

# A rare sighting of a female bottlenose dolphin (*Tursiops truncatus*) with a pilot whale (*Globicephalas melas*) calf in the southern Bay of Biscay, France

Anne Littaye<sup>1</sup>, Enorha Guimard<sup>1</sup>, Sophie Préato<sup>2</sup>

Interspecific alloparental care in case of adoption is a phenomenon that is quite rare to observe in the wild. Beyond mammals, mothers are the ones that provide care to their young. However, it is possible that in some species other individuals may help such as the father, siblings, aunt or even unrelated individuals (Riedman, 1982). Alloparental care is defined as any non-parent taking care of the young to raise it as if it was their own, by engaging in behaviours that benefit the young (Woodroffe and Vincent 1994; Augusto et al. 2016). This type of behaviour can be observed through babysitting, provisioning and adoption (Lewis & Pusey, 1997; Conry et al, 2022). There are some cases of intraspecific alloparental care observed in the wild beyond cetaceans such as with sperm whales (*Physeter macrocephalus*; Whitehead, 1996), pilot whales (*Globicephala melas*; Augusto et al, 2017), bottlenose dolphins (*Tursiops truncatus*; Skai et al, 2016), and Atlantic white-sided dolphins (*Lagenorhynchus acutus*; Simard & Gowan, 2004).

Scientists are more and more intrigued by cases of adoption in the wild.

Beyond terrestrial mammals, one adoption has been reported in the capuchin monkey that included an infant marmoset into the group. After 14 months, the marmoset was fully integrated in the capuchin group, having benefited from nurturant behaviour exhibited by 2 adoptive “mothers” and showed tolerance from all members of the group (Izar et al. 2006).

Few cases of interspecific adoption within marine mammal species have been reported despite being difficult to observe and arguably more complex to explain. In French Polynesia at Rangiroa atoll, a female bottlenose dolphin (*Tursiops truncatus*) has been reported to adopt a melon-headed whale (*Peponocephala electra*) calf (Carzon et al. 2019). Even though the mother bottlenose dolphin already had her own calf, the melon-headed calf rarely left its new mom’s side which is unusual to see as a female bottlenose would normally care for one calf at a time due to the resources required to raise them.

In Iceland, cases of a pilot whale calf adopted by a pod of killer whales (*Orcinus orca*) raised many questions. This phenomenon has been observed quite regularly in 2021 spotted by Orca Guardians Iceland, and 2022 by the Icelandic Orca research program. When the new-born pilot whale has been observed, there was no pod of pilot whales in the area at that time, and it swam at close at echelon to a female killer whale (Thomson Jess, J.T. (2022 August 06), Orca pods are adopting pilot whale and no one knows why, *Newsweek*). What makes these discoveries more incredible is that the relation between killer whales and pilot whales in Iceland is known to be antagonistic as pilot whales regularly chase away killer whale pods (Selbmann et al. 2022).

Another case in New-Zealand from Far Out Research Ocean Collective based in Paihia, New-Zealand has spotted for the first time a female bottlenose dolphin with a pilot whale calf on her side. The pod of this female has been seen mixed with other individuals of killer whales and pilot whales. In Quebec, a juvenile narwhal migrating from the Arctic has been with a pod

---

<sup>1</sup> Objectif Sciences International – Program OSI-CETIS

<sup>2</sup> Explore Océan

of belugas since 2016 and has still been seen in 2021, which shows that the young individual may have been adopted by the pod of belugas (Elisabeth Guillet Beaulieu, (2022 January 13), Was the narwals seen in the St Lawrence River in 2021, *Baleine en direct*).

Beyond baleen whale species, a rare case of a southern pacific right whale individual has been seen with a humpback whale calf swimming on its side in western Australia in October 2022 (Harry Baker, B.H. (2022 November 09), Whale sighting in Australia hints at “extremely unusual” interspecies adoption, *Live Science*). It is thought that the adult right whale may act as a surrogate mother to the young humpback, however as it is a recent discovery it is quite unsure if it is a case of an adoption.

Here on this report, we want to show a potential adoption case quite like the one in New-Zealand. On the Basque coast between Hendaye and the Capbreton canyon, a pod of bottlenose dolphins usually observed offshore in this area has been spotted and among them a female with a pilot whale calf by her side on the 12<sup>th</sup> of May 2022, (a), (b).



