

# Do unrelated captive African elephants have strong and stable social bonds?

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2015

## Abstract

Wild female African elephants (*Loxodonta africana*) form strong and stable bonds with highly related individuals in their core group (Archie et al., 2006). This species benefits through resilient relationships by increased reproductive success, decreased stress and a lengthier life span. Yet almost all elephants in captivity are unrelated (Schulte, 2000). It is not fully understood what effect this has on the gregarious species, since there is very little research in this area. The current study addressed this problem by studying the relationships between a group of 7 semi-captive African elephants, 5 of whom were unrelated. The elephants had been housed together for a number of years, and group composition had not varied much. The elephants were able to maintain a somewhat natural herd formation, which provided a unique study opportunity. Social bonds were assessed based on a minimum association proximity of two elephant body lengths, and were recorded in an association matrix. Using Social Network Analysis, the population and dyad structure were constructed to illuminate the individual social preferences. The results show consistent and resilient friendships between the elephants, with individuals having preferred elephants to associate with. These findings demonstrate that captive unrelated elephants do form bonds with one another, which could help to cope with stress and improve wellbeing. This highlights the importance of elephants being kept together in captivity, since many captive elephants across the world in the tourist industry are kept separately, and are unable to interact (Kontogeorgopoulos, 2009). Future research would benefit from measuring physiological factors to assess the effect of bonds in captivity on stress responses.