

Fig. S1. Time of independent discoveries of familiar (open circles) and unfamiliar (full circles) nests by informed workers as a function of (i) the total number of visits of the familiar nest during exploration; (ii) the total time spent in the familiar nest during exploration; and (iii) the recency of the last visit to the familiar nest. Each point represents one informed worker (GLMM; discovery times were log-transformed; effects of ‘Number of visits’: $F_{1,87} = 2.147$, $p = 0.15$; ‘Total visit time’: $F_{1,86} = 0.230$, $p = 0.63$; ‘Recency of last visit’: $F_{1,87} = 2.034$, $p = 0.16$; ‘Nest’: $F_{1,88} = 19.268$, $p < 0.001$; interaction with ‘Nest’: $F_{1,85/86} < 1.1$, $p > 0.3$ for all three variables).

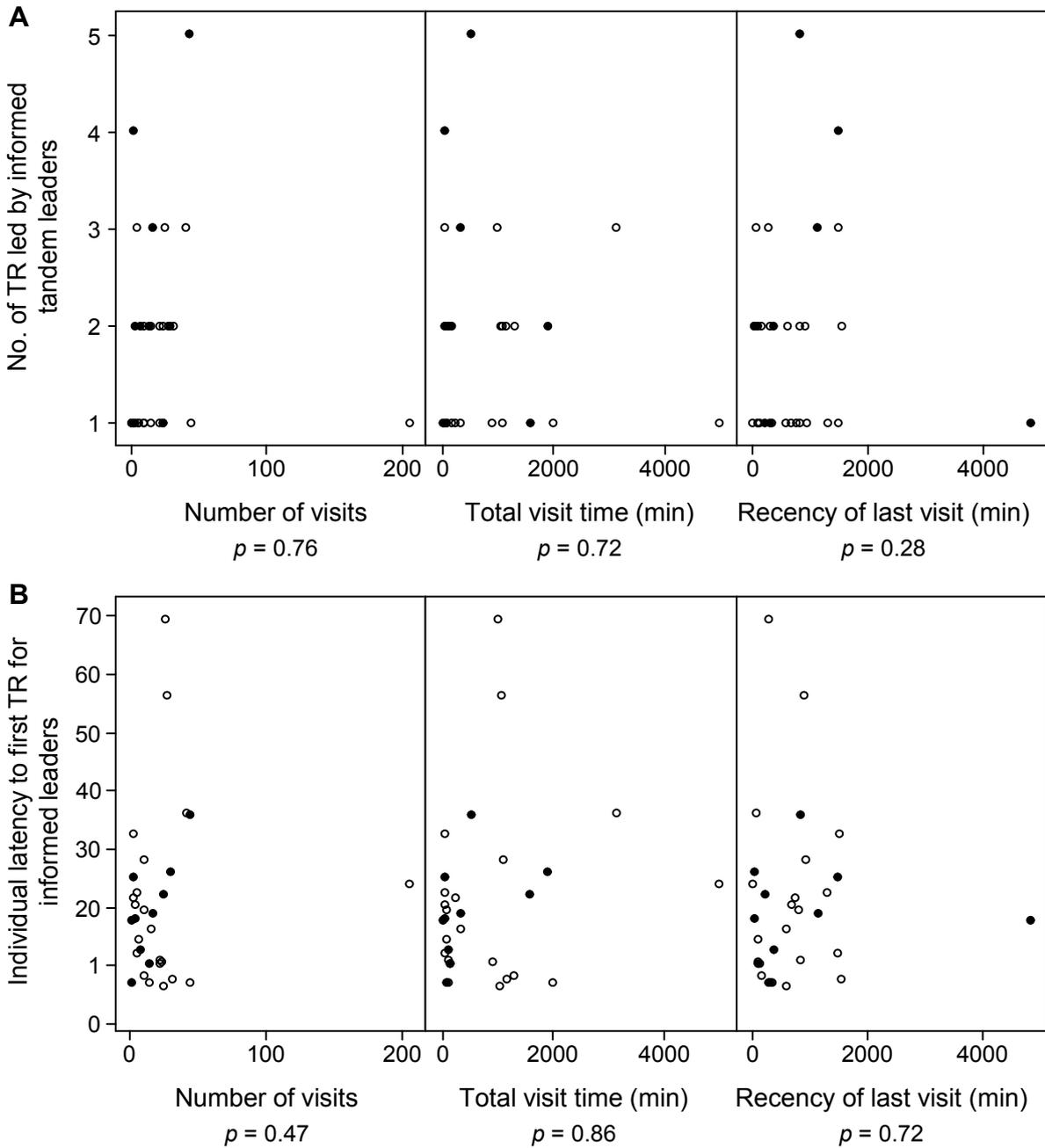


Fig. S2. (A) Number of tandem runs (TR) led and (B) individual latency to first tandem run to familiar (open circles) and unfamiliar (full circles) nests by *informed* tandem leaders as a function of (i) the total number of visits of the familiar nest during exploration; (ii) the total time spent in the familiar nest during exploration; and (iii) the recency of the last visit to the familiar nest. Each point represents one informed worker (GLMM; No. of TR was