BEHAVIORAL AND HUSBANDRY INTERVENTION IN THE CASE OF A HYBRID TURSIOPS SP.

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This paper is written about, and dedicated to, a bottlenose dolphin named Pepe. Why does this particular dolphin warrant his story being told? I believe that Pepe can serve as a reminder to us all that each animal is a unique individual, with needs and wants all their own. It is up to us, as trainers, to be receptive to those needs, and in doing so, we are able to provide the best possible care for each animal.

HISTORY

Pepe was born at Marineland on September 8, 1976. Being a hybrid and a very large animal, when Pepe was 18 months old his mother was moved from the pool and he began training with a park-born female hybrid named Angel. The training regimen consisted of 3 sets per day with one primary trainer. From the very beginning, Pepe's eating habits and behavioral performance were prone to erratic fluctuations. When hungry and motivated he was a great worker and fast learner, other times he would ignore the trainer, and constantly wander from position. Nevertheless, in the 10 months of training he learned 7 behaviors with 2 more in progress.

During this time, Pepe played a great deal with Angel. He also had contact with many people around the pool and some would swim with the animals regularly. It was through this extensive play behavior that Pepe developed a reputation as a biter.

At the age of 27 months, Pepe was moved with Angel to the main show area, the dolphin arena. The social structure there consisted of 2 subdominant males, 2 dominant males, and 3 females, including Angel. Pepe quickly became the third subdominant male and "lowest man on the totem pole".

The training regimen consisted of 1 to 2 sessions per day, mostly in tandem with Angel, with one of 4 different trainers. His appetite fluctuated, and his attention span slowly decreased to a couple of minutes at best. In the 21 months in the dolphin arena he learned one new behavior - gating between his holding pen and the main pool. He lost Sd's to 5 behaviors, and would do them only with Angel. He began to throw up habitually, sometimes several times a day, and would swallow objects that were blown or thrown into the pool - like wood chips, paper products, leaves, and so on. As time went on he became more and more isolated. If the dominant males were out in the main pool for free time, he would not socialize with the other animals, but would remain in his holding pen. He also resisted working in a structured training session with the dominant males.

At this point, at the age of 4, it seemed apparent that Pepe was not going to adjust to this environment, so he was moved back to his home pool and I became his primary trainer. There he was introduced to a park-born male, one year younger, named Merlin. The training regime of 3 sets per day was resumed, working him alone and occasionally with Merlin. His appetite remained erratic and his attention span,

although irregular, increased in average length. He relearned all the lost behaviors and learned 4 new behaviors with 2 others in progress.

Physically, he continued to bite and his throwing up decreased, but was still evident. He continued to swallow objects, and we were forced to use a fiberoptic scope on two separate occasions to remove objects from his stomach. At this time several small ulcers were found in the stomach lining.

Pepe spent a year there, and at the end of that year we attempted to reintroduce him into the dolphin arena, this time with Merlin. The social structure now consisted of the 2 dominant males, 2 females, and Pepe and Merlin. Pepe's adjustment to the dolphin arena this time was mixed. I remained his primary trainer and although his attention and appetite were still erratic, he learned new behaviors and was able to work in a structured session with a dominant male. On the negative side, however, he was throwing up frequently, still biting, and refused to socialize with the other animals, when the dominant males were present. Meanwhile Merlin, although also subdominant, adjusted quite well.

Pepe remained in the dolphin arena for only 4 months. In that short period of time, it became apparent that his adjustment to the area was unlikely, so it was decided to introduce him into the pilot whale show pool. At that time, I initiated specific behavioral strategies to attempt to reduce his problem behaviors and improve his overall state.

The social structure in the pilot whale show area included one female pilot whale, and 2 pacific white-sided dolphins, one male and one female. Pepe's integration into the social system here was slow but steady. Within a few months he was quite comfortable with the other animals and eventually developed a strong bond with the female pilot whale, Bubbles. With continued behavioral work, his problematic behaviors decreased or disappeared. Although his appetite and attention remained irregular, he continued to learn new behaviors and became a regular participant in the show.

TARGET BEHAVIORS

A look at Pepe's history reveals several problematic conditions, tenacious in nature. He was always a physically weak animal, with intermittent stomach disorders and a lower than normal resistance to infections. Besides these physical difficulties, there was the development of a variety of nonadaptive behaviors, frequent and atypical enough to be of serious concern to those of us working with him.

Some behaviors or behavioral patterns were evident from the beginning of training, as in the case of his erratic appetite and his biting. Others, however, did not begin until his first introduction into the dolphin arena. These included, a significant drop in his attention span to a minimally functional level; the loss of Sd's to several completed behaviors; the advent of habitual throwing up; and the response of quickly swallowing any object that fell into the water.

POSSIBLE CAUSES

Before discussing the strategies that were initiated to alleviate these behaviors and help Pepe become a healthier, more fully functioning animal, it is helpful to explore the factors which may have contributed to the development of these problem behaviors.

The first factor which must be seriously considered is the physical health of Pepe. As previously mentioned, small ulcers were discovered at the age of 4 ½ which could have affected his appetite and energy level. He also had sustained an injury to his peduncle at around 3 years old, which caused occasional swelling and which was under constant scrutiny. This was later diagnosed to be osteomyelitis and a source of his chronically high white blood counts.

One question we asked ourselves was whether Pepe was in any kind of pain from this condition. That is a difficult question to answer. Dolphins, by nature, mask symptoms to the point that once they show signs of pain or illness, they are often in dire straits. Our best clues to their condition are provided through physical and behavioral changes. In Pepe's case, besides the physical presence of swelling, he would sometimes show deterioration in more strenuous behaviors, while continuing to work well on others. With this being an indication of possible pain or discomfort, those behaviors were immediately suspended until he seemed willing and able to resume that type of activity.

Another factor which most certainly contributed to Pepe's loss of productivity and development of nonadaptive behaviors, was the effect of dominance. Each time Pepe was moved to the dolphin arena, the social structure consisted of more males than females, and within that structure, the presence of 2 dominant males. Despite his greater size, Pepe always aligned himself with the subdominant males. In that weak position, pressures were placed on him that he was apparently unable to cope with.

Differences in training regimen from his home pool to his initial transfer to the dolphin arena could also have contributed to the onset of Pepe's problems. First of all, there was the loss of his one primary trainer and the replacement by 4 new individuals. Behavioral charts indicate he was worked inconsistently and less often than before. He also received less personal attention. Most of the time he was worked with Angel, which reduced contact with people on an individual basis and increased his dependency on Angel. Eventually, he was relying on her for several Sd's. Finally, there was a lack of challenging work for Pepe. In the period of almost 2 years he learned only one new behavior while losing several others.

One last factor concerns the age at which Pepe was separated from his mother and the impact that may have had on his subsequent development. Compared to the other 5 dolphins born at the park, Pepe's separation from his mother, at18 months, was at a substantially earlier age. The average age of the other five animals was 29 months, with the youngest being 26 months and the oldest 33 months.

Although I found no definitive research or conclusions on optimal age of separation, Herman notes in his book Cetacean Behavior, "Close affiliation between the newborn and mother continues for an extended period of time and dependency may persist even into adulthood" (Herman, 1980). Whether this had an impact on Pepe's later problems is uncertain but worth further investigation, particularly in light of the extensive research done by John Bowlby on early separation of young children from their mothers and the far-reaching effects it has on personality and behavioral development (Bowlby, 1973).

STRATEGIES AND INTERVENTIONS

Throughout Pepe's life a variety of strategies were employed to cope with his many and varied problematic conditions. On-going husbandry practices included regular health monitoring through blood

tests and stomach contents sampling. A fiberoptic scope was used to remove known foreign objects from his stomach and to examine it for possible lesions or ulcers. At age 7 Pepe was xrayed to discover the origin of the swelling in his peduncle. This revealed osteomyelitis which was treated by monitoring the white blood count and administering antibiotics at every rise.

Besides this on-going husbandry care, other strategies were attempted to aid Pepe. To help in stabilizing his eating habits, and to curb his throwing up, different feeding schedules were employed. For a period of 2 weeks, Pepe was fed twice nightly to increase his appetite and weight. Little change was noted. Later on, 3 months before his move to the pilot whale show, a schedule of 8 feeds per day was begun which continued for one month after the move. His normal diet was fed in small amounts over the course of the day, with at least three of the feeds being training sessions. Accurate charts were also kept, listing the time of day, number of pounds fed, and the amount, if any, of regurgitation seen. This provided us with a clear picture of Pepe's eating and regurgitating habits, and the evidence of change when it did occur.

Another strategy attempted was the moving of Pepe to different pools. Although Pepe was quite comfortable in his home pool, it was hoped that he could be successfully integrated into a permanent situation where he would have more room to swim, a larger social unit, and a more diversified and challenging training regimen. However, when it became apparent that he was not adjusting, and that his behavior was deteriorating and his physical health was in jeopardy, the option to move him to a less threatening environment was exercised. It was through this process that he was eventually introduced into the pilot whale area, where he integrated quite well. There was concern, throughout this time, that he not be moved too often, as the move itself can be a source of stress.

Finally, a variety of behavioral strategies were implemented to help Pepe. Because of his delicate health, he was the first dolphin to be trained on the fluke presentation, stomach tube, and fecal tube behaviors. With his voluntary cooperation, it was easier and less stressful to perform these procedures on a frequent basis. After his first experience at the dolphin arena, we ensured that consistency was maintained in trainers, that Pepe was worked at least three times a day, and that the sets were balanced between individual work and work with other animals. On his second introduction to the dolphin arena, he was specifically worked with each of the dominant animals. Pepe was encouraged and rewarded for participating in these sessions, while the dominant animal was rewarded for allowing him to do so. Special care was also taken to provide Pepe with a lot of personal attention and support.

During Pepe's second residency at the dolphin arena, and in conjunction with the expanded feeding schedule, several behavioral interventions were specifically aimed at reducing his biting, swallowing of objects, and throwing up. First, desensitization work was initiated to train him to allow us to touch his mouth, tongue, and teeth, without biting. At the same time, he was trained to retrieve safe objects like paper cups or paper towels, and then let us open his mouth and remove the objects. Third, water work was begun with Pepe, reinforcing him for gentle play and non-biting behavior. The reinforcement was high at first and then slowly reduced to a variable schedule until the biting ceased completely. Extra time was spent with him immediately following a feed to reduce the incidence of throwing up, since the feeding charts indicated that as a time of high probability.

From the first day Pepe was moved to the pilot whale area, consistency in trainers was maintained by having myself or another familiar trainer with him every day. For the first two weeks we spent all of our extra time with him. We would sometimes just sit with him, or rub him, or encourage play behaviors like playing with a ball or pulling on a rope, and then feed him during shows and training sets. The pilot whale show, normally a two-trainer show, was expanded to include a third trainer to work exclusively with Pepe, helping him integrate into the show structure. Staffing and priorities were adjusted to continue this for his first couple of months. During this time the other animals were reinforced for allowing Pepe to work, particularly the dominant female pilot whale.

RESULTS

The results of these interventions and strategies were quite encouraging. Pepe was successfully integrated into the pilot whale show. His appetite and attention continued to fluctuate, but his overall participation increased. He maintained his repertoire of behaviors and continued to learn others. Socially he appeared to be comfortable, interacting with all of the other animals and developing a strong bond with the female pilot whale, Bubbles, each displaying imitative behavior picked up from the other.

His biting stopped completely. He would allow us to open his mouth and remove any objects. Rubbing his mouth and tongue was such a preferred activity for him, that it became a conditioned reinforcer for other behaviors as well.

His retrieval work improved so that not only would he retrieve an object from the water that we pointed to, he would voluntarily retrieve an item he found on his own and bring it to the trainer. His throwing up almost completely disappeared, with only an occasional time noted and that usually occurred around a loss of appetite.

Finally, Pepe's overall responsiveness to people increased tremendously. He would seek attention when anyone approached the side of the pool by playing ball or allowing us to rub him all over for as long as we were willing to do so. Most times, we would be the ones to break off the contact first, not him. At the risk of sounding anthropomorphic, he seemed happy.

CONCLUSIONS

Although the results of our many attempts to help Pepe adjust to a stable, comfortable environment were ultimately successful, the ending is still a sad one. Tragically, Pepe died in April 1984, from an abscess in his heart. He was on antibiotics at the time and was being closely watched.

As sad as Pepe's death may be, I believe that we who worked with Pepe, and Pepe himself, all benefited from his time here. Perhaps our greatest gift to him was human contact. Pepe was a terribly fragile animal that needed special care and meaningful interaction. With that he thrived for over two years in his last home. It cannot be proven, but I believe those were years he may not otherwise have had.

Through his life, Pepe gave us something valuable as well. He proved that sensitivity and responsiveness to one animal's needs can pay off. Pepe was not shuffled off to some community pool, or given up on altogether, but patiently cared for and helped to make a place for himself.

In conclusion, the last behavioral notes on Pepe, recorded the day before he died, may sum up best all that I have been trying to say. "Four shows. Ate close to nothing, minimal positioning, no behaviors. Wanted to play."

REFERENCES

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