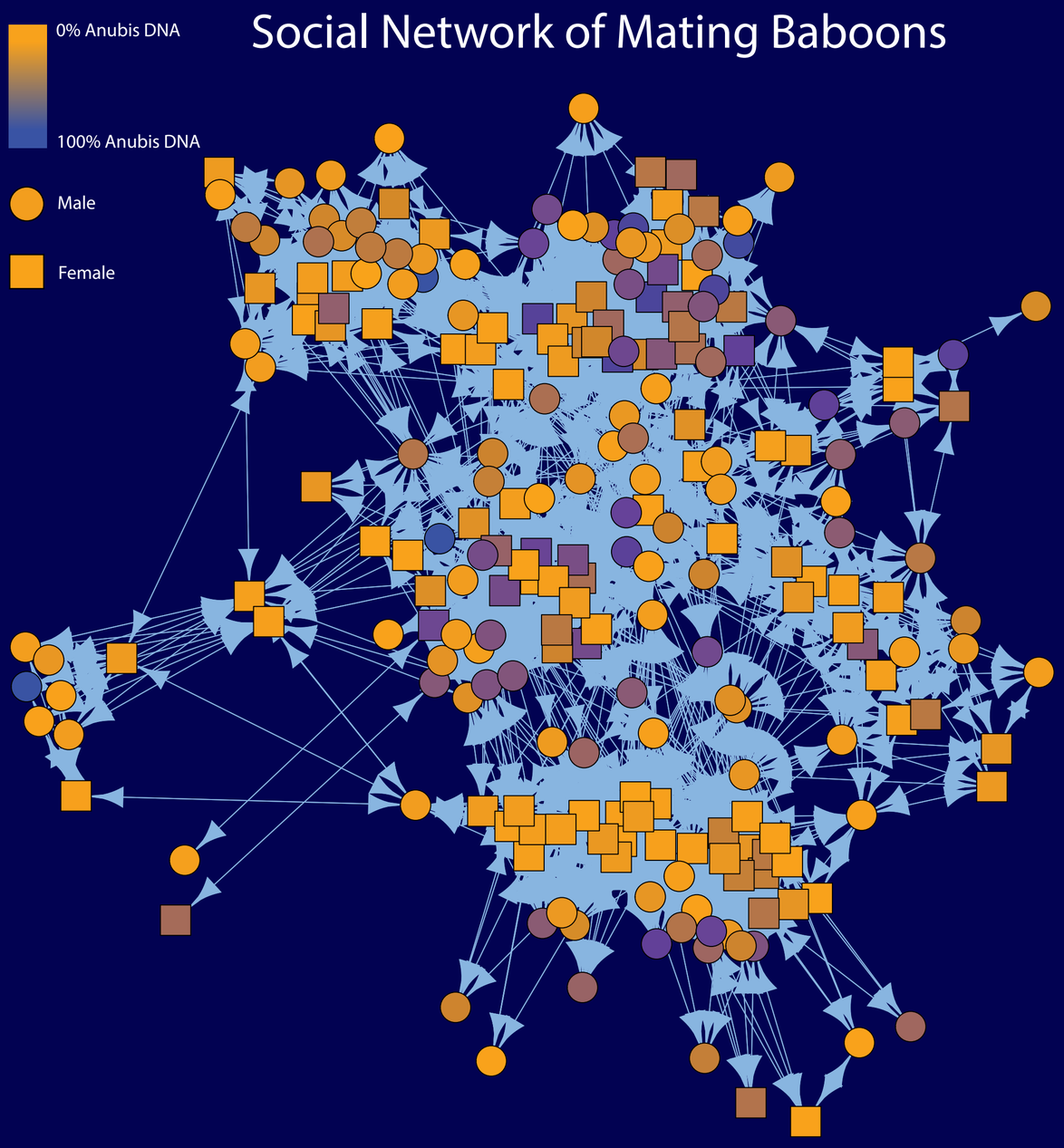
Hybridization and Mating Behavior of Yellow Baboons (*Papio cynocephalus*)

