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Polygynandry



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Synonyms

[Bigamy](#); [Plural marriage](#); [Polygamy](#)

Definition

Polygynandry is a form of polygamy; in sexually reproducing animals, it is a multi-male and multi-female mating system. Polygynandry encapsulates both polygyny (males having multiple female mates) and polyandry (females having multiple male mates) within the same species.

Introduction

Sexual promiscuity in the form of polygynandry may provide benefits for both females and males. However, the types of benefits females and males gain are different due to differences between the sexes; males have the potential to produce a much higher number of offspring compared to females. Therefore, females more than males typically express quality-based mate preferences and males more than females typically express

quantity-based mate preferences. For example, because of sperm competition, females can increase genetic diversity and quality in their offspring and introduce cryptic female choice by mating with multiple males in a sufficiently brief time period. In addition, having multiple mates may secure additional resources for the female and, due to paternal uncertainty, decrease male infanticide or willingness to harm an offspring and increase their investment and paternal care. In males, fitness is directly increased with multiple female mates because males can fertilize the egg(s) of multiple females and, therefore, increase the number of offspring they produce.

Polygynandry in Nature

In animals, polygynandry refers to two or more females or males having two or more mates in a breeding season. Polygynandry is common in nature; it can be observed in various species, including cichlid fish, dusky pipefish, European badgers, red foxes, territorial frogs, alpine accentors, sea spiders, collared pikas, and African ground squirrels. In the case of females, the benefits of multiple mating can include increasing the number of offspring produced. Multiple mating partners also may contribute materially to the well-being and safety of offspring, as in Galapagos hawks, dunnocks, and dark-eyed juncos. Multiple mating by females decreases the risk associated with mating with a male with an

insufficient quantity or quality of sperm, which decreases the risk of producing unfertilized eggs, e.g., in dark-eyed juncos, in which a female's social partner often has lower genetic quality than the quality of other possible mates (Bellamy and Pomiankowski 2011; Davies et al. 2012). According to Fisher's (1930) sexy son hypothesis, multiple mating by females increases the chances of producing a greater quantity of sons that inherit their father's sexual attractiveness, which could then increase the son's attractiveness as a mate. This appears to occur, for example, in songbirds in which mated females seek extra-pair copulatory partners with more colorful plumage than their social partner. In addition, more colorful plumage and longer tail predict survivability of males. In the case of males, as in fruit flies, reproductive success increases with the number of copulations with different females. Also, if multiple males share paternity in offspring produced by the same female, a given male may benefit by abandoning the female to search for additional mates (Davies et al. 2012). In humans, polygynandry may refer to a male or female being married or involved in a relationship with more than one male and with more than one female. Polygynandry in humans is relatively rare. One example of polygynandry occurs in peoples of the Indian Himalayas, who mix polyandry and

polygyny to thereby form a polygynandry-like social and mating structure (Levine and Silk 1997).

Cross-References

- ▶ [Breeding Season](#)
- ▶ [Cryptic Mate Choice](#)
- ▶ [Genetic Variation](#)
- ▶ [Infanticide](#)
- ▶ [Polyandry](#)
- ▶ [Polygamy](#)
- ▶ [Polygyny](#)
- ▶ [Promiscuity](#)
- ▶ [Sperm Competition](#)

References

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