

Olfactory discrimination ability of spider monkeys (*Ateles geoffroyi*) for the odours of ripe and unripe fruits

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Introduction

For frugivorous primates, the ability to discriminate between fruit odors, and of different degrees of ripeness in particular, should be important for an efficient food selection based on nutritional value.

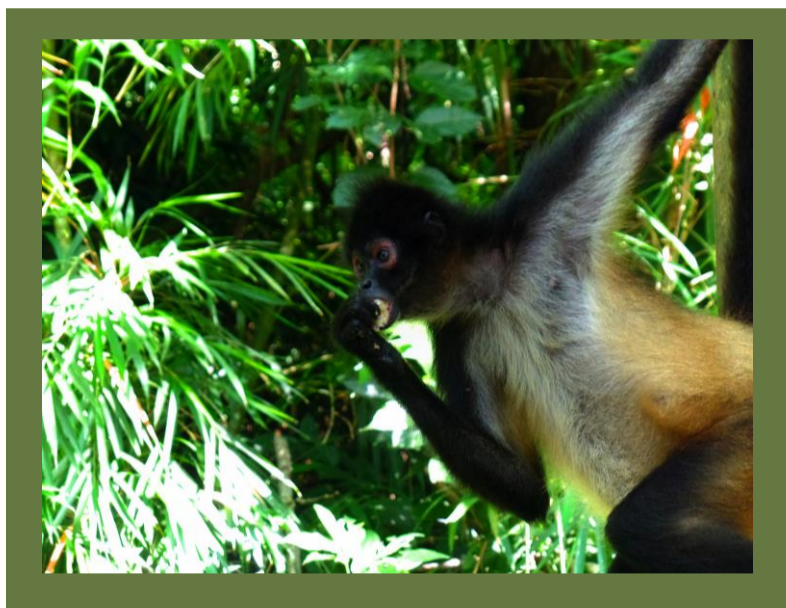


Fig 1. Spider monkey (*Ateles Geoffroyi*) eating fruit.

Method

Odour mixtures mimicking different degrees of ripeness of two neotropical fruits:

-*Leonia cymosa* (*Violaceae*), for both intact and open fruit.



Fig 2. Examples of the fruit *Leonia cymosa* ripe (left) and unripe (right).

-*Couma macrocarpa* (*Apocynaceae*) intact fruit.



Fig 3. Examples of the fruit *Couma macrocarpa* ripe (left) and unripe (right).

were tested using a **two-choice instrumental conditioning paradigm**. Five adult spider monkeys were trained to discriminate between two paper strips impregnated with an odor mimicking ripe fruit and an odor mimicking a different degree of ripeness of the same fruit.



Fig 4. Spider monkey performing the experiment.

Aim

To assess the ability of spider monkeys to discriminate between odours:

- of ripe and unripe fruits
- representing different degrees of ripeness

Results

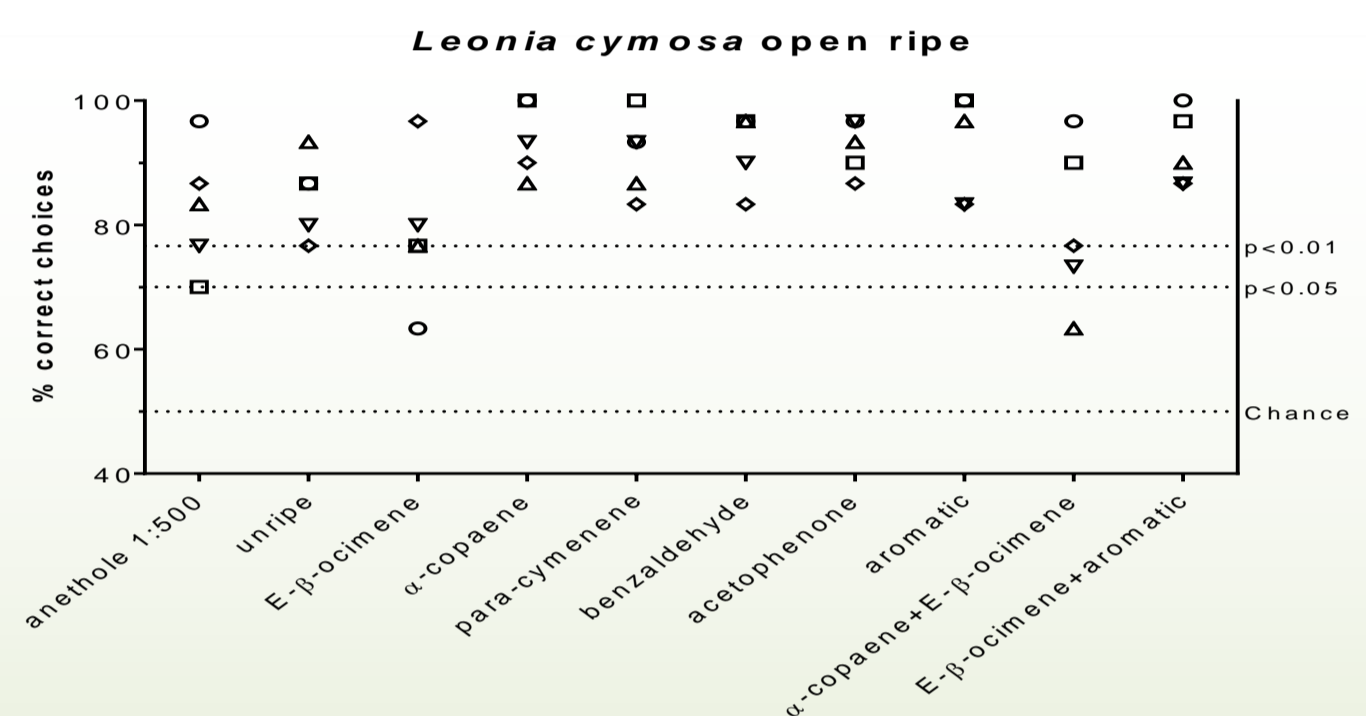


Fig 5. Percentage of correct choices in the discrimination between the odours of *Leonia cymosa* open ripe and unripe and mixtures mimicking different degrees of ripeness of this fruit.

Animals significantly discriminated between ripe and unripe odorants of *L.cymosa* open and *C.macrocarpa*, and between the majority of their tested variations.

Animals failed to significantly discriminate between the ripe and unripe odorants of *L.cymosa* intact.

Conclusions

- Spider monkeys are able to discriminate between ripe and unripe odours of fruits and the majority of their variations during the ripening process.

- This supports the notion that spider monkeys may use olfactory cues for food selection.

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