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Olfactory discrimination of aliphatic 2-ketones and 1-alcohols in South African fur seals (*Arctocephalus pusillus pusillus*)



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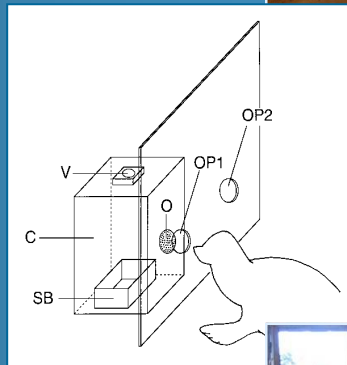
BACKGROUND

It has traditionally been considered that marine mammals have a poor sense of smell but behavioral studies suggest that seals' sense of smell can be important for finding food, social communication and reproductive behavior.

The odorants used in this study are all present in the natural environment of seals, mostly in their diet.

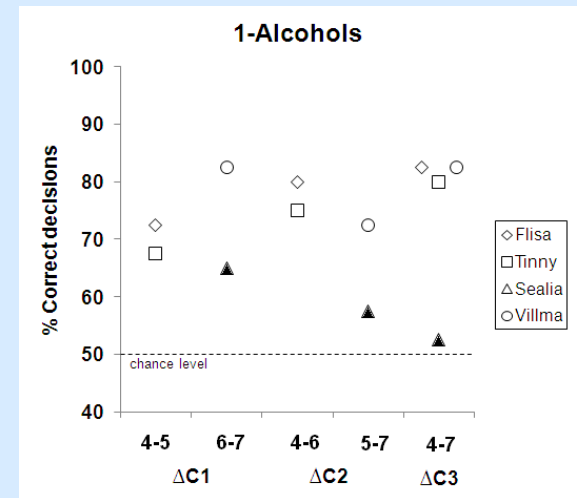
MATERIAL AND METHOD

- The study took place at Kolmården Wild Animal Park.
- Four female South African fur seals were tested in a food-rewarded two-alternative choice test.
- Four structurally related odorants belonging to the classes 2-ketones (butanone to heptanone) and 1-alcohols (butanol to heptanol), were used.



RESULTS

- All the fur seals were successful in discriminating all pairs of 2-ketones.
- As shown in the graph, three of the four fur seals successfully discriminated all pairs of 1-alcohols.



The black triangles in the graph shows one seal's (Sealia) failures to discriminate any of the pairs of 1-alcohols.

- I found no correlation between discrimination performance and carbon chain length.

AIM

- To assess olfactory discrimination abilities of South African fur seals for odorants belonging to the odor classes 2-ketones and 1-alcohols.
- To assess a potential correlation between olfactory discrimination performance and carbon chain length.

CONCLUSION

South African fur seals have a well-developed ability to discriminate between odorants belonging to 2-ketones and 1-alcohols. No correlation was found between discrimination performance and carbon chain length.