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SÉMINAIRE

usociality through conflict dissolution via queen specialization

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Queens strongly influence offspring social behaviors across the diverse eusocial taxa, suggesting that maternal influence might be involved in the origin of eusociality. Such ancestral maternal influence could have been manipulative or an honest signal, but a manipulative maternal influence could make eusociality unstable as offspring resistance evolves. Using an analytical model and individual based simulations, we show that an ancestral manipulative maternal influence becomes an honest signal under feasible conditions as maternal specialization into reproduction evolves. The reason is that specialization can move the population out of the zone of parent-offspring conflict over helping, a process that we term conflict dissolution. The key for this process is that helpers alleviate life-history trade-offs faced by mothers. Our results can simultaneously explain the origin of eusociality and its widespread association to a maternal influence via evolutionarily shifts of manipulation into honest signals.