

Results from Experiment 1 (Rio, Dachner, & Warren)

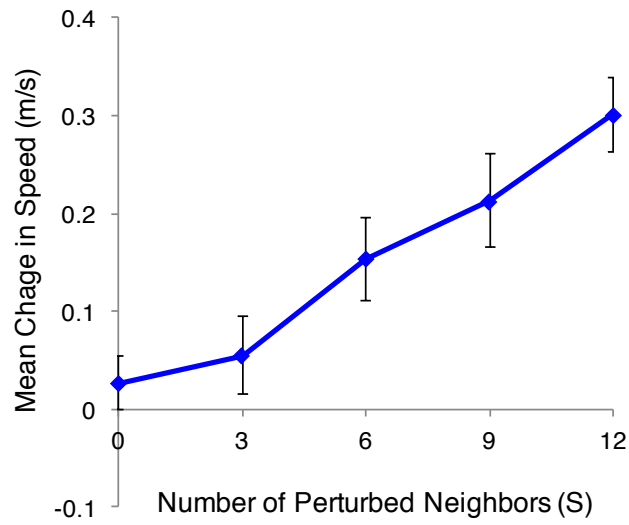


Figure S1. Speed perturbations in Experiment 1: Mean absolute change in speed as a function of the number of neighbors in the perturbed subset S. This figure is paired with Figure 2a in Rio, Dachner, & Warren. Error bars=SE of mean.

Simulations of Experiment 1 (Rio, Dachner, & Warren)

