

# **Is that a beard on his neck? Bearded dragons as therapeutic animals - A case study of autism and a bearded dragon**

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**Abstract:** *Assisted Therapy (AAT) is the utilization of animals as a therapeutic method; it is the deliberate inclusion of an animal in a treatment plan. Animal-assisted therapy has been practiced for many years and can be a useful intervention for individuals or groups. Studies found positive outcomes and overall improved emotional well-being in individuals with autism, ([1]Redefer and Goodman 1989), medical conditions ([2]Havenar et al. 2001), compromised mental functioning ([3]Kanamori et al. 2001), emotional difficulties ([4]Barker and Dawson 1998), undesirable behaviors ([5]Nagengast et al. 1997), and physical problems ([6]Nathanson et al. 1997). Additionally, AAT has been used with individuals across the lifespan; including children, adolescents, adults, and the elderly. Florence Nightingale - the founder of social work, first identified the therapeutic potential of animals in the 1800s, through observations and surveys conducted by psychiatric institutions that small pets helped reduce anxiety in patients. There are many researches in animal assistive therapy which focus mainly on "mainstream" animals; such as: dogs, cats, bunnies, Guinee pigs, parrots, horses etc.*

*This paper will explore reptiles in general - as therapeutic animals and bearded dragons in particular. I will show how one particular bearded dragon managed to assist in reducing stress levels in a young boy with autism, how we managed to control anxiety attacks accompanied by hyper ventilation, undesirable vocal bursts, extreme violent outrages integrated with personal endangerment. By understating how to corelate the suitable animal to a person's needs at a given time; we can assist a larger and more diverse of humans.*

**Keywords:** *animal assisted therapy, autism, anxiety, reptiles, bearded dragons.*

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## **I. Introduction**

Animal Assisted Therapy (AAT) has been used with individuals across the lifespan; integrating children, adolescents, adults, and the elderly. The deep bond between humans and animals has been proven to exist throughout history. Prehistoric cave drawings depict men and wolves sitting around the campfire, evidence from ancient Egypt, showing kings and cats; men, horses and dogs kept each other company while hunting and to this day, and in our modern world, humans keep various animals as their pets. ([7]Connor 2000). The bond between humans and animals is simply - amazing. Humans are the only species in such which act in this matter with other species. Humans have created an affixed relationship with animals, demanding everything from physical sustenance to labor, companionship and entertainment. How we look upon animals is dependent on the particular species in question and our own culture bias ([8]Pavlidis 2008). Florence Nightingale - the founder of social work, first identified the therapeutic potential of animals in the 1800s, through observations and surveys conducted by psychiatric institutions that small pets helped reduce anxiety in patients of all ages. Levinson believed that animals serve as an intermediate in human history, by returning to emotional and mental health, and enabling a detached person to maintain the initial and vital connection with nature, instincts and his or her inner self. ([9]Levinson1978)

I am a therapeutic petting zoo manager at "Ahavat Zion" elementary school in Tel Aviv - Israel; where I work as an animal assisted therapist and canine therapist. I work with kids from ages 6-12 with various issues, such as: communication problems, social problems, violent issues, and a large variety of ASD. The kids are hand-picked by the school's counselor, and a maximum group of five at a time were treated together. When the kids come into to the zoo, they are told that they are guests in the animal's home and must behave as such:

No shouting or running. Respect the animal's personal space. Do not pick them up. Do not chase them. And of course - wash their hands before and after.

### **Animal assistive therapy advantages:**

There are many researches showing the physiological, psychological and social advantages that animals provide human beings. AAT is defined as a form of therapy which involves using animals as a fundamental part of one's treatment. The most common animals for treatment are: dogs and cats, next - bunnies, birds, fish and other rodents, but also larger animals such as horses, elephants, dolphins and a variety of reptiles. The range of "problems" that are used for such treatment is broad, however, some animals' interventions involve treatment of cognitive functioning, social interaction issues and autism ([10]Fine 2010).

Katcher Identified 4 components of an alliance between humans and animals:

Security - the sense of security that is felt when an animal is with us or accompanies us. Intimacy - the ability to reach intimacy with the animal (touch, caress).

