

The Magic of Touch



Healing Effects
of Animal Touch
and Animal
Presence

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Animals of the Same Species Touching Each Other

Touch Buffers Stress

The mere touch by another conspecific has healing powers: it calms, comforts and protects against stress.

Rats are afraid of an open area because it could expose them to raptors. The stress experienced when having to cross an unprotected field is reflected by an increased output of prolactin, a hormone that is released into the bloodstream in response to acute stressors, such as confrontation with a predator. Wilson (2001) placed 70 rats, one at a time, in an open field for 10 minutes, either alone, with a conspecific separated by a Plexiglas partition or with a conspecific without a partition.

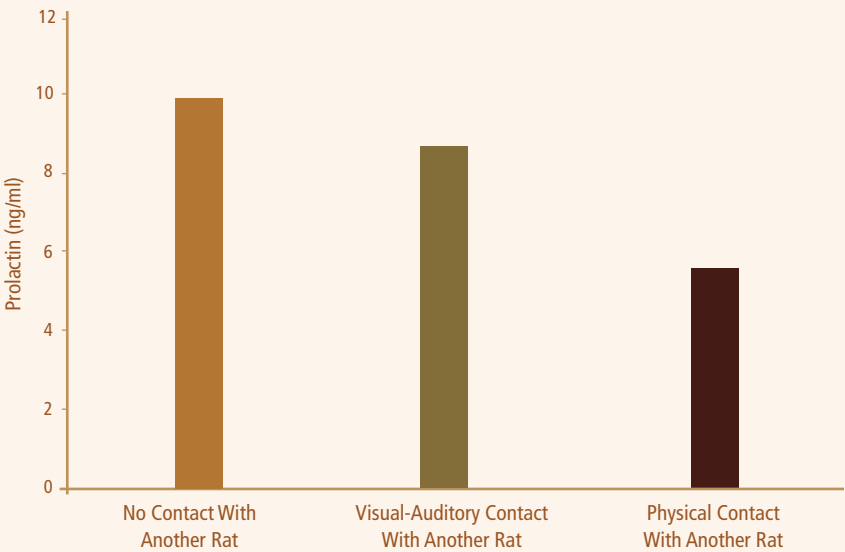


Figure 1. Stress response of rats placed in a fear-inducing open field, either alone, with another rat they can see and hear or with another rat they can touch.

Studies in humans have also confirmed the calming, stress-buffering effect of touch.

Drescher et al. (1980) monitored the heart rate changes of four women after (a) quiet rest, (b) a familiar person stood next to them for one minute, and (c) the familiar person touched their wrist for 30 seconds. The tests were repeated five times.

On average, heart rate was:

- 67.0 beats per minute at rest; it increased to
- 68.3 beats per minute when the person stood next to the subject, but decreased significantly to
- 64.4 beats per minute when the person touched the subject.

In a supplemental experiment, subjects were asked to touch their own wrists for 30 seconds after a quiet rest period. Unlike being touched by another person, self-touching had no effect on heart rate. These experiments were repeated with four men with the same results. The findings provide evidence that physical touch by another individual, rather than mere presence, also has a strong calming effect on humans.

Drescher et al. (1985) confirmed in a subsequent study with 20 people that physical touch by another person leads to a significant heart rate deceleration. In line with this physiologically calming effect is the finding of Henricson (2008), who noted during intensive care of 44 patients that the 22 patients who experienced the nurse's gentle touch found it comforting.

Figure 4. Loving touch by family members and nurses has a calming effect and reduces anxiety in distressed patients.



Being touched lowered their level of anxiety significantly compared to the 22 controls (Figure 4).

Numerous reports by Triplett & Arneson (1979), Norberg et al. (1986), Fisher & Joseph (1989), Schoenhofer (1989), Mulaik et al. (1991), Moore and Gildbert (1995), Routasalo (1996), Routasalo & Isola (1996 & 1998), and McKie (2000) reiterate that human patients greatly benefit from being touched. A nurse's touch not only has a physiologically calming effect, but also one that is emotionally comforting and hence buffers psychological stress.

To be touched by another person is a calming, relaxing and pleasant experience (Figure 5) that is physiologically mediated by oxytocin and endorphins (Uvnäs-Moberg et al., 1993; Uvnäs-Moberg, 1997; Lund et al., 2002; Grewen et al., 2005; Light et al., 2005).

Touching is an ancient method of comforting and healing; it is used professionally in massage therapy and healing techniques that aim to promote well-being and ameliorate psychological and physical disease symptoms (Figure 6).

