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Healing and Caring in Dolphin-Assisted Therapy: Criticisms of Effectiveness and Ethical Issues

*Mit allen Augen sieht die Kreatur
 das Offene. Nur unsere Augen sind
 wie umgekehrt und ganz um sie gestellt
 als Fallen, rings um ihren freien Ausgang.
 [...] das Offene, das
 im Tiergesicht so tief ist.*

Die achte Elegie, Die Duineser Elegien, Reiner Maria Rilke

Human–Non-Human Interactions and Vulnerability in Animal-Assisted Therapies

This report originates from research that I undertook years ago in Mongolia and Brazil about shamanism, which then led me to work for a period in Bali Island, in the field of dolphin-assisted therapies (DAT). The central topic of my research was the notion of care in ancient healing traditions, in unconventional treatments, as well as their contributions to present therapies, seen from a multidisciplinary approach involving psychology, anthropology and philosophy, which focuses in particular on the pivotal role played by transformational processes within the therapeutical dimension.

Speaking about caring and healing, the study of shamanism (in particular, Siberian shamanic traditions) allowed me to closely observe how interaction between humans and animals, in some cultures, seems essential in order to achieve complete recovery, at both the individual and the social levels. The shaman's initiatory transformation is manifested in her/his friendship with animals, in her/his knowledge of their secret languages, in the possibility to communicate with them. Animals – panther, bear, tiger, jaguar, eagle, deer, horse – indeed become her/his assistants, as well as the allies who guide her/him in the accomplishment of her/his healing and community functions (Eliade, 1974) In a wider sense, the shamanic notion of caring and healing is founded upon a mystical solidarity between humans and animals, a bio-psycho-social paradigm studied using multi-species ethnographies, the paradigm being rooted within some of the ontologies of humans and non-humans investigated by Philippe Descola (animism, totemism and analogism). In his global grammar of ontologies, Descola (2005) considered the naturalism within Western culture a fertile ground so that the

relation between human and non-human living beings may be understood in terms of caring-related practices.

In this sense, animal-assisted therapies (AAT), a specific field of animal-assisted interventions (AAI), seem to play a pivotal role. In the recent past, we have been witnessing an increasing development of programmes in which animal companions assist human professional figures in therapeutic and educational work. Using a wide variety of animals, these kinds of inter-species relationships, according to Boris Levinson, a pioneer in this field from the 1970s, seem to greatly favour the healing of, and recovery from, physical and emotional diseases, increasing the sense of self-effectiveness and self-esteem in the patient.

Unlike in psychoanalysis, where animals could play a healing role by appearing in dreams as curative *images* (Hillman, 1997), in AAT, the interaction between humans and animals involves the *bodily dimension* of both. Thus, the animal body breaks in the therapeutical dimension to play a key role through the actual presence – in flesh and bone, paws and hair – of a living animal that breathes, sniffs and moves side by side with the caregiver and the patient. The face-to-face recognition of the absolute singularity of the living flesh-and-bones animal, as in Derrida (2006), should allow a *bodily experience of our own* animality finally shared with other species.

An essential feature of the therapeutic effectiveness of AAT seems to consist precisely in the patients' comprehension that we all are bodily beings, exposed to the common experience of *vulnerability*. This *corporal compassion* should offer the possibility to create a bond of intimacy, due to the recognition of a shared bodily kinship (Acampora, 2006). The AAT seems therefore an attempt – not always successful, I would say, as in the case of DAT, here, which is discussed shortly – in building a new conception and practice of healing as a co-constructed affectivity, involving empathy and envisaging a fully achieved human–animal bodily intersubjectivity as its goal.

In particular, in collective occidental discourse about dolphins, the patterns of human–dolphin interaction and communication are constructed as special attributes *of the dolphins*. What is perceived or experienced during the encounter is ascribed to the animal: dolphins are consequently constructed as having special qualities that, in turn, 'explain' the experience of the encounter. The first of these qualities is the power to *heal*; another is the ability or purpose to *rescue*; another is the belief in the *telepathic* power of the dolphin.