Paul Tuck
IST 719

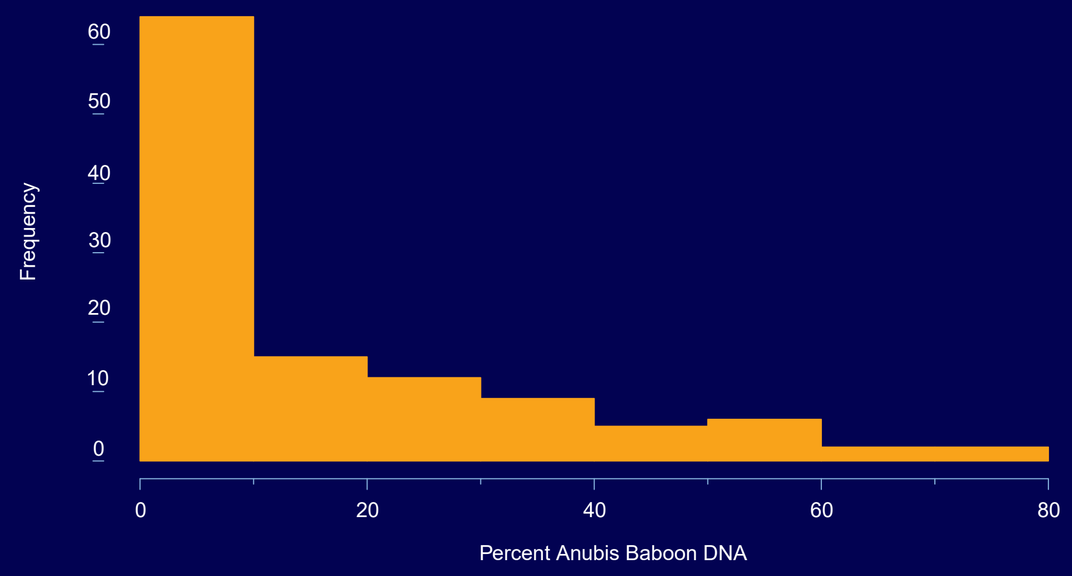
Story: Barriers to hybridization are what build and maintain species boundaries, and can come in the form of geographic barriers, behavioral differences, or non-viability of offspring. The recent hybridization in a troop of Yellow Baboons with Anubis Baboons (*Papio anubis*) provides us a unique opportunity to study these barriers in more detail.
Dataset: The dataset used for this project was downloaded from the kaggle website [1]. It was part of a larger study of a troop of Yellow Baboons that had recently experience gene flow from Anubis Baboons [2] (see references). Rows = 12,141; columns = 20
Audience: This project is primarily for the benefit of wildlife and evolutionary biologists and other academics interested in the process of speciation. This is also for conservationists who need to understand how hybridization could affect the long-term survival of the population.

Question 1: Of consorting and conceiving pairs, is there a relationship between the female and male hybrid scores?

