

CHAPTER 8

HUMAN-ANIMAL INTERACTION THEORIES - A CRITICAL ANALYSIS

8.1 Introduction

Interaction theories were explained in terms of *attentionis enges*. As often happens in behavioural sciences, however, the same word may have different meanings and different words may have the same meaning. In evaluating existing human-animal interaction theories, it is thus necessary to first discuss the meaning of terminology.

8.2 Terminology

As for all identifiable, normal or expected behaviour patterns, attention needs can be experienced on a continuum. Such a continuum can lead to the use of different terms to describe the same underlying need. Particularly, terms such as nurturing, dependence, affiliation, love, attachment, bond, social facilitation, companionship, relationship, friendship, social symbiosis (mutualism), touch or other bodily contact and shared exercise or recreation could fulfil *attentionis engens*. These terms will be discussed briefly in order to place them in attention need context.

- Nurturing and dependence

The term nurturing is usually used for parental behaviour of humans as well as animals.²³⁰ In ethograms for animals the basic needs for care-giving and care-seeking are described as epimeletic and etepimeletic behavioural systems. Many interpretations may be given to such behaviour, but it could be an indication that development cannot take place without special attention from the nurturing party. Such behaviour could also be redirected or displaced on an interspecies basis.²³¹ Katcher and Beck¹¹⁷ indicated that this could be one of the motivations for successful human-animal interaction and

this was later supported by other studies.⁹⁵ Nurturing is thus more than feeding and security.

- Affiliation

The Integrative Neurobiology of Affiliation was recently highlighted in the Annals of the New York Academy of Sciences, Volume 807.¹⁷³ The publication represents the proceedings of a conference sponsored mainly by The National Institute of Mental Health in the USA:

"The central purpose and theme of this meeting was to examine the biological and especially the neural substrates of affiliation and related social behaviors".¹⁷³

These studies were based on an intraspecies level, but were also meant "to improve our understanding of human interaction". This places the physiology of human-human, and for that matter human-animal interaction, on the cutting edge of mental health studies. One of the editors is also a psychiatrist. It was stated that affiliation as an independent topic had not been studied seriously before, as recently as 1990. Affiliation is defined as social behaviour that brings individuals closer together and includes positive forms of association such as attachment, parent-offspring interaction, pair-bonding and coalitions. Affiliation provides a social matrix within which other behaviour may occur. Despite the fact that social behaviour is dealt with in psychology, sociology, anthropology, psychiatry and evolutionary biology, little attention has been directed at the regulatory physiology and neural processes that subserve affiliation. The editors concluded:

"The work represented in this volume also has important implications for the study of serious neuropsychotic disorders. For example, episodes of certain of these disorders can be induced by social stressors; in

other disorders a marked decrease in affiliative behaviors is a prominent feature of the patients' difficulties. Furthermore, abnormalities in animal systems implicated in the neurobiology of affiliation have also been documented for major depression in humans. At the conference, the evolutionary and mechanistic perspectives converged on the theme that studies of affiliative behaviors cannot be fully interpreted in isolation from other social behaviors; neither can they effectively be isolated from the biological and social contents that shape their expression".¹⁷³

- Love and affection

Love, as explained earlier,¹⁵² was seen by the Greek philosophers as an experience varying in intensity, viz platonic love (friendship), agape (concern for others), philia (compassion) and eros (romantic love). All these variations indicate levels of intensity on the one hand, but on the other hand they also indicate expressions of a special fulfilment of *attentionis egens*.

- Attachment and bonding

Since Bowlby's²³² work on attachment between infant and mother, it has also been proven that infants can develop bonds with individuals or objects other than the mother and that relationships other than the mother-infant dyad can also be characterised as attachments. Attachment is based on a longer term successful positive interaction.^{233,234,235}

- Social facilitation

The social facilitation role of animals, as originally described by Messent and Serpell²³⁶, is behaviour where animals can play a role in enhancing human to human contact and communication. In such cases, animals act as a trigger mechanism to fulfil the social needs of humans.

