ALLOPARENTAL CARE IN MAMMALS & BIRDS

JULIA ROMANCHIK
OVERVIEW

- Introduction
- Reasons Alloparental Care Occur
- Benefits of Alloparental Care
- Conclusions
Interest in this study derives from the altruistic indications of this behavior, since helpers seem to directly improve the survival and consequently the reproductive success of the breeding individuals, at the expense of the helper. (Gilchrist, 2007)

Researchers use a cost-benefit analysis strategy to determine why Alloparental Care and Cooperative Breeding occurs in Birds and Mammals. It is though that these phenomenon occur when there are benefits to the Alloparent, the Genetic Parent, the Offspring, or the entire Group.
INTRODUCTION

- **ALLOPARENTAL CARE**: Individuals other than the genetic parent contribute to the care of conspecific young (Wilson in Riedman, 1982)

- **COOPERATIVE BREEDING**: Situations where more than a single parenting pair show helping behavior towards offspring (Jennions & Macdonald, 1994)

- **ADOPTION**: Special Case

- At least 3% of bird and mammal species exhibit cooperative breeding characteristics (Komdeur, 2006)

K-Selectivity of Mammals & Birds
- Energy-Intensive Prolonged Offspring Care
  - Gestation & Post-Natal Cost (Riedman, 1982)
- Limited Production Output
  - Kin selection allows helpers to increase their fitness indirectly (Elman et al., 1991)

Social Nature of Mammals & Birds
- Tight Kingship Bonds
- Social & Cooperative Structure
  - Leads to cohesive group benefits (Jennions & Macdonald, 1994)
- High-Density Breeding Colonies
  - Individuals have a reduced chance of mating success, so they opt to help until conditions become more favorable (Riedman, 1982)
Animals sometimes care for offspring, not their own, due to lack of Kin-Recognition (Pierotti, 1991)

The death of offspring drive individuals to assist family members with offspring care (Pierotti, 1991)

http://nilikutashani.wordpress.com/2010/04/05/walvis-bay/
○ **INCREASED FORAGING EFFICIENCY**: Group size increases ability to catch, produce, & defend food (Clutton-Brock, 2002)

○ **A PLACE TO CALL HOME**: Helpers stay to “pay rent” during limited territory conditions (Gilchrist, 2007)

http://blog.simplyhike.co.uk/index.php/2011/05/kingfisher-family-caught-on-camera/
Reciprocal Cooperation of Parents
   > Breeders may exchange beneficial acts as a form of reciprocal altruism (Clutton-Brock, 2002)

Reciprocal Cooperation of Offspring
   > Offspring assist alloparent in raising his/her own offspring (Gilchrist, 2007)
BENEFITS: DIRECT TO ALLOPARENT

- **PARENTAL EXPERIENCE:** Helpers gain experience raising young (Riedman, 1982)
- **INCREASED STATUS:** Placement to succeed dominant individual (Cockburn, 1998)
- **PROTECTION:** Reduced predation risk (Jennions and Macdonald, 1994)
- **REPRODUCTIVE BENEFITS:** Breeders trade reproductive allowances for help (Gilchrist, 2007)


Brown Hyena
CONCLUSIONS

- Birds & Mammals are able to participate in Alloparental Care due to their Life History and Sociality
- Alloparental Care occurs when there is minimal cost to the Alloparent, a benefit to the Alloparent, or when the cost-benefit ratio evens out to neutral. However, some researchers believe mutualism may play an important role in the evolution of cooperative behavior. (Clutton-Brock, 2002)
THANK YOU!

CHIMPANZEE: A Disney Nature Film

Coming to Theaters April 20th
REFERENCES


QUESTIONS?