Assessing the rationality of time investment when rock ants choose a nest site

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A team of researchers from the University of Oxford and Arizona State University has carried out experiments with rock ants to assess their rationality of time investment when they choose a new nest site. In their paper published in the journal *Biology Letters*, the group describes their experiments with the ants and what they learned from them.

Prior research has shown that humans do not always think or act

logically. Additionally, sometimes humans have what are known as "irrational decision latencies," taking longer to make a decision on some things in ways that do not always seem to make sense. An example of this is a study that showed it took people longer to decide which of two images had more dots when the dots in the two images were closer in number—even though it should have been a quicker decision because the reward for doing so was smaller. In this new effort, the researchers looked to further understand rationally of time investment, by studying it in rock ants.

Rock ants were chosen because prior research has shown that when a nest is damaged, the ants must go out together and find a new home, and agree on which one to choose. Prior research has also shown that if the nest is destroyed to the point that only one ant survives, that single ant will go find a new home, and will make a decision if given more than one option. To judge rationality of time investment with the ants, the researchers pulled the roofs off a multitude of nests and then recorded the ants as they reacted.

In studying the video, the researchers found that when a single ant was faced with choosing between two very similar new nest options, it took more time to decide than if the options were such that the decision was obvious. Thus, it demonstrated the same kind of irrational decision latency as humans. However, when a whole group was making the decisions, they chose the better option just as quickly for similar options as they did for those that were more obvious.

More information: Takao Sasaki et al. Rational time investment during collective decision making in Temnothorax ants, *Biology Letters* (2019). DOI: 10.1098/rsbl.2019.0542