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Stress and Play Fluctuation in Wild *Lemur catta*

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Strepsirrhines have been neglected in the study of animal play. Yet, data from a wide array of primate taxa are needed to understand role, functions and social determinants of play. We investigated play behaviour in wild ring-tailed lemurs (*Lemur catta*) at the Berenty Reserve (Madagascar) where two other sympatric lemur species, and potential resource competitors, live (*Propithecus verreauxi* and *Eulemur fulvus*). We followed two groups of ring-tailed lemurs (9 and 16 individuals) from November 2006 to February 2007. We evaluated play fluctuation during possible stressful conditions, such as the presence of neighbour groups of conspecifics (C), and the presence of groups of other lemur species (NC). We considered the absence of any other group (A) as the control condition. We first verified whether the presence of other groups did increase stress levels in the study groups. Stress levels were measured via scratching, which previous studies have shown to be a reliable indicator of anxiety in human and non-human primates. Scratching rates in the study animals were higher in the presence of other groups (C+NC) compared to when other groups were absent (A). Overall play rates were highest when other groups were nearby. In presence of NC groups, play rates decreased as NC groups approached the study groups. Instead, when only C groups were in sight, play rates increased as the distance between the study groups and other conspecifics decreased. Moreover, play was highest during extra-group aggressive encounters (involving C groups) whereas it was suppressed during intra-group fights. Our results suggest that play fluctuates in response to different stressful conditions and may be used as a mechanism to cope with anxiety.

plastic lymphoid infiltrate, displaying a pseudo-follicular dense aspect. This complex histological pattern was compatible with media cells intestinal lymphoma associated with a chronic enteritis. An intense and diffuse infiltration of lymphoid cells, resembling those invading the tonaca propria of the intestine, was detectable in the liver parenchyma. Histological sections were submitted to immunohistochemistry using a panel of antibodies (DakoCytomation, Denmark) to human CD3 specific for different lymphocyte lineages/stages. A relevant part of infiltrating lymphocytes in the intestine, most of the lymphocytes composing the intestinal neoplasm, and the liver lymphoid infiltrate were immunoreactive for the T lymphocyte marker CD3. In human pathology enteropathy-type T-cell lymphoma is a recognised complication of gluten-sensitive enteropathy. In comparative terms, the role of dietary-related disorders in captive lemurs should be considered as a possible aetiology.

Is There a Correlation between Handedness and Target Laterality in the Pig-Tailed Macaque (*Macaca nemestrina*)?

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Key Words: *Macaca nemestrina* · Handedness · Target laterality · Object choice

Few studies have examined the relationship between target's laterality and hand preference in non-human primates. This study aims to verify whether monkeys' handedness affects their choice of a target or whether target position determines a retrieval using the hand closest to it. Using a *two alternative choice test*, seven pig-tailed macaques were presented with binary combinations of food items (a jelly and a piece of pineapple) of the same shape and size. The position of the two different items was counterbalanced across trials. A monkey's preference between food items was assessed by recording which of the two objects was retrieved first. Furthermore, the hand used to retrieve the favourite item (target) in each trial was recorded in order to evaluate hand preference and the target's laterality effect. Our results suggest that macaques show a specific hand preference at individual level. Most of the subjects choose to use the hand closest to the target even though it was not the preferred hand. Furthermore, some macaques showed no lateralization when retrieving an item contralateral to their preferred hand. In conclusion, target position seems to affect the hand preference in retrieving an object. In contrast, the hand preference of macaques does not seem to be linked to the retrieval of an object.

Behavioural Displays of the Guizhou Snub-Nosed Monkey (*Rhinopithecus brelichi*)

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Key Words: Ethogram · Repertoire · Social behaviour · Gray snub-nosed Monkey · China · Fanjingshan

The entire population of Guizhou (or grey) snub-nosed monkeys (*Rhinopithecus brelichi*; Thomas, 1930), has an estimated size of 800 individuals and occurs only in a restricted area of

400 km² in the sub-tropical semi-deciduous broadleaf forests of Wuling mountains in the Fanjingshan National Nature Reserve (Guizhou province, China). We aimed to construct an ethogram of *Rhinopithecus brelichi* and to increase knowledge about the behaviour of snub-nosed monkeys in general, for future quantitative comparison. We provide an ethogram for grey snub-nosed monkeys based on data collected from nine captive individuals (at Fanjingshan National Nature Preserve Rescue Centre). The observations from captive individuals were recorded during a period of seven months, from June to December 2009. Their number and housing conditions changed several times during the study period. Ninety behaviours were recorded. They were grouped in three main categories: individual behaviours (then divided into six sub-categories: ingestion, locomotion, postures, maintenance, investigation and individual play), social behaviours (subdivided into sexual, affiliative, social play, submissive and aggressive/agonistic behaviour) and infant care. The detailed description of each behavioural display provides a standard for systematic and quantitative comparative studies of the genus *Rhinopithecus*. We then compared our data with behavioural data of the other two Chinese endemic congeneric species: *Rhinopithecus bieti* and *R. roxellana*. We observed that some behaviours involving physical contact, e.g. Holding Lumbar, Kissing Back and Rocking, were not shown by *R. brelichi*. A better understanding of *R. brelichi* behaviour can help improve the breeding success of captive individuals and may provide useful insights for future field research.

Can Positive Reinforcement Training Enhance Welfare in Captive Vervet Monkeys (*Chlorocebus aethiops*)?

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Key Words: Training · Enrichment · Welfare · *Chlorocebus aethiops*

Studies show that training programmes may be fundamental to accustom captive non-human primates to isolation within a familiar area through positive reinforcement. Training is a procedure that allows medical treatment and behavioural research and improves animal welfare. A group of ten vervet monkeys (*Chlorocebus aethiops*) housed at Parco Natura Viva (Bussolengo, Italy) underwent a training programme before presenting them with a problem solving and social facilitation study. The focal animal sampling method was used to collect behavioural data on the monkeys during the pre-training period in order to assess social behaviour shown by the colony. The same method was used during the training period and immediately after the training session in order to understand the effects of the training programme on the behaviour of the subjects. Furthermore, each individual training session was video-recorded to detect the psychological well being of each individual during the training session in order to understand when the subjects could be involved in the cognitive research. The results of this study show significant differences across subjects when being trained. However, over a period of three months all the subjects were ready to be involved in the cognitive study. Furthermore, findings suggest that the training programme can enrich the everyday life of the captive primates to increase affiliative behaviour, decrease agonistic behaviour and increase activity. In conclusion, our study underlines the importance of the training programme as an important tool in husbandry care in order to improve animal welfare.