

COMMENTARY

KILLER WHALE KILLERS

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In February 2010, a SeaWorld trainer was killed by a killer whale (*Orcinus orca*). The particular killer whale involved has been involved in three of the four human deaths attributed to killer whales in captivity. A second trainer had been killed just 9 weeks earlier by a SeaWorld killer whale on loan to a facility in the Canary Islands. As a result of the most recent incident, the US Occupational Safety and Health Administration cited SeaWorld in August 2010 for a willful violation of the US Occupational Safety and Health Act, because of the potential and specific dangers the agency considered killer whales to pose to trainers. SeaWorld appealed the citation, which went to court in September/November 2011. In addition, the controversy over holding killer whales in captivity led the US House of Representatives Subcommittee on Insular Affairs, Oceans and Wildlife to hold an oversight hearing in April 2010.

Key words: Killer whale; *Orcinus orca*; Trainer deaths; SeaWorld; Congressional hearing; Occupational Safety and Health Administration (OSHA)

Introduction

On February 24, 2010 at SeaWorld Florida, a male killer whale (*Orcinus orca*) named Tilikum grabbed trainer Dawn Brancheau,¹ pulled her into the water, and ultimately killed her. Her autopsy report states that she died of blunt force trauma and drowning, suffering a broken jaw, backbone, and ribs, a dislocated elbow and knee, and a severed arm, with part of her scalp removed, exposing her skull (Stephan, 2010). This was the third human death

with which Tilikum had been associated. On July 6 1999, 27-year-old Daniel Dukes was found dead, draped over Tilikum's back. There were no witnesses to his death, but it appeared that he was in the facility after hours (it is unknown whether he stayed in the park once it closed or entered the grounds after closing) and entered the tank voluntarily to try to swim with the animal. SeaWorld has maintained that his death was caused by hypothermia rather than injury or drowning; hypothermia is the most widely reported cause of death in the media, e.g.:

Dukes' autopsy revealed that Dukes had died of hypothermia. His skin was not broken and he only had mild scratch marks that were determined to be from the bottom of the pool. Trainers reported Tilikum making sounds revealing distress when they found Dukes' body. (Anonymous, 2011)

However, Dukes' autopsy report does not mention hypothermia and records cause of death as drowning. It notes that he had contusions and abrasions all over his body that occurred pre- and post-mortem, a total of 37 separate injuries occurring before he died (Reyes & Perez-Berenguer, 1999).

Tilikum was also involved with the death of part-time trainer Keltie Byrne on February 21, 1991, at Sealand of the Pacific, in Victoria, Canada (n.b. Tilikum was not sold to SeaWorld until 1992). At the time of Byrne's death there were also two female killer whales in the tank (Haida 2 and Nootka 4), who were involved, along with Tilikum, in her drowning:

The trainer slipped and fell into the tank with the whales. . . . Although Tilikum was not the orca to initially touch Keltie, he was involved when Haida II, Nootka IV, and Tilikum tossed her to each other's mouths, presumably playing. The trainer subsequently drowned. (Anonymous, 2011)

However, an eyewitness account described the trainer slipping, her foot entering the pool, and then Tilikum grabbing her foot and dragging her into the water (Kirby, 2012). Although serious injuries were sustained by the trainer, the ultimate cause of death was drowning "due to or as a consequence of forced submersion by orca (killer) whales" (Coroner's Court of British Columbia, 1991)

A less publicized death occurred on December 24, 2009, when 29-year-old trainer Alexis Martínez was killed by a male killer whale named Keto at Loro Parque, an oceanarium in the Canary Islands. Keto is owned by SeaWorld, and had been transferred with three other young killer whales (two females and a male) from SeaWorld Texas to the Canary Islands in February 2006. Martínez died after Keto shoved him against the side of the tank, inflicting lacerations and internal injuries (Loro Parque, 2009).

Two years previously, in October 2007, another trainer at Loro Parque, 29-year-old Claudia Vollhardt, had been injured by Tekoa (a son of

Tilikum), the younger male killer whale. Her bitten and broken arm required surgery (Zimmerman, 2011). This earlier attack occurred in the presence of SeaWorld trainer Steve Aibel (Zimmerman, 2011), who himself had been attacked by a killer whale named Ky (Ky or Kyuquot is also the son of Tilikum) at SeaWorld Texas in July 2004 (for video evidence of the attack see MSNBC, 2004). On November 29, 2006, a nonlethal attack by female killer whale Kasatka on trainer Ken Peters at SeaWorld California (Repard, 2006) prompted an investigation by the California Occupational Safety and Health Administration (Cal/OSHA). Kasatka had previously been documented attempting to attack trainers in 1993 and on June 12, 1999 (Repard, 2006).

