

## CHAPTER 10

### SUMMARY AND EVALUATION OF STUDY

#### 10.1 Introduction

This chapter will summarize the objectives stated for this study, evaluate the study in terms of the contribution it made, present some self-criticism, indicate further research following on this study and make some recommendations based on the findings of the study.

#### 10.2 Summary of objectives

In terms of the objectives set for this study, the following section will indicate how the objectives were met.

##### 10.2.1 Existing interaction theories in personology

The objective was to illuminate the importance of positive human-human interaction in personology. By using an elective approach, positive interaction was valued in the 16 theories studied, as an integral part of the psychological, emotional, social and cultural needs of all individuals. The latter part of the chapter explained how modern science recognizes studies on complexity such as interaction between biological entities to be part of mainstream science. It means that science should open up to less positivistic approaches if scientists want to include all of reality. It is not a matter of either a positivistic approach or other approaches, but seemingly "unmeasurable" realities should be used to compliment traditional measurements. The aim is to find a balance between dogma and dynamics.

##### 10.2.2 Human-animal interaction in human-human context

The objective of this chapter was to indicate that the need for attention is a basic need and that many of the therapeutic

advantages claimed from human-animal interaction, are actually based on such a need. It was also indicated that positive interaction between man and animal is two-directional and has a mutual beneficial effects. Lastly, it was also explained why some people are not involved with animals. If the same theoretical basis is found between human and animal as what is applicable to human-human positive interaction, then interaction theories in personology can be extended to human-animal interaction where the animal fulfils a substitute or additional social function. The term used to describe the basic need for positive attention is *attentionis egens* and this need can be fulfilled by either human or companion animal.

### 10.2.3 Current status of animal-facilitated psychotherapy

The object was to reflect the scope of scientific literature on the use of animals in psychiatry. This was achieved by reporting the current status of reports in a chronological order and a separate review on the status in South Africa. Although there is evidence that animals were used in psychiatry ages ago, literature over the past three to four decades indicated that the use of animals in psychiatry were not abundantly reported. However, some surveys could serve as indicators that a much wider use of animals in psychotherapy occurs than that is revealed in scientific literature.

### 10.2.4 Determining a physiological basis for positive interaction

The object was to formulate a physiological framework for positive human-animal interaction, based on human-human and animal-animal interaction. Interaction physiology is a relatively new research field. A physiological basis for positive intra- and interspecies animal interaction or affiliation could thus provide measurable parameters to link interaction theories. Such basis does not only pave the way for an encompassing theory on interaction behaviour, but could also provide a rationale for animal-facilitated psychotherapy.

#### 10.2.5 **Methodology to investigate a physiological basis for human-animal interaction**

The object was to design and implement a methodology which could reveal the same physiological basis for human-animal interaction as for human-human and animal-animal interaction. The parameters chosen were  $\beta$ -phenylethylamine, oxytocin, prolactin, cortisol, norepinephrine, dopamine and  $\beta$ -endorphin. The choice of these parameters were based on existing information on human-human and animal-animal interaction studied. The indication when to collect blood for plasma level chemical analyses was a superficially determined physiological change, namely a decrease in blood pressure. A state of anxiety questionnaire was used to determine the participant's emotional feeling on the day that the positive human-animal experiment took place. Controls were baseline values, dog owners versus people interacting with unfamiliar dogs and dog interaction versus quiet book reading.

#### 10.2.6 **Results of experimental procedures**

Snyder<sup>297</sup> said that in science one never "proves" a theory. After initial experiments provided data suggesting a particular hypothesis, further experiments should be conducted to test such a hypothesis. Results of the study are such "initial experiments" and the door is opened for further tests. However, the results of this research support to a great extent the theoretical framework which it was supposed to confirm. Even if this study is seen as more descriptive or explanatory of nature than cause and effect, it served its purpose and it also supports the hypothesis as stated in the Introduction.

#### 10.2.7 **Evaluating existing human-animal interaction theories**

The object was to evaluate existing inclusive theories on human-animal interaction and determine whether these theories could be reconciled to this study. This investigation supported the idea

that the theory used for this study, terminology included, is rather accommodating than opposing to other theories. Although this theory is not claimed to be a final "one-unified-theory", it meets the criteria to propose a rationale for animal-facilitated psychotherapy by linking existing theories and providing a physiological basis for such a rationale.

### 10.2.8 Applications of human-animal theory in animal-facilitated psychotherapy

Bloom and Lazerson<sup>209</sup> said that:

"The behaviour disorders that lie beyond our present knowledge represent as much our failure to understand the biology of the cognitive and emotional operations of the brain as they do our inability to characterize the mechanisms underlying its disorders".<sup>209</sup>

Although this study dealt with the physiology of healthy adults, such understanding can be the rationale for clinical work. By using this rationale of fulfilling *attentionis egens*, the object of this chapter was indicating how it should be applied in psychiatry. For the first time, animals in therapy were described in a similar format used for medicinal therapies. The conditions and preconditions for the application of human-animal theories in psychiatry made it possible for theory and practice to merge into a useful therapeutic approach.

## 10.3 Evaluation of study in terms of its contributions

The main contributions of this study are as follows:

### 10.3.1 Converging a wide spectrum of interaction literature

This study brought together what belongs together with regard to interaction literature. This is done on an intra- and interspecies basis.

### 10.3.2 Interspecies physiological indicators of positive interaction

For the first time, neurotransmitters were used as indicators of interspecies' positive interaction. In this process baseline values for neurotransmitter plasma levels in dogs were also determined for the first time.

### 10.3.3 Rationale for animal-facilitated psychotherapy

Based on the *attentionis enges* theory and physiological support for that, a specific rationale for the use of animals in psychotherapy is proposed.