- Companionship, relationship, friendship and social symbiosis
Companionship, relationship and friendship may all be explained by means of the different ways the ancient Greeks explained love. The basis for such positive interaction is that the need for attention is fulfilled in a non-threatening and even pleasurable and satisfying way. Mutual trust between the parties concerned is usually implied for success in this interaction, which is always a two-directional experience.
- Touch and other bodily contact
Touch and other bodily contact such as stroking, is behaviour which is more explicit than a positive feeling. Close contact adds to the other senses of sight, smell and hearing with regard to positive interaction.
- Exercise and recreation
Play and other mutual physical activities, such as walking together, are forms of recreational interaction which can fulfil attention needs by means of physical excitement.²³⁷ Social behaviour which is triggered by attention needs can be represented by various types of interaction, including physical activities, communication and emotional feelings.

8.2.1 *Attentionis egens*

It is clear that it is not necessary to fall into the semantics trap when positive interaction is defined in terms of *attentionis egens*. All descriptions with their different connotations, interpretations and perceptions may be useful and acceptable in describing aspects of this basic, normal need. The term *attentionis egens* is therefore inclusive rather than exclusive. It also allows for the description of the need on the different levels or in different contexts, such as physiological, biological, social, emotional and psychological. Furthermore, the physiological basis for the exhibition of the behaviour is present in man and animal. The well-known ethologist, Michael Fox,²³⁷ concluded his studies of such similarities as follows:

"Between animal and man are many similarities.

The animal in man shares similarities in basic brain structure, emotions, needs and in communication, development, and socialization in infancy with other members of the animal kingdom. Greetings and other social rituals, social distance and personal space, and biorhythms and internal time are seen in both human and non-human animals alike".²³⁷

In an attempt to explain the phenomenon of human-animal interaction, a number of papers have been published on identifying motives for people keeping animals, the establishment of correlations between certain general personality traits and ownership, attitudes and perception towards and of animals by people, and the different roles animals play in human life.^{238,239,240,241} These contributions, however, did not provide a theoretical framework for therapy. For psychotherapy specifically, one cannot focus on all the roles pets may play, but only on those which have a defined psychological effect. Bruce Fogle²⁴² expressed this area of interaction in the following way:

"It's a false impression however, that pet-keeping is an unnecessary luxury, a frivolous invention of the idle rich. Most so-called primitive cultures keep animals for companionship without any other obvious practical motives in mind".²⁴²

Human-animal interaction must thus have psychological effects which are more than meets the eye. Such "invisible" or "unmeasurable" effects could be described as fulfilling the need for attention on an interspecies basis.

8.3

Existing theories on human-animal interaction

Despite any previous attempts at establishing theories, it was believed during the late eighties that there is still a lack of a

coherent theory to explain human-animal interaction.²⁴³ Proposals for such a theory will now be discussed in chronological order.

8.3.1 **Brickel: 1982**

Brickel²⁴⁴ published an article, "Pet-facilitated psychotherapy: a theoretical explanation via attention shifts". The argument was that the manner in which pets reduce emotional discomfort is theoretically explained by the competing-response theory of extinction via attention shifts. Using this model, pets are viewed as emotionally distracting stimuli that allow for exposure to, instead of avoidance of anxiety-generating stimuli. Therapist-directed alternative response patterns are developed in this way.

Pets are viewed as a form of stimulus for human behaviour and pet behaviour as a form of reward for human behaviour towards pets. When two humans interact positively, each serves as a stimulus for the other and this is also true of human-animal interaction. This approach is representative of the learning theory of a stimulus-reward relationship.

8.3.2 **Kidd and Kidd: 1987**

The editor of *Anthrozoös* opened a debate on a theory of human-animal interaction studies by asking leaders in the field to respond to an article by Kidd and Kidd,²⁴³ titled "Seeking a theory of the human-companion animal bond". They stated that studies already undertaken in this field have been based on animal-animal, human-human and human-object relationships as analogous theories most likely to provide the comprehensive inductive, deductive and functional theoretical bases needed. They suggested that the weaknesses of each model should be rigorously analysed for similarities and differences and that those data that do not seem to fit any of the model analogues, must be pinpointed for more exacting research. They defined a theory as a set of related statements that seem to explain satisfactorily a variety of apparently related events, data or results. It should

therefore provide a suitable organisational method, an acceptable explanation and a reliable prediction for future studies. Their conclusion was:

"The best that can be said is that sometimes, under some circumstances, and in some ways, human-animal relationships are analogous to animal-animal, or human-human, or to human-object relationships".²⁴³

For these authors the theoretical formulations, as discussed, were inadequate and incomplete.

