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Personality assessment and feline–keepers relationship in lions *(Panthera leo).*

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Abstract

Animal personality is a growing research area due to the increasing evidence of the impact that it has on welfare, health and management of animals in captivity (Freeman and Gosling, 2010). Testing and improving existent methodologies, as well as develop new ones, to outline animal personality is an important step towards welfare, health and longevity of captive animals (Phillips, 2007; Whitham and Wielebnowski, 2013). Lions (*Panthera leo*) were chosen for this study because the species is understudied compared to other *felidae* species in personality matters and because it displays a vast, diverse and well known behaviour repertoire (Schaller, 1973). Behavioural observations were conducted on the seven African lions housed in ZSL Whipsnade zoo. Keeper-animal interactions were recorded and a personality questionnaire was given to the keepers in order to rate 28 personality traits (Chadwick, 2014). Sociogram, composite sociality index (CSI) and spread of participation index (SPI) were also used to assess personality traits (Stanton 2015). Data gathered in this pilot study was successfully used to produce ID like personality traits profiles for all animals, to delineate personality traits, outline the unique characteristics of each subject. A sociogram consent to access and validate the dyad solitary/social and a SPI to understand each animal enclosure usage and relate it to the trait triad affiliate/fearful/aggressive towards humans. We believe this approach is promising and could be applied to investigate keeper-animal interactions also in other species. The limitation of this study is the sample size of the animal considered; in future research we hope to test other animals in order to validate the methodologies.
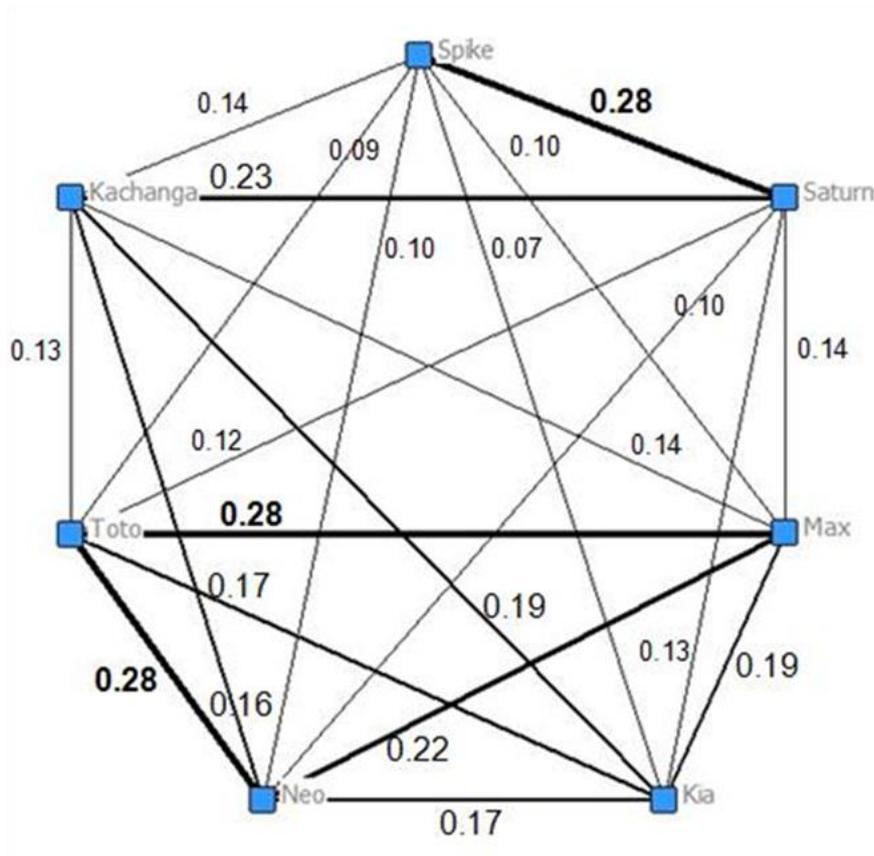
Figure 1. Whipsnade Zoo African lion pride's sociogram. The line that connects two animals is accompanied by a number that can range from 0 to 1, representing the closeness of relationship between the two: 1 means inseparable animals, while 0 represent animals that don't cross their paths at all.

References

Chadwick, C. 2014. *Social behaviour and personality assessment as a tool for improving the management of cheetahs (Acinonyx jubatus) in captivity.* [dissertation]. Salford, Salford university.

Freeman, HD., & Gosling, SD. 2010. *Personality in nonhuman primates: a review and evaluation of past research. American Journal of Primatology,* 72(8), 653-671.

Phillips, C., & Peck, D. 2007. *The effects of personality of keepers and tigers (Panthera tigris tigris) on their behaviour in an interactive zoo exhibit. Applied Animal Behaviour Science,* 106(4), 244-258.

Stanton, LA., Sullivan, MS., Fazio, JM. 2015. *A standardized ethogram for the felidae: a tool for behavioural researchers. Applied animal sciences.*

Whitham, JC., & Wielebnowski, N. 2013. *New directions for zoo animal welfare science. Applied Animal Behaviour Science,* 147(3–4), 247-260.