power-transformed; *No. of tandem runs*: effects of ‘Number of visits’: $F_{1,30} = 0.10$, $p = 0.76$; ‘Total visit time’: $F_{1,30} = 0.13$, $p = 0.72$; ‘Recency of last visit’: $F_{1,30} = 1.25$, $p = 0.28$; ‘Nest’: $F_{1,30} = 0.18$, $p = 0.67$; interaction with ‘Nest’: $F_{1,30} < 1.6$, $p > 0.2$ for all three variables; *Latency to first tandem run*: effects of ‘Number of visits’: $F_{1,30} = 0.54$, $p = 0.47$; ‘Total visit time’: $F_{1,30} = 0.86$, $p = 0.37$; ‘Recency of last visit’: $F_{1,30} = 0.13$, $p = 0.72$; ‘Nest’: $F_{1,30} = 0.17$, $p = 0.68$; interaction with ‘Nest’: $F_{1,30} < 1.92$, $p > 0.18$ for all three variables).

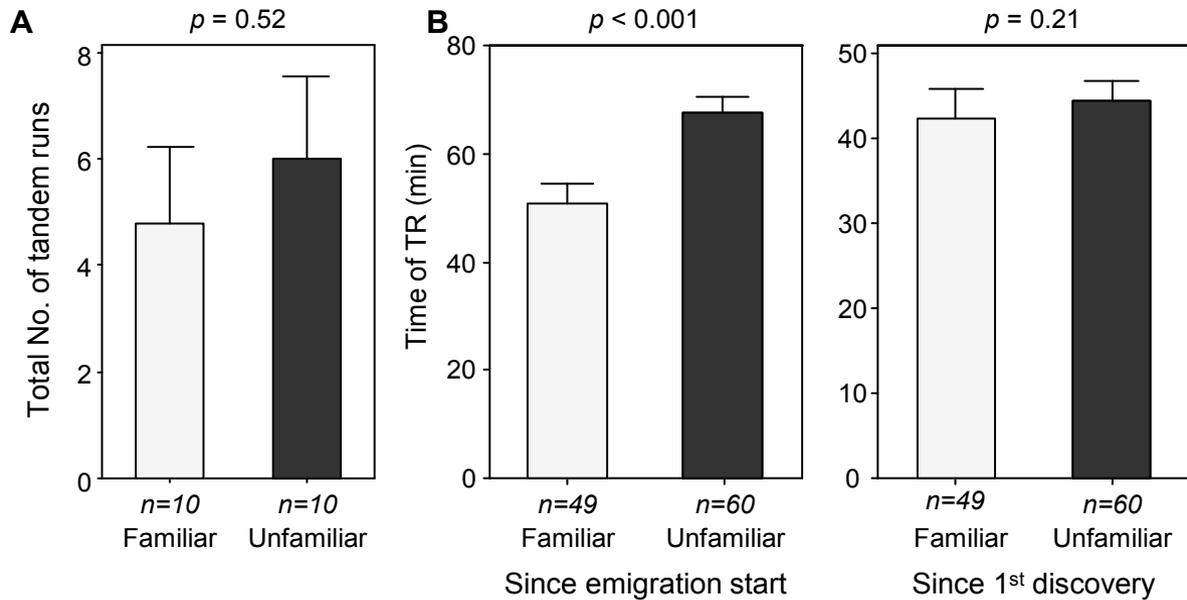


Fig. S3. (A) Total number of successful forward tandem runs to familiar (light grey) and unfamiliar (dark grey) nests in experiment 1. (B) Tandem run times to familiar and unfamiliar nests since the start of emigration or since the first discovery of the nest. Bars and whiskers represent means and standard errors, respectively (GLMM; no data transformation; effect of ‘Nest’; no. of tandem runs: $F_{1,9} = 0.460$, $p = 0.52$; time since emigration start: $F_{1,98} = 11.037$, $p < 0.001$; time since first discovery: $F_{1,98} = 1.576$, $p = 0.21$).

