

Dogs help to heal.
Explaining the social, psychological and somatic
effects of Animal-Assisted Therapy.


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The wisdom of our forebears

Hippocrates (469-377 BC): "The natural healing force within each of us is the greatest force in getting well"

Hildegard von Bingen (1098-1179): „viriditas“ (D. Sölle: "Green power", a healing power based on contact to nature) is a great help in healing body and mind




coupled with modern expert
knowledge:

“There is convincing empirical evidence that close contact with nature, animals and plants has a beneficial influence on health and quality of life.”
(EU Commission “Cooperation in the Field of Scientific and Technical Research”, 2007, p. 5)
This aspect is slowly being acknowledged by the
healthcare sector.

Animal-Assisted Therapy

- Researchers and practitioners from different disciplines (psycho-, ergo- and physiotherapists and others) are working together to develop therapies using animals.
- Terminology and theories (modules) have been compiled
- Continuing vocational training courses have been conducted



Beneficial health effects: the example of longer survival rates following a heart attack

Study by FRIEDMANN (1982)

- 92 patients (heart attack; Angina pectoris)
 - After 1 year: 14 had died
 - 3 (of 53) had a pet, 11 (of 39) had none
 - "Survival rate" with pet: 95% (without pet: 72%)
 - No other variable explained this variance!

Repeat study in 1995 (with Thomas) involving 369 heart attack patients
or with life-threatening cardiac dysrhythmia:

Dog-owners survived longer ($p = 0.02$), while cat-owners died earlier ($p = 0.03$) - they had less social support and were mainly women.

Explained by "endorphins" and relaxation



Health "through" animals

Study by ANDERSON et al. (1992):
4957 volunteers without a pet, 784 with a pet
(a socio-demographic cross-section of society)
"lured" to the clinic

- Pet-owners: lower systolic (not diastolic) blood pressure
 - Pet-owners: lower plasma triglyceride levels
- Male pet-owners: better cholesterol levels (although they smoked more, ate more meat and "take away food", they probably moved more)
 - No differences in BMI
- Explained by parasympathetic processes

Health "through" animals:


Study by RAINA et al. (1998; 1999)

1000 elderly Canadians interviewed on their social-emotional contacts (including pets)

Results then matched with health insurance records

- Pet-owners: 30 contacts with the healthcare system (Comparable figure: 37 contacts)
- Pet-owners: 53,000 \$ health insurance costs (Comparable figure: 69,400 \$)
- Pet-owners: 8 days in hospital (Comparable figure: 13 days)
- Living with a pet is closely associated with social support through other people

The feeling of being needed, being able to care for someone, more social life



Representative, long-term data from Germany

B. Headey and M.M. Grabka: The relationship between pet ownership and health outcomes.
www.diw.de

Over 10,000 people interviewed in 1996 and 2001,
representative of Germany (SOEP)

- Cross-sectional comparison of visits to the doctor in the last 3 months:

1996: Pet-owners:	2.8	2001: 2.7	.
Non-pet-owners:	3.0	3.2 (Diff.: 18.5 %)	.

- Eliminating the effects of gender (women: 24% more often), age (oldies: 1.4% more often), partnership (6.7%) and income (the richer 16% less often), we find that
- pet-owners went to the doctor 7% less than others in 2001.

Representative, long-term data (2)

B. Headey und M.M. Grabka: The relationship between pet ownership and health outcomes.
www.diw.de

Long-term partial analysis of 3977 pet- and home-owners:


1996 pet- and home-owners (larger families, more living space, less luxury, more in suburban locations, older people demanding less from children and more independent vis-à-vis other people)

- Pet-owners went to the doctor 10% less (2001),
- longstanding pet- and home-owners (1996) even 13% less (2001)
- and when they were longstanding owners of animals in 1996 and 2001, 16% less.
- Do we see here a different lifestyle, different ways of living together? What counts is the way a relationship is lived!

People living with a pet

Federation of European Companion Animal Veterinary Associations (2009)

- go to the doctor less often
- are quicker to overcome stress caused by loss and serious adversities
 - are more stable emotionally and generally healthier
 - survive serious cardiovascular conditions longer
- Patients suffering from high blood pressure can prevent pressure rising further when under stress through stroking a dog or cat
- Pet-owners have lower cardiovascular risk factors; they have lower systolic blood pressure and their serum triglyceride levels are also lower



Socio- and psychosomatic effects

While somatic effects (training of circulation , muscles, joints, digestion; sensorimotor training and integration; coordination; vigilance, etc.) are important

- psychological and social factors also play a role.