In response to the article, Herzog and Burghardt²⁴⁵ felt that the paper did not provide significant new insight into the question of why humans form intense relations with members of other species. They were also of the opinion that the proposal of a theory of this nature is premature, because the field of study is still new and relations between animals are diverse and complex. Even in the field of human psychology, there is still a need for a unifying theoretical perspective.

Lawrence²⁴⁶ said that conclusions are a long time away, but her interest lies with those people who do not keep animal companions.

Messent²⁴⁷ believed that:

"It is my contention that if a positive selective reason could be found for affiliative interspecies relations (such as attention needs: author), it would go some way forward in providing a testable theory".²⁴⁷

Rollin²⁴⁸ was not convinced that models are needed to explain phenomena in human-animal interaction. He stated that anecdotes about interaction with animals, which all people share and

which are immortalised in literature, tell more about human-animal interaction than "scientific" surveys do.

Serpell²⁴⁹ suggested that perhaps the most fascinating aspect of research on human-animal relationships is its potential for providing a theoretical bridge between animal and human studies.

Kidd and Kidd's²⁴³ reply to these opinions on their proposal did not add new arguments, but merely either agree or disagree on aspects mentioned by their peers.

8.3.3 Case: 1987

Case²⁵⁰ was of the opinion that, because of the current interest in pets and their therapeutic effects, a need has developed for a comprehensive model of pet ownership. She proposed to use a "web model" designed to explain organisational computing systems as a useful metaphor for dog ownership. The web model considers the resources to be an ensemble of equipment, applications and techniques, with costs and benefits only partially identifiable. A complex infrastructure is necessary to support the resource. Both resource and infrastructure are social objects, highly charged with meaning. However, not every aspect of the web model fits dog ownership perfectly, since some parts are specific to the application of technological systems in organisations.

8.3.4 Bergler: 1988

Bergler²⁵¹, a psychologist, came up with a comprehensive model to explain human-animal interaction. His proposal is based on weighing up psychological cost and benefit factors and if the benefits are more important, it may lead to an experience that enhances well-being and quality of life. He referred to the importance of need and the perceived probability of need satisfaction. Some of the psychological benefit factors are affection, socialibility, closeness to nature and security (Fig 8.1).