In addition, there have been several instances of killer whales in captivity seriously injuring other whales. On August 21, 1989, female killer whale Kandu 5 attacked another female, named Corky, during a show at SeaWorld California. Kandu rammed Corky, breaking her own jaw and severing an artery. Although Corky was not seriously injured, Kandu died from blood loss (Zimmerman, 2010).

Throughout recorded history, there have been no reliable reports of wild killer whales killing a human being (Hoyt, 1984), and only a handful of minor injuries have been reported (Associated Press, 1996, 2005). Yet there have been four human deaths and several serious injuries caused by captive killer whales. Indeed the *CRC's Handbook for Marine Mammal Health* emphasizes the dangers that killer whales can pose to trainers:

Aggression expressed by killer whales toward their trainers is a matter of grave concern. Show situations involving water behaviors with trainers and orcas have become popular in recent years. Aggressive manifestations toward trainers have included butting, biting, grabbing, dunking, and holding trainers on the bottom of pools preventing their escape. Several situations have resulted in potentially life-threatening incidents. In a few such cases, we can attribute this behavior to disease or to the presence of frustrating or confusing situations, but in other cases, there have been no clear causal factors. (Sweeny, 1990, pp. 61–62)

The OSHA Investigations

As noted above, on November 29, 2006, killer whale Kasatka grabbed trainer Ken Peters and

twice held him briefly under water. Peters suffered a broken foot and puncture wounds from the killer whale's teeth. As a result of this injury, the State of California expressed concerns about the safety risks posed by killer whales to trainers and conducted an investigation (Division of Occupational Safety and Health [DOSH], 2006). No citation was issued, but in the resulting report, it was noted that 3 weeks prior to the Kasatka incident, another female killer whale, Orkid, had similarly grabbed trained Brian Rokeach by the ankle and submerged him, but the trainer had been able to escape (DOSH, 2006). It also noted that despite 18 years of experience at SeaWorld, and 13 years of experience with Kasatka, Peters had been unable to identify a warning or indicator behavior from Kasatka prior to this incident (DOSH, 2006). The report also highlighted four factors about killer whales that put trainers at risk: the size of the whales, their intelligence and predatory nature; that they live in a medium (i.e., water) that is foreign to humans; and that, despite being in captivity, they are still wild animals (DOSH, 2006). It also noted that, although SeaWorld trainers were fit and healthy and the company had instituted emergency equipment and protocols, these were insufficient when considering the size, intelligence and power of a killer whale (DOSH, 2006). The original report stated:

The contributing factors [sic] to the accident, in the simplest of terms, is that swimming with captive orcas is inherently dangerous and if someone hasn't been killed already it is only a matter of time before it does happen. The trainers recognize this risk and train not for if an attack will happen but when. The orca is capable of tearing off an arm, a leg, or a head, and if that is against its nature it could easily drown a human or trap it in the cold waters of the tank until the human expires from hypothermia. Even if the animal does not have the intent to kill, the bulk and weight of its body is enough to smash a person against the sides of the pool, knocking them unconscious or crushing them to death. (p. 17)

This statement was uncannily prophetic. Three years later Alexis Martínez would indeed be killed by being "smashed" into the side of a pool by Keto and Dawn Brancheau would be drowned and dismembered.

However, the reaction of SeaWorld at the time of this report was to protest Cal/OSHA's conclusions

and request the report's withdrawal and revision. Within months of meeting with SeaWorld, Cal/OSHA issued a substantially revised report (Fryer, 2006) that excised 10 pages of the original, including much of the criticism of SeaWorld's training techniques and husbandry practices, references to the behavior and even the existence of individual killer whales, and most notably the prophetic warning statement (DOSH, 2007).

After the death of Dawn Brancheau, the US Occupational Safety and Health Administration (OSHA) also conducted an investigation and issued a citation on August 23, 2010 (Grove, 2010). OSHA charged SeaWorld with violating Section 5(a)(1) of the US Occupational Safety and Health Act of 1970: "The employer did not furnish employment and a place of employment which were free from recognized hazards that were causing or likely to cause death or physical harm to employees" (Grove, 2010, p. 5).

OSHA determined that the violation was "willful," meaning: "A violation that the employer intentionally and knowingly commits. The employer either knows that what he or she is doing constitutes a violation, or is aware that a condition creates a hazard and has made no reasonable effort to eliminate it" (US Department of Labor, 2009).

