Increasing consciousness of nonverbal communication with Equine-Assisted Leadership Training (EALT):

An exploratory study.

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Foreword

Well over half a year ago one of my greatest wishes was fulfilled when I got my own horse, a large sorrel gelding with white socks. This event inspired me to write my master's thesis on this topic because it included the three things that appealed to me the most: corporate communication, training methods and horses. I could not think of a better combination.

Thankfully, there were two supervisors who were willing to help me realize this particular study. Dr. Ardion Beldad and Suzanne Janssen, MSc, I would like to thank your dearly for sharing your knowledge, providing your criticism and your high level of involvement with my thesis.

The research itself would not have been possible without help from professional trainers. After a long search on the internet I found two very competent trainers: Marieke van Asselt of Inzicht door Paarden and Ferdinand Aukes and Margreet Jonker of InnerQi. They did not just help me gather all the data I needed, they also fully included me in their activities and generously shared their insights about their fields with passion.

Aside from this, there are three special people who did not just help me realize this study, but also played a big part in my entire academic career. I would like to thank my parents, Jan and Ingrid and my boyfriend Maarten for everything they have done for me, which is quite frankly too much to count.

In closing I would like to thank everybody who made my student years such a great time. So, my dear friends, housemates from Zwicked, members of UMTC, Hippocampus and Hippeia, and the girls of Pheromore, thanks for all the great times!
After all this, I will be moving on to a new phase, one which I am just as psyched for. But for now, I hope you will enjoy reading my thesis!

Samenvatting

Achtergrond

Met de komst van een meer filosofische gerichte onderzoeksstroming sinds de tweede helft van de vorige eeuw is er binnen de corporate communication meer aandacht uit naar de invloed van individuen en zijn plaats in de wereld (Matthews, 1996; Wicks, 2003). Leiderschap is een populair onderwerp binnen dit onderzoeksveld waarin onder andere gevraagd wordt wat leiders succesvol maakt. Interpersoonlijke vaardigheden als nonverbale communicatie blijkt een belangrijke voorspeller zijn van het succes van een leider (McCall & Lombardo, 1983). Ook blijkt dit belangrijke invloed te hebben op corporate prestaties (Bass & Yammarino, 1991; Church & Waclawski, 1999), motivatie en de cultuur (Goleman, Boyatzis & McKee, 2008; Sala, 2005).

Voor loopbaan en corporate doelstellingen is het belangrijk dat managers zich bewust zijn van de invloed van hun non verbale communicatie. Echter blijkt dat enkel 50% van de managers zich bewust zijn hiervan (Haijtsema, 2007). De trainingsmarkt speelt hier op in met een ruim aanbod aan leiderschapstrainingen, ter bewustwording van de non verbale communicatie. Een nieuwe trainingsvorm is Equine-Assisted Leadership Training (EALT). Het principe van EALT is dat paarden de nonverbale communicatie van mensen spiegelen en her daardoor beter zichtbaar maken met behulp van de trainer.

Onderzoekshoofdvragen

In deze studie is aan de hand van de volgende twee hoofdvragen het effect van EALT ter bewustwording van de nonverbale communicatie in corporate omgeving onderzocht:

- *How does human-horse interaction contribute to increasing consciousness of non-verbal communication for participants of Equine-Assisted Leadership Training?*
- *What is the effect of Equine Assisted Leadership Training on participants´ consciousness of their non-verbal communication?*

Methode

Om de hoofdvragen te beantwoorden is zijn er twee onderzoeken uitgevoerd. Het eerste onderzoek diende ter verklaring van de mogelijke toegevoegde waarde van de mens-paard interacties in EALT. Aan de hand van een analyse op basis van de Rose van Leary (Leary, 1957) is gekeken of deze interacties significant overeen kwamen met mens-mens interacties. Voordat dit mogelijke was is eerst door een analyse van 181 foto's van paarden onderzocht of het gestelde model hiervoor toepasbaar was.

In het tweede onderzoek zijn interviews gebruikt om te onderzoeken in hoeverre mensen geloofden dat ze iets geleerd hadden van de EALT training. Drie stadia van interviews zijn hiervoor gehouden. De eerste vond plaats direct voor de training en richtte zich vooral op de motivatie en de verwachtingen van de deelnemers. De tweede vond plaats direct na de training en richtte zich vooral op wat de deelnemers hadden geleerd en hoe zij dit dachten te gaan toepassen in de praktijk. Tenslotte vond het derde stadium vier weken na de training plaats en werd er vooral ingegaan op hoe de deelnemers het geleerde daadwerkelijk hadden toegepast op de werkvloer.

Resultaten

Uit de eerste studie blijkt dat de interacties tussen mens en paard overeenkomsten hebben met mens-mens interacties volgens Leary's Rose. Dit betekent dat mensen feedback kunnen krijgen op hun normale interacties met behulp van paarden. Daarnaast blijkt dat paarden inderdaad het gedrag van mensen spiegelen. De resultaten van het tweede onderzoek geven aan dat EALT een positieve invloed heeft op het bewustzijn van de non verbale communicatie van deelnemers. Echter, het blijkt dat in de meeste gevallen de deelnemers in plaats van compleet nieuwe inzichten te verkrijgen, vooral het beeld wat al bestaat bevestigd of aangescherpt op een manier die confronterend werkt. In de meeste gevallen geven de deelnemers aan zich hierdoor beter te kunnen uitdrukken op de werkvloer en hun gedrag beter te kunnen aanpassen aan hun publiek. Daarnaast geven verschillende deelnemers aan zich door de training sterker te voelen