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Abnormal behaviors in rescued *Macaca sylvanus*

Environmental and social deprivation can trigger abnormal behaviour and lead to long term changes in non-human primates. However, we can change their environment to promote appropriate conducts and to improve their psychological wellbeing in captivity. We conducted the current study about the three Barbary macaques living in the sanctuary Fundació Mona with two objectives: (a) to explore the proximal causes of the abnormal behaviour and (b) to propose a procedure to reduce the abnormal behaviour.

We used an observational methodology, specifically scan sampling and all occurrence. We found out that the male macaque spent significantly more time doing abnormal behaviors and less time doing individual and social behaviors than the two females, so the other analysis were focused on him. First, we saw he made pacing more frequently than Self-Injurious behavior (SIB) and the contexts which most triggered him were unclear, humans, near disturbance and chimpanzees. There was a significant effect of the context and the access to areas of the enclosure on the type of abnormal behavior: chimpanzees were the only context in which he made more SIB than pacing and when there was no access to one of the exteriors he presented a curiously high frequency of SIB

We conclude that unclear contexts are due to brain damage, boredom or unidentified stressful events. Keepers can be a meal anticipation signals or they can reinforce the abnormal behavior with attention, and near disturbance may cause stress because of the noise or it may signal the presence of humans. Chimpanzees are a source of stress pers se or perhaps they trigger redirected aggression, and SIB would be high when there is no access to one exterior because chimps are nearer in this condition. We propose an intervention based on enrichment, operant conditioning, husbandry and possibly drugs

Keywords: non-human primates, Barbary macaques, psychopathology, abnormal behavior, rescue centers

La privación ambiental y social pueden generar conductas anormales y provocar cambios a largo plazo en primates no humanos. Sin embargo, podemos modificar su ambiente para promover comportamientos apropiados y mejorar su bienestar psicológico en cautividad. Hemos realizado el presente estudio sobre los tres macacos de Berbería residentes en el santuario Fundació Mona con dos objetivos: (a) explorar las causas proximales de la conducta anormal y (b) proponer un procedimiento para reducir la conducta anormal.

Hemos utilizado una metodología observacional, concretamente scan sampling y all occurrence. Descubrimos que el macaco macho pasó significativamente más tiempo haciendo conductas anormales y menos tiempo haciendo conductas individuales y sociales que las dos hembras, por lo que el resto de análisis se centraron en él. Primero vimos que hizo pacing con más frecuencia que Self-Injurious Behavior (SIB) y los contextos que más le afectaron fueron unclear, humanos, sonidos cercanos y chimpancés. Hubo un efecto significativo del contexto y del acceso a las áreas del recinto sobre el tipo de conducta anormal: los chimpancés fueron el único contexto en el que hacía más SIB que pacing y cuando no había acceso a uno de los exteriores presentaba una frecuencia de SIB curiosamente alta

Concluimos que el contexto unclear se debe a daños cerebrales, aburrimiento o eventos estresantes no identificados. Los cuidadores pueden ser una señal anticipatoria de las comidas o pueden reforzar la conducta anormal con atención, y los sonidos cercanos tal vez causan estrés por el ruido o señalan la presencia de humanos. Los chimpancés quizá son una fuente de estrés per se o provocan agresiones redirigidas, y el SIB sería alto cuando no hay acceso a un exterior porque los chimpancés se encuentran más cerca en esta condición. Proponemos una intervención basada en enriquecimiento, condicionamiento operante, manejo y posiblemente medicación

Palabras clave: primates no humanos, macacos de Berbería, psicopatología, conducta anormal, centro de rescate

Abnormal Behaviors in Rescued *Macaca Sylvanus*

PS1048 TFG Psychology

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1. Introduction

Non human primates can suffer from psychopathology in a similar way us humans do. The main factors for an individual to develop abnormal behaviors, such as locomotor stereotypies and Self Injurious Behavior (SIB), are **environmental and social deprivation**, specially an early separation of the infant from the mother, and they can cause **long-term changes** in the individual. However, by analysing the causative variables of the aberrant behavior we can change the environment to promote **alternative and species-apropiate conducts**. These points are interesting to maximize the psychological well-being of captive animals

Abnormal behavior sets of actions compulsive and repetitive towards one self

Objectives
- To explore the proximal causes of the abnormal behavior
- To propose a procedure to reduce the abnormal behavior

2. Method

Subjects

Pipa (18y)

Illegal trafficking

Katy (20y)

Tourism and Mascotism

Titín (14y)