Da Costa et al. (2004) monitored the heart rate of 11 sheep, both in their familiar group and while they were isolated for 30 minutes, using remote heart rate recorders. Being separated was a stressful experience for them, causing their mean heart rate to increase accordingly from 94 to 113 beats per minute. When they could see a large picture of another sheep during isolation, their heart

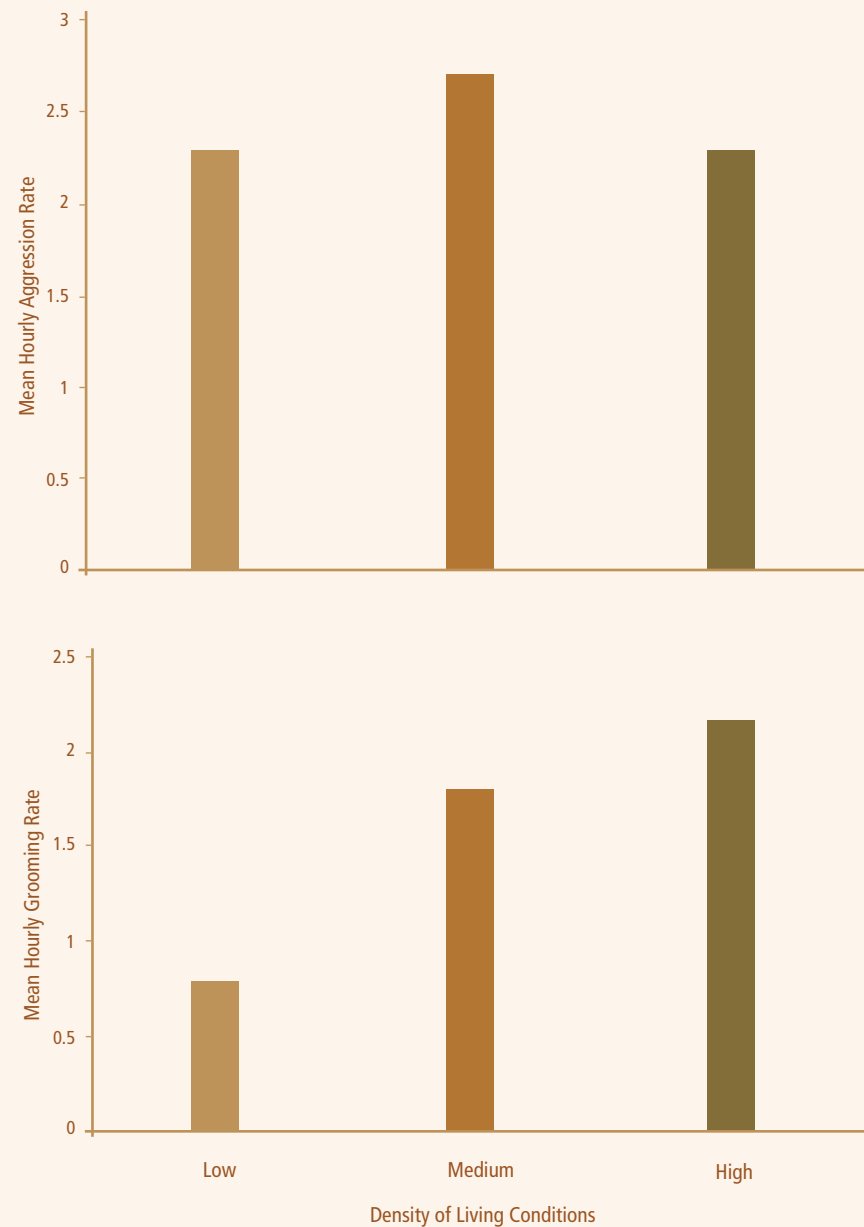


Figure 5. Being touched by another person is calming and reassuring.



Figure 6. Touch is used in massage therapy to relieve pain and distress.

Figure 15.
Relationship
between density
of living conditions
and grooming
engagement in
groups of rhesus
macaques.



De Waal & Aureli (1997) observed that chimpanzees employ the same “peacemaking” strategy, both to forestall aggression and reconcile after an aggressive dispute. For example, if an animal caretaker arrives with a bucket full of fruits, the apes will first rush toward each other, embracing reassuringly, kissing, and patting one another on the back (Figure 13).

