

Habituation to visual barriers in big felids under professional care for behavioural research purposes

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INTRODUCTION & AIM

Recording animal behaviour without bias due to the presence of watchers remains challenging; even if technological advances are helpful, direct observations are still worth it (1, 2). Habituation can partially alleviate this issue, but for many species, there is still a lack of data (5).

The aim of this study was to habituate big felids in a zoo to the exposition of visual barriers to obtain a reduced or absence of reaction.

METHOD

Four tigers (*Panthera tigris*) and five lions (*Panthera leo*) from “Parque Centenario” zoo in Mérida, México, were used, all in a good healthy state, and the research protocol was approved by the Bioethics Committee (ref# CB-CCBA-I- 2024-001). On non-continuous days, random and gradual exposition to visual barriers (posters) was made (Fig. 1). Posters placed on metal supports were mounted in front of the enclosure and replaced nine times by different people.

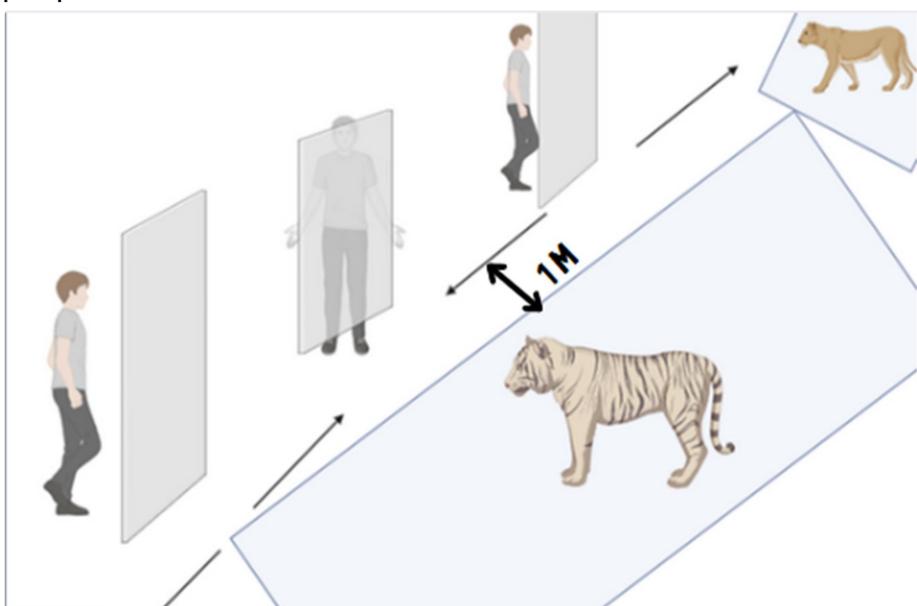


Figure 1. Diagram of the movement of visual barriers during habituation.

After each change, one minute of observation plus four of rest were effectuated using focal sampling. On the posters, small square holes covered with mesh allowed the person behind them to observe without being seen (Fig. 2). The ethogram considered reaction (i.e., turning ears, body orientation) and no reaction (i.e., absence of movements). Frequencies were weighted by number of watchers and animals by species. A Manova test and Spearman correlation between the frequencies and the progression of days were performed.



Figure 2. Use of the visual barriers during habituation in zoo.

RESULTS & DISCUSSION

A total of 12 non-continuous days distributed over 39 days were needed to obtain no reaction of animals (Fig. 3 and 4). A significant effect ($P < 0.001$, Manova test) of days' progression was found on the frequency of behaviours studied. Significant negative correlations were found between reaction behaviours ($P < 0.05$, Coef. Corr from -0.36 to -0.74) and days in both tigers and lions. Also, a positive correlation ($P < 0.05$, Coef Corr from 0.87 to 0.95) was found with no reaction behaviours.

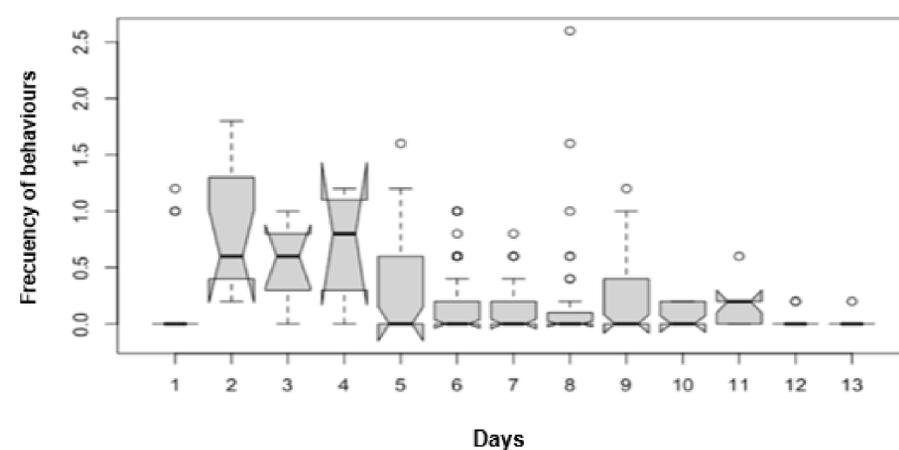


Figure 3. Median frequency of reaction behaviours to exposure during habituation for observation purposes in *Panthera leo* specimens in a zoo

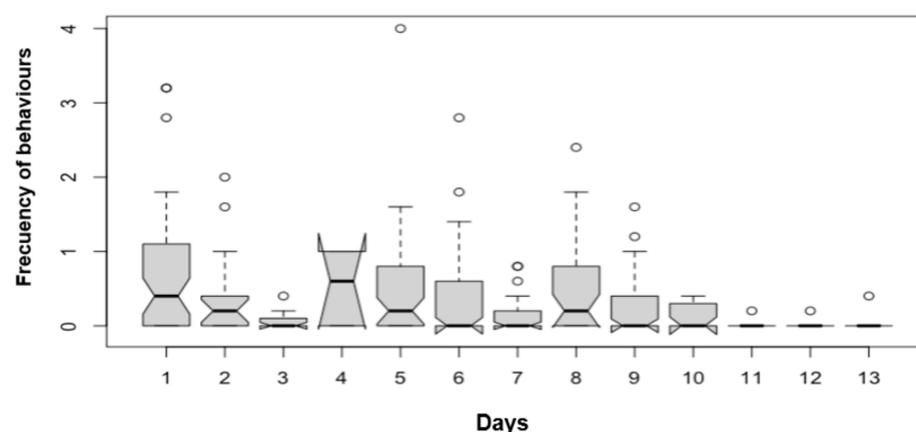


Figure 4. Median frequency of reaction behaviours to exposure during habituation for observation purposes in *Panthera tigris* specimens in zoo.

Previous studies had report the use of visual barriers in tigers and lions, focusing on mitigate stress due to conspecifics (4) and keepers (3) resulting in a reduction of stereotypic behaviour. The present study is the first report of using visual barriers for habituation to barriers itself. Our results showed that the random and repeated exposition to posters resulted in the no reaction of animals, enabling to watch the animals without interruption of their behaviour.

CONCLUSION

These big felids can be habituated to visual barriers in a relatively short period of time, enabling hidden observation.

FUTURE WORK / REFERENCES

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