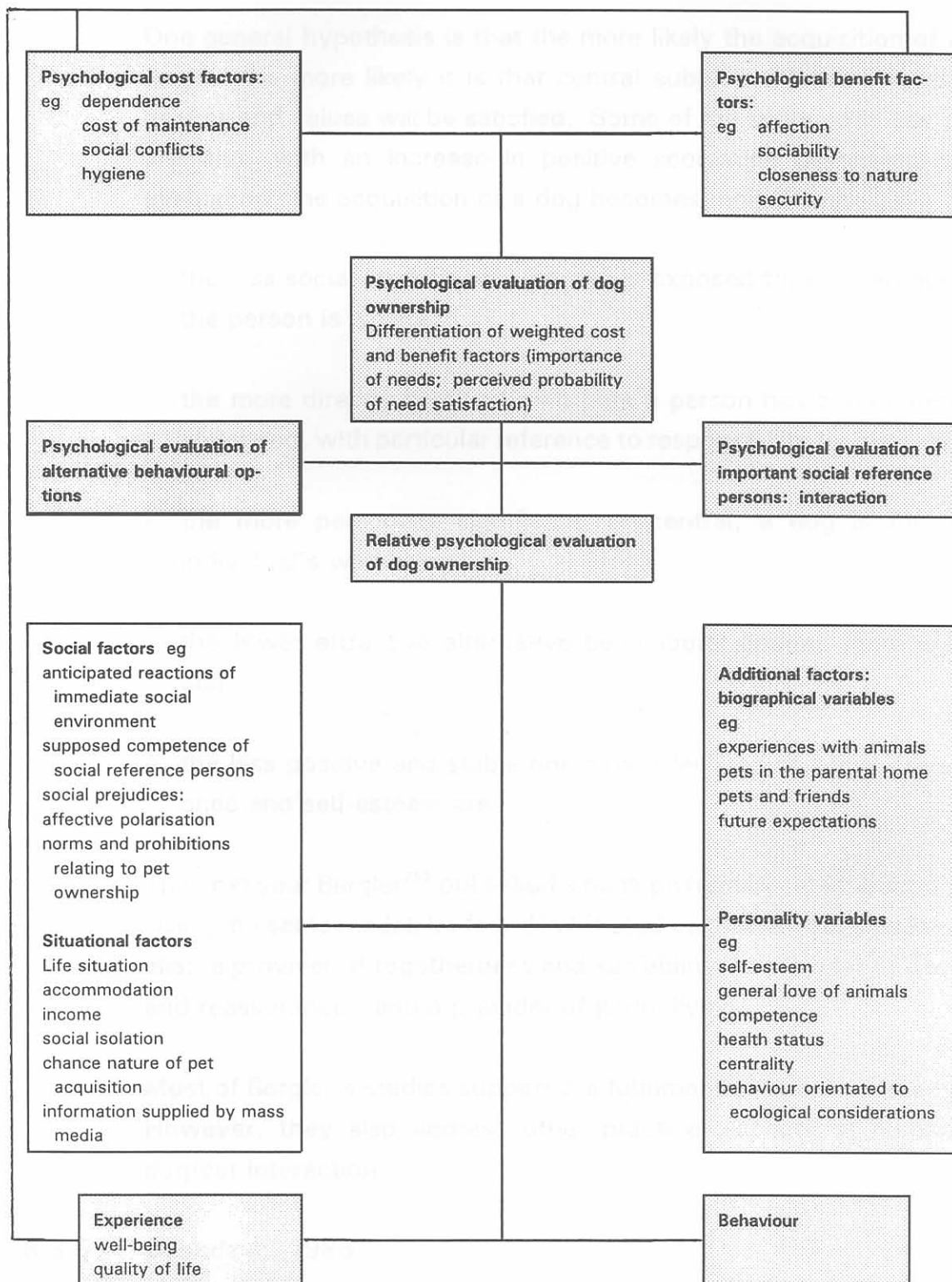


Fig 8.1: Proposed theoretical model according to Bergler 1988, p82²⁵¹

One general hypothesis is that the more likely the acquisition of a dog is, the more likely it is that central subjective (basic) needs, desires and values will be satisfied. Some of the subhypotheses²⁵¹ are that, with an increase in positive scores on psychological evaluation, the acquisition of a dog becomes more likely:

- the less social stimulation a person is exposed to, i.e. the more the person is isolated;
- the more directly involved with pets a person has been during childhood, with particular reference to responsibility for pet care;
- the more personally significant, or central, a dog is for to individual's well-being;
- the fewer attractive alternative behavioural options there are; and
- the less positive and stable one's own feelings of social assurance and self-esteem are.

The next year Bergler²⁵² published a book on human-cat interaction. Using the same model, he found in his studies that the cat was *inter alia*: a provider of togetherness and sociability; a provider of calm and reassurance; and a provider of joyful living.

Most of Bergler's studies support the fulfilment of attention needs. However, they also address other practical aspects of human-dog/cat interaction.

8.3.5 Odendaal: 1988

Odendaal²⁵³ proposed a theory to explain companion animal ownership and specifically how it can precipitate in veterinary practice. Based on a historical and cross-cultural literature study and a survey among veterinary clients (n = 600), it was concluded

that people are involved with companion animals for mainly two reasons, viz psychological reasons and reasons associated with the animal's natural abilities, also called utility reasons. The latter include economic involvement with animals and the basic care of the animals. Although many psychological and social reasons were given as to why people keep companion animals, most of them could be associated with attention needs. The following model was provided to link reasons for keeping animals and veterinary consultations (Fig 8.2):

