Public Abstract
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False alarms should be common and costly for group-living animals, but to limit false alarms, animals must evade a tradeoff between response sensitivity and accuracy. I investigated this topic in two closely-related species of treehoppers, *Umbonia crassicornis* and *Platycotis vittata*, in which mothers defend their group living offspring from invertebrate predators. *Umbonia* offspring groups produce synchronous signals to alert their mothers of predator attacks, and *U. crassicornis* offspring groups are known to produce false alarms. I examined a) the function of vibrational signals by *U. crassicornis* mothers after predator attacks, b) the functions of *P. vittata* offspring and maternal signals during predator encounters, and c) the response of a vibrationally-sensitive insect predator to *P. vittata* familial vibrational signals.

Results showed that *U. crassicornis* maternal signals function as negative feedback, dampening the collective signaling of their offspring after predator attacks. This likely reduces false alarms by offspring without reducing the sensitivity of predator detection. *Platycotis vittata* mothers and offspring also partition communicative roles, with offspring signaling predator presence and maternal signals dampening offspring signaling response. However, false alarms are unlikely in this species and thus benefits of negative feedback are unlikely to be the same as for *U. crassicornis*. Finally, *P. vittata* offspring signals attract a species of generalist insect predator, whereas *P. vittata* maternal signals had no effect on the same predator. Predator eavesdropping may favor maternal suppression of unnecessary offspring signaling.

Research on collective behavior over the past decade has largely focused on identifying general principles that are applicable at all levels of biological organization, from cellular decision-making to animal groups. Negative feedback is hypothesized to be important for reducing tradeoffs between sensitivity and accuracy in collective behavior. This work is the first to show that collectively-signaling animals can limit false alarms by partitioning communicative roles, whereby the task of providing negative feedback falls to dedicated individuals.