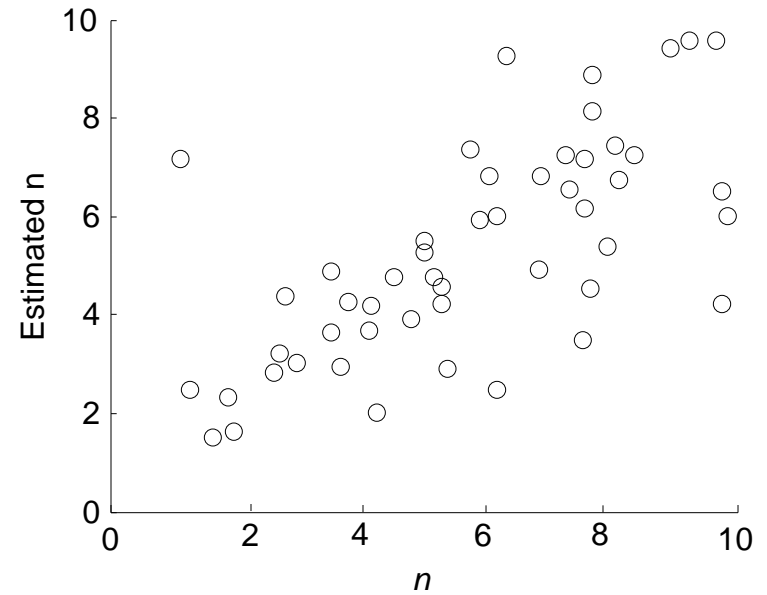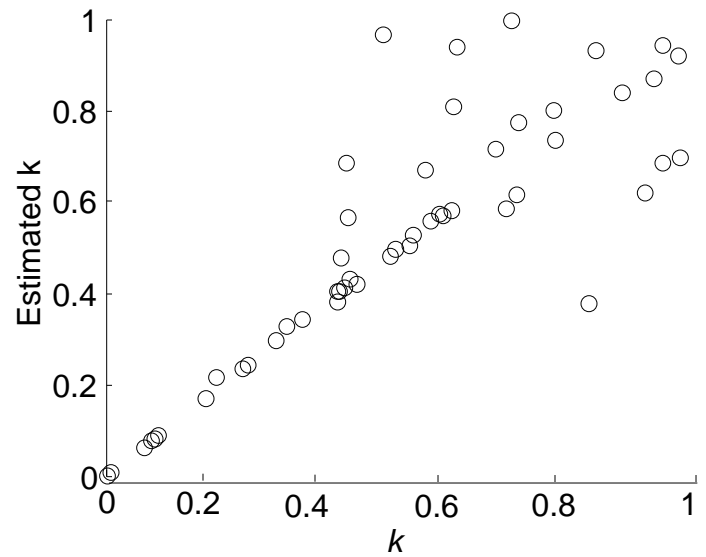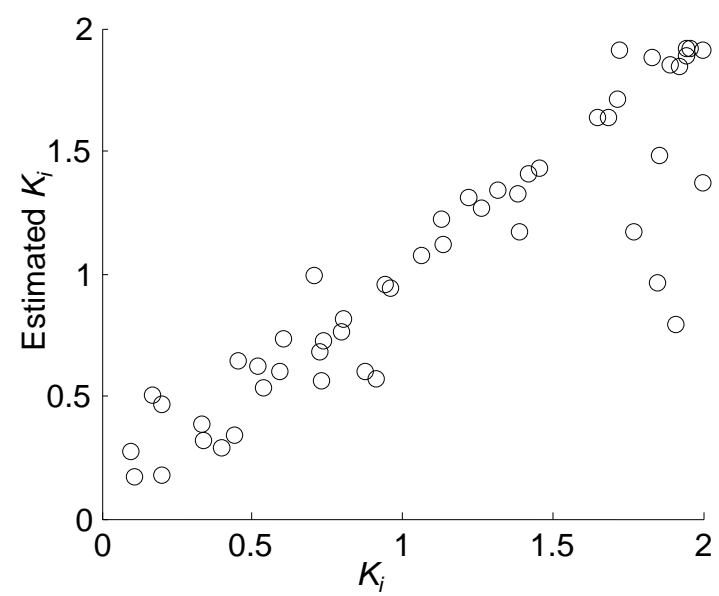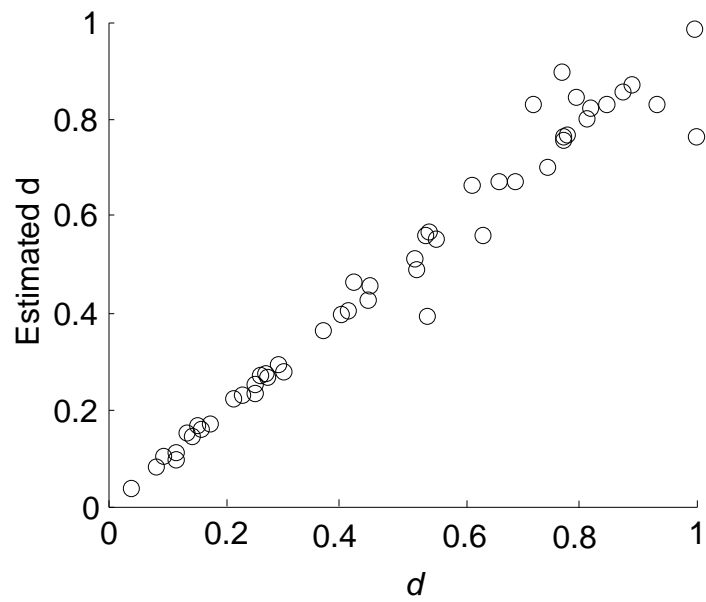**Supplementary Figure 1: Normalized IFNB1 expression time course used in the ODE model.** IFNB1 mRNA levels were normalized by their highest value within each replicate. Values between measures points were determined by linear interpolation of their experimentally measured values at a MOI of 2 (thick solid line), 1 (thick dashed line) and 0.5 (think dashed dot line).

Supplementary Figure 2: Identifiability of model parameters using the proposed estimation protocol. As described in methods, simulated data sets were generated using a range of values for (A) degradation rate (*d*), (B) rate of expression of gene by infected cells (*k$_i$*), (C) the level of IFNB1 for which the gene expression rate is 0.5 per cell (*k*), and (D) Hill coefficient (*n*). Parameters were then estimated from these data and compared to their actual values.