

Posterior Prior

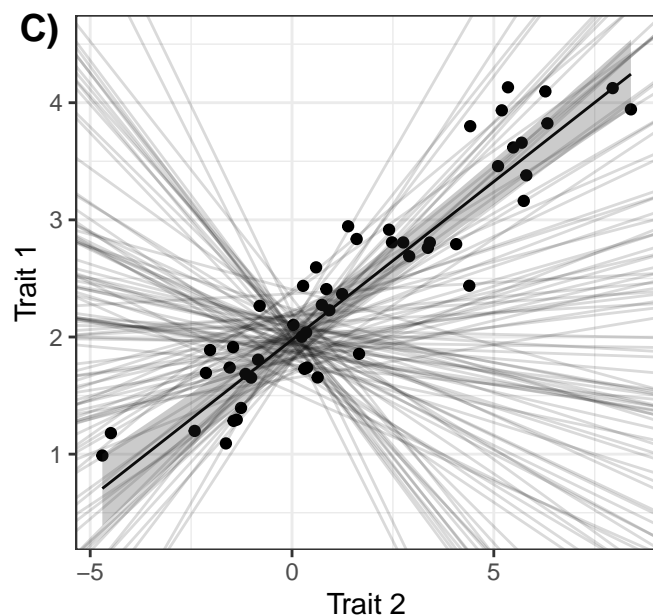
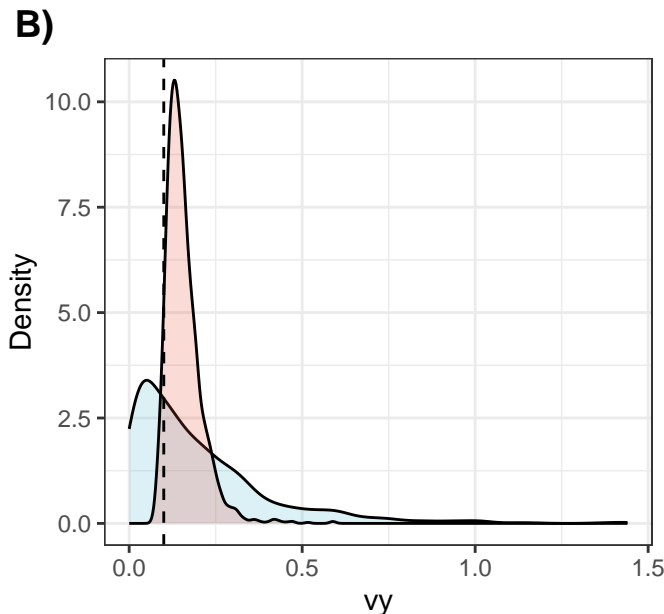
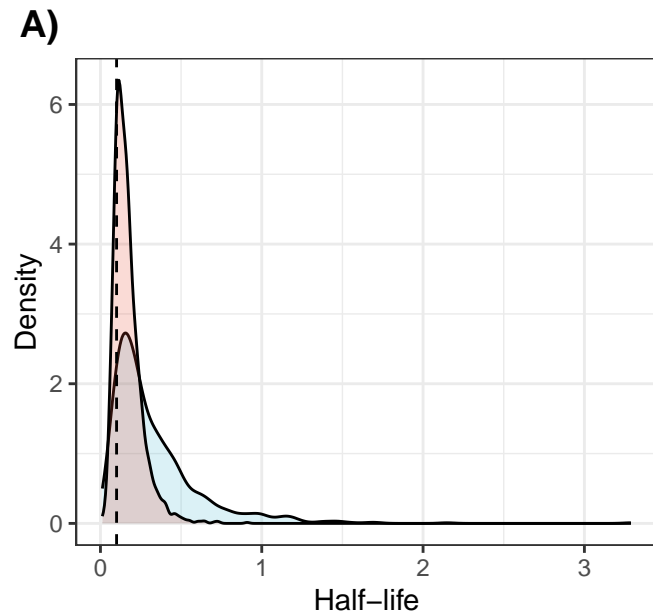


Fig. S4: Prior vs. posterior for A) Half-life, B)  $v_y$ , and C) Predicted mean intercept and slope and 89% compatibility interval for the means with priors in light grey and posterior in dark grey colors. For this simulation parameter values were set to:  $hl=0.1$ ,  $v_y=0.1$ ,  $\alpha=2$ ,  $\beta=0.25$ ; Priors:  $hl \sim \text{lognormal}(\log(0.25), 0.75)$ ;  $v_y \sim \text{exponential}(5)$ ;  $\alpha \sim \text{normal}(0, 1)$ ;  $\beta \sim \text{normal}(0, 1)$ . Dotted lines in A) and B) are true values of the parameter