SeaWorld was fined a total of \$75,000 (Grove, 2010), of which \$70,000 comprised the maximum civil fine for a willful violation of the Act (US Department of Labor, 2009). A press release that accompanied the issuance of the citation summarized the concerns of OSHA:

SeaWorld recognized the inherent risk of allowing trainers to interact with potentially dangerous animals. . . . Nonetheless, it required its employees to work within the pool walls, on ledges and on shelves where they were subject to dangerous behavior by the animals. (US Department of Labor, 2010)

Moreover the press release stated that:

The OSHA investigation revealed that SeaWorld trainers had an extensive history of unexpected and potentially dangerous incidents involving killer whales at its various facilities, including its location in Orlando. Despite this record, management failed to make meaningful changes to improve the safety of the work environment for its employees. (US Department of Labor, 2010)

In response, SeaWorld issued a statement saying: “allegations in this citation are unsupported by any evidence or precedent and reflect a fundamental lack of understanding of the safety requirements associated with marine mammal care” (SeaWorld, 2010a) and subsequently launched an appeal against the OSHA citation (see below).

The Congressional Oversight Hearing

In the US, cetaceans are held for purposes of public display under an exemption to the Marine Mammal Protection Act, which allows animals to be held for “scientific research, public display, or enhancing the survival or recovery of a species or stock” [16 U.S.C. 1374 Sec. 104 (c)(1)]. A facility displaying cetaceans must offer “a program for education or conservation purposes that is based on professionally recognized standards of the public display community” [16 U.S.C. 1374 Sec. 104 (c)(2)(A)(i)]. At present, once in captivity, marine mammals are under the jurisdiction of the Department of Agriculture’s Animal and Plant Health Inspection Service (APHIS).² The death of Dawn Brancheau brought attention to a growing debate, however, as to whether the research and educational benefits of displaying captive killer whales outweigh the welfare and human safety concerns of holding this species for public display.

The deaths at SeaWorld and Loro Parque occurred at a time when the documentary *The Cove* was nominated and won an Academy award (or “Oscar”) for best feature documentary (the film won at least 46 other awards internationally). The movie primarily covered the drive fishery for small cetaceans in Taiji, Japan, but noted that some dolphins in this drive fishery are purchased by dolphinariums and aquariums, historically including facilities in the US such as SeaWorld.³ The film posited that these live sales subsidize the drive fishery and make it economically viable. The movie drew national attention to dolphinariums and their role in society, and it was in this climate that the US House of Representatives Subcommittee on Insular Affairs, Oceans, and Wildlife decided to hold an oversight hearing entitled “*Marine Mammals in Captivity: What Constitutes Meaningful Public Education?*” The hearing was held on April 27, 2010 (Subcommittee on Insular Affairs, Oceans, and Wildlife, 2010).

Two of the comments raised by the chair of the subcommittee were that (a) National Marine Fisheries Service (NMFS) had not developed any regulations or evaluation regime for conservation or education programs at public display facilities and also that (b) NMFS had not developed any regulations where marine mammals might be removed from facilities, or permits for display might be revoked, due to regulatory violations (Madeleine Z. Bordallo, Chair of the Subcommittee on Insular Affairs, Oceans, and Wildlife, in Subcommittee on Insular Affairs, Oceans, and Wildlife, 2010).

In response, the NMFS witness, Eric Schwaab (NMFS assistant administrator), clarified that the agency did not generally review conservation and education programs at marine mammal captive display facilities and that NMFS interpreted the requirement in the Marine Mammal Protection Act for facilities to meet “professionally recognized standards of the public display community” [16 U.S.C. 1374 Sec. 104 (c)(2)(A)(i)] as meeting guidelines developed by the Association of Zoos and Aquariums (AZA) and the Alliance of Marine Mammal Parks and Aquariums (AMMPA) (Eric Schwaab, assistant administrator of the United States National Marine Fisheries Service in Subcommittee on Insular Affairs, Oceans, and Wildlife, 2010). The zoos and aquariums were therefore effectively self-regulating and self-evaluating their educational and conservation outputs.

The witness for AZA, Paul Boyle (senior vice-president of Conservation, Education and Professional Development), stated that its educational guidelines encompassed factors such as funds allocated to education, outreach programs, educational publications and graphics (Paul J. Boyle, Association of Zoos and Aquariums in Subcommittee on Insular Affairs, Oceans, and Wildlife, 2010), and the educational programs were defended by public display representatives for the industry, who stated that seeing cetaceans in facilities such as SeaWorld was instrumental to promoting public concern for marine conservation (Julie Scardina, curator, SeaWorld Parks and Entertainment and Rae Stone, Alliance of Marine Mammal Parks and Aquariums, in Subcommittee on Insular Affairs, Oceans, and Wildlife, 2010). It was, however, countered that there are several countries that do not have captive cetaceans and yet have a very strong public marine

conservation ethos (e.g., the UK, New Zealand, Costa Rica; Naomi Rose, senior scientist, Humane Society International, in Subcommittee on Insular Affairs, Oceans, and Wildlife, 2010).

