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The Differential Allocation Hypothesis (DAH) proposes that selection would favor individuals in a population that invest more resources in their current reproductive attempt when paired with a high-quality mate, at the expense of future reproductive attempts. Additionally, it is argued that DAH should take place to a greater extent in polygamous species since they are more likely to engage in extra-pair copulations. A two-fold approach was used to investigate the circumstances in which DAH would occur: firstly, a mathematical model was developed to illustrate the relationship between male attractiveness and female fitness. The model provides a theoretical framework for determining whether DAH depends on extra-pair paternity levels (EPP), assuming that male attractiveness only signals indirect fitness benefits. Secondly, meta-analytical techniques with correction for phylogeny were used to examine data from 31 empirical studies of 20 species of birds, using egg size and egg androgen content as response variables. A multiple regression model was formed using data collected from literature to determine the correlation between the male's attractiveness and EPP in the context of DAH. The goal was to verify the predictions of the theoretical model with empirical evidence. (Received August 11, 2011)