A propos "Explanation" 1: Social psychosomatics


Singles

- More often ill
- Single men in Germany live 3.6 years less, are more "at risk" after the death of their partner (47%)
 - Pets are "social catalysts"

Pets as social catalysts

- People with dogs are often socially "more attractive"
 - Make contact more easily
 - Body contact without inhibitions
 - Sympathy bonus (wheelchairs; assessments of photos)

Direct influence on well-being: in the way things are experienced and in possible physiological explanations (endorphins, oxytocin, lower blood pressure through relaxation, etc.)



A propos "Explanation" 2: Relationships and Social Psychosomatics

- Subjectively lonely, "unloved" people
 - Reduced immune competence
 - More often psychosomatic problems
 - When taken ill, worse outlook
 - More negative affinity

Dogs offer faithful closeness, give and demand rewarding interaction, allow trust.

The helpful effects of living with animals (quality of life) are similar to the social-emotional support given by people (Garrity und Stallones, 1998)

Animals don't judge

People - even with the best intentions - do
judge


- smarter - more stupid
- more beautiful - uglier
- more successful - less successful, etc. etc.

People judge and like dealing out recommendations

They use their heads (the cognitive side) and not their feelings
(often distancing themselves)

Dogs are not like that (General Schwarzkopf!)


➤ "Cinderella effect"



A propos "Explanation" 3: Animals "work" in a client-focused manner

The optimisation principle in Rogers' humanistic therapy states that: Development/therapy is "successful"

- when **unconditional positive regard** is experienced,
- when the coach/therapist is **authentic**: Rogers, (1973, p. 177):
A person becomes increasingly authentic through "listening more and more to all aspects of his physical and emotional knowledge, discovering that he is more and more prepared, with greater sureness and depth, to be that person closest to his own authenticity."
- when the client is met by **empathetic understanding**
- when what the client says is accepted **without doubt and without judgment**
 - **Dogs - those "obligate social world champion of adaptation" - constantly pay attention to what the leader of the pack is doing.**



A propos "Explanation" 4: Depression and life expectancy

J. Blumenthal (Lancet, vol. 362): 817 older men who had undergone bypass surgery were monitored over a five-year period:

- Nearly 40% suffered from depression, and there were twice as many deaths in this group as in the non-depressed group.
- Minor depressive episodes not lasting longer than 6 months had no negative impact on life expectancy.

With dogs: Recreational activities with more fun and more enjoyment, less 'negative affectivity'.


Garrity et al. (1989): a strong attachment to a pet is associated with significantly less depression in low-spirited older people (not recognisable when in "normal" spirits)



A propos "Explanation" 5: Personal factors

Negative affectivity is a characteristic of all illnesses, but especially psychosomatic ones

- Serpell, 1991: Having a pet can help counteract minor health problems (headache, aching joints, difficulty concentrating, constipation, shortness of breath, etc.). Effect is longer-lasting for dog-owners than for cat-owners.
 - Pets help people to find out what they are in need of and to ask for their needs to be met
 - Model learning: living in and accepting the here and now



How do pets affect us? A few neuro-biological findings

Human beings and animals are closely linked

- Evolution has prepared human beings to live with other human beings, but also with animals and nature:
 - For more than 99% of mankind's history, we have been living with animals, plants and natural forces
 - Human beings were always dependent on exact knowledge of their natural environment, requiring them to "read" an animal's behaviour and know what it was going to do next
- Over 98% of our DNA is the same as that of chimpanzees, 70% the same as that of mice, 30% as that of fungi (though not all functions for producing protein, enzymes, etc. are to the same extent "switched on").
 - In their deeper levels (nervous and hormonal system for basic social relations) human beings are like mammals



The starting point: Biophilia

Evolutionary affinity to other species:
We were prepared for a bonding
with other creatures in our bio-cultural evolution

- the old interaction “programmes” are still there, despite a few thousand years of “civilisation”.



Biophilia

We experience this affinity for instance in our tendencies to care for life, to bond with others, to share readiness; it can be seen in our reverence for life, for the beauty of living beings, but also in our rejection of spiders, slimy things, etc.