Image 1: (a), (b) Bottlenose dolphin with a pilot whale calf observed on the 12th of May 2022 - OSI

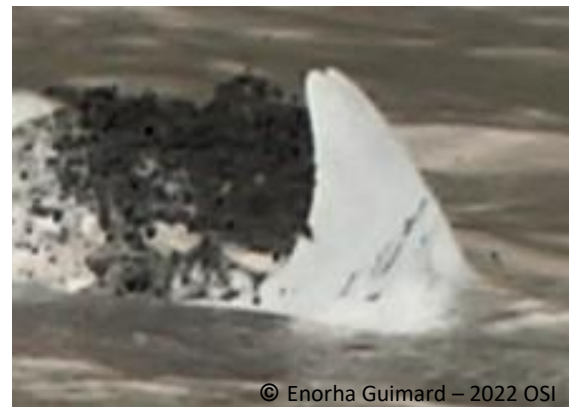
<sup>1</sup> Objectif Sciences International – Program OSI-CETIS

<sup>2</sup> Explore Océan

This observation occurred during a survey organised by a professional whale watching company, Explore Océan, in partnership with a participative science association, Objectif Sciences International, with a team of scientific experts. Explore Océan is mostly operating during the spring and summer time to educate people about marine wildlife in the Bay of Biscay offshore Hendaye.

This female bottlenose dolphin and her pod have been sighted in the same area as a pod of pilot whales on 26<sup>th</sup> April 2022 and 29<sup>th</sup> April 2022. All pilot whale groups observed from the beginning of April until these dates included newborns; bottlenose dolphins included very young individuals (but with no distinguishable fetal folds). Analysis of fin photos of each of the two species on 26 and 29 of April show that they were the same groups (c, d), respectively between 30 to 40 bottlenose dolphins and 20 to 30 pilot whales. During this observation, both species showed social behaviours, interacting between individuals and between species. The bottlenose dolphin observed on 12<sup>th</sup> May with the pilot whale calf was not seen with a calf on 29<sup>th</sup> April.

Sightings of pilot whales were rarer from the beginning of May (no sightings on 1<sup>st</sup>, 10<sup>th</sup> and 12<sup>th</sup> of May) and on smaller groups (sightings on 8<sup>th</sup> and 15<sup>th</sup> of May). This species was no longer observed from the 15<sup>th</sup> of May in this area of the Cape Breton-Southern Bay of Biscay canyon, as it is every year around this period.



*Image 2: Dorsal fin of the female bottlenose dolphin concerned on April 29, 2022 (c) and May 12, 2022 (d)*

A calf alone in the wild would not manage to survive without the milk of the mother and protection from predators. It is very complicated to explain the reason why these calves from another species ended up with a pod of a different species, however few hypotheses could explain this phenomenon.

Calves could have been abandoned or got lost, separated from its pod and in this case can be found and adopted by another group of different species of cetaceans. Some individuals from another species could display empathy and adopt the abandoned calf. It could be possible that the adoption is only temporary and the group is trying to find the pod of the lost calf. In the case of the pilot whale calf, this one has not been seen since this first and only sighting. It is possible that the bottlenose dolphin found the pilot whale pod and brought back the calf.

However, another hypothesis that could explain adoption is the case that some individuals could be able to “steal” the baby from the pod (Conry et al. 2022). It is known that female bottlenose dolphins can steal babies from other species for a brief period in context of conflicts. The reason for this theft could be explained by the female losing her own calf recently and desiring a substitute (Conry et al.

<sup>1</sup> Objectif Sciences International – Program OSI-CETIS

<sup>2</sup> Explore Océan

2022). Another explanation developed by Riedman (1982) is that adoption could benefit the female by practising motherhood to improve future reproductive success.

It is very hard to explain the reason why interspecific adoption occurs, and the debate is still largely open. The lack of photos and sightings of this female with the pilot whale calf does not provide some characteristic information that could indicate if the female bottlenose may be the biological mother of a hybrid calf. However, from the first 2 pictures that we have collected, we can clearly see that this is a pilot whale calf born very recently and unlikely a hybrid calf.

The Bay of Biscay is an area mixed with deep oceanic waters, continental shelf, shelf edge and a place where cold and hot water mix together (Kiszka et al. 2007; Laran et al. 2017). These characteristics of the area bring large amounts of biodiversity with a high primary productivity and attract top predators like cetaceans. The distribution of pilot whales in the Bay of Biscay shows a clear preference for deep oceanic waters and on the shelf edge with a group size that is relatively small (around 30 individuals in a pod) but sightings have recorded some pods of pilot whales in shallow coastal waters for a short period of time (Certain et al. 2008; Kiszka et al. 2007). Bottlenose dolphins are known to be mostly close to the coast on the continental shelf however it depends on the area. In the Northeast of the Atlantic, the population of bottlenose dolphins may mostly prefer the continental shelf (Skov et al. 1995 ; Kiszka et al. 2007), but other populations don't seem to show a preference of depth in general in the Bay of Biscay which could explain the opportunistic feeding behaviour of this species (Kiszka et al. 2007).