According to Servais (1999), a Belgian psychologist teaching Anthropology of Communication in Liège, this set of qualities fosters the perception of the dolphin's behaviour as a response to the human's emotions, feelings or thoughts and

the establishment of an interactional system on the human part, in which this human being experiences a close and intimate relationship.

Servais, therefore, suggests the category of *enchantment* to describe the 'dolphin effect' and the related enchanting animal encounters, underlining that all the imagery connected with the animal, in this case – the dolphin – represents an essential ingredient in zootherapy.

Ainsi, s'il est vrai que les exigences de neutralité, de contrôle strict de variables et de reproduction conduisent à empêcher les changements apportés par la présence d'un animal de se produire c'est que la sensibilité à l'émotion et, probablement, au plaisir et à la beauté, c'est-à-dire tout l'imaginaire attaché à l'animal sont, non pas des illusions dont il faudrait se prémunir absolument, mais des ingrédients essentiels de la zoothérapie. (Servais, 1999)

DAT programmes

There are currently DAT programmes all over the world, including Europe, Israel, Russia, the Middle East, Asia, USA – the Bahamas, the Hawaii Islands – Caribbean, Mexico, South America, China and Japan, in closed or semi-open marine mammal zoological facilities. Simultaneously, the first DAT professional course was set up by an Austrian psychologist, Norbert Trompisch, founder of the Dolphinswim Institute and Alpha Therapy in Turkey, at the end of the 1990s.

This type of therapy claims to help physically ill people with different psychopathologies, sustaining new behaviours, communication patterns and cognitive improvement. It has been targeted for children and adults of all ages, and the purported benefits include intensified stimulation, better memory span, augmented motor skills, acceleration of healing, increased relaxation and increased well-being, as well as reduced stress, pain and depression. Programmes comprising 2-week sessions are advertised to be beneficial, with short- and long-term effectiveness, for a wide group of physical and psychological disabilities, ranging from autism, mental retardation and eating disorders, to burn-out syndrome and post-traumatic stress disorder (Antonioli & Reveley, 2005; Likura et al., 2001; Salgueiro et al., 2012; Schenk, Pollatos, Schenk, & Schandry, 2009; Webb & Drummond, 2001).

Moreover, DAT facilitators claim that the biosonar of dolphins may play an effect on human biological tissue and brainwave activity: the ultrasound from the echolocation clicks of dolphins is supposed to have an electromechanical effect on the endocrine system and human tissues and to stimulate them positively (Birch, 1998; Brensing, Linke, & Todt, 2003). The relaxation and reduction of stress or

pain seem to be appreciated even in pregnancy and birth – therefore, programmes of dolphin-assisted pregnancy and dolphin-assisted birth are conducted.

DAT promoters support research studies wherein interaction with dolphins is included as part of the reward process, to determine whether enhancement occurs in the attention span and the rate of learning for children with mental disabilities. The dolphin and their trainer work alongside therapists to help children achieve a therapeutic or educational objective (pronunciation of a consonant) or a therapeutic goal (increased positive communication with others). As a supplement to an intervention, this therapy seems to commonly offer benefits for children who are socially unresponsive, shy and withdrawn and/or may experience heightened anxiety (Breitenbach, Stumpf, Fersen, & Ebert, 2009; Lukina, 1999; Nathanson, 1989).

In the 1970s, in the United States, Betsy Smith – with her *Water Play* – and the clinical therapist David Nathanson – with his *Dolphin Human Therapy* – started to highlight that dolphins increase attention spans and language skills in neurologically impaired children, especially those affected by autism spectrum disorder.

Anthropologist and professor at the Florida International University, Smith started Project Inreach, a pioneer pilot study that began in 1978. The researcher saw ‘the flexibility of using the Atlantic bottlenose dolphin as a facilitator in eliciting communicative responses from autistic person’ (Smith, 1983). She chose the name *Water Play* for these new experimental treatments because the game mechanism, with the fun and the laughter that is often set in human–animal bonding, induces the affected person greatly to move and stimulates an affective, emotional and psychological response. In 1984, Smith published the article ‘Dolphin Plus Autism. A case study’, reporting her observations of an 18-year-old boy named Michael during his encounters with dolphins in 16 sessions in the course of 1 year (Smith, 1984). She claimed that the contact with the dolphin could stimulate spontaneous social behaviour in an autistic person and reduction of aggressive behaviours, as her staff verified in 1987 with four children during the *Dolphin Plus Autism Pilot Project*.

