

Supplementary File 2: Model Diagnostics

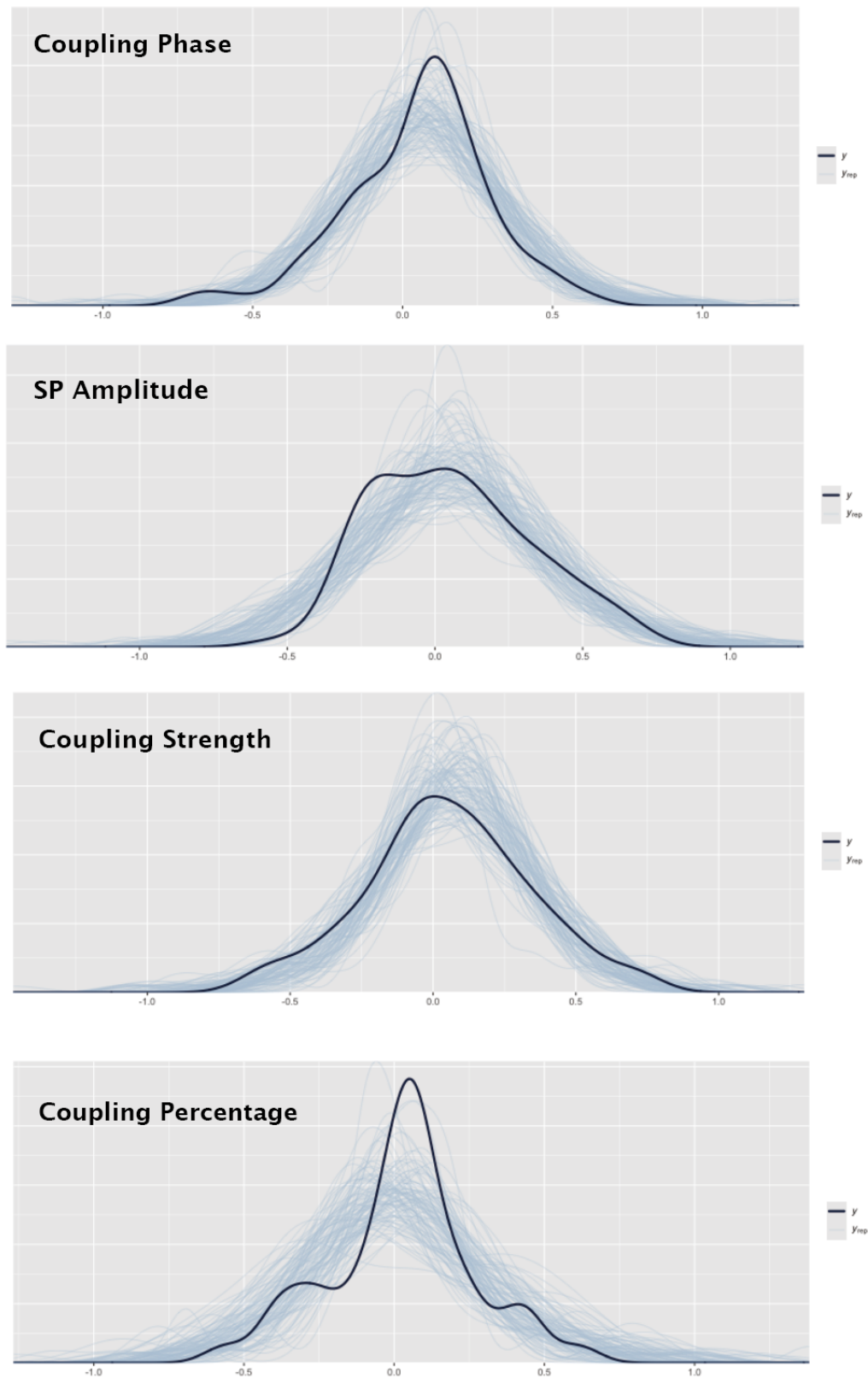


Figure 1: Posterior predictive check of overall models of coupling-memory association measures

