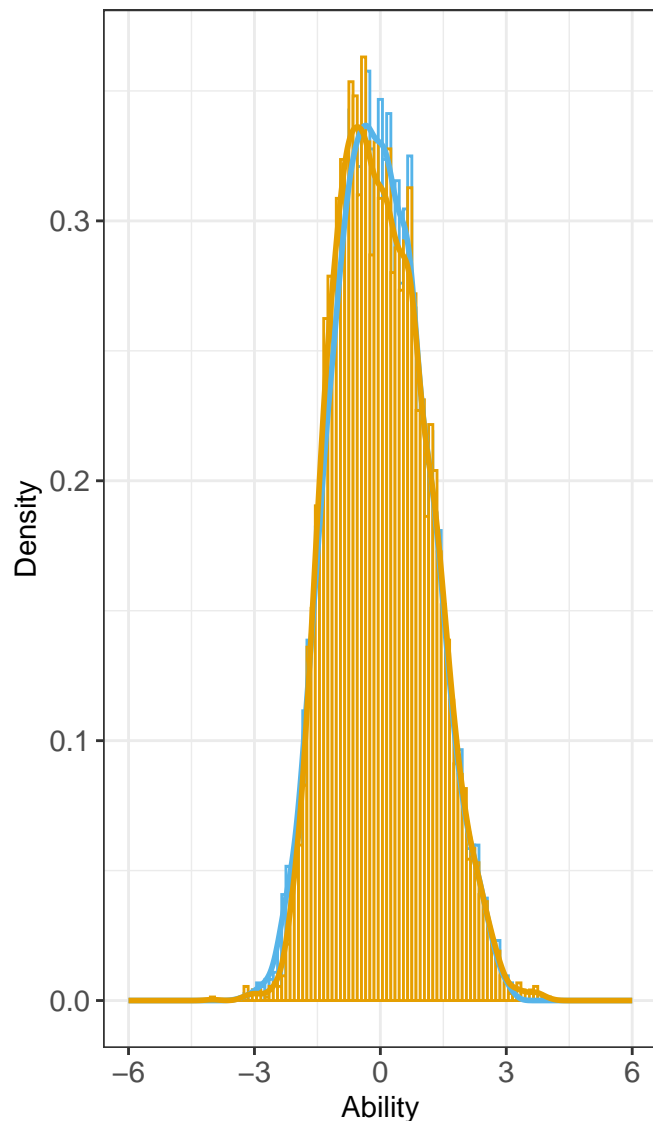
Difficulty parameters



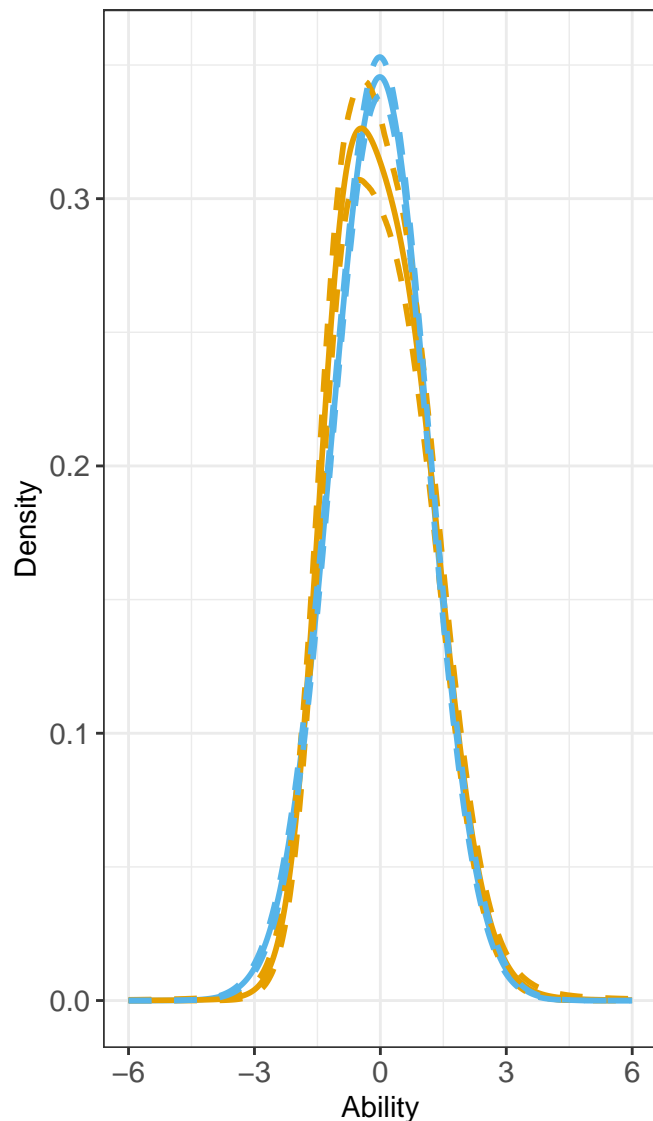
Discrimination parameters



Timss data  
Distribution of individual posterior mean