Only then will they come forward to collect their share of the food. De Waal (1989) observed a group of 19 chimpanzees in an outdoor corral and noted a significant increase in friendly contact behaviors prior to daily feeding (Figure 14).

The same tension-mitigating strategy is useful when animals are confined in small quarters, leading to crowded living conditions.

Judge & de Waal (1997) compared the behavior of adult male rhesus macaques of breeding troops living:

- (a) in the wild, with no crowding;
- (b) in corrals, under moderately crowded conditions; and
- (c) in zoos, under intensely crowded conditions.

Unexpectedly, the mean hourly rates of the males’ aggression did not differ significantly between the uncrowded, moderately crowded and intensely crowded conditions, but there was a positive correlation between social grooming and the degree of crowding; the males’ grooming activity increased significantly with the degree of crowding (Figure 15).

This behavioral adaptation to crowding effectively controlled the risk of aggression and, at the same time, maintained positive social relationships even under potentially distressing living conditions.



Figure 16. By
placating their harem
male with grooming,
baboon females
reduce the risk of
becoming the male's
target of aggression
during crowding.

Figure 21. Amicably contacting the opponent makes two dogs quickly forget their aggressive dispute.

Cools et al. (2008) witnessed 1,711 agonistic conflicts among a large number of pair-housed dogs. The conflict was terminated in 606 cases (35 percent) by one of the dogs showing a friendly contact behavior, such as licking the lip corner of the opponent or inviting the opponent to play (Figures 21 & 22).



Butovskaya et al. (2005) showed in children that friendly touch and interaction not only re-establishes social harmony on the behavioral level, but also neutralizes the physiological stress, as measured in saliva cortisol levels, which is associated with social conflict (Figure 23).

Among 30 boys, aggressive conflicts and their consequences were observed during a summer camp. Mean cortisol levels 10 minutes after a conflict were significantly lower (1.1 ng/ml) when the two opponents engaged in reconciliatory behaviors than when they failed to do so (2.3 ng/ml).

Figure 22. Reconciliation after a serious conflict allows dogs to quickly change moods and engage in playful interactions, as shown by their typical play face.



Figure 23. Children often spontaneously touch each other after a dispute. This reconciliatory gesture protects them from the continuation of emotional distress and re-establishes harmony.



Table 1. Physiological correlates of a person grooming a dog.

	PERSON		DOG	
	resting	grooming	resting	being groomed
Blood pressure (mmHg)	87.6	84.4	91.0	87.7
Beta-endorphin (pmol/L)	3.1	8.0	1.2	2.8
Oxytocin (ng/L)	2.1	4.0	0.1	0.5
Dopamine (pg/L)	86.5	107.0	35.0	60.5

Blood plasma was analyzed for endogenous substances associated with a state of well-being and enjoyment—beta-endorphin, oxytocin and dopamine.

Compared to quiet resting, grooming the dog resulted in a significant decrease in blood pressure, both in the human and the dog, and a significant increase in beta-endorphin, oxytocin and dopamine (Table 1). The tactile interaction was calming and enjoyable for both (Figure 30).

Baun et al. (1984) also found in a study group of 24 people that subjects experienced a significant decrease in blood pressure while petting their dogs (Figure 31). Similar results were reported by Jenkins (1986).

Figure 31. Petting their companion has a physiologically calming effect for dog owners, as reflected in a lowering of blood pressure.



Touch Buffers Stress

Morgan (2008) studied the emotionally comforting effect of interaction with a companion dog versus a friendly person in 126 volunteers, who were exposed to a speaking task.

The subjects were significantly less anxious, as measured with the State Trait Anxiety Inventory (Spielberger et al., 1983), when they had the company of a dog than when they had the company of a person, or when they were alone (Figure 32).