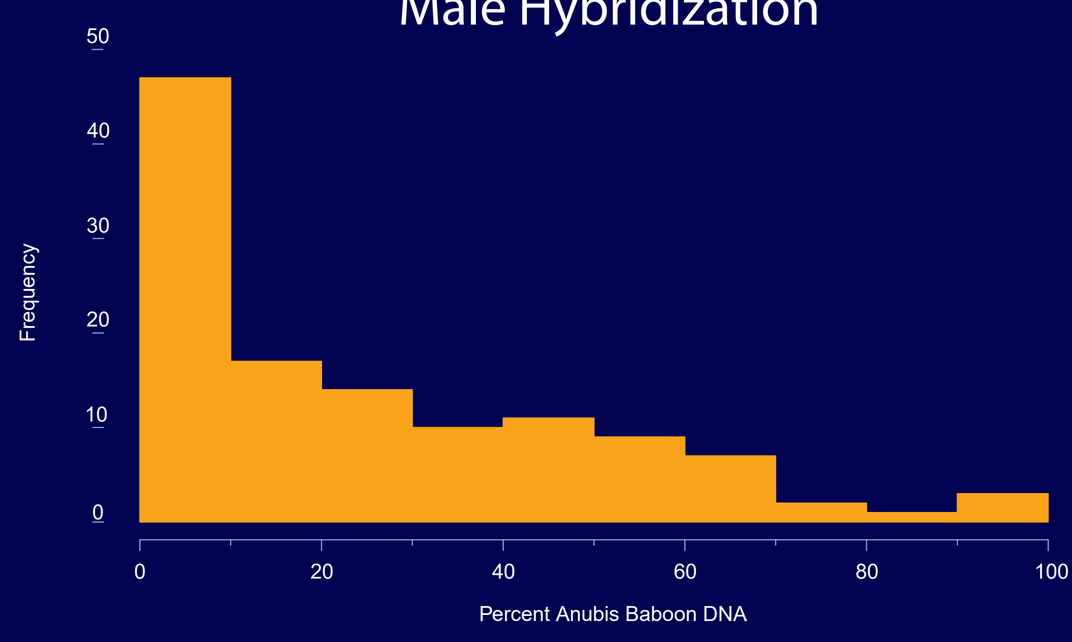
Social Network of Mating Baboons



Female Hybridization

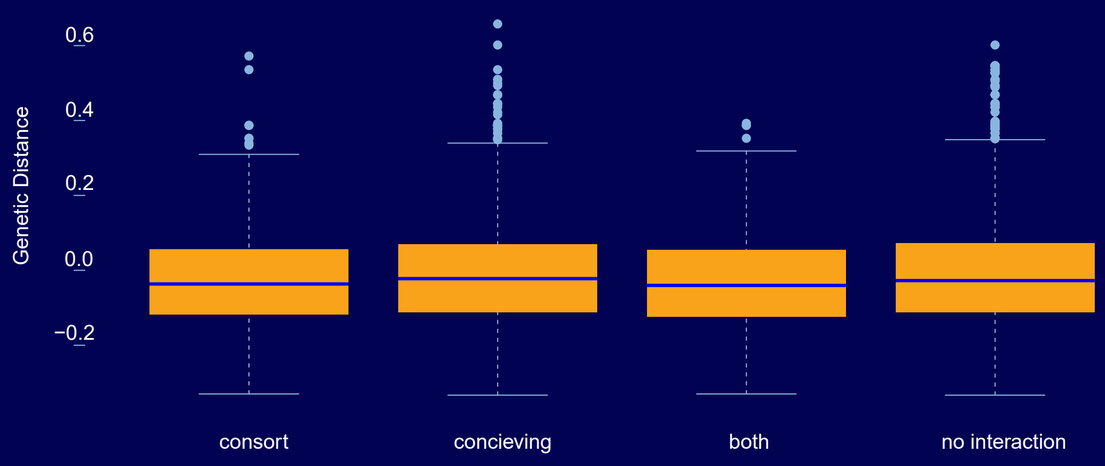


Male Hybridization



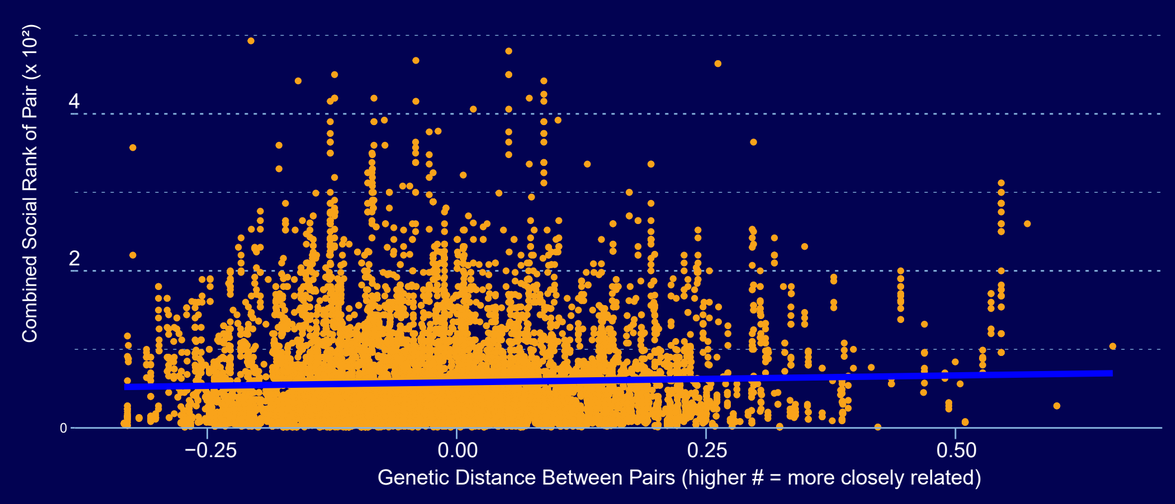
Question 2: Does genetic distance affect whether a pair consorts or conceives?

