



What's size got to do with it? Investigating associations between size and worker task

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Task partitioning is crucial for effective and efficient coordination of behavior in social insect societies. Many task allocation studies have focused on social insect species composed of workers with distinct morphological or age-related castes. However, little is known about task allocation when worker size variation is continuous, even though this is very common. We hypothesize that in species with continuous worker size variation, individual workers still specialize in different tasks and that worker size is strongly correlated with task specialization. Using species with differing degrees of worker size variance in the ant genus *Formica*, we conducted a mark-recapture study focused on three separate tasks. Our results suggest that individual workers are highly consistent in the task performed. Of the individual ants recaptured one to several days after marking, 98.6% were doing the same task. We then investigated the association between individual worker size and task, through measuring worker head width. Our preliminary data suggest that in species with high levels of worker size variation, size was strongly correlated with task. However, size-task correlation was weaker and often nonexistent in species with more uniformly sized workers, suggesting that they may rely on different cues or individual characteristics when allocating tasks.