Wilson, E.O. (1984) *Biophilia: The human bond with other species*.
Cambridge: Harvard Univ. Press

Kellert, S.R. (1997) *Kinship to mastery. Biophilia in human evolution and development*. Washington D.C., Island Press

Human beings are prepared for relationships with animals

- In situations involving man-animal relationships certain neurological and hormonal processes take place - processes that we are unaware of (Buss, D.M. (2005). *The handbook of evolutionary psychology*. Hoboken, N.J.: Wiley & Sons)
- From a neurological perspective, we have the same "social tools" as vertebrates, influencing our social and sexual behaviour, the way we care for our offspring, the way we mate or the way we deal with stress (Kotrschal, K. (2009) *Die evolutionäre Theorie der Mensch-Tier-Beziehung*. in: C. Otterstedt und M. Rosenberger (eds.) *Gefährten - Konkurrenten - Verwandte*. Göttingen: Vandenhoeck & Rupprecht, 55-77.),

Analogue (not digital) communication explained

Analogue communication in particular permits interaction transcending species boundaries, contributing to their effects (communicating authentically)

- the look on our face, our gestures, voice modulation, what our eyes are saying, the language of touch
 - The language of (early) relationships
- The language of intensive experience, of existential importance (love, grief, fighting, anger)

An 8-week old dog can already "understand" a human being on an analogue level, though not (yet) on a verbal/digital level

Watzlawick, P., Beavin, J.H. und Jackson, D.D. (1996). *Menschliche Kommunikation*. Bern: Huber



The most important biophilia "vehicle": Empathy

A key process in inter-species communication

A sympathetic vibration, a correlation between
what we perceive in others and what we feel ourselves.

Frans B.M. de Waal (2008). Putting the altruism back into altruism: The evolution of
empathy. *Annual Review of Psychology* 59, 279-300.

Feelings experienced on multiple layers of
the nervous system
(communicated in an analogue manner)



Different kinds of empathy

- Emotional and motoric contagion

Done automatically, without learning, e.g. the way birds flock together, yawning, giggling;
Horse - horse - rider;

- Sympathetic concern

involving experience, learning and processing

Binti Jua in Chicago Zoo

Masserman et al. (1964): Schmerz des anderen Affen verhindern - Selbstschutz zur Vermeidung negativer Erregung?

- Transfer of empathic perspectives

Mental adoption of emotions felt by others:
The substitute experience of an electric shock



Explanation I: Mirror neurons

- Neurological base for empathy?
- for matching (synchronous) behaviour
 - Learning by copying?
- "Understanding" the existential actions of others (discovering what 'makes them tick')

Rizzolatti, G. und Sinigaglia, C. (2008). *Empathie und Spiegelneurone. Die biologische Basis des Mitgefühls*. Frankfurt: Suhrkamp.


Bauer, J. (2008) *Warum ich fühle, was Du fühlst*. Munich: W.Heyne

Feeling safe with humans, monkeys or crows - effects transcending species boundaries?

Explanation of empathy II

As one example: the hormone **oxytocin**: Prepares human beings for pro-social interactions with other higher species: The "endocrinological equivalent of candlelight, background music and a glass of wine".

Oxytocin, the "favourite child of the peptide revolution" (Pert, 2001), of great importance for motherly behaviour, for mating behaviour and for a "rewarding" partnership, for the social memory, for "reading" subtle expressions (Domes et al. 2007), for trust in people (Kosfeld et al. 2005)



Explanation II: Oxytocin

"Oxytocin levels in a dog increase when stroked by its owner, as does the owner's own oxytocin"

Temple Grandin (2005).

Animals in Translation. New York: Scribner, p. 108.

Oxytocin is emitted by pets and humans through touching each other

Kerstin Uvnäs Moberg (2003),

The Oxytocin Factor. Cambridge, MA, Da Capo, p. 131

Biological preparation for relationships -
boosts the "calm and connecting system"



The positive effects of stroking

a further explanatory aspect

Stroking (some 40 times a minute) leads to the following effects in rats (Kerstin Uvnäs Moberg, 2003. *The Oxytocin Factor*):