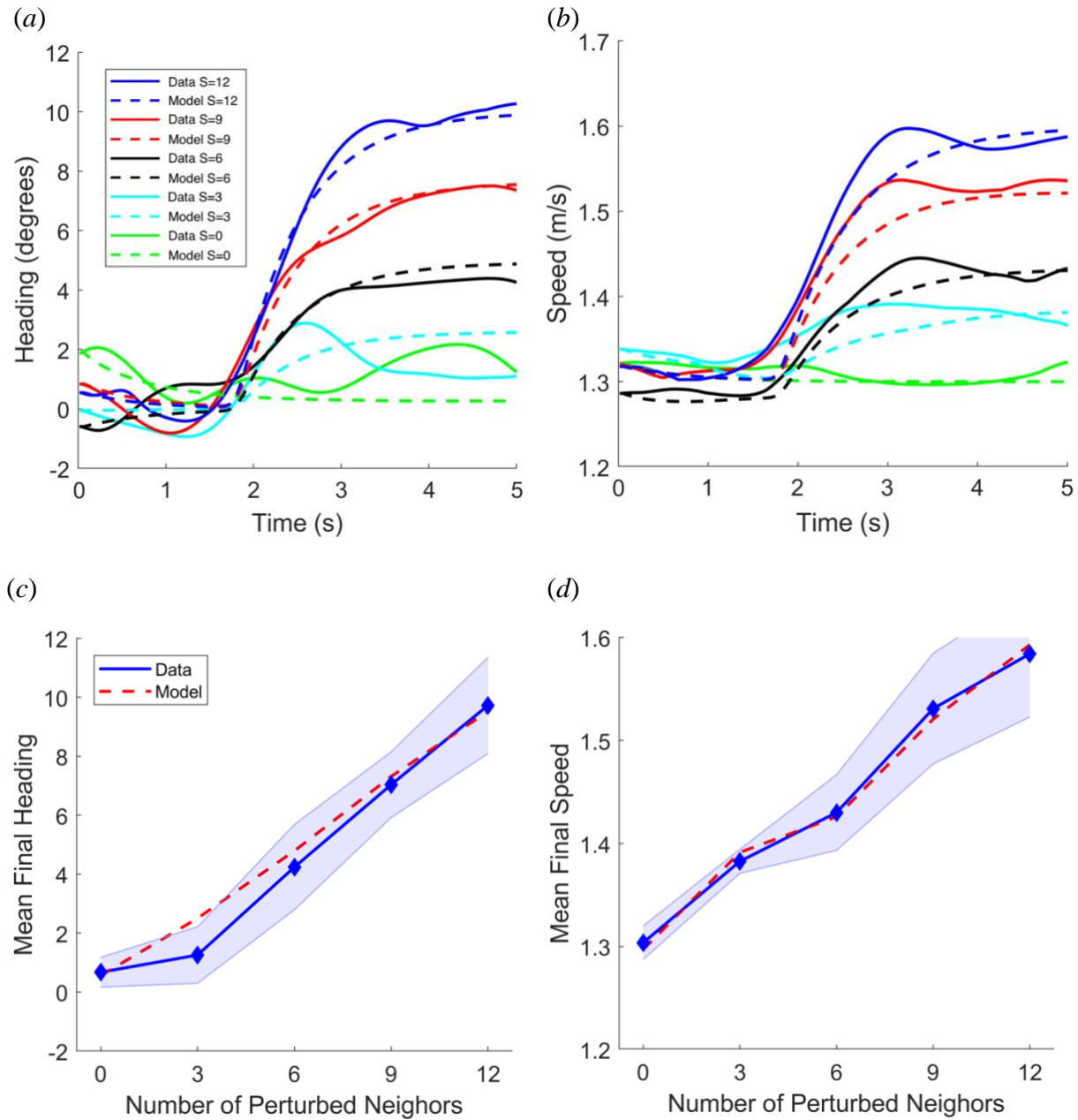


Figure S2. Simulations of heading perturbations and speed perturbations in Experiment 1. *Top:* Mean time series of (a) heading and (b) speed for human data (solid curves) and model (dashed curves) at each subset size S (number of perturbed neighbors, colored curves). *Bottom:* Mean absolute final (c) heading and (d) speed as a function of the number of perturbed neighbors S . Shaded regions = 95% CI for human data.

Simulations of Experiment 2 (Rio, Dachner, & Warren)

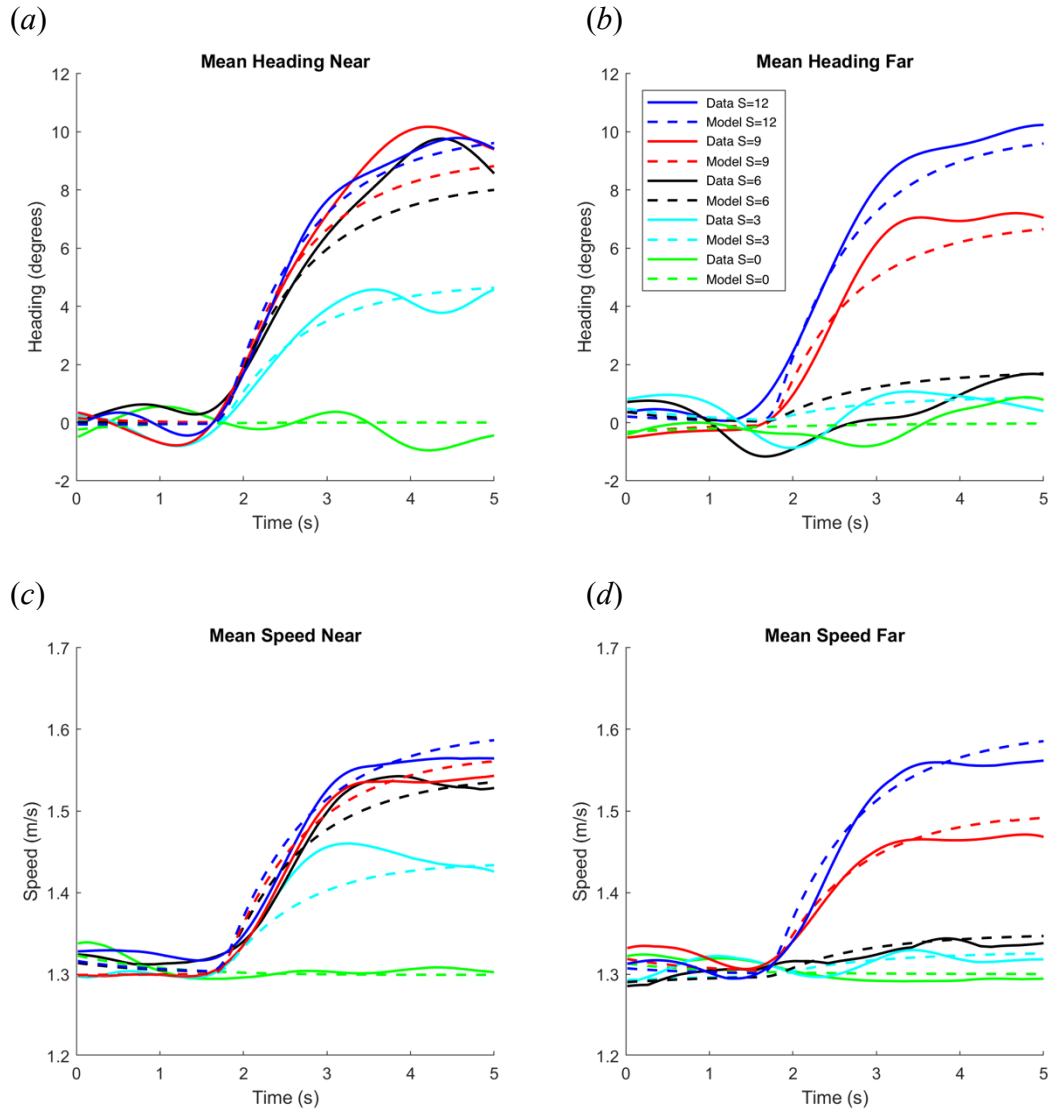


Figure S3. Mean time series for human data (solid curves) and model (dashed curves) in Experiment 2. *Top:* Mean time series of heading for each subset size S (number of perturbed neighbors, colored curves) in (a) the Near condition (~1.5m) and (b) the Far condition (~3.5m). *Bottom:* Mean time series of walking speed in (c) the Near condition and (b) the Far condition. Note that smaller subsets $S=0,3,6$ (green, cyan, black) illustrate the effect of distance, as nearly all were in the near zone (5 neighbors) or the far zone (7 neighbors).

