The Human-Animal Bond
A Biological Imperative
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The Human-Animal Bond (HAB) is the innate, powerful, and complex attachment between humans and animals, wild or domestic. The earliest humans’ cave art depicts evidence of this mutually beneficial, or symbiotic, relationship. Years ago, keeping pets was considered more of a pastime for the wealthy or “animal whisperer” types and it is only in the last 30 years that the “bond” has become a recognized concept. Anecdotal evidence of people with pets being healthier, happier individuals has been around for ages and when anecdotal evidence is strong, constant and cross-cultural, curious researchers “take a look” at the occurrences. Over the last 25 years, studies have confirmed what the heart has already known: there are health benefits for people who interact with animals and health benefits for animals with human interactions. Scientific worldwide studies across academic disciplines including psychology, social work, child development, geriatrics and animal behavior indicate the bond is a biological imperative that makes us, and animals, not only healthier and happier, but perhaps shapes us into kinder, gentler people.

When we talk about dynamic relationships, we often talk about the “chemistry” involved. While it doesn’t sound romantic when talking about affairs of the heart, it really is brain chemistry at work. Oxytocin is a hormone produced in the hypothalamus, transported to and secreted by the pituitary gland at the base of the brain. In 1902, oxytocin was identified as the hormone that induced labor contractions and facilitated birth. Fifty years later, scientists discovered it’s also responsible for releasing breast milk, dubbing oxytocin as a female hormone. This was the case until the 1980s, when researchers grew more curious about the effects of oxytocin.

All mammals, male and female, produce oxytocin and over the years, researchers have found that oxytocin lowers blood pressure, heart rate and stress hormones in humans and animals. Oxytocin exerts multiple psychological effects influencing social behavior and emotions; it makes people more trusting and more trustworthy, diminishes the antisocial tendencies found in people affected with Autism Spectrum Disorder and acts as a natural calming agent. A look, touch or gesture can stimulate the flow of oxytocin.

Studies show that both humans and animals experience higher levels of oxytocin after positive interactions, which includes looking at each other and petting. Touch receptors just under the skin can activate the flow of oxytocin. Kerstin Ulnas-Moberg and her team at Sweden’s Karolinska Institute, found when humans stroke rats 45 times a minute for two minutes, the rat’s stress hormone levels, heart rate, and blood pressure drop. She found the optimum anti-stress effects at 40 strokes per minute, which happens to be the natural rate we stroke our pets.

A 2003 study measured blood pressure and blood chemistry of 18 people and dogs before, during and after positive social engagement for 30 minutes where the owners, gazed at, petted and lavished them with attention. The results were monumental. Concentrations of beta-endorphin, prolactin, beta-phenylethylamine, and dopamine increased in both dogs and people after just 30 minutes of positive interaction. The owners experienced a drop in the stress hormone cortisol. In both the humans and dogs, oxytocin levels doubled.

Oxytocin surges in a female’s body just before birth and is the hormone responsible for initiating the first attachment or bond. We are hard-wired to react to infantile (cute) faces, which encourage compassion, discourage aggression, and unconsciously provoke positive, affectionate behaviors including the willingness to care. The concept of Kindchenschema (or baby schema), by ethologist Konrad Lorenz, is a set of facial features (large head and a round face, a high and protruding forehead, large eyes, and a small nose and mouth) which elicits a nurturing response towards infants ensuring or enhance their survival.

New behavioral and neurophysiological studies hypothesize the cute, juvenile-like facial features of puppies, kittens, cats, dogs and other species, are unconscious releasers of nurturing behaviors. One study assessing cuteness perception in young children (3-6 years old) presented high infantile and low infantile images of dog, cat and human faces. The results of the study show that the concept develops early and isn’t limited to human faces.

Some animals (dogs, cats, squirrels, dolphins, seal) retain juvenile characteristics (neoteny) into adulthood, and it is considered a by-product of domestication. Many of the infantile characteristics have been emphasized during the human selection of certain breeds, developing animals that are tamer, fatter or cuter.

In the 1960s, Dmitry Belyaev and Lyudmila Trut set out to breed a more docile silver fox by breeding the tamest with little human interaction—a nature versus nurture view. After the fifth generation, the foxes were distinctly different, becoming slightly more social. According to Lyudmila Trut, who carried on the experiment after Belyaev’s death, by the sixth generation a “domesticated elite” type of fox emerged. She says,
"They are eager to establish human contact, whining to attract attention and sniffing and licking experimenters like dogs." By the 10th generation, 18 percent of the foxes were elite (tame), the 20th generation 35 percent tame and according to Trut in 1999, 70 percent to 80 percent were tame.

The foxes’ physical traits also changed. They had white markings, curled tails—some tails are three to six vertebrae shorter and smaller skulls. Their ears were no longer pointed but floppy puppy ears. In other words, cute. These generations had shorter, wider snouts and the coat color patterns of domestic dogs. Interestingly, their cortisol levels dropped 75 percent, and they produce less cortisol when stressed than captive foxes. Additionally their brains produce higher levels of serotonin, "thought to be the leading mediator inhibiting animals’ aggressive behavior," wrote Trut. Serotonin is a neurotransmitter critically involved in shaping an animal’s development from its earliest stages.

The end result demonstrates tameness is a genetic foundation that supports domestication as biological process, but something unexpected happened. The researchers who continued the study after Belyayev’s death in 1985, changed. They had bonded with the foxes with such a strong sense of attachment and responsibility towards the foxes that they sought placement in good homes for them when facing closure due to funding loss. About the foxes, Trut has said, “They have shown themselves to be good-tempered creatures, as devoted as dogs but as independent as cats, capable of forming deep-rooted pair bonds with human beings—mutual bonds, as those of us who work with them know.”

In her book, Made for Each Other, Meg Daley Olmert writes, “The ultimate result of Belyayev’s experiment: that making more affectionate animals makes more affectionate people. This is the biology of bonding in a nutshell.” The project continues today; although on critically low funding, it has surpassed the 50th generation of foxes, the foxes are considered tame, and they are sold as pets.

With the continual studies coming out about the health benefits of pet ownership for people and their pets, people are responding in positive ways to better care for their pets. In September 2016, the Human Animal Bond Research Initiative (HABRI) released results of its first of a kind survey enquiring about pet owners’ knowledge of the health benefits of the HAB, pet health and animal welfare. Their online survey, Survey: Pet Owners and the Human-Animal Bond, involved 2,000 participants of different generations and covers nine categories. Here’s a sampling of participants’ answers after learning about the research of positive health benefits of pets:

- 92% of pet owners are more likely to maintain their pet’s health, including keeping up with vaccines and preventative medicine
- 89% of pet owners are more likely to take their pet to the vet for regular check-ups
- 88% of pet owners are more likely to provide their pets with high-quality nutrition
- 62% of pet owners are less likely to skip visits to the veterinarian
- 88% of pet owners agree doctors and specialists should recommend pets to patients for healthier living.

Read the extensive results here: https://habri.org/2016-pet-owners-survey

The ancient, innate, profound bond of mutual synergy between humans and animals was once thought to only thrive in our hearts. The human-animal bond makes us more compassionate, empathic, caring people; our companion pets are our emotional and social pillars. Scientific evidence is showing this natural bond is a biological part of us, perhaps as necessary to our well-being as the air we breathe.