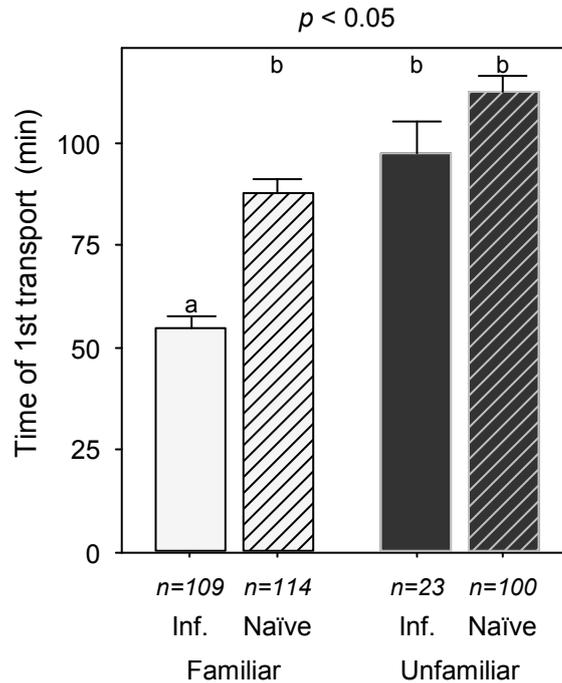


Fig. S4. Time of first transport to familiar and unfamiliar nests for informed and naïve transporters since the start of emigration. Bars and whiskers represent means and standard errors, respectively (GLMM; no data transformation; effect of ‘Nest’: $F_{1,333} = 11.39$, $p < 0.001$; ‘Information’: $F_{1,333} = 32.73$, $p < 0.0001$; interaction ‘Nest’ \times ‘Information’: $F_{1,333} = 5.16$, $p < 0.05$). Same letters indicate no differences, whereas different letters indicate significant differences ($p < 0.05$) in Tukey’s post-hoc tests.

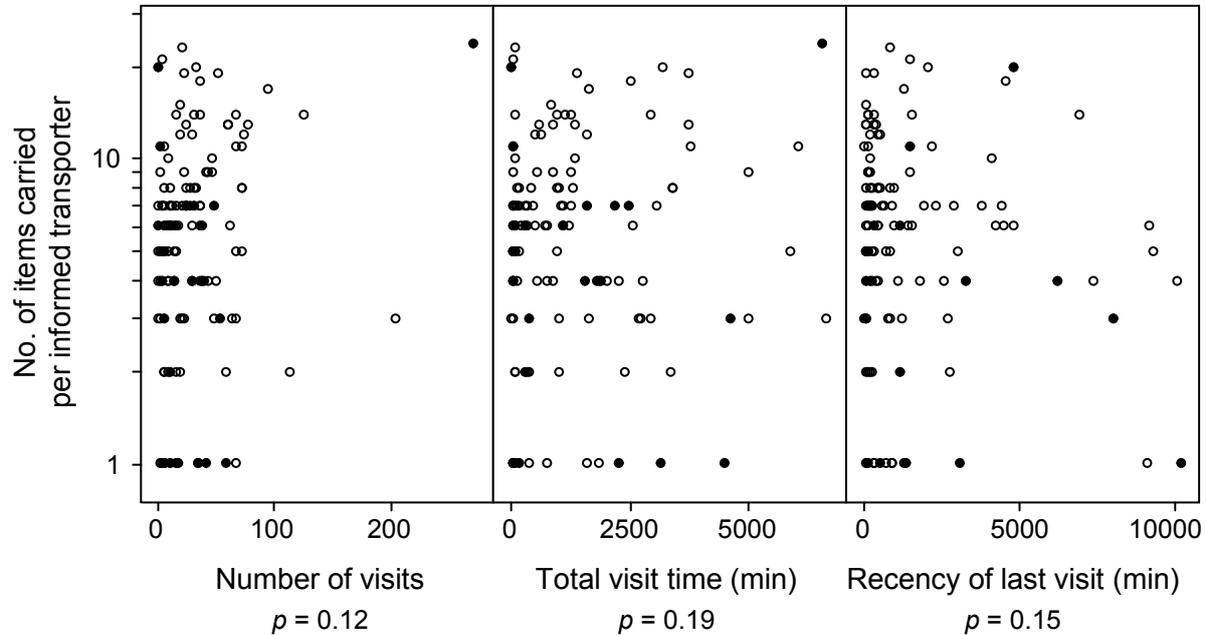


Fig. S5. Number of items carried per *informed* transporter to familiar (open circles) and unfamiliar (full circles) nests as a function of (i) the total number of visits of the familiar nest during exploration; (ii) the total time spent in the familiar nest during exploration; and (iii) the recency of the last visit to the familiar nest. Each point represents one informed worker (GLMM; power-transformation; effects of ‘Number of visits’: $F_{1,131} = 2.4$, $p = 0.12$; ‘Total visit time’: $F_{1,130} = 1.74$, $p = 0.19$; ‘Recency of last visit’: $F_{1,118} = 2.06$, $p = 0.15$; ‘Nest’: $F_{1,131} = 0.62$, $p = 0.43$; interaction with ‘Nest’: $F_{1,118-131} < 1.89$ $p > 0.17$ for all three variables).