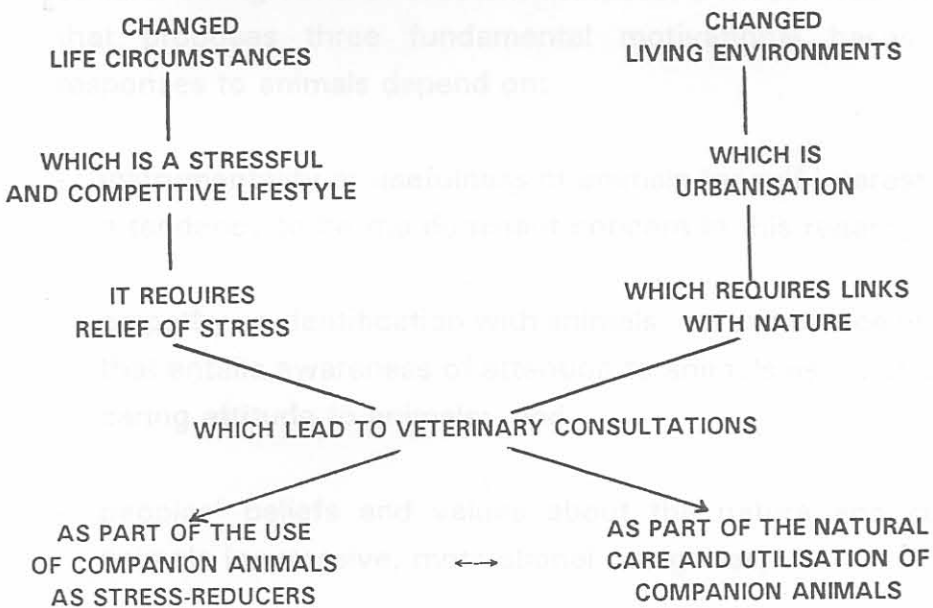


Fig 8.2: Clients' needs to keep companion animals according to Odendaal, 1988, p162²⁵³

8.3.6 Doi: 1991

Doi²⁵⁴ used a concept deriving from the Japanese word "amae" to explain the bridge between dependence and attachment - two conceptually different states. The word refers primarily to what an infant feels when it seeks its mother, but it is the same feeling in an adult who is emotionally close to another. The feeling of "amae" is not mediated by word, though it can be acknowledged as such a reflection. Also, when frustrated, it can lead to a desire for such a

feeling. Its central importance is true also in non-Japanese contexts and examples from French and American stories were used to indicate universality. The psychology of keeping companion animals can also be understood in terms of "amae".

8.3.7 Hills: 1993

Hills²⁵⁵ addressed the theoretical grounding of the human-animal relationship from the perspective of the motivational basis of attitudes toward animals. Building on recent developments in attitude theory and integrating themes from the historical and cultural background to Western attitudes, a model was developed that proposes three fundamental motivational bases, where responses to animals depend on:

- instrumentality or usefulness of animals for self-interest, having a tendency to be the dominant concern in this regard;
- empathy or identification with animals: an experience of animals that entails awareness of attention to animals associated with a caring attitude to animals; and
- peoples' beliefs and values about the nature and status of animals (expressive, motivational categories).

8.3.8 Wilson: 1994

Seven years after the debate by Kidd and Kidd,²⁵³ Wilson²⁵⁶ published an article in *Anthrozoös* on "A conceptual framework for human-animal interaction research: the challenge revisited". As in the previous case, the editor of the journal asked leading scientists in the field of human-animal interaction to comment.

Wilson²⁵⁶ claimed that research has shown that pets can lower blood pressure, heart rate, anxiety, decrease depression and enhance social environments, but that little attention has been paid to a theoretical basis for human-animal interaction research and studies to include normal and non-normal populations, different

cultures, non-traditional relationships and those not interested in animals. There is also a lack of developmental (longitudinal) studies to determine the benefits of pet ownership over time. Her proposal is to use a "Quality of Life approach" as a conceptual framework for evaluating potential benefits for pet owners:

"Quality of life refers to clinically relevant aspects of subjective symptoms, feelings, and well-being".²⁵⁶

Quality of Life should be evaluated by refined psychometric instruments. Her previous model considered variables such as gender, age, ethnicity, socio-economic status, educational levels, a pet history, housing variables, health status, current attitudes toward animals, level of attachment and the individual's well-being. However, she felt that there were limitations to that model, as both intentionally and unintentionally, life events were not always covered. Selection of an instrument (test) is not always an easy task, because there are more than 80 tests to measure Quality of Life. None of the studies evaluating the health benefits of human-animal interaction has attempted to measure all domains of Quality of Life and this is seen as a point of criticism.²⁵⁶

Allen²⁵⁷ feared that without further structure, this model would be disregarded in much the same manner as its predecessors. She suggested that the study of Quality of Life, as it relates to human-animal interaction, should be treated as an applied area within each of the respective disciplines - rather than to try to create a new interdisciplinary field.