## 10.4 Self-criticism of the study

The following criticism can be considered:

### 10.4.1 Elective approach

The elective approach in theory formation may not be acceptable to everybody. However, the aim was to form a metatheory which include most of the existing theories on interaction. It would be very difficult to propose a completely new theory for an age-old phenomenon such as human-animal interaction which has already been described many times in many ways, and which is studied in depth since the eighties. The approach was rather to find the necessary links between the existing interaction information in order to compile an inclusive theory which could bring human-human, animal-animal and human-animal theories closer together.

### 10.4.2 The comprehensive role of animals

This study proposed a specific rationale for the use of animals in psychotherapy, but it did not address the complete role which animals may play in people's lives. It may be possible to fine-

tune the use of animals by using the theory of this study partially, or other rationales could be added. This contribution is merely one premise for psychiatrists when they consider the use of animals in therapy.

#### 10.4.3 **Sample size**

Although the sample may be large enough for a biological phenomenon which occurs consistently in humans and animals, it is true that there could be a great variety of manifestations on a continuum for any basic need. The practical execution of the experiment was, however, difficult. To coordinate people, dogs, blood collectors, facilities and apparatus, the laboratory and the researcher repeatedly on specific times and at the same place, were no easy task. It was also necessary to complete the study in the shortest period of time to minimize variables. A larger sample size, according to the experience of this study, would possibly be constrained by logistical factors and finances.

#### 10.4.4 **Questionnaire**

The state of anxiety questionnaire was not a standardized instrument and it probably discriminate insufficiently. However, it served its purpose as indicator of feeling during this specific experiment.

#### 10.4.5 **Clinical studies**

The rationale has not been applied in clinical studies yet, because such practical applications fall outside the scope of this study. It should be evaluated by qualified psychiatrists.

#### 10.5 **Further research**

The following research may generate from this study:

### 10.5.1 **Biochemistry of interspecies interaction**

The role of biochemicals, especially the neurotransmitters and hormones, is only in the initial stages of investigation. In the light of improving technical abilities, it may come easier to study and measure biochemicals during interaction. The specific role of biochemicals on an interspecies basis is still a wide open field for further research.

### 10.5.2 **Drug development**

As often happened in the past, biochemistry could be mimicked by laboratory work. The use of specific neurotransmitters in the treatment of interaction disorders is a possibility which is at this stage only under speculation.

### 10.5.3 **Theory to therapy**

Research regarding the rationale of this study in psychiatry, should be tested in clinical cases. This can only be done by qualified therapists in real-life situations. Field trials instead of laboratory environment is thus suggested for such investigations.

## 10.6 **Recommendations**

The following recommendations can be made from this study:

### 10.6.1 **Education**

Animal-facilitated psychotherapy should become a commonly accepted approach in psychiatry. This can only happen when it becomes part of the formal training of psychiatrists. The current lack of information in this field can be seen as the greatest obstacle in the implementation of this therapy. Such knowledge will not only explain the proper use of animals in therapy, but it will also clear scepticism and misconceptions regarding the therapy. The physiological basis for such therapy makes it

possible to teach animal-facilitated psychotherapy as mainstream medicine.

#### 10.6.2 Multidisciplinary approach

In times when there is a widely recognized sensitivity towards the use of animals for the benefit of humans, it is important to ensure the welfare and well-being of the animals involved. An advantage of the theory proposed in this study is that it is based on mutual emotional benefit for humans and the animals. It is recommended that programmes which involved animals, should include veterinary selection of and care for the animals.

#### 10.6.3 Planned programmes

Animal-facilitated therapy should not be considered unless it is well-planned and structured. Apart from a lack of knowledge, poorly planned programmes is the other main reason why programmes could fail. A motto of "plan before therapy" is true for animal-facilitated therapy as is true for any other therapeutic approach.

#### 10.6.4 Clinical application of the rationale

The rationale for the use of animals, as proposed in this study, should be applied in psychiatry. Following a new trend, without having a rationale for therapy in place, is unacceptable in medical science. It is thus strongly recommended to use physiological parameters as a specific rationale for the use of animals for psychiatric patients who are diagnosed with *attentionis egens* needs.

### 10.7 Conclusion

This study came a long way since Katcher<sup>298</sup> declared in 1985 that data is lacking on the physiologic responses of companion animal-human interaction. Animal-facilitated psychotherapy may



have a tentative beginning in psychiatry, but there is little doubt that this therapeutic approach can grow in recognition and application in the years to come. The reason is that human-animal interaction is a common natural phenomenon of which more and more scientific understanding is gained. If the conditions and preconditions are met, animal-facilitated psychotherapy can take its rightful place along with any other therapeutic regimes in psychiatry. The physiological basis altered the approach to animal-facilitated psychotherapy from "magic" to "medicine".

In terms of the hypothesis stated in chapter 1, this study indicated that physiological parameters can support a theoretical basis for animal-facilitated psychotherapy and in doing so, provides a rationale for the use of animals in psychotherapy.

"All the normal functions of the healthy brain and the disorders of the diseased brain, no matter how complex, are ultimately explainable in terms of basic structural components of the brain and their function".<sup>209</sup>

19. J. J. van der Stoep, *Die Hout*, 1994: 712-807.

20. A. J. van der Stoep, *Die Hout*, 1994: 712-807.

21. H. J. van der Stoep, *Die Hout*, 1994: 712-807.

22. J. J. van der Stoep, *Die Hout*, 1994: 712-807.

23. Meyer WF. *Parapsychologie*. In: Meyer WF, Moore C, Vajda HG, Eds. *Parapsychologie van Freud tot Frank*. 2nd Ed. 1980: Lexicon Publishers, 1983:3-8.