„Evaluation of non-verbal communication patterns between horses and humans by video analysis

In cooperation with the University of Vienna Univ. Doz. Dr. Thomas Stephenson; e.motion – Center for Equotherapy Mag.[a] Roswitha Zink

1. Summary

Equotherapy is a therapeutic method using specially trained horses. It is based on the skill of the horses to read body language and expression of clients and show it to a therapist similar to biofeedback. One of the principle foundations is rooted in new knowledge gained from neuromedicine[1] and deep psychology, which can be applied to a non-verbal dialog between horses and clients. Equotherapy is used to help people cope with psychological and emotional problems, which could be caused by illness, disabilities or traumatic experiences. E.motion, the Center of Equotherapie, works in close cooperation with the Social Medical Center Otto Wagner Hospital Vienna and with Paediatric Units of other Viennese Hospitals.

The goal of this study-group is to contribute to the scientific research and establish and professionalize the use of horses within therapeutic methods. This is with the cooperation of the University of Vienna, the Veterinary University and e.motion.

With the study "Nonverbale Kommunikation - ist ein interspezifischer Dialog zwischen Mensch und Pferd quantifizierbar?"[2] Kate Shein already made a first step to investigate nonverbal communication between human and horse. It was possible to improve her methods and so the investigation of this new field could be continued.

The Equotherapy study-group will do a random survey with children and teenagers who receive Equotherapy treatment. The group will analyze video and find non-verbal communication patterns. Within the disciplinary overlaps of medicine, psychology and pedagogy, a quantitative analysis will be completed by qualitative observational aspects. The study-group will start with the following main themes:

- Diagnosis with horses: use open interaction with a horse to diagnostically and therapeutically assess the emotional and psychological structures of a client.

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[1] Especially the research about „Spiegelneuronen" (Bauer 2006) and the overlap between neuro biology and psychoanalysis (Leuzinger Bohleber 2003) and the „ Erfahrungslernen über das Gedächtnis der Zelle" (Hüther 2006).
[2] OENB-supported study 48/2004/1018

e.motion – Center for Equotherapy
Baumgartner Höhe 1, 1145 Wien
e-mail: info@pferd-emotion.at Internet: www.pferd-motion.at

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- Analogy of non-verbal interactive processes: mother - infant interaction and horse - client interaction in Equotheraphy in special consideration of affectivity.

- Open interaction with a horse as a „scene": how does open body language interaction with the horse display itself? Video study from praxis as if it were "scenes".

2 Introduction

According to the Austrian Association for Therapeutic Riding (ÖKTR), the term „Therapeutic Riding" includes three different methods: Hippotherapy as a physiotherapeutic method; Therapeutic Vaulting and Riding as a psychological/pedagogical method, which puts the holistic furtherment of people above the horse (see Gäng 1994, 17); and lastly, riding as a sport for disabled for recreational purposes.

2.1 Equotherapy

The term "Equotherapy" was created by e.motion, which is based in the Otto Wagner Hospital. It fits in the method "Therapeutic Vaulting and Riding" with the nomenclature in the introduction, although the working practice and the methodical foundations are very different than in the Therapeutic Vaulting and Riding. For example, in Equotherapy the main focus is studying and analyzing non-verbal communication

Horses are highly social animals and are able to read the smallest body language signals. In Equotherapy these skills are used, and the horse acts as a partner for the client as well as for the therapist. In the special training the horses refine their ability to read the clients body language, to give feedback to the therapist and they learn to react to it during the therapy[3].

Assuming that inner psychological conditions express themselves in motion, with the help of a horse, a therapist can draw conclusions about the psychological and emotional state of a client. Because of his/her own observation and assessment and the feedback of the horse, a

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[3] This happens in different steps. After birth horses learn to live in a complex social system. Non-verbal communication between horses draws a lot of attention to fine signals of tension and relaxation. During the special training to become a therapy horse, the horse has to learn to distinguish between the non-verbal communication of a horse and the analogies connected to human communication.

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Baumgartner Höhe 1, 1145 Wien
e-mail: info@pferd-emotion.at Internet: www.pferd-motion.at

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therapist is able to bring the non-verbal interaction between the horse and the client to a verbal level of reflection during the progress of the therapy (Stephenson 2003).

Moreover, there is a positive assumption that emotional state and body language influence each other. This opens the possibility to change the psyche through changing the body expression and a more positive sense of body awareness.

1.1   Roll of the Horse within Equotherapy

The following historical example will demonstrate the special skills of horses:

> *In the beginning of the 20th century scientists were studying an extraordinary horse called „kluger Hans". Supposedly this animal could calculate, read the clock and do other exceptional things. A special group of authorized scientists confirmed that the "wonder animal" completed all the tasks by itself. Any wilful deceit or involuntary signal giving was considered impossible by the committee. Shortly after, they discovered that the horse could only solve a problem when at least one of the observers knew the answer. The "kluge Hans" could not count, read or calculate like a human – but he had the skill to interpret the slightest involuntary changes in the human body. During its training it learned how to react properly (see Watzlawick 1978, 42f).*

Because of the disappointment that the horse was not as intelligent as a human, an astonishing scientific finding was totally ignored: the skill of the horse being able to read body language (Zink 2004).