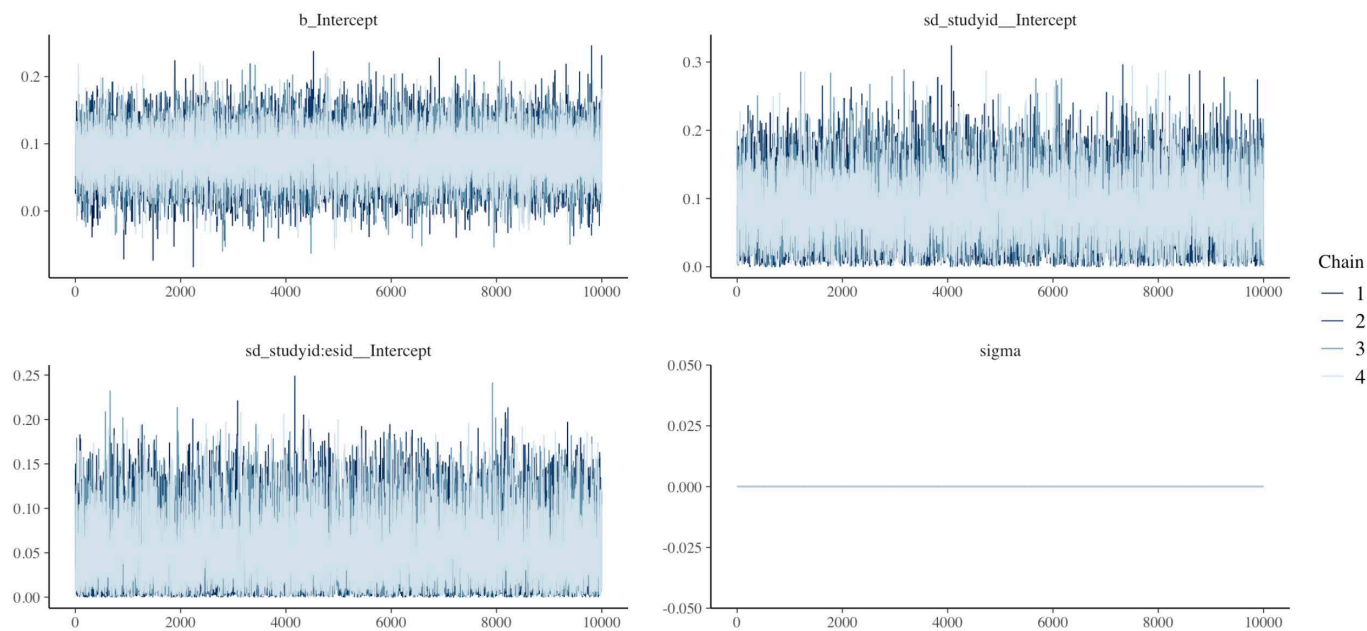


Figure 2: Example of the trace plot used to assess the convergence of models. Well-mixed chains showing no trends or drifts over iterations indicate successful convergence.

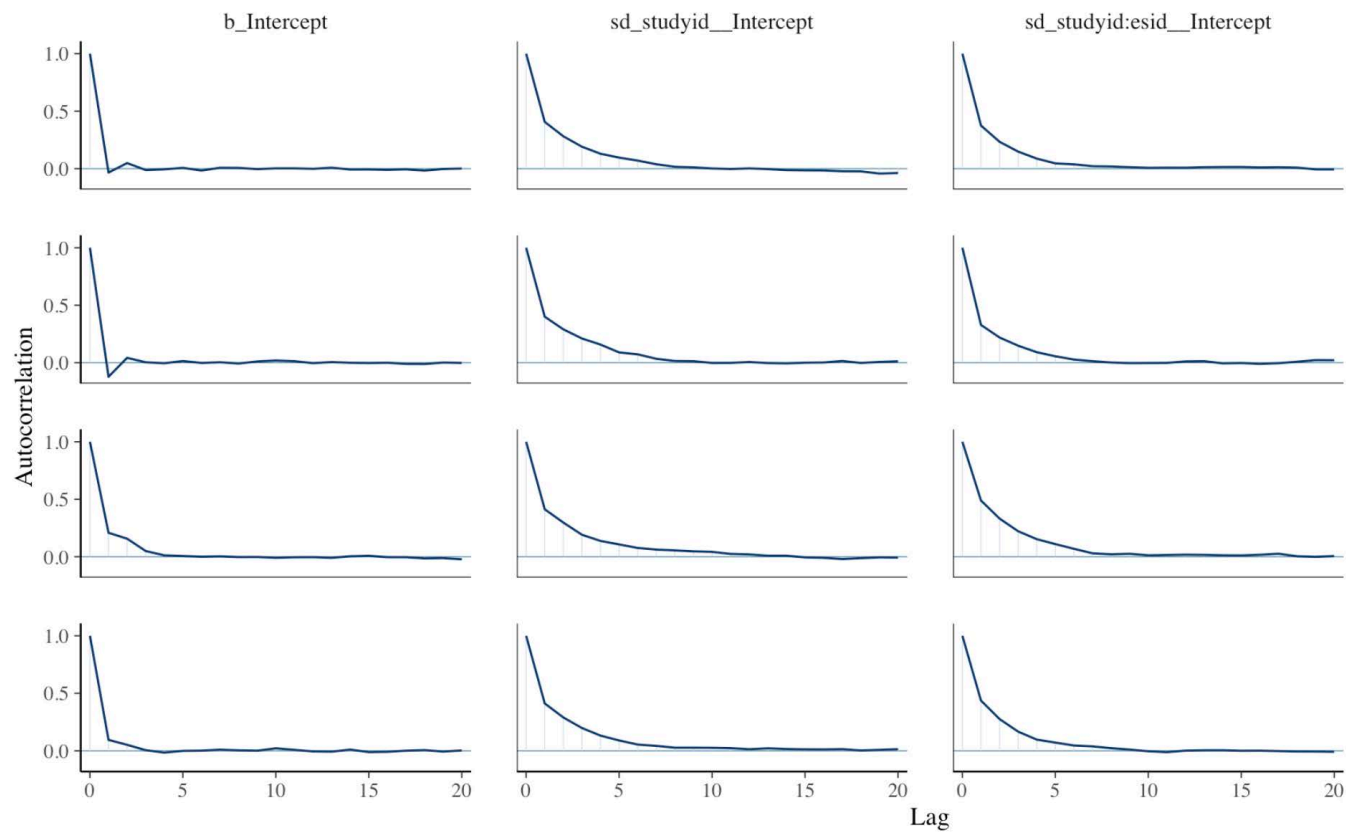


Figure 3: Example of the autocorrelation plot used to assess the independence of samples across iterations, with a rapid decay of autocorrelation indicating efficient sampling and low within-chain redundancy.