In the meantime, Nathanson reported that the 2-week *Dolphin Human Therapy* programme significantly increased language, speech as well as gross and fine motor functioning among children with various disabilities. His *Dolphin Human Therapy* pilot study took place in 1978 and 1979 – at first, 2 days per week, then from 1995, a full-time programme comprising 5 days per week – at Dolphin Plus, in FL, USA (Nathanson, De Castro, Friend, & McMahan, 1997). Nathanson compared the effectiveness of learning in water with dolphins to that of learning in a land-based classroom setting in eight children with mental retardation. As an example of the exercise adopted, Nathanson applied operant

conditioning, asking the child to discriminate between two picture boards by touching the drawing of a cat; if the child did so, the child received a reward or a dorsal ride. Dolphins were used as a part of both stimulus and reinforcement, while interaction with dolphins was included as part of the reward process.

Examples of instruction are as follows:

- if you want a foot kiss from 'name of the dolphin', look/touch/touch and say circle/oval, where stimulus is the circle, reinforcer is the dolphin; and the reinforcement location is on the dock;
- if you want a foot push with 'name of the dolphin', look/touch/touch and say circle/oval, where stimulus is the circle, reinforcer is the dolphin; and the reinforcement location is in the water (Nathanson, 2007).

Nathanson claims that DAT increases attention span, motivation and language skills more rapidly and cost-effectively than other more-conventional therapies and that the effects are maintained over an extended period of time. By increasing attention and motivation, the amount of time needed to help the child improve cognitively, physically or even behaviourally could be substantially reduced (Nathanson et al., 1997).

In Belgium, from 1991 to 1996, Servais followed the *Autodolfijn Project*, a 5-year research study that drew on the complementary work of Nathanson and Smith, which aimed to assess the effect that dolphins have on learning in children with autism. She formulated a hypothesis, according to which interactions with dolphins foster learning in autistic children, by 'increasing their attention faculty and their motivation to learn' (Servais, 1999). Despite the initial encouraging results, the staff did not register any relevant difference in cognitive improvement after the sessions with dolphins, and this can be considered the last relatively wide experimental study on the effects of DAT.

Sessions

Programmes can involve dolphins in both captivity and semi-captivity, by including many different variations, ranging from the client simply looking at or taking care of a dolphin or touching it, to entering the water and swimming with the animal. Therapy generally provides that the patient swim and play with dolphins over several sessions while working on tasks such as hand-eye coordination or various verbal response targets, including interactions at the poolside with a behavioural modification focus (e.g., a swim is offered as a reward for the completion of a set task); simply swimming with the dolphins either in their tanks or in the open sea; dorsal fin rides; activities where the participant is made to feel he/she is 'looking after' the captive dolphin through feeding or other practices.

A child enters the water accompanied by the therapist and a dolphin trainer, who facilitates the contact between the child and the dolphin, playing an essential part in promoting interaction, including simple actions like touching the dolphin or swimming with it.

Sessions usually last 30 minutes on average, and the programme generally consists of several units, which ensure that the children become more comfortable with the setting and the therapeutic situation. During the orientation stage, the so-called 'first unit', the child is introduced to the dolphin, and possible ways of interacting with the dolphin are demonstrated: the trainer manipulates the dolphin's movement, in order that children are able to touch, play or give simple hand commands to the dolphins. Then starts a series of therapeutic sessions, where children are allowed to play with the dolphin after emitting a correct motor, language or cognitive response. During the 'play' time, the children can touch or kiss the dolphin, dance in a circle with it or ride on the animal by holding onto the dorsal fin.

In each subsequent session, the already-known interaction patterns are repeated and new ones are added. A child can interact with a dolphin from a distance, throwing different balls and rings to the animal, which are returned to the child by the dolphin. The child usually kneels at the pool or sits on a platform and holds different-sized rings above the water, which are touched by the dolphin with its nose. The distance between the child and the dolphin is reduced, but the contact is still only established through the object.