By communicating there is a content aspect and a dominance aspect which is transported through non-verbal signals. Argyle (1991) states that especially with emotional stress these non-verbal signals are harder to control and therefore show more reliable information about the sender.

With the help of horses that were taught to react to human body language, tension and relaxation as well as to the quality of movement itself, we have a more "objective communication partner" in the therapy. The horses´ focus and feedback are only on the body language of the client, thus the therapist can use to complete and enrich his/hers subjective observation.

e.motion – Center for Equotherapy
Baumgartner Höhe 1, 1145 Wien
e-mail: info@pferd-emotion.at Internet: www.pferd-motion.at

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3 Study-group „Equotherapy"

The study-group „Equotherapy" is working with three main themes in 2007/2008. These main themes will be researched on the basis of psychoanalytical literature and analyzed through praxis video studies. The video is the foundation of the three theses, which will be submitted at the University of Vienna (Department of Educational Science).

3.1 Main Theme: Diagnosis

Especially for children and teenagers, horses provide the possibility to create a very activity-oriented relationship in the here and now. This relationship is based on the structure of the psyche and the current inner conflicts of the client. Using the horse, we offer an experience like a playing situation in the diagnosis process. By communicating with the horse, the client has the opportunity to come into contact, shape a relationship and act out conflicts. Moreover the advantage of working with a horse is to get a non-human feedback on body language. The video studies will show how valuable this form of communication can be for diagnosis.

3.2 Main Theme: Mother-Child-Interaction

Non-verbal communication plays a very important roll in early interaction between infants and their psychological parent. Scientists describe it as being formative for later interaction as an adult. The study will prove if there are any analogies in the interaction between client and horse and the interaction between mother and infant. It will try to answer the question of how much the client - horse communication can repeat, strengthen or even renew basal experiences with interactions and relationships.

3.3 Main Theme: Understanding through „Scenes"

Psychoanalytical Pedagogic looks at relationships as if they were scenes. When we see the horse as a partner in a relationship, we can also look at the interactions between the child, the horse and the therapist as if they were scenes. The horse has a special roll, because unlike humans it does not share transference and counter transference. Its non-verbal reaction to affect and also unconscious affect gives a special form of feedback in the relationship. In this thesis we will study how such a scene is designed, which rolls the partners play in the interaction and how tension is built up and released.

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Baumgartner Höhe 1, 1145 Wien
e-mail: info@pferd-emotion.at Internet: www.pferd-motion.at

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4 Research Focal Point

Movement and body expression are the first and most important means of human communication. Different states of the psyche and also conflicts, like tension, fear, ire, anger or happiness will show themselves in the quality of the movement and will become apparent. You have to account for this essential part of human expression because you can use it as a formidable resource. Non-verbal communication is a very complex process, which often happens unconsciously by the sender and consequently is misinterpreted by the receiver. Deciphering the body as a mirror to the soul puts ourselves in a great dilemma (Hermer; Kinzling, 2004).

The open interaction is not meant to reveal any hidden or concealed contents of the client. It is not meant to expose deceit. The horses´ task is to invite the client to non-verbal communication, offer a relationship and give feedback to the client's non-verbal relationship. The open interaction provides a good situation for the therapist to observe psychodynamic structures. The horse indexes body language and non-verbal communication. This is not meant to replace, but rather to support the process of verbalization, which is led by the therapist. Furthermore, it will help to point out psychological and emotional aspects which might not (yet) have been verbalized.

According to this, we could show how the interaction with the horse requests non-verbal communication of the client and how the psychoanalytical research interprets such non-verbal communication. In addition, we will see how the three thesis topics correlate to psychological/psychoanalytical theories.

5 Method

To answer the fundamental questions of these main themes we want to present a psychological/psychoanalytical theory for each theme and put it in relation with the analysis of the video.

e.motion – Center for Equotherapy
Baumgartner Höhe 1, 1145 Wien
e-mail: info@pferd-emotion.at Internet: www.pferd-motion.at

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5.1 Video

The therapist, the horse and the client are at a manageable place. The client has the task to get in contact with the horse and he/she will get more assignments[4] (see item 1 through 7) throughout the session. All of these assignments need interaction with the horse, and the client does not get any additional support.

5.1.1 Technique

The whole sequence (items 1 through 7) is filmed with two video cameras which are placed diagonally from each other to see the interaction of the client as best as possible. Verbal expressions play a secondary roll in these studies, therefore there is no audio with the video.