Proximity - treating the animal as a family member. (Sleeping in bed, dealing with loss). Permanence - the immutability of the animal, in contrast to the rest of the family (who grow and change physically and psychologically). ([11]Katcher, 1983)

Children who are unable to form close satisfying relationships with peers should be a focus of concern. They miss out on opportunities to learn social skills that will remain important throughout their life. Especially critical are the skills needed to initiate and maintain social relationships and to resolve social conflicts ([12]Asher, Hymel, & Renshaw, 1984).

## **II. Autism**

Children with autism are very unique and are different from each other. They do not have challenges and traits in common, hence they form a heterogeneous group. Autism in simple term means, they have an impaired ability to read, manage social cues and face various sensory issues. They are found with unusual sensory responses like being hyper responsive or hypo responsive to various types of sensory stimuli and 75% of children with autism are diagnosed with sensory problems. A majority of autistic people are either hyper or hypo sensitive to light, sound, crowds and other external stimulation. Some have both hyper and hypo sensitivities. This often results in autistic people covering their ears, avoiding or reacting negatively to brightly lit areas, or on the other hand they crash hard into sofas and crave for strong bear hugs ([13]Christopher, 2019). Many individuals with Autism are very reactive to normal sensory stimuli and may exhibit sensory defensiveness and therefore impaired responses to tactile stimulation is a frequently reported symptom among children with autism spectrum disorder ([14]Nicolaas, 2014). Hypersensitivity to movement (Over – Responsive) Children with tactile dysfunction have problem in integrating tactile sensation hindering their life skills. Recent studies have shown the presence of tactile dysfunction in children with autism, which is very much reflected in their level of low tolerance for any activity that involves touch sensations. Tactile Hypersensitivity – Hyper-tactile individuals show high resistance towards social touch and avoid being kissed, hugged or cuddled. They are often unable to certain type of clothes and find it difficult to cope with certain textures. The textures of certain foods can be very hard to handle and might find discomfort in using combs, brushes, socks, and other items with a medium to high sensory output ([15]Christopher, 2019). The somatosensory system is part of the nervous system. It helps us to detect and perceive pain, temperature, head and body position, and, of course, touch. The system is involved in many functions, and it plays a key role in fine and gross motor skill development. Somatosensation is often described as a mixed sensory category; the stimuli received comes not only from skin, but also from limbs and joints. A study focused on somatosensory differences in autistic children. The study found that children with autism had a higher tactile discrimination threshold than typically developing children ([16]Büyüktaşkın, 2021).

### **Reptiles and autism:**

Most reptiles are social but their laid-back nature gives them a calming and therapeutic influence on children with autism. These reptiles' gentle disposition, predictable behavior, and manageable size make them suitable companions for kids who may be overwhelmed by more energetic or unpredictable pets. Bearded dragons, for example, thrive on routine, and their serene presence can provide a comforting sense of stability and predictability to children with autism or sensory issues. This can help reduce anxiety and provide emotional support for kids navigating the challenges of autism ([17]Williams 2024). From my experience, Children with ASD and Somatosensation avoid furry animals such as - dogs, cats, bunnies and guinea pigs and have a deeper connection and understanding of various reptiles; Whom are either smooth or textured.

**Case Study:**

Daniel: 8 years old, started second grade after transferring from another school. He is an only child to a single mother who immigrated from Russia. Not yet diagnosed with ASD, however, violent and miscommunication behavior suggests that.

In Daniel's case - touching furry animals was something he did not like to do. The fur on animals repelled him and made him move back from them. Once I took out the reptiles, he finally did not abstain touch. I believe heat is also a factor when it comes to Somatosensation and ASD - since all furry animals are warm blooded and warm to the touch; reptiles- are cold blooded and absorb the heat from the human body. Thus regulates the child's temperature and the animal's into one.