Genetic Distance of Interacting Pairs



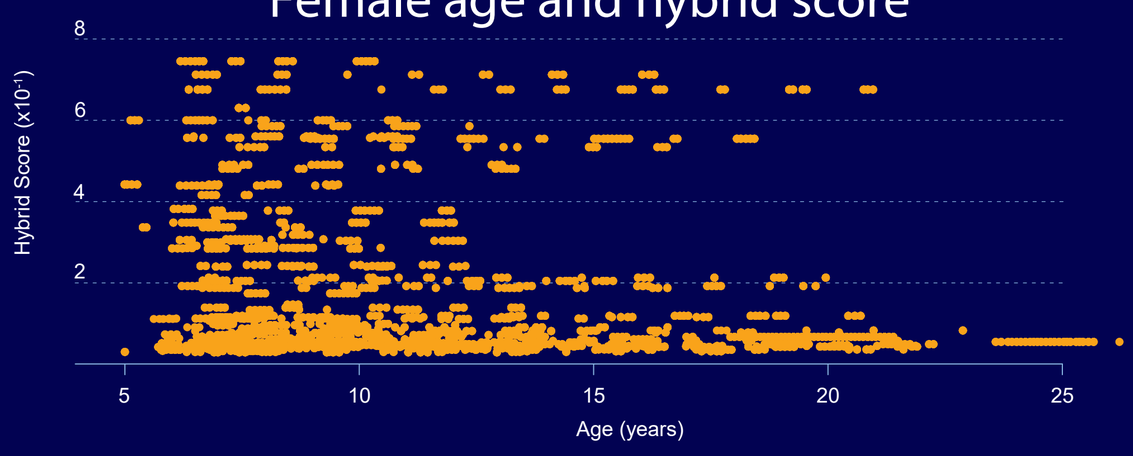
Question 3: Are genetic relatedness and combined social rank related?

Relatedness and Social Rank



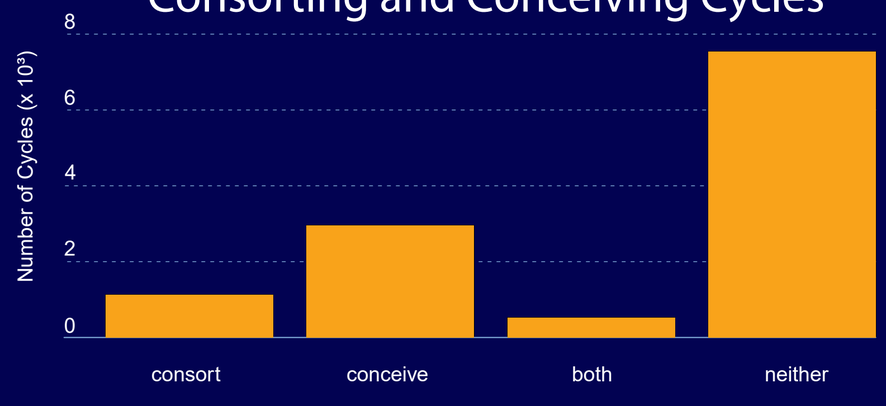
Question 4: Are female hybrid scores and age related?

Female age and hybrid score



Description: Consorting and conceiving pairs.

Consorting and Conceiving Cycles



References:
1: https://www.kaggle.com/datasets/dryad/baboon-mating
2: Tung J, Charpentier MJE, Mukherjee S, Altmann J, Alberts SC (2012) Genetic effects on mating success and partner choice in a social mammal. The American Naturalist 180(1): 113-129.
R Libraries used: ggplot2, igraph, RColorBrewer, plotrix