Lago²⁵⁸ commented that in multivariate research, this inclusive definition of Quality of Life runs the risk of confounding variables defined as baseline conditions, or mediating factors, with outcome measures. Just as health status represents a complex domain baseline, mediating, and outcome measures, so does the complex array of human relationships or the lack of them, that concern particular human-animal interaction.

Marx²⁵⁹ was of the opinion that instruments used in the social sciences are rarely valid or reliable enough to predict specific effects and that the relationship between human emotions and subsequent health effects are always complex and in many cases speculative.

Melson²⁶⁰ found that, to document Quality of Life changes as a result of pet ownership or involvement with animals in other ways, is an important challenge to researchers. This will raise further questions, such as what the underlying processes that account for Quality of Life.

Wilson²⁵⁶ concluded that, what was needed was to build a scientific literature that has a unified theory base that allows evolution of the impact and the process of human-animal interaction in a wide variety of samples.

8.3.9 Human-Animal Interaction Conference, Geneva: 1995

The challenge mentioned by the previous scientist was in a sense taken up and discussed further by contributors to the seventh International Conference on Human-Animal Interaction, held on 6 September 1995. Although only the abstracts are available (full length articles have not been published yet), it was worthwhile to evaluate some of these most recent proposals. The Quality of Life approach was discussed by two Americans (the original proposal was also made by an American). A new biological framework was presented by an Englishman and a panel discussion was organised by a group of French scientists. It seems as if the non-Americans ignored the Quality of Life model.

Barofsky²⁶¹ asked the question "Conceptualizing Quality of Life: How do Companion Animals fit?". He defined Quality of Life as an activity in which people ordinarily engage and this is important, because any formal assessment of Quality of Life will have to reflect how people think about and generate such assessments. Four elements have been identified as being involved in Quality of Life: a description of the state a person is in; scaling these states; stating preferences for being in a particular state; and aggregating such preferences into an

index that summarises the Quality of Life of the person. He proposed that one of the reasons why the importance of animals to people had not been definitively demonstrated, is that much of the benefit of animal companionship is implicitly acquired and that the occurrence of such learning has not been adequately assessed.

Katcher's²⁶² paper was titled "Tools for resolving contradictions in one's knowledge about companion animals: Space, Context, Behavior and Biophilia". He said that at least four different investigative methods are used to discern how animals influence Quality of Life:

- experimental or observational studies which contrast human behaviour with and without the animal present;
- surveys of the general population in which subjects are asked a battery of questions chosen by the experimenter;
- similar studies of people who are defined as patients or are specifically recruited; and
- narratives told by observers or subjects about the significance of companion animals.

The second and third methods revealed very little influence of the presence of a companion animal on health or Quality of Life, yet some studies of clinical populations have documented an influence of animals on health. The first and last method, however, revealed very strong effects of human-animal interaction and these disparate results may reflect the effects of difference in methodology. Studies are required which bridge these methodologies and examine how results are influenced by context, conceptual space, selection of subjects and the investigative situation. Furthermore, the concept of biophilia which posits a communality between experiences with place, animals and nature may be a valuable addition to the theoretical tools for understanding the interdependence between people and nature.²⁶²

Bradshaw's²⁶³ paper, "Social interaction between animals and people - a new biological framework", acknowledged the problem that development in the field of human-animal interaction studies is currently hampered because its empirical approaches being largely undisciplinary instead of multidisciplinary. The reason for this is that each approach derived directly from a single academic tradition, such as biology, psychology or anthropology. Companion animals may have had a function as regulators of human social behaviour, but why human societies should have such a need, capable of being fulfilled by an animal, is still unclear.

Montagner²⁶⁴ and his panel of contributors dealt with the following topics under the title "The theoretical basis for the human-animal bond":

- cultural and scientific obstacles which hampered the development of a theory for the human-animal bond;
- genetic factors and eco-ethological conditions which may have facilitated human-animal interaction;
- genetic, ethological, eco-ethological factors which may have underlain a particular attachment; and
- factors which may underlie the long-standing human-animal bond.

None of these contributions addressed a rationale for therapy in a specific manner.