Daniel first came to me in the middle of a panic attack on his first week of school. He was screaming and crying, his eyes were shut and he was making a constant sound, which seemed monotonous and calming to him. There is a special place with hammocks in our zoo, called "the cabin", thus I immediately helped him lay down on one and went to grab our bearded dragon - Napoleon. Daniel was still crying, making that monotone sound and his eyes were shut. I told him I was going to put the bearded dragon on his chest and the second I did he stopped crying. The sounds were not as loud and after a minute - I said: "I think Napoleon is a little scared of the sound he was making" - thus he immediately stopped! After a few more moments, Daniel opened his eye, looked at Napoleon and patted her head and smiled.

Since that incident, Daniel was assigned to me for a weekly session, in which he always avoided the furry animals, and went straight to the reptiles. With each session, Daniel's trust in me grew and he felt safer to confine in me.

The next incident I was called to help with Daniel was when his teacher called me to come and help her in the classroom with him. It seemed that another kid said something to him - and Daniel interpreted it as something else and got very angry. He started throwing chairs at his class mates, screaming and hitting his surroundings. I walked into his class, kneeled down towards him and asked him if he could come help me with Napoleon. He looked up at me, stopped screaming and came out of the classroom with me into the zoo. I put him in a hammock and brought Napoleon. Put her on his chest and his breathing became slower by the minute. After a few minutes, I asked him if he wanted to tell what had happened and he answered: that this kid said something and insulted him, he asked him to apologize but the kid kept going, picking on him and bullying him. Daniel could not take it any longer so he snapped. Hit the kid and started throwing things. I asked him to look at napoleon and see if she was missing something. He looked at her and saw that she was missing an arm - and said "on no, you poor thing, how did this happen?" I told him that Napoleon was bullied by her friends before she came here - the bigger dragons bit her hand off, so we took her in. In that moment, Daniel saw Napoleon in a different light. As if she understood what he was going through; since she experienced bullying too. The "Empathy button" (as I like to call it) was pressed that time and immediately changed the situation. Empathy construct has received considerable attention by psychologists and educators alike because of its association with positive behavior and psychological adjustment. It has been identified by some as one of the most essential of all personality traits because it motivates helping and other prosocial behaviors and inhibits aggressive behaviors ([18]Batson,1991; [19]Hoffman, 2000) However, research findings are generally in positive association between empathy and prosocial behaviors this does not necessarily imply that empathy always results in prosocial behavior, or even the desire to respond in prosocial ways.

The last significant incident was the most empowering one. I was called to the roof of the school's building, where Daniel was standing on the ledge; kicking and screaming, held by several teachers. Apparently, he was threatening to jump of the roof, the situation was going on for an hour, by the time they called me over. I walked over to Daniel, kneeled down and whispered in his ear: "Do you want to sit with Napoleon in the hammock?" He immediately stopped everything and nodded- yes. The staff released the grip and Daniel came down from the roof with me. Entered the zoo, laid in a hammock and I put Napoleon on his chest.

Ever since the last incident, Daniel has been coming to sit with Napoleon every time he feels stressed or angry - a minute before he feels he is about to burst and become violent or about to endanger himself or others. He now knows how to apprehend his situation before it happens. It has been two years now, and Daniel did not have any more episodes anymore and has been coming less and less.

### III. Conclusion

The animal-human connection is intricated; and not all known of its therapeutic virtues, especially when it comes to reptiles in general and bearded dragons in particular. Bearded dragons offer calming and therapeutic benefits while being easy to care for compared - to other lizard species; their serene presence, manageable size, and straightforward dietary requirements, make them very easy to bond with. The calming effects and therapeutic advantages of bearded dragons can greatly enhance the well-being and development of children with ASD ([20]Williams 2024).

Today, our “Living Zoo” (as I like to call it) consists of over 40 animals, from various reptiles to ducks and chickens, lab rats, a ferret and a few bunnies and guinea pigs; most are running free within the compound, healthy and happy, living a good life. The majority of them were rescued from various places and carries a disability. Ever since I started this journey, I have seen kids from a diverse background, deal with various issues, but the common thing in all of them, is the empathy and joy it brings to them. A safe place for everyone, with no judgment or violent of any kind, where they are accepted as they are, no matter what the reason they came the in the first place.

My mission is to keep the light in their eyes, ablaze. (Alanis Morrissette, 2020)

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