

Cross-sectional investigation of non-kin affiliation in bonobos (*Pan paniscus*)

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Research on captive and wild bonobos (*Pan paniscus*) has provided evidence for strong bonding among adult females and between adult males and females. However, few studies have investigated how association patterns differ between age/sex classes. Here we provide a cross-sectional investigation of affiliative interactions between non-relatives of different age/sex classes in captive bonobos. Behavioral observations were conducted from July 11 to November 8, 2011 at the Columbus Zoo, using a standardized ethogram and inter-observer reliability tests to ensure consistency of data collection. Behavioral data were collected via 15 minute instantaneous proximity scans of all individuals and five minute focal follows of randomly chosen individuals. Ad lib sampling was utilized when possible. Affiliation patterns were analyzed with G-tests for goodness-of-fit and dendrograms. Patterns of association among adults were similar to those reported from other captive and wild studies. Each of the juvenile/sub-adult females exhibited an affiliation pattern that differed significantly from expected values ($G=73.559$, $p<0.001$; $G=9.336$, $p<0.01$; $G=22.892$, $p<0.001$) and primarily targeted non-related juvenile/sub-adult males and adult females. Unlike juvenile/sub-adult females, juvenile/sub-adult males exhibited greater variation in their pattern of affiliation, where the oldest associated significantly more with adult females ($G=69.760$, $p<0.001$) and the youngest two primarily targeted juvenile/sub-adult females and adult males ($G=53.524$, $p<0.001$; $G=94.536$, $p<0.001$). The infant female initiated affiliation with adult males significantly more than any other age/sex class ($G=14.616$, $p<0.001$). The infant male associated most with maternal relatives, but targeted adult males and the infant female in the rarely observed instances of non-kin affiliation ($G=7.368$, $p<0.05$). These variations in patterns of affiliation between age/sex classes may reflect changes in behavioral strategies as individuals age, become more independent, and establish reproductively salient social bonds. Research was supported by The Ohio State University College of Food, Agricultural, and Environmental Sciences Will C. Hauk Endowment fund.