Reduced aggression

Increased curiosity

Decreased fear and calm

Increased social interaction

Decreased pulse rate and blood pressure

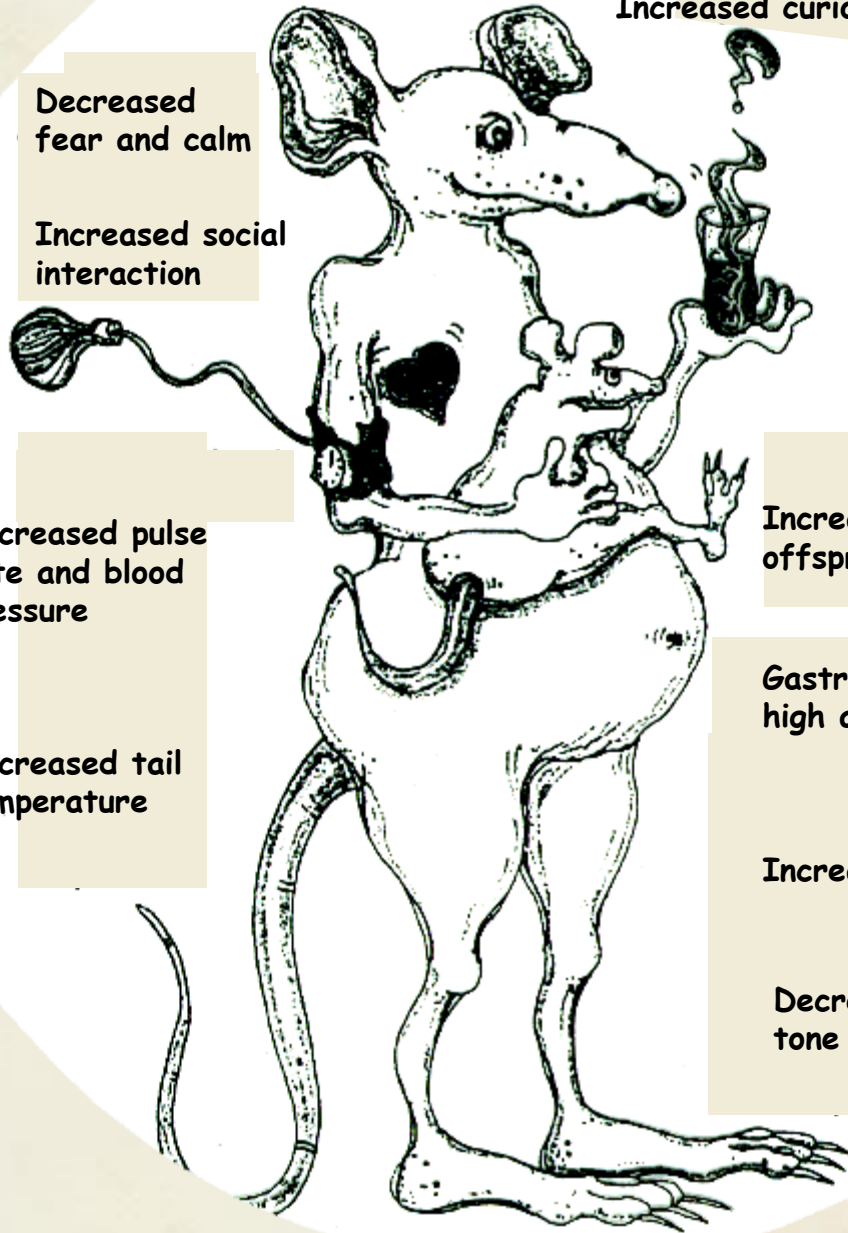
Decreased tail temperature

Increased binding to offspring and partner

Gastrointestinal tract high activity


Increased pain threshold

Decreased muscle tone



Relationships and social psychosomatics


- Following the breakdown of social relationships, people become more susceptible to illness
 - Singles suffer more heart attacks than people living in a relationship
- People living in relationships seen as positive are more effective in overcoming stress (grief, redundancy, rape, illnesses)
- There are fewer cases of depression among happily married couples than with unhappy couples or singles
 - Improved immune competence
 - The effect of a dog as a "social catalyst"
 - The sympathy bonus
 - "Cinderella Effect"



Physiological and psychological research and experience

Humans are dependent on social feedback. In particular in early phases of synaptic development, steady and reliable care and attention from 'psychological parents', smiles, stroking and friendly eye contacts promote stable well-being and ties - from both a physiological and psychological perspective.

Dogs facilitate feedback and cooperation within the peer group, can help reduce the incidence of stress preventing children from learning (school dogs), and can help improve personal efficiency.



Why the need for early friendly relations?

Brain researchers (e.g. Roth 2007): For neurobiological reasons, the basic traits of one's personality are stabilised at an early age - **prevention of violence**

A child's brain with its "genetically remembered" knowledge (cf. evolutionary relation-building preparation) becomes active at a very early age (children are very much motivated to learn things), and is deeply influenced through social experiences in relationships (even though existing programmes remain adaptable throughout life).

Importance of experiences, role models - even when coming from young dependent animals

Thank you for your patience!