The OSHA Citation Appeal

The court appeal of OSHA's citation was held during September 19–23, 2011, and continued during November 15–18, 2011. During the case, the issue of whether Tilikum grabbed Dawn Brancheau by the hair or by the arm arose (see conflicting statements in Orange County Sheriff's Office, 2010a, 2010b, as noted above). However, it was disclosed that in 1997 a killer whale named Winnie had grabbed the sweat shirt worn by a trainer at SeaWorld Ohio. The incident was written up in a report filed in SeaWorld's "incident log." These reports are distributed to trainers in the company (at all of the parks, in California, Texas, and Florida, as well as Ohio until 2001) for comment. Due to concerns over the risk that loose, hanging objects might pose to trainers, it was proposed that killer whales be behaviorally desensitized to such hanging objects (loose clothing and hair were specifically mentioned). Despite this recommendation, no specific action was taken to prohibit trainers from leaving their hair loose or to desensitize Tilikum to loose hair, which was admitted in the hearing by a SeaWorld representative (Tompkins, 2011, p. 656, lines 10–13). This illustrates that SeaWorld had internally considered and noted that trainers could potentially be grabbed by their hair by killer whales, but nothing had been done about it.

Another matter arising in the hearing was a lack of consideration by SeaWorld of the events leading to the deaths of trainers at parks other than SeaWorld. Although a trainer had died at Sealand, and despite SeaWorld purchasing animals involved in this incident, SeaWorld representatives at the hearing admitted that they did not know the details of Keltie Byrne's death (Tompkins, 2011, p. 466, lines 24–25). Regarding the death of Alexis Martínez at Loro Parque by a SeaWorld whale, under the supervision of a SeaWorld trainer Brian Rokeach, they effectively dismissed this incident as irrelevant to the management of their US parks, admitting they had no knowledge of the results of a Spanish government investigation into the incident

(Tompkins, 2011, p. 563, lines 15–16). The only precautionary measure taken by SeaWorld after this incident was to pull trainers from the water for less than 5 days, although close contact was still allowed.

SeaWorld has maintained an "incident log" since 1988 (Tompkins, 2011, p. 361, line 7 and p. 369, line 6), which details aggressive incidents with killer whales and trainers. The reports in this log are meant to help train employees and ensure that potential incidents of aggression and injurious interactions can be predicted and avoided (Flaherty Clark, 2011, p. 184, lines 14–19; Tompkins, 2011, p. 449, lines 21–24). This log contained 98 incidents reported from SeaWorld and 3 reported from Loro Parque in the Canary Islands. Moreover, a SeaWorld representative testified that every incident of aggression was recorded in the log (Tompkins, 2011, p. 450, lines 8–9). However, for just one killer whale (Kayla), the OSHA attorney highlighted that her "animal profile"⁴ listed seven aggressive incidents. During questioning, the SeaWorld representative agreed that the descriptions of these incidents warranted full incident reports (Tompkins, 2011, p. 454, lines 5–7), but six of them were not recorded in the incident log (Black, 2011, p. 457, lines 15–18).⁵ When the SeaWorld representative was questioned, he replied, "Based on what I'm seeing here and if these are accurate, we missed a few" (Tompkins, 2011, p. 457, lines 19–20). Moreover, a trainer called as a witness described an incident from 2005 involving the killer whale Ikaika.⁶ The trainer testified that she wrote a full incident report, but again, the OSHA attorney noted that there was no such report in the incident log (Howard-Fishburne, 2011, p. 697, lines 19–21). There was no exhaustive cross-referencing of reported incidents, but the testimony at the hearing suggests that many aggressive incidents are not fully reported, and thus SeaWorld employees are not fully informed regarding aggressive "precursors" or behaviors that lead to potentially aggressive incidents for the whales with which they work.

Conclusions

At present Tilikum is participating in shows, although trainers are not allowed to physically interact with him. SeaWorld provides its trainers

with a profile of animals under their care, and in Tilikum's profile, it notes:

Aggressive tendencies: Has negative history with trainers in water; Please be advised that this whale was involved in the accidental drowning of a trainer at Sealand of the Pacific in 1991 and involved with an incident with a guest in his pool in 1999 at [SeaWorld Florida]

Behavioral incidents: 7/6/1999—Drowning—no specific behavior noted; 2/24/2010—Grabbed ponytail, pulled in water; Held trainer underwater; Carry/tow trainer. (Seaworld, 2010b, p. 27)

The profile also adds this comment about the incident with Daniel Dukes: "He was also involved in an incident in July 1999 resulting with [sic] the drowning of a guest in his pool, although his participation is not known" (Seaworld, 2010b, p. 28).