5.1.2 Test Situation

The test situation[5] „open interaction" will be filmed. It lasts about 12 minutes and consists of the following items:

Item 1	**Getting in contact:**
	While getting in contact there can be a first offer for a relationship. The client should get the horses attention and get in contact.
Item 2	**Claiming distance – space:**
	The client's task is to gain distance between himself/herself and the horse. He/she should claim his/her own space, earn respect and defend his/her borders.
Item 3	**Giving closeness - space:**

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[4] 1 Getting in contact, 2 Distance, 3 Closeness, 4 Together, 5 Relaxation, 6 Challenge/frustration, 7 Saying goodbye

[5] After consultation with the Ethics Committee of the Veterinary University of Vienna, it is concluded that the project causes no harm to the animals. The animals are not caused any fear, pain or stress, and they will not sustain any lasting damages, and therefore the project is not considered as "testing on animals".

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Baumgartner Höhe 1, 1145 Wien
e-mail: info@pferd-emotion.at Internet: www.pferd-motion.at

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	To allow closeness it is necessary to give the horse enough space and to retreat. Only then the horse can step closer without fear.
Item 4	**Together - walking part of the way together:**
	Walking part of the way together challenges the client in different ways. To be successful the client has to walk with purpose for the horse to follow. In addition the client has to combine elements from item 2 and 3 to motivate the horse to start moving and to follow trustingly.
Item 5	**Relaxation:**
	The client's task is to create a relaxation phase for himself/herself and the horse.
Item 6	**Challenge/frustration: overcoming difficulties:**
	Difficulties can complicate walking part of the way together. The client gets a new challenge which could cause failure and frustration.
Item 7	**Saying goodbye:**
	Saying goodbye ends the sequence of interaction between the client and the horse.

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Baumgartner Höhe 1, 1145 Wien
e-mail: info@pferd-emotion.at Internet: www.pferd-motion.at

5.2 Data Analyses

We will analyze the video regarding non-verbal interaction between the client and the resulting reaction of the horse. To keep it manageable we will primarily look at body posture, movement and orientation as non-verbal means of communication. According to the main focus of each thesis, we will give reference to already existing and established psychological/psychoanalytical theories. The analysis of the video consists of a quantitative and a qualitative part.
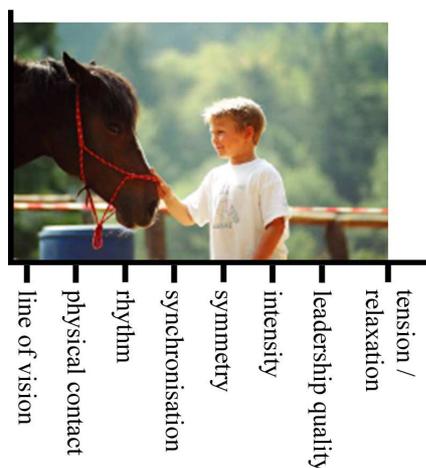
Main Theme: Diagnosis	Main Theme: Mother-Child-Interaction	Main Theme: Understanding Through „Scenes"

Item 1: Getting in contact
Item 2: Distance
Item 3: Closeness
Item 4: Walking together
Item 5: Relaxation
Item 6: Challenge
Item 7: Saying goodbye

line of vision
physical contact
rhythm
synchronisation
symmetry
intensity
leadership quality
tension / relaxation

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Baumgartner Höhe 1, 1145 Wien
e-mail: info@pferd-emotion.at Internet: www.pferd-motion.at

Appendix

In explanation to the data analysis

Main Theme: Diagnosis	Main Theme: Mother-Child-Interaction	Main Theme: Understanding Through „Scenes"

Item 1: Getting in contact
Item 2: Distance
Item 3: Closeness
Item 4: Walking together
Item 5: Relaxation
Item 6: Challenge
Item 7: Saying goodbye

The items, listed on the ordinate, are parts of horse-human dialogs, which every participant of the study goes through. In the evaluation each of the items is examined with respect to the criteria of the abscissa.

Data is collected for client and horse. Subsequently diagrams are generated and compared.

Ep.: Sequence 1 – Item 1 – Client

Getting in contact is examined with respect to the following criteria:

Line of Vision: Does the client look in the direction of the horse?

Physical Contact: Does the client get in contact to the horse?

Rhythm - Impulse: Does the client use rhythmic or impulsive movements to communicate?

Synchronization: Is there any synchronization of movements, between client and horse?

Leadership quality: Which position does the client have in the order of rank?

Symmetry: Are input and output of interaction equal?

Tension und Relaxation: Which extent of tension exists in head, torso and limbs?

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Baumgartner Höhe 1, 1145 Wien
e-mail: info@pferd-emotion.at Internet: www.pferd-motion.at

Two techniques are in use for analysis of the video material.

If appropriate the duration of the criteria being fulfilled is put in relation to the total duration.

Otherwise a value on a scale is assigned to the situation.