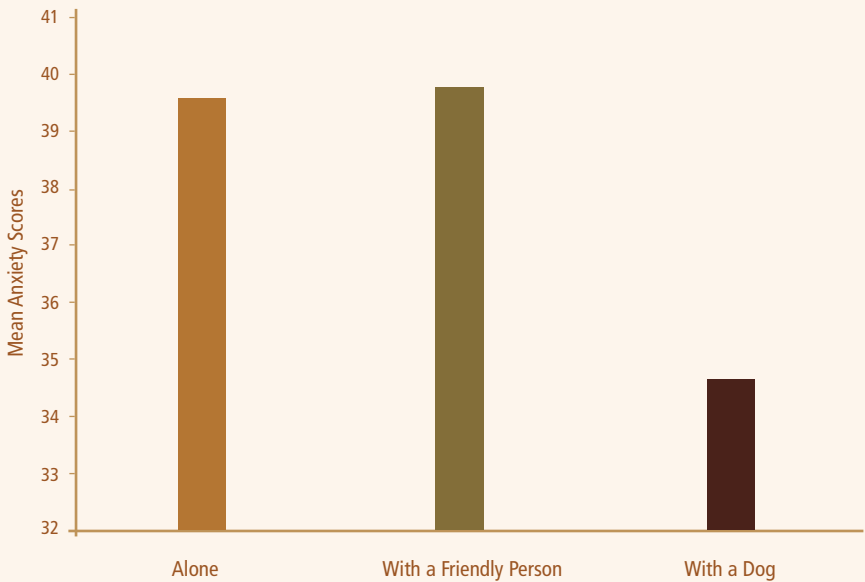


Figure 32. Anxiety levels of subjects exposed to a speaking task alone, in the company of a friendly person, and in the company of a dog.



Figure 33. The visit of a friendly person accompanied by a dog is a de-stressing experience for seniors, but not the visit of the person alone.

Figure 44. Dog owners spend more time outdoors going for walks.



These results provide evidence that pets, especially dogs, have a long-lasting, health promoting effect on people. Siegel (1990 & 1993) supports this assumption by prospectively following Medicare enrollees in a health maintenance organization for one year.

People who had a dog (n=202) or a cat (n=141) reported fewer doctor contacts over a one-year period than people who had no pets (n=593). On average, pet owners consulted a physician 8.1 times per year, while people without a pet visited a physician 9.7 times per year; the difference was of statistical significance. Owners of dogs, in particular, were buffered from the impact of stressful life events and made relatively little use of physicians. Compared with cat owners, dog owners spent significantly more time with their pet, especially outdoors (Figure 44).

Looking after a companion animal bears intrinsic responsibilities that make one feel useful and needed; one strives to remain or become healthy in order to continue caring for the pet. It is not uncommon for the healthcare system to find pet owners insisting upon early discharge so that they can get back to make sure that their pets are well taken care of (see Figure 35) (Benda & Lightmark, 2004).

Cole et al. (2007) investigated the influence of 12-minute visits by therapy dogs on patients with advanced heart failure. One group of 25 patients serving as a control group had no visitor while resting quietly, a

