

EVOLUTION OF SEXUAL DIMORPHISM IN BIRDS

BY YUNMAN SONG



Credit: (cc) Francis C. Franklin, Wikimedia Commons Figure 1
Pair of mandarin ducks – plumage dimorphism

Why are male birds generally more beautiful than female birds?

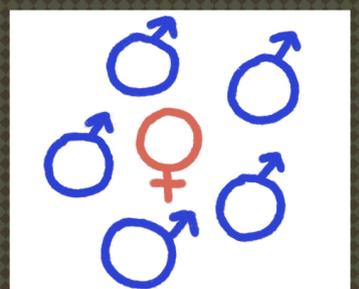
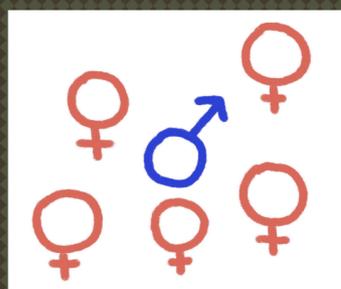
Sexual dimorphism refers to the obvious difference in characteristics between females and males, which is the result of the evolution of differentiated classes and division of labor. Because all sexually distinct organisms have differences in reproductive structures, sexual dimorphism are generally used to refer to other characteristics not directly related to reproduction.

As the one with a surplus of gametes and who costs less in reproduction, males are eager to get more reproductive opportunities. Females, on the other hand, are choosier and mate with the males provide “sexy sons” or good genes.

Mating Systems



Polygyny Polyandry



Polygynandry

Mating in an indiscriminate way

Monogamy

Mating with only one mate during mating season



Credit: (cc) Polyoutis, Wikimedia Commons Figure 2

In terms of **sexual dimorphism** in birds, **social mating systems** have a strong and persistent influence on various forms of dimorphism. Polygamous species had more sexual dimorphism than monogamous animals. (Dunn, Whittingham and Pitcher 2007) In polygamous population since when one sex is choosy, and the other sex is indiscriminate, the differences in sexual activity and potential reproduction rate will increase the competition among the indiscriminate sex for access to mate with the limiting sex. Hence, the greater the differences, the stronger the sexual selection. Sexual dimorphism embodies intersexual competition. (Emlen, Oring 1977)

Sexual selection is independent of natural selection. Therefore, some female's mate choice preference drives the evolution of males toward to acquiring some traits that have **greater mortality costs**. (Promislow et al., 1992) As shown in figure 2, the heavy casque of male is an example.