**The Adaptive Significance of Polyandry: A Meta-Analysis**

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The asymmetric investment in reproduction between males and females suggests that males should have higher optimal mating rates than females. However, polyandry, or females mating with multiple males, is ubiquitous among animals. In the past few decades, there has been much debate over the fitness consequences of polyandry for females. Three meta-analyses found that polyandry decreases female longevity while increasing fecundity, leading to a net fitness benefit. However, many studies in these meta-analyses either involved multiple matings with the same male, which is not polyandry, or only compared matings with one versus two males. Therefore, how higher, more realistic rates of polyandry influences female fitness remains unclear. To address this gap, we conducted an updated meta-analysis, which included a new decade of research and examined a wide range of levels of polyandry. We found that while polyandry in general increases female fitness, the intensity of polyandry that females experienced moderated its effects on fitness. Specifically, high rates of polyandry decreased both longevity and fecundity resulting in net fitness costs to females. Therefore, while our results support previous findings, they also highlight that high rates of polyandry are costly to females, thus suggesting that there may be an optimal intermediate rate.