Tilikum's profile does not mention that Dawn Brancheau actually died, the death of Keltie Byne is portrayed as an "accidental drowning," and his role in the death of Daniel Dukes is downplayed. The profiles similarly understate risks from other whales; for example, Kasatka's attacks are portrayed thusly: "Grabbed a trainer by the foot and held him under for several moments at a time without a response to a stage call" (Seaworld, 2010b, p. 6); "She has at times exhibited more intense physical aggressive behavior" (Seaworld, 2010b, p. 7); and "Kasatka aggressed on a trainer . . . in a show and didn't respond to stage calls. She grabbed him by the foot and surfaced several times. She eventually swam over to the net which was used to separate the trainer from her" (Seaworld, 2010b, p. 8).

The last description fails to note that in fact the net did not separate her from the trainer—she came over the net, resulting in the trainer's rapid movement away from the edge of the pool, during which he attempted to run on a broken foot (Video of November 29, 2006 incident with Kasatka and Ken Peters).⁷ Such descriptions severely downplay and hardly warn trainers about the potential dangers that they might be facing by interacting with these whales.

If killer whales are aggressive, and there is a risk to human health and life through interacting with them, what can be done? In the case of Tilikum, the nongovernmental organization The Humane Society of the United States (HSUS) sent a letter to

SeaWorld proposing that Tilikum be "retired" to a sea-pen facility (Pacelle, 2010). However, this proposal was rejected by SeaWorld (Atchison, 2010).

As noted above, SeaWorld is allowed under US law to hold marine mammals for the purpose of public display due to the perceived educational and conservation benefits of these exhibits. However, it may be that more members of the public are now attending shows because of the possible danger the animals pose to humans. For example, a visitor to SeaWorld was interviewed on television and said: "that's a chance you take when you go and see an animal show, it's a whale, it's a lion, it's a snake—that you take a chance of something horrible happening to a human being."⁸ Titillation of more bloodthirsty members of the public is surely not what was intended by the MMPA's provisions for public display.

One of the witnesses at the Congressional oversight hearing in April 2010 was Louie Psihoyos, the director of *The Cove*. His testimony was critical of the captive marine mammal industry, noting that its portrayal of cetaceans in captivity as "playful happy pets" was "irresponsible." He went on to state: "From dolphin collisions to orca attacks, the question is not whether but when the next tragedy for marine mammals in captivity will occur" (Louie Psihoyos, Oceanic Preservation Society, in Subcommittee on Insular Affairs, Oceans, and Wildlife, 2010).

Only time will tell if he is correct.

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Notes

¹There are conflicting reports as to whether she was grabbed by her hair, stated by SeaWorld witness trainer Jan Topoleski (Orange County Sheriff's Office, 2010a), or by her arm, as noted in the statement of SeaWorld witness Security Officer F. Herrera (Orange County Sheriff's Office, 2010b) and tourist Susanne deWitt (Orange County Sheriff's Office, 2010b). 18:29:46

²Prior to amendments of the MMPA in 1994, jurisdiction over captive marine mammals was shared with the National Marine Fisheries Service (NMFS), which also had jurisdiction over marine mammals in the wild. Live captures and imports of marine mammals for purposes of public display are still under NMFS jurisdiction.

³It should be emphasized that since 1993 no permits have been issued to facilities in the US for the importation of small cetaceans caught via drive fisheries. However, prior to this, animals caught in drives were imported into the US. In a newspaper article, Fred Jacobs, vice president of communications for SeaWorld, was quoted as saying that SeaWorld “saved” the dolphins it imported (see Moore 2009).

⁴Every whale has an “animal profile,” which records among other information all aggressive incidents with that whale. These records are brief notations of the incident and date and normally correspond to full reports in the incident log.

⁵Incident reports are typically several pages long and are distributed for consultation and comment within SeaWorld (SeaWorld, 2010b).

⁶Ikaika was housed at Marineland in Ontario from 2006 through 2011. He is now at SeaWorld California.

⁷Demonstrated in video of November 29, 2006 incident with Kasatka and Ken Peters.

⁸Transcript of an interview with Merly Carvalho, Good Morning America (7:21am), ABC News, March 30, 2011.

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