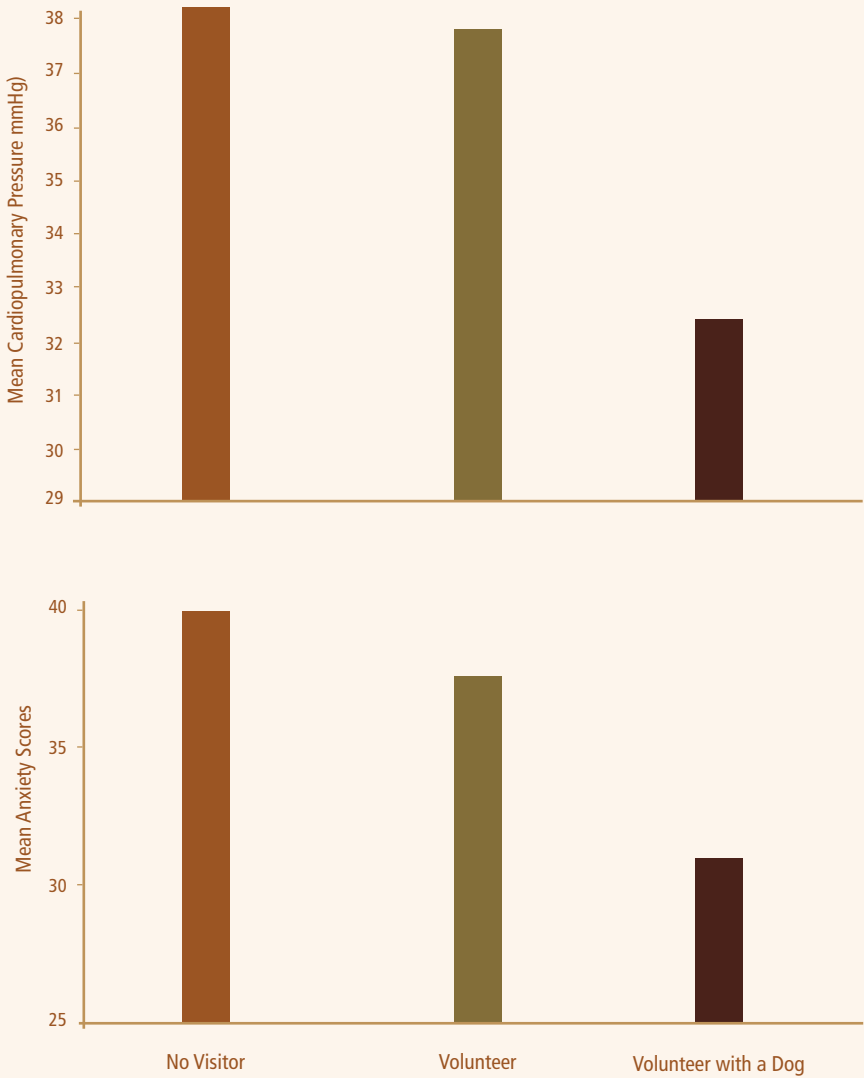
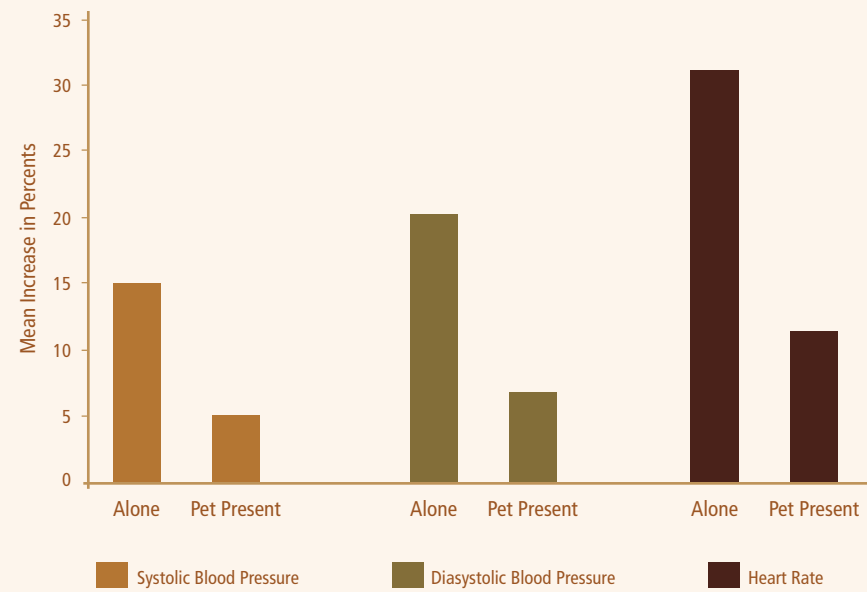


Figure 45. Effect of a therapy dog on cardiopulmonary pressure and anxiety of patients with advanced heart failure.

second group of 25 patients was visited by a volunteer, and a third group of 26 patients was visited by a dog accompanied by a volunteer.

Patients who received a visit from a therapy dog accompanied by a volunteer had significantly lower cardiopulmonary pressures and significantly lower anxiety scores than patients visited by a volunteer only and patients who were resting alone (Figure 45). Compared with the therapy dog, the volunteer's influence on the patient was insignificant. The presence of the dog created a healing environment that allowed the patient to be more relaxed and experience more ease of mind.

Figure 60. Cardiovascular stress response of 24 people while giving a speech alone, versus with their pet being present.



who had their dog or cat accompanying them; the pets were roaming freely in the test room, but their owners had no physical contact with them.

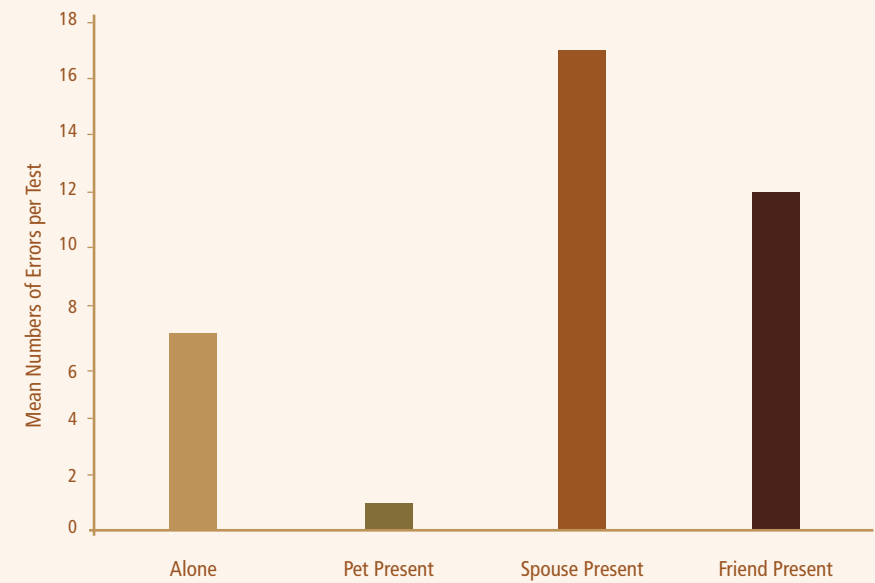
The subjects of both groups showed an increase in heart rate and blood pressure while giving a speech, but this stress response was significantly lower in people who had their pet with them than in those who were alone. The presence of the pet had an anxiety-buffering effect that the individuals without pets were missing (Figure 60).