Unknown procedence

Place

Procedure

Observational sessions

Sessions
20 minutes

Time range
Between 10:00 - 18:00

Dates *(2021)*
Training 11/02 – 11/08
Register 11/08 – 12/17

Methodology

Software Zoomonitor

Scan sampling: 2 min intervals for individual and social behavior

All occurence for abnormal behavior and its context

Measures

Abnormal behaviors

Pacing
Hair pulling
Self Harming

Modifiers

Access to areas
All areas
No access to EX
No access to I

3. Results

Figure 1. Activity of the subjects

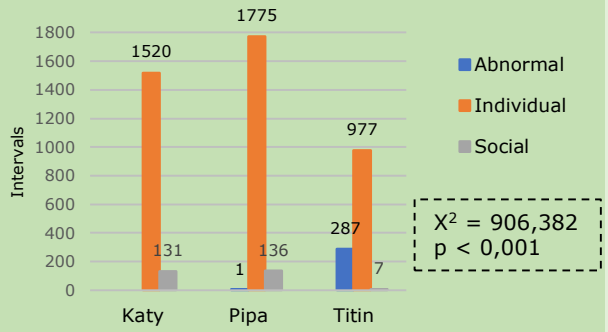


Figure 2. All occurrence of Titín´s abnormal behavior

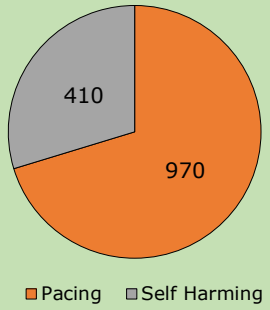


Figure 3. Influence of access to areas on Titín´s abnormal behavior

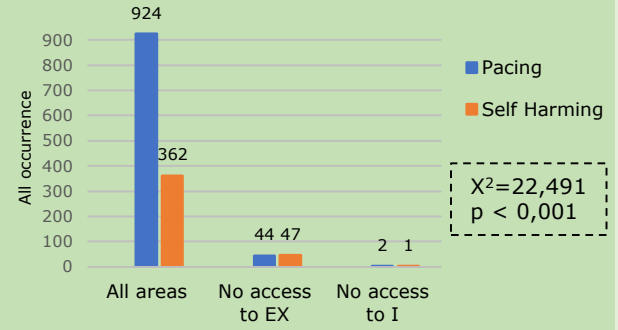


Figure 4. All occurrence of context on Titín´s abnormal behaviors

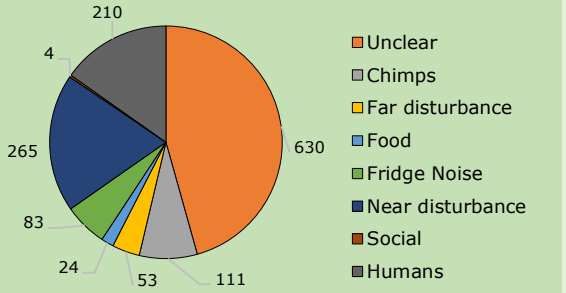
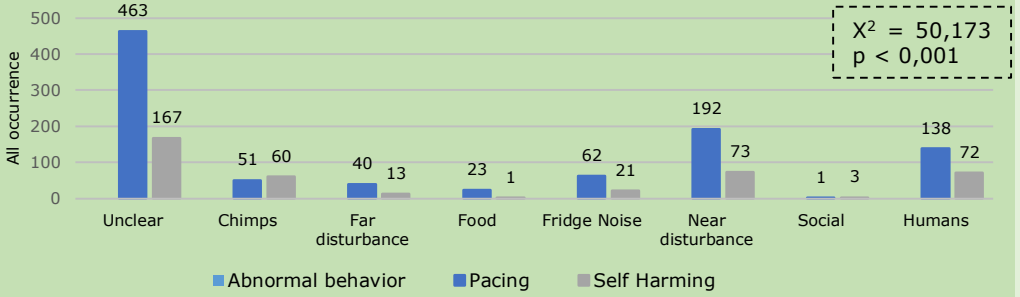


Figure 5. Influence of context on Titín´s abnormal behavior



4. Discussion

(1) Unclear contexts may be due to brain damage (early experience), boredom or unidentified stressful events **(2)** Keepers can be a meal anticipation signal or Titín wants their attention (positive reinforcement) **(3)** Near disturbance may cause stress because of the noise or maybe it signals the presence of humans **(4)** Chimps are a source of stress per se or perhaps they trigger redirected aggression **(5)** SIB is high when there is not access to EX possibly because Titín is in E and chimps are nearer. **Limitations:** irregular schedule & lack of bibliography

Proposed intervention

Enrichment: foraging / grooming board; unprocessed vegetables; manipulative toys
Conditioning: extinction + non contingent reinforcement; extinction + differential reinforcement of alternative behavior (DRA); differential reinforcement of other behavior (DRO)
Husbandry: giving macaque´s scatter before chimpanzee´s scatter
Drugs? psychiatric and veterinary opinion is needed

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