A fourth unit consists of the first direct contact: the child sits at the pool on the platform and dangles his/her feet into the water. The dolphin gently pushes against the child's feet or legs; the child can now touch the fin, the back or head of the dolphin. In the final unit, the child and the therapist are in the water and the dolphin swims near them. The therapist holds and supports the child, while the dolphin pushes and pulls the pair. If the child is physically able, he/she can be pushed and pulled without the therapist's assistance.

Criticism

Supervised swimming programmes with dolphins are claimed to bring benefits to a large number of diseases, whereby DAT is not generally viewed as a stand-alone treatment but rather a process wherein animals should be used as a supplement to other interventions. Although the promoters of this type of practices highlight the physiological, psychological and cognitive benefits on human participants, the swim programmes involving children and dolphins have been criticised not only for the expense (approximately 300 euros for a session) but also because there is a lack of a research basis to support such programmes. In 2003, Smith

herself denounced the risk of a monetary speculation without empirical evidence backing therapy use (Smith, 2003).

Studies supporting DAT indeed seriously suffer from theoretical and methodological flaws, as denounced by Marino and Lilienfeld (1998, 2007), who examined five academic studies – Smith, Nathanson and Servais included – on the effectiveness of dolphin therapy. They noticed that the reliability and quality of the methods were questionable, finding several methodological weaknesses, including the sample size being too small and thus not representative; the lack of control over the effects caused by exercising in an aquatic environment and the lack of control groups.

Smith (1983), Nathanson (1998) and Lukina (1999) described the changes in social interactions that lead to an improvement in children's communicative abilities and social-emotional behaviour; according to parents, these effects remain stable for a period of 6 months and, in addition, behaviours within parent-child interactions become more clearly interpretable and harmonious after the sessions. But they do not seem to deeply consider the fact that experimental treatment typically consists of a complex assortment of non-specific factors: for instance, not only are the children interacting with the dolphin, they are also playing by the sea on a sunny day, with the associated excitement of both the travel and a fascinating accommodation. The therapy involves a vacation for the entire family, whereby parents have the opportunity to bond with the child under enjoyable circumstances. So, the construct validity is consistently threatened when researchers fail to recognise that there are multiple components to the specific treatment.

The limited number of children and sessions (including their low frequency), as well as concurrent therapeutic and educational activities by the children, may have a confounding effect over the interaction results. In addition, the generalisation of the putative abilities acquired by dolphin co-therapy to a different context is in question, due to the very peculiar treatment setting. Pragmatic issues of accessibility, expense and risk, such as opportunity cost, time, money effort expended or *ineffective* treatments, also reduce and marginalise the ability to seek effective treatments.

The dolphin is a wild, unpredictable animal, even when well trained: so the dolphin's health and behaviour in captivity make the logistics of this type of therapy challenging. One of the concerns is that patients can be injured, especially when children are placed in proximity to large powerful animals in an aquatic environment: aggressive behavioural patterns, such as forceful push, hit and chase, even bites, have been observed (Frohoff & Packard, 1995). Moreover, there are currently no laws requiring that the dolphins be tested for parasites, with additional

risks of zoonotic infections, and eventually parasitism, for both interacting parties (Geraci & Ridgway, 1991).

In 2008, Cathy Williamson wrote in a report for the Whale and Dolphin Conservation Society that these kinds of animal therapies are not suitable treatments because they involve two highly vulnerable groups: not only the *suffering* patients, but also the dolphins, suffering from confinement and human disturbance:

It is essential that in any Animal Assisted Therapy program, the health and welfare of both the humans and the animals involved are the primary considerations. We suggest that DAT is not only ineffective as a therapeutic intervention, but could be harmful to both parties. (Williamson, 2008)

In fact, DAT seem to not properly consider the animal's vulnerability and call into question the *welfare* of the animals (De Mori, 2013; Stamp Dawkins, 2006; Zucca, 2009) involved in their programmes.