Allen et al. (2002) further studied the stress-buffering effect of a pet in comparison to a spouse and a friend. Cardiovascular recordings were taken in the homes of 60 people who were exposed to a five-minute mental stressor (serial subtractions) alone, with the pet, with the spouse, or with a friend present in the same room, but not physically touching the subject.

Table 3. Mean stress response to a mental challenge of 60 people in different social support environments.

	CHANGE IN HEART RATE	CHANGE IN BLOOD PRESSURE
Alone	+33%	+19%
Pet present	+ 7%	+ 8%
Spouse present	+45%	+40%
Friend present	+41%	+41%

Figure 61. Arithmetic performance of 60 people in different social support environments.



The response to the stressor—as measured in changes in heart rate and blood pressure, relative to resting values—was significant when the subject was alone. The stress response was significantly reduced when the pet was present, but it was increased when either the spouse or the friend was present (Table 3).

While the presence of the pet calmed the subject and reduced his or her tension while doing serial subtractions, the presence of the spouse and the friend probably made the subject nervous, rather than composed. In line with this assumption, the subjects made significantly fewer errors in the serial subtractions when the pet was present than when they were alone, or when the spouse or the friend were present (Figure 61).

The dog or cat companion silently and unconditionally emanated a sense of ease and emotional comfort that was absent when a human companion unwittingly created tension by or his or her mere presence.

Animal companions are endowed with an array of biologically inherent qualities that the average human companion is lacking. Pets are psychologically always “safe,” non-threatening, non-judgmental and non-competitive. Dogs especially are loyal, lovable friends, silently listening confidants, consistent sources of psychological support and affection who make relatively few demands, do not hold grudges—even when they were abused—are always happy to see their human companions after an

Figure 68. Caring for a bird improved the health of seniors.

Colombo et al. (2006) assessed the health status and well-being of 144 elderly people in seven retirement homes. The participants were randomly divided into three groups, who were given a bird (n=48), a plant (n=43) or nothing (n=53).

After three months, there was a significant improvement in perceived health for the group that cared for the bird (Figure 68). Although not statistically significant, there was also an improvement in health status in the group caring for the plant, while the control group's health status was relatively low.

Caring for the bird also increased the subjects' general well-being: They experienced significantly less anxiety and depression, better physical function, and more life satisfaction. This was not the case for the subjects with the plant, nor for the subjects who served as a control.



CHAPTER 5

Conclusion

The healing, calming and stress-buffering effect of companion animals is increasingly recognized by professionals. In a survey, for example, 57 percent of psychiatrists, 48 percent of psychologists and 40 percent of family practice physicians reported that they prescribe their patients companion animals, especially dogs, to combat loneliness, depression, inactivity, stress and a variety of physical ailments, including high blood pressure, blindness, recuperation from surgery and various diseases associated with old age (Arkow, 2004).

“What is man without the beasts? If all the beasts were gone, man would die from a great loneliness of the spirit. All things are connected.” –Chief Seattle, 1854

Through touch, all living creatures—including humans—express this basic interconnectedness. That is why touch is so comforting and healing. It is a reflection of the unconditional love that we experience, especially in the presence of companion animals. When we gaze into the unfathomably still eyes of a dog, cat, horse or any other animal, we are looking into the soul of nature, where we are all one; it gives us a sense of recognition of our own sacred, universal self. When we touch another living being without any expectations, we experience this sacred connection in a very deep, healing and tangible way.



Figure 69. Children naturally experience a deep connection to animals, especially their pets. This connection is based on mutual unconditional love.