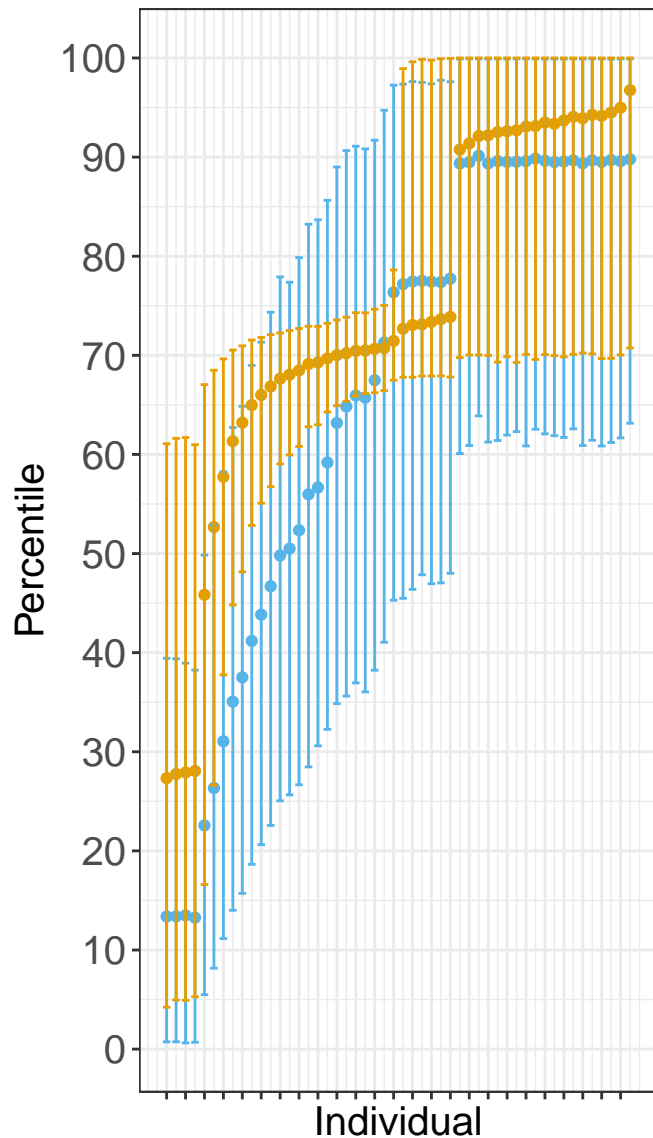


Timss data  
Estimate of distribution of abilities

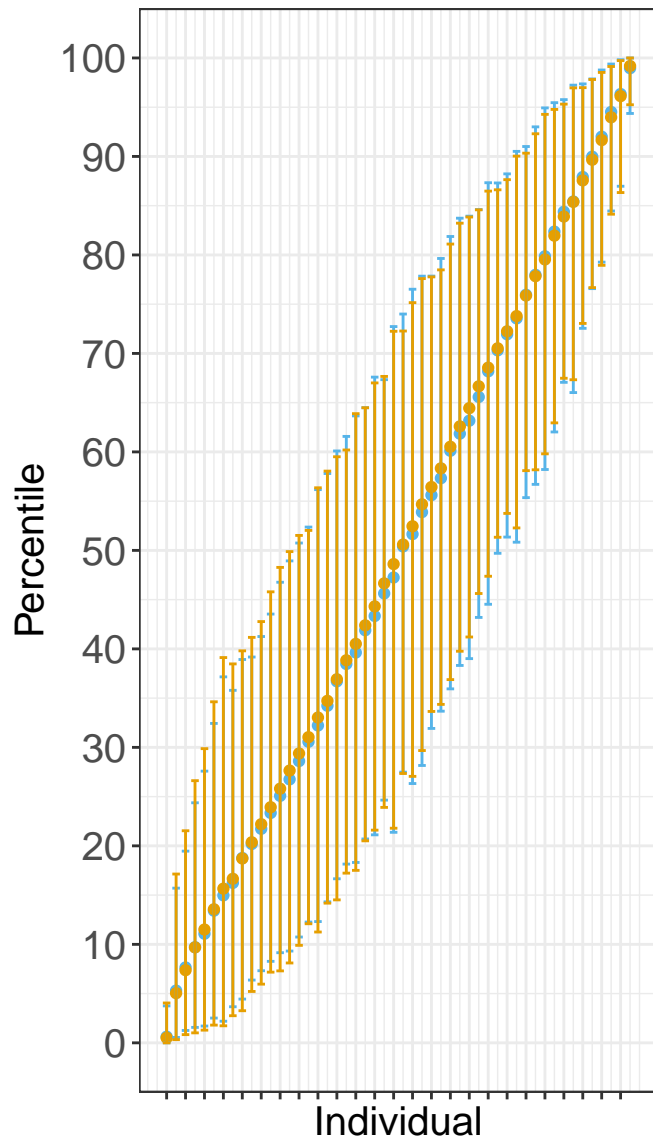


— Parametric — Semiparametric

Health data



Timss data



• Parametric • Semiparametric