

OBSERVATIONS OF SHORT-FINNED PILOT WHALES AND ATLANTIC SPOTTED DOLPHINS TOWARDS DEAD CALVES: DISTINCT INTERSPECIFIC SOCIAL BEHAVIOUR?

INTRODUCTION

Epimeletic behaviour involves the giving of care or attention. It is termed 'succorant' if directed toward individuals in distress, and 'nurturant' if toward young (Caldwell and Caldwell 1966). This behaviour towards dead calves is well documented for several species of odontocetes, both in captivity and wild, and has also been described in some mysticetes. Nonetheless, to our knowledge, and apart from the present study, there are only two reports of epimeletic (nurturant) behaviour for wild short-finned pilot whales (*Globicephala macrorhynchus*), in Californian waters (Norris and Prescott 1961) (described as Pacific pilot whale *Globicephala scammoni*). In addition, to our knowledge, this is the first report of epimeletic behaviour toward dead calves for wild Atlantic spotted dolphins (*Stenella frontalis*).

METHODS

Opportunistic observations of short-finned pilot whales and Atlantic spotted dolphins behaviour towards dead calves were conducted during nautical surveys between 2003 and 2007 in the waters of the archipelago of Madeira by the research team of the Madeira Whale Museum and whale-watching operators, and in the Azores by the research team from DOP. Photographs and videos were made. Additionally, *post-mortem* exams from fresh neonate carcasses of Atlantic spotted dolphins collected in madeiran waters were also performed in order to find possible causes of death as well as indications of epimeletic (nurturant) behaviour.

STUDY AREA

The Portuguese archipelagos of Madeira and Azores are located in SE North Atlantic (Fig. 1). Observation events were made in S/SE Madeira and in the Channel Pico – São Jorge (Central Group, Azores).



Fig. 1 – Study area.

RESULTS and DISCUSSION

Three observations of epimeletic behaviour on short-finned pilot whales showed that on each occasion it was always the same adult individual carrying the dead calf (either using the melon or mouth). In the three cases they were accompanied by other members of the group and the calves were in advanced state of decomposition, indicating that the carcasses were carried for several days (Fig. 2, Table 1).

In contrast, the observations of four neonate fresh carcasses of Atlantic spotted dolphins showed that adult individuals of this species tried to rescue the calves supporting them at surface, but abandoning them after a short-period (minutes to hours) (Fig. 3, 4, Table 2). Additionally, only few individuals of the group are involved in this behaviour, as observed in two of these occasions. Adult teeth scratches in the carcasses also suggest epimeletic behaviour. Data of the *post-mortem* exams is presented on Table 3.

Based on the comparison of the reported observations we suggest distinct interspecific behaviour towards dead calves, both at a social level (number of animals in the group involved) as well as at an individual level (time and energy invested supporting the dead calf). The present observations allow shedding some light into the social behaviour of this free-ranging species.

Table 1 – Data of the three events on short-finned pilot whales carrying dead calves.

Event	Date	Local	Observed during (min)	Calf condition	Calf carried		Calf accompanied by pod		Calf collected
					by	using	number	constitution	
#1	25-08-2003	Azores	109	decomposed	same adult (mother?)	melon, mouth	11	mixed	no
#2	02-09-2007	Madeira	15	decomposed	same adult (mother?)	melon	10	mixed	no
#3	16-09-2007	Madeira	23	decomposed	same adult (mother?)	mouth	30	mixed	no

Table 2 – Data of the four events of Atlantic spotted dolphins dead calves.

Event	Date	Local	Observed during (min)	Calf condition	Calf supported at surface		Calf accompanied by pod		Calf collected
					by	using	number	constitution	
#1	20-07-2005	Madeira	30	fresh	four adults	melon, anterior dorsal region	20	adults (at least)	yes (abandoned after 30 min)
#2	28-06-2006	Madeira	30	fresh	single adult (mother?)	melon, anterior dorsal region	1	adult	yes (collected after 30 min)
#3	08-09-2006	Madeira		fresh		found abandoned			yes
#4	01-07-2007	Madeira		fresh		found abandoned			yes

Table 3 – Data of the *post-mortem* exams of the four neonates of Atlantic spotted dolphins.

Event	Gender	Umbilical cord	Fur at beak	Weight (kg)	Total length (cm)	Teeth scratches	X-ray result	Necropsy	Possible cause of death
Neonate #1	Female	Yes	Yes	–	75.5	Yes	–	No	unknown
Neonate #2	Male	Yes	Yes	6.14	75.3	No	no fracture	Yes	Pneumotorax
Neonate #3	Male	No	No	7.68	80.5	No	no fracture	Yes	Spleen infection/haemorrhage
Neonate #4	Male	Yes	Yes	6.06	82.0	Yes	no fracture	No	unknown
Mean ± S.D.				6.6 ± 0.9	78.3 ± 3.4				



Figure 2 – Photographs of short-finned pilot whales carrying dead calves. a, b, c – using the melon; d – using the mouth. a – other individuals around.



Figure 3 – Photographs of Atlantic spotted dolphins supporting dead calves. a – using the anterior dorsal region; b – using the melon.



Figure 4 a, b, c – Photographs of adult teeth scratches and bite marks on dead neonate Atlantic spotted dolphins.

CONCLUSIONS

⇒ observations suggest distinct interspecific behaviour towards dead calves, both at a social level (number of animals in the group involved) as well as at an individual level (time and energy invested supporting the dead calf).

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