8.3.10 **Costall: 1996**

Costall²⁶⁵ reflected on a symposium by the British Psychological Society's annual conference with the theme, "Theoretical and practical aspects of person-pet relationships". She found that the papers relegated the status of the animal's concern to independent

variables, while the person-pet relationship is after all a relation - it is mutual or reciprocal. The relation or interaction itself deserves to become the focus of future inquiry:

"It seems to me that the logic of the problem demands that, ultimately, we must adopt a 'mutualist approach'. To repeat, the pet-person relation is a relation. It is mutually defining and irreducible. A pet is a pet by virtue of its relation to people, and, conversely, its human companion is such by virtue of his or her relation to the pet".²⁶⁵

8.3.11 Cameron: 1997

Cameron²⁶⁶ presented a paper at the American Veterinary Society for Animal Behaviour with the title "Canine Attention Addiction".

Although this contribution did not attempt to suggest a general theory, the published abstract of the paper support the attention need theory. Despite the fact that emphasis is placed on excessive attention-giving or -seeking as attention addiction, the introductory remarks are of specific relevance to this study:

"Attention is a major behavior driving force for many of the more highly evolved genera including canis, felis, and homo. It does not rank with food, shelter, and sex, but it is close. In the human world, whole industries and professions are based on, or at least driven by, the need for attention. Witness the entertainment and fashion industries, politicians, even the auto industry. On the darker side, a significant degree of criminal activity is driven by the need for attention, and many of our sports celebrities are more known for their antics than their skills.

With this model in mind, it should not be any surprise that a close look at our pets' actions reveals comparable behavior that is explainable in no other way than an inherent strong need for individual recognition".²⁶⁶

What is important here is that attention needs are seen as a major driving force (need) in many of the more highly developed genera, i.e. interspecies fulfilment of the need is thus an obvious result of positive interaction between the species. The premise of this study suggests that attention needs lie on the same level as any other basic need (food, shelter, sex).

8.3.12 **Wilson: 1998**

At the 8th International Conference on Human-Animal Interaction in Prague, Czech Republic, Wilson²⁶⁷ expanded on her earlier theory. She said that relationships between humans and animals involve a combination of positive and negative exchanges which are as diverse as the individuals and animals involved. She emphasized that animals can have an impact on a person's life situation who has to play the care-giver's role. Such a role could be stressful and charged with negative elements. The two streams of interaction, namely the positive and negative aspects of social exchanges between care-givers and companion animals provide a broad multidimensional framework to view the potential of social exchange theory as a new approach to explain care-giving companion animal interaction. Such a framework could provide a checklist during therapeutic interventions. Care is part of special attention.

8.4 **Discussion**

None of the theories proposed contradicts or refutes the theory proposed in this study. A summary of the main points of the theories presented in this study is presented as follows (Table 8.1):

Table 8.1: Theories on human-animal interaction by author, key idea and link to *attentionis egens*

	Author	Key idea
1.	Brickel	Pets can provide attention shifts
2.	Kidd & Kidd	Analogies between human-human, human-animal interaction
3.	Case	Pet ownership as a web model
4.	Bergler	Pets can provide psychological benefits such as affection
5.	Odendaal	Pets can fulfil psychological needs
6.	Doi	Relationships with pets can explain the bridge between dependence and attachment
7.	Hills	Contact with animals lies on a continuum of instrumental, empathy (psychological factors) and dependence/dominance
8.	Wilson	Quality of Life model (fulfilling needs, creating feelings of well-being)
9.	Bradshaw	Biological framework for man-animal relationships may have a biological (physiological) basis
10.	Costall	Positive interaction between owner and pet is a mutualist relation
11.	Cameron	Attention is a basic need in both humans and animals
12.	Wilson	Social exchange theory to explain care-giving

Although these ideas are reconcilable with *attentionis egens* theory, it is not meant to explain all interaction between humans and animals. The proposal is for a specific human-animal interaction, namely a rationale for psychotherapy. Instead of "one unified theory" it forms a basis as supported by physiological parameters, for the role animals can play in therapy by providing attention to those people who are in need of attention, because of some psychiatric conditions.

Variables such as development (longitudinal studies), cross-cultural aspects, age, gender, socio-economic environment and educational levels or background will not affect successful human-animal interaction if the basis of such interaction is found in a universal need which is present in normal function (physiology) of both humans and animals, throughout their lives.

To evaluate the application of this theory in order to establish how animals can facilitate therapy, the next chapter will deal with the possible use of animals in psychiatry.