

The effect of food availability on the costs and benefits of sexual cannibalism in the Springbok mantis, *Miomantis caffra*

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Eligible for student prize

Sexual conflict arises when behaviours ensuring one sex's optimal reproductive fitness impose fitness costs on the opposite sex. Sexual cannibalism is one such expression of this conflict and is one of the rare cases in which female behaviours impose costs on males. In order to better understand the costs and benefits of these behaviours for each sex, this project investigated the Springbok mantis, *Miomantis caffra*, in which this conflict seems to have intensified to unprecedented levels. Females were placed on high and low feeding regimes in order to examine the influence of adult feeding success on both fecundity and the rates of cannibalism in mating trials involving potential mating pairs. Contrary to expectation, although there was a positive correlation between female body condition and fecundity, poorly fed females did not cannibalise males more often than well fed females and there was little evidence to suggest that cannibalistic females would produce larger oothecae. One characteristic of this species that may help to explain these data is that aggressive females which never mated could still reproduce via parthenogenesis which occurred frequently in this study. Since oothecae produced asexually were not significantly smaller than those produced sexually, females were not strongly 'penalised' for not mating with males. The results of this study add to the growing literature on the adaptive significance of sexual cannibalism and praying mantid mating systems, demonstrating that facultative parthenogens have the potential to escalate sexual conflict to new heights.

