

# Ants respond to social information at rest, not on the fly

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A new study of rock ants (*Temnothorax albipennis*) conducted by Edmund Hunt and colleagues at the University of Bristol, UK suggests that ants don't get distracted by social information when on the move, only fully responding to it when at rest. Such sporadic monitoring of the social environment may reduce information overload and enhance the robustness of complex societies. Credit:

Edmund Hunt, University of Bristol, UK

Ants don't get distracted by social information when on the move, only fully responding to it when at rest, a new study from the University of Bristol, UK indicates. Such sporadic monitoring of the social environment may reduce information overload and enhance the robustness of complex societies, the researchers suggest.

Edmund Hunt, a PhD student in Bristol's School of Biological Sciences, and colleagues tracked the movement patterns of lone rock ants (*Temnothorax albipennis*) exploring a large arena outside the nest, both when the arena was clean and when it contained chemical information (pheromones or other cues) left by previous nest-mates.

The researchers discovered a relationship between the duration and average speed of an ant's movements, and also established that movements mostly fluctuated around a constant average speed. The [average speed](#) increased in anticipation of a longer movement, suggesting that movement durations were somehow determined in advance.

This was the case both when chemical information was absent and when it was present, suggesting ants probably only fully respond to [social information](#) in between movements.

Edmund Hunt said: "An intermittent response to social information would help the individual ant by reducing the burden of information it has to process when moving around in its crowded society. It could also benefit the colony as a whole by moderating positive feedback effects, which may otherwise propagate social information of poor quality through the system. This would compromise the effectiveness of the [ants](#)

' decentralized task allocation system.

"Such intermittent responsiveness to aspects of the [social environment](#) during movement may have implications for the way we understand other complex adaptive social systems, including human ones."

The research is published today in *Royal Society Open Science*.

**More information:** 'Ants determine their next move at rest: motor planning and causality in complex systems' by Edmund R. Hunt, Roland J. Baddeley, Alan Worley, Ana B. Sendova-Franks and Nigel R. Franks in *Royal Society Open Science*: [rsos.royalsocietypublishing.org ... /10.1098/rsos.150534](https://rsos.royalsocietypublishing.org/doi/10.1098/rsos.150534)

Provided by University of Bristol

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