



Selective Attention by Beluga Whales to Mirror Image Video

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Introduction

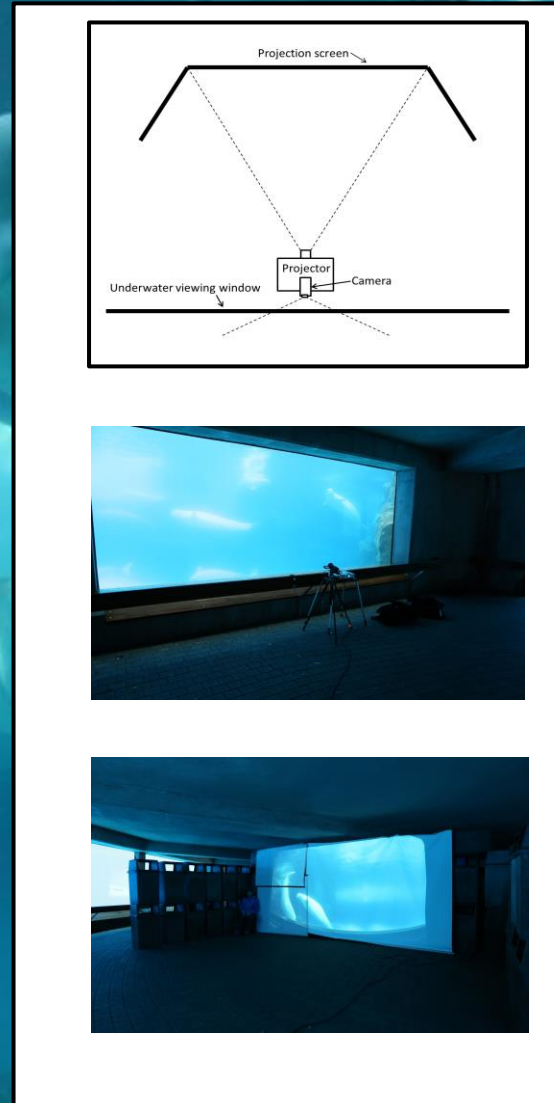
There is evidence that some animals show selective attention to conspecifics that mirror their own movements. That is, both human and non-human animals can be more attracted to members of their own species whose movements and body postures match their own. The present study investigated this phenomenon in captive beluga whales (*Delphinapterus leucas*) at Marineland of Canada (Niagara Falls, Ontario).

Methods

Utilizing a live-action-video paradigm, life-sized moving images were projected onto a screen outside a rectangular viewing window, such that the whales could look through the window at the equivalent of a live mirror image of themselves. On other days, as control conditions, the whales were presented either with anti-mirror moving projections, or replay of the same whales' movements previously recorded on other days. The amount of time the whales spent at the viewing window, apparently looking at the projected images, was the dependent variable.

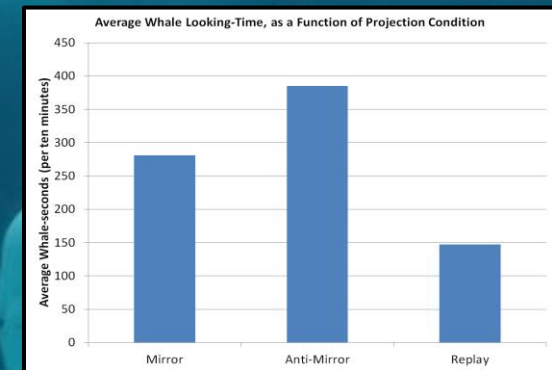
Acknowledgements

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Results

At the present time, data collection remains underway. So the findings presented here must be taken as preliminary. To date, a total of nine trials have been completed (three in each condition). The preliminary findings are presented in Figure 4. As predicted, the time over which the subjects looked at the projected image was about twice as high for the Mirror-Movement condition when compared to the Replay control condition. Somewhat counter to expectations, however, the Anti-Mirror condition produced the greatest amount of beluga time apparently looking at the projected images.



Discussion

The findings suggest that the whales were in fact interested in, and attentive to, the moving images of themselves.

That the Anti-Mirror condition resulted in the greatest looking time, compared to the Replay control condition, suggests that temporal synchrony and general movement matching is more important than the kind of precise one-to-one enantiomorphic matching found in the Mirror condition.

As additional data come in from this study, it is hoped that a detailed analysis of the animals' responses at the viewing window will provide insights into their internal mental states (e.g., play, contingency testing, mirror-self-recognition, etc.)