

## Conclusions

The animals did not show any significant signs of increased stress or agitation due to expectation of the enrichment.

However both the Pallas's cats and the cheetahs showed non-significant patterns of negative behaviours in relation to the enrichment. These findings warrant further investigation.

The fact that both the Pallas's cats and the drills showed undesirable behaviour on the second day of delayed or withheld enrichment, indicates that two consecutive days of altered enrichment schedules might not be the optimal way of introducing variation in their schedule.

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Evaluation of varied enrichment schedules for two feline and one primate species at Parken Zoo

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## Background

When fed or given food-based enrichment at the same time every day, captive animals have been shown to sometimes be able to predict this event. Such expectation may lead to undesirable behaviours, such as stereotypies, increased aggression and inactivity. Subsequently, this kind of anticipation in the animals can lead to lowered welfare.

This problem with anticipation is sometimes seen in zoos and as a solution a degree of variation can be introduced into the feeding schedule to make the event less predictable. Such variation was introduced into the enrichment schedule at Parken Zoo in Eskilstuna by withholding or delaying the enrichment on particular days.

## Aim

This study was performed with the goal to explore and evaluate the behavioural effects of this variation on the species Pallas's cat (*Otocolobus manul*), cheetah (*Acinonyx jubatus*) and drill (*Mandrillus leucophaeus*).

Specifically it aimed to answer four questions:

- I. Do the animals show expectation prior to the enrichment?
- II. Are there any negative behaviour associated with the enrichment?
- III. What are the reactions to enrichment being withheld on some days?
- IV. What is the effect of having two consecutive days with withheld enrichment?

## Method

The enrichment was given according to a specific shedule for each species.

Pallas's cat: Thursday - Monday 11.15 (expected);  
Tuesday - Wednesday 15.00.

Cheetah: Wednesday & Saturday no enrichment;  
other days 14.30 (expected).

Drill: Wednesday & Thursday no enrichment;  
other days 15.00 (expected).

The animal's behaviours were observed during fixed sessions (morning, pre expected enrichment, post expected enrichment and afternoon) both on days with and without enrichment. The recorded data was then analysed statistically.

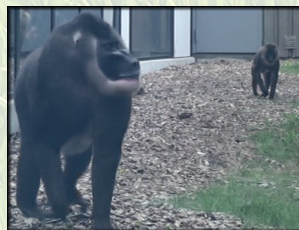


Pallas's cat  
(*Otocolobus manul*)

A female/male pair,  
female shown in picture

Cheetah  
(*Acinonyx jubatus*)

Two males



Drill  
(*Mandrillus leucophaeus*)

A female/male pair

## Results

- I. When comparing the pre expected enrichment sessions to the same period on the days when enrichment was either delayed or withheld, none of the species showed any difference in activity or negative behaviours. This suggests that there is no increase in stress level depending on treatment.
- II. The Pallas's cats only displayed aggressive behaviours during the pre and post expected enrichment sessions, no such behaviours were observed during any of the other sessions. Indicating that there might be a connection between the enrichment event and the aggressiveness.

In the cheetahs, pacing (aimless walking along a set route) was only observed at days with enrichment. Since pacing is most often seen post feeding in large cats, it is surprising that the mere part was observed at morning sessions.

- III. Aggressive behaviours in the Pallas's cats during the post expected enrichment sessions were only observed on days when enrichment was delayed. This might indicate that not receiving enrichment has a negative effect on their behaviour.

- IV. The drills were significantly less active on the second day of withheld enrichment compared to the first.

Also, during the days with delayed enrichment, aggressiveness was only seen on the second day in Pallas's cats.