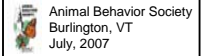


Parallel Swimming in Captive Maternal Beluga Whales (*Delphinapterus leucas*)

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Introduction

Around the time of birth, the affiliative tendencies of adult females demonstrates a triphasic pattern in some ungulate species. At first, expectant mothers separate themselves from their social groups in order to give birth in isolation. After that, they move into maternal clusters in which mothers and babies affiliate with one another. Later on, as the calves gain more social independence, the affiliative tendencies of the mothers are lessened and they return to their preparturient social groupings. The present study provides partial evidence that a similar pattern of behavior may exist in at least one cetacean species.

Subjects

Two adult female beluga whales, and their two male offspring (born nine days apart) were the subjects of this investigation. They were housed in a one million gal pool at Marineland of Canada.

Methods

Observations were made twice weekly during post-partum weeks 9-19. On each day and for each pair-wise combination of the four whales, three measures were assessed on a second-by-second basis within three successive 9-minute observation periods:

- average inter-whale distance
- percent time "parallel swimming" (Fig 1)
- percent time touching

ANOVAs were conducted on each measure with relationship (mother-offspring) and time block (weeks 9-14 vs weeks 15-19) as independent variables.



Fig 1: Parallel swimming, characterized by matching body orientations and close proximity

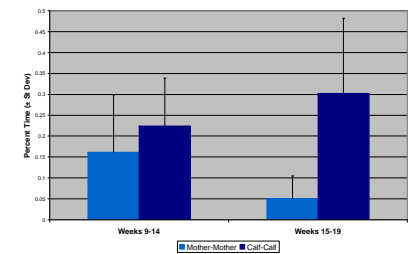


Fig 2: Parallel Swimming as a Function of Time and Relationship

Results

Inter-whale Distance

No significant differences were found for inter-whale distance as a function of either relationship or time block.

Parallel Swimming

Far more parallel swimming occurred between mother-calf pairs than between other combinations, including adult female-non-offspring pairings ($F(1,167)=77.2, p<.001$).

The two mothers were more closely affiliated in terms of parallel swimming during weeks 9-14 post-partum than during weeks 15-19 ($F(1,41)=5.44, p=.025$), while the same measure trended in the opposite direction for their calves. See Fig 2.

Touching

There was significantly more touching between mother-offspring pairs than in other pairings ($F(1,152)=16.3, p<.001$).

Time block was not significantly related to the amount of touching between the two adult females.

Discussion

These findings suggest that beluga mothers have a tendency to associate with each other when their babies are young in a way that is similar to that seen in ungulates.

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