

Female Mimicry in Passerine Birds: Long Term Adaptations

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Adapting one's behavior has been the cornerstone of evolution for all species. Specifically when it comes to mate selection, there is often times a high level of competition where physical size and strength come into play. For Passerine birds, securing a female in a habitat associated with the migration season requires that males arrive early and defend their territory from other strong males. One method for late arrivers to secure a habitat and a female without direct physical competition with a male is to have delayed plumage maturation (dull colored body) as to mimic females. Since strong males traditionally have bright colored bodies, this female mimicry may be useful in sexual deception for the purpose of encroaching on territory. Lyon & Montgomerie (1986) suggest that this strategy is not a long term behavioral adaptation and only applies when there is more intense male to male competition for securing a habitat. However, as sexual deception through mimicry is effective in securing a strong habitat (and attracting a female) without engaging in competition, there is evidence that male Passerine birds have utilized female mimicry as a long term strategy.

Indeed, some bird species mature slower (dull plumage) and their bodies resemble females. Despite the sexual deception in terms of looks, males that arrive early to find a habitat must still compete. Ultimately, this results in a competition where body size and physical traits in general are advantageous to survival (1986). However, males that are late arrivers and do not have the physical capacity to compete with other males are faced with the challenge of still securing a female and a habitat. Consequently, female mimicry proves to be a long term solution because being able to arrive late, encroach on territory without being attacked and use indirect means of competition still offers significant competitive advantages (Saetre & Slagsvold, 1996, pp. 989).

The female mimicry of Passerine birds with dull plumage can be extremely effective over the longevity of a bird's life. While both research studies utilized mentioned that female mimicry took place when resources were in short supply, Lyon & Montgomerie (1986) dismissed it as a long term trait. However, according to Saetre & Slagvold's (1996) research study where game theory was applied, they asserted that the long term advantages of female mimicry went above beyond securing a habitat in short supply. In fact, they argued that while "a female mimic may not be able to evict a territory owner completely, he may be able to take over parts of the area defended by the male resident" (1996, pp. 990). This avoids direct physical confrontation and still secures a habitat. Moreover, arriving late as the same time as females also works as a benefit because then the late males go even more unnoticed. As a result, arriving late could be used as a strategy for securing a nest while avoiding all physical conflict completely; a very useful trait when a male is physically smaller.

Ultimately, while these female mimics are not the most attractive of the bunch because their tactics are representative of low quality birds, the advantages still offer qualities that are attractive. For example, a female would recognize the male's high social cost for using such behaviors. Furthermore, as the female mimic would still secure a habitat despite the "handicap," females would regard him as a resource holding male, no matter what approach he took to attain it (1996, pp. 992). From these points, it is reasonable to argue that the males adaptive behavior and overall penchant towards mimicry depends on their physical characteristics. If a given male is physically strong and has a mature plumage, then it is advantageous from him to arrive and build a nest early. On the other hand, if a male has a dull plumage, then he can still gain the rewards of a female and a nest by utilizing female mimicry. His behavior would apply as a long

term behavioral trait because arriving with the females and deceiving other males surely secures the rewards and interest of females.

References

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