Supplemental Methods

In early spring 2007, emerging *P. fuscatus* were collected in and around Ann Arbor, Michigan. After emerging from diapause, wasps do not immediately begin nest construction, but rather spend up to a few weeks assessing potential nest sites. During this time, they also engage in aggressive dominance contests with multiple other foundresses [S1], possibly assessing potential co-foundresses. Prior to this experiment, wasps were housed with approximately 10 other wasps from the same collection location (mean ± SE. = 10.38 ± 0.50, range = 9-13, mode = 10, n = 8 cages) for one week. All collection locations were separated by at least 1 km, and most by more than 20 km to ensure wasps from different collection locations had not previously interacted. In total, the aggressive interactions of 50 focal wasp queens were followed over the entire length of the experiment. On the first trial (Day 0), focal wasps were introduced to a new wasp that was collected from a distant location, with whom they had not previously interacted. The first two hours of their encounter were filmed and then the pair of wasps were housed together for one day. After one day together, the wasps were separated and returned to their initial housing situations. On the sixth day after the separation (Day 6), focal wasps were paired with a new and different social partner and their interactions were filmed for two hours. After the two-hour trial, the wasps were returned to their initial housing situation. Similar procedures were used on Days 7 and 8. On Day 7, the focal wasp was re-paired with the same wasp from Day 0. On Day 8, the focal wasp was paired with another new social partner.

Videotapes of the behavioral interactions were watched double blind to the identity of wasp and
the day of the trial. While wasps do engage in a number of non-aggressive interactions, these generally occur after prolonged interactions on a nest. In our trials, the only clearly measurable interactions were proximity and aggression. To compare aggression between trials, we calculated an aggression index that takes into account the intensity of each aggressive interaction for the first half hour, when interactions were most intense [S2]. The aggression index was calculated by assigning each behavior a score and dividing the summed aggression score by the total number of interactions. We recorded each instance of the following behaviors (score): bodily contacts that did not result in aggressive behaviors (0), darts (1), dart with open mandibles (2), bites (3), mounts (4) and grapples (4). While the wasps are extremely visual, contacts were assigned conservatively, only when one of the wasps actually made sustained physical contact. If wasps were simply passing by each other (i.e. no sustained interaction) no contact was scored. We compared the aggression indices among the rounds using Friedman ANOVA and multiple comparisons.