Simulations of Individual Trajectories in a Human ‘Swarm’ (Rio, Dachner, & Warren)

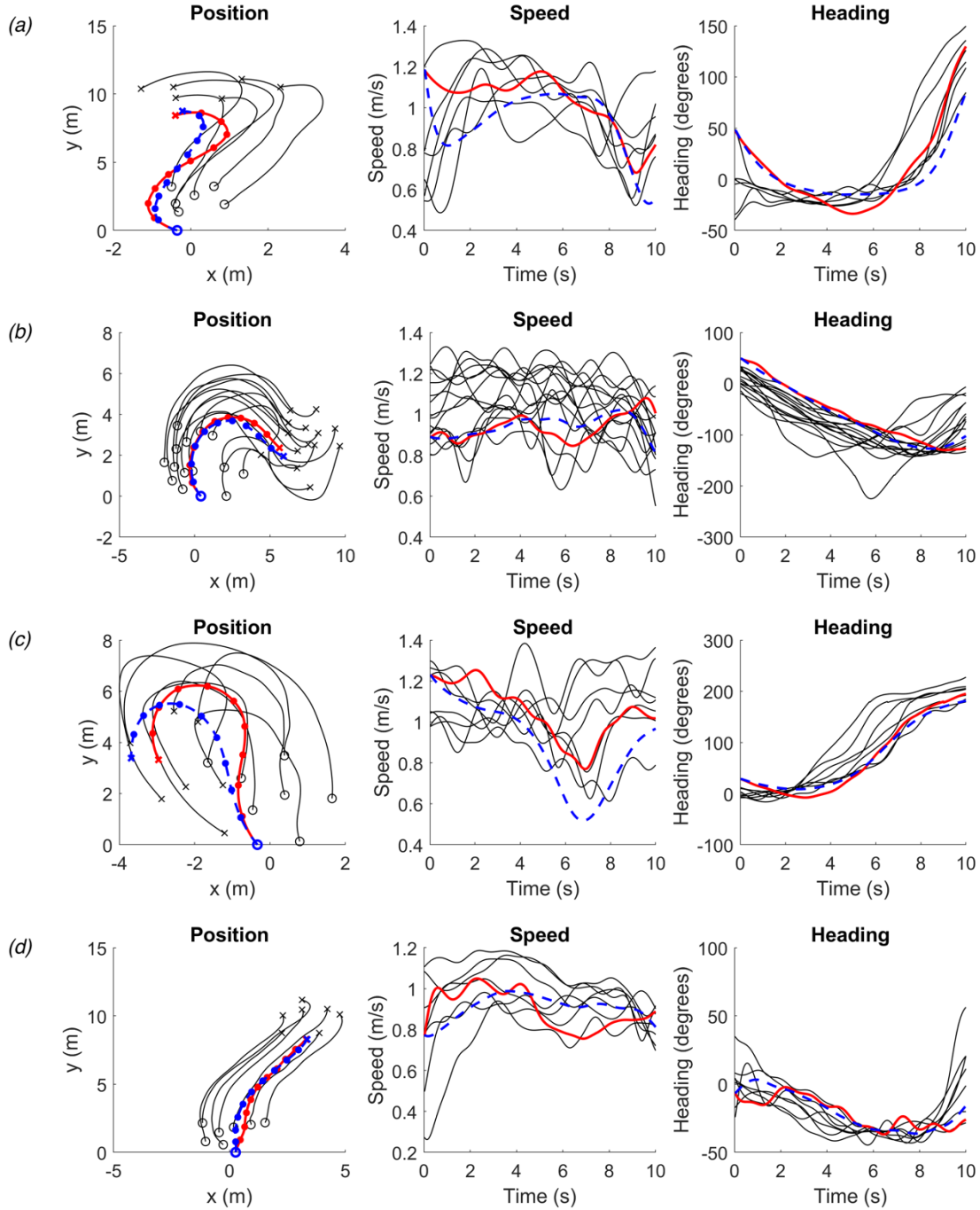


Figure S4. Simulations of sample 10s segments from the human ‘swarm’ data. (a) IPD=2m, mean position error=0.51m, speed $r=.76$ (RMSE=0.14 m/s), heading $r=0.94$ (RMSE=21.12°). (b) IPD=1m, mean position error=0.32m, speed $r=0.24$ (RMSE=0.07 m/s), heading $r=0.99$ (RMSE=9.3°). (c) IPD=2m, mean position error=0.60m, speed $r=0.80$ (RMSE=0.18m/s), heading $r=0.94$ (RMSE=10.01°). (d) IPD=2m, mean distance error=0.29m, speed $r=0.33$ (RMSE=0.11 m/s), heading $r=0.86$ (RMSE=7.14°). Participant = solid red curve, model = dashed blue curve, neighbors = black curves; O=starting positions, X=final positions.