By the fact that these 2 species can be seen in both deep and coastal waters, it is probable that pods of pilot whales and bottlenose dolphins interact together in a certain area for short periods of time. It could be that during these encounters between the 2 species that the calf met the female bottlenose dolphin.

Augusto, J. F., Frasier, T. R., & Whitehead, H. (2017). Characterizing alloparental care in the pilot whale (*Globicephala melas*) population that summers off Cape Breton, Nova Scotia, Canada. *Marine Mammal Science*, 33(2), 440-456.

Certain, G., Ridoux, V., Van Canneyt, O., & Bretagnolle, V. (2008). Delphinid spatial distribution and abundance estimates over the shelf of the Bay of Biscay. *ICES Journal of Marine Science*, 65(4), 656-666.

Conry, D. S., De Bruyn, P. J., Pistorius, P., Cockcroft, V. G., & Penry, G. S. (2022). Alloparental care of a bottlenose and common dolphin calf by a female Indian Ocean humpback dolphin along the Garden Route, South Africa.

Izar, P., Verderane, M. P., Visalberghi, E., Ottoni, E. B., De Oliveira, M. G., Shirley, J., & Fragaszy, D. (2006). Cross-genus adoption of a marmoset (*Callithrix jacchus*) by wild capuchin monkeys (*Cebus libidinosus*): Case report. *American Journal of Primatology*, 68, 692–700. <https://doi.org/10.1002/ajp.20259>

Kiszka, J., Macleod, K., Van Canneyt, O., Walker, D., & Ridoux, V. (2007). Distribution, encounter rates, and habitat characteristics of toothed cetaceans in the Bay of Biscay and adjacent waters from platform-of-opportunity data. *ICES Journal of Marine Science*, 64(5), 1033-1043.

Laran S., Matthieu Authier, Aurelie Blanck, Ghislain Doremus, Helene Falchetto, Pascal Monestiez, Emeline Pettex, Eric Stephan, Olivier Van Canneyt, Vincent Ridoux, (2017). Seasonal distribution and

---

<sup>1</sup> Objectif Sciences International – Program OSI-CETIS

<sup>2</sup> Explore Océan

abundance of cetaceans within French waters- Part II: The Bay of Biscay and the English Channel, Deep-Sea Research Part II 141 (2017) 31–40

Lewis, S. E., & Pusey, A. E. (1997). Factors influencing the occurrence of communal care in plural breeding mammals.

Riedman, M. L. (1982). The evolution of alloparental care and adoption in mammals and birds. *The quarterly Review of Biology*, 57, 405–435. <https://doi.org/10.1086/412936>

Sakai, M., Kita, Y. F., Kogi, K., Shinohara, M., Morisaka, T., Shiina, T., & Inoue-Murayama, M. (2016). A wild Indo-Pacific bottlenose dolphin adopts a socially and genetically distant neonate. *Scientific Reports*, 6, 23902. <https://doi.org/10.1038/srep23902>

Selbmann, A., Basran, C. J., Bertulli, C. G., Hudson, T., Mruszczok, M. T., Rasmussen, M. H., ... & Samarra, F. I. (2022). Occurrence of long-finned pilot whales (*Globicephala melas*) and killer whales (*Orcinus orca*) in Icelandic coastal waters and their interspecific interactions. *acta ethologica*, 1-14

Simard, P., & Gowans, S. (2004). Two calves in echelon: an alloparental association in Atlantic white-sided dolphins (*Lagenorhynchus acutus*)? *Aquatic Mammals*, 30, 330-334.

Skov H., Durink J., Danielsen F., Bloch D. Co-occurrence of cetaceans and seabirds in the north-east Atlantic. *Journal of Biogeography*, 1995, vol. 22 (pg. 71-88)

Whitehead, H. (1996). Babysitting, dive synchrony, and indications of alloparental care in sperm whales. *Behavioural Ecology and Sociobiology*, 38, 237-244

---

<sup>1</sup> Objectif Sciences International – Program OSI-CETIS

<sup>2</sup> Explore Océan