The activities cause suffering to the dolphins on many levels: physical (respiratory, peptic and vision diseases, stress-related disorders), behavioural (aberrant, hyper-sexual and stereotyped behaviours, unresponsiveness, self-inflicted trauma and excessive aggressiveness) and social (alteration of hierarchies, limitations of sexual partners, impoverishment of original wild group after catching). There are few laws to regulate the working hours of therapy and safeguard the service animals; marine mammals are easily disturbed in water interactions or are exposed to unhealthy and stressful conditions, due to their confinement, training and participation in ineffective or exploitative practices (Dierauf & Aubin, 2001).

Moreover, several behaviours exhibited by these mammals are naively associated with sociable and playful attitudes, beginning with the 'smile' on their faces, which has nothing to do with a joyful sign, rather than being an anthropomorphic feature of the dolphin, as explained by Voza and Vallortigara (2015). Furthermore, ethological observations conducted by Janik (2015) have shown that manipulation of organic material, such as shell, dead woods and seaweed, help dolphin calves in gaining knowledge about objects and they display learning behavioural skills used in chasing fish. Likewise, breaching, surfing and leaping are behaviours linked to specific physiological (sometimes social) functions that are not related to playful patterns.

All these types of perceptual and cognitive misinterpretations in the human-animal interaction expose vulnerable dolphins to activities that highly affect mammal welfare.

Conclusions

Despite the severe ethical and methodological criticism, the rate of use of DAT and dolphin-assisted activities (DAA) has significantly increased over the past three decades, often turning into lucrative business. Dolphins are frequently used in an effort to promote interest for learning activities and the concentration span of people with severe learning disabilities. Several studies claim that DAT therapies benefit disabled children, but close scrutiny of the research reveals that most studies have serious methodological flaws and, therefore, such putative positive physiological, psychological and cognitive benefits during dolphin interactions have not been experimentally validated yet (Fiksdal et al., 2012). For better validation, Marino (2013) suggests that a minimisation of construct confounding would require that both experimental group and the control group be exposed to the same, or at least highly similar, procedures and stimuli with only the key ingredient – the dolphin *per se* – as the differential treatment component between groups. Longitudinal studies will be necessary to establish causality and the possible influence of the family climate. Novelty effects could be verified by exposure of the control group to another novel, attractive animal, while keeping as many other variables as possible equal.

Moreover, as described before, human–dolphin interactions are actually characterised at least by two sets of perceptual and cognitive misinterpretations. On the one hand, humans are neglecting the animal's psycho-physiological dimension; on the other side, humans have a misleading interpretation of dolphins' nature. Therefore, it appears of primary importance to go further into dolphin ethological observations and cognitive–behavioural research, with dissemination of the results obtained with careful scientific scrutiny, and especially to apply for compliance to regulations by operators (*refinement*).

Clegg, Borger-Turner and Eskelinen (2015) tried to assess captive mammals' welfare by adopting the Farm Animal Welfare Quality Assessment to measure the welfare of bottlenose dolphins; their work is an effort in the aforesaid direction. The researchers published the C-Well, an overall welfare assessment index for captive bottlenose dolphins, with 11 criteria and 36 species-specific measures developed in situ at three seawater facilities – Dolphin Plus, Dolphin Cove and Island Dolphin Care, all in Florida.

Two different attempts in order to overcome the limitations associated with a real dolphin were proposed by Nathanson and Dobbs. The first was by applying animatronic technology to the therapy: in his *Test Animatronic Dolphin*, an electronic animated puppet effective as a real dolphin was used as the reinforcer (Nathanson, 2007). Dobbs, another pioneer in DAT, projected the Dolphin Dome,

in which an oceanic virtual environment is recreated into an inflatable dome, with dolphin sounds and images on the wall; inside the dome, children can move, play and receive treatments. The Frederick Holmes Special Needs School in Kingston Upon Hull in Yorkshire introduced the Dolphin Dome with great success, reporting that the participants experienced relaxing, peaceful and joyful moments; however, there is no experimental study or validation on Dolphin Dome so far.

Based on all these considerations and in order to avoid perceptual and cognitive misinterpretations, as well as the methodological flaws found in DAT, certainly it seems appropriate to apply for a *replacement* by more suitable treatments and to promote more respectful attitudes towards non-human species, in this case, mammals.

However, DAT appears as a challenging field of reflection, in which we can see how the human–animal bond can be an intense psychological stimulus, even instrumental in shaping a child’s emotional development, even projective; in activating the adult’s affective–emotional mechanisms; in promoting “‘relations of obligation” built on mutual “caring for” as both companion species and work colleague’ (Scott Taylor & Carter, 2018).

Finally, dolphin therapies seem to testify the human need for bonding with animals; the attraction and fascination that animals, especially if as charismatic as dolphins, exert on humans. And possibly, the *enchantement* for dolphins and the spread of assisted therapies seem to manifest a specific aspect of the biophilia hypothesis, first described by Fromm (1973) as ‘the passionate love of life and all that is alive’, then proposed by Wilson (1984) as ‘an urge to affiliate with other forms of life’; afterwards considered by the environmental psychologist Kaplan (1995) for the restorative effects of nature on our attentional capacity and by Gardner in his multiple intelligence theory, in relation with the specific aspect of naturalistic intelligence, defined as the ability to connect, on a profound level, with non-human living beings and to appreciate the effect that such relationships have upon us and our external environment.

Corporeal phenomenology of human–animal relations (Acampora, 2006) and inter-species ethics could help to delineate an *ecology* (Bateson, 1991) of human–animal relationships founded on a notion of *caring* as an original openness towards the other(s), be they human or not. This inter-species caring attitude, issued from the recognition of our common vulnerability and fragility, leads to a shared awareness of the *original* and essential *interdependence* that intertwines all living beings, an interdependence that cares and, at the same time, manifests and nurtures in its many nuances (to take care of, to care, to cure). Care thus becomes the key conception that may actually allow us to practically construct an actual interdependent relation of closeness – and not simply neighbourhood – with

the remaining living beings, restituting to human nature its real place within the wider system of Life.

Summary

Since the 1970s, new therapeutic practices, involving the interaction between humans and dolphins – *Tursiops truncatus* in particular, have developed. Such practices are known as dolphin-assisted therapies (DAT), a specific case of a more heterogeneous set of experiences with dolphins called dolphin-assisted activities (DAA): these include programmes of dolphin watching and swimming in high seas, as well as shows in dolphinariums and marine parks. DAT has grown rapidly as a highly attractive form of therapy, due to the well-liked animals used in an aquatic, and often exotic, environment. This kind of co-therapy seems to testify the *enchantment* that dolphins – in myths and chronicles often reported in rescue at sea, perceived as especially charismatic – exert on people; the human attempt of bonding with them, possibly in response to the need of building a human–animal bodily intersubjectivity.

Keywords: Dolphin-Assisted Therapy, human–non-human interactions, animal care.

Heilung und Fürsorge in der Delfintherapie: Kritik an der Effektivität und zu ethischen Fragen

Zusammenfassung

Seit den 1970er Jahren haben sich neue therapeutische Methoden entwickelt, in die die Interaktion zwischen Menschen und Delfinen, im speziellen des *Tursiops truncatus*, einbezogen ist. Solche Praktiken sind als Dolphin-Assisted Therapies (DAT) bekannt. Ein spezifischer Fall eines besonders vielfältigen Sets an Erfahrungen mit Delfinen heißt Dolphin-Assisted Activities (DAA): es enthält ebenso Programme von Delfinbeobachtung und Hochseeschwimmen als auch Shows in Delphinarien und Wasserparks. Dank der beliebten Tiere, die im Wasser und einer oftmals exotischen Umgebung eingesetzt werden, ist DAT als höchst attraktive Therapieform rasant angewachsen. Diese Art der Co-Therapie scheint den Zauber zu belegen, den Delfine – in Mythen und Chroniken oft als Retter in der See beschrieben und als besonders charismatisch wahrgenommen – auf Menschen ausüben; das menschliche Verlangen, sich mit ihnen zu verbinden, ist möglicherweise als Antwort auf das Bedürfnis, eine körperliche Intersubjektivität zwischen Mensch und Tier herzustellen, zu verstehen.

Schlüsselwörter: Dolphin-Assisted Therapy, Delfintherapie, Mensch-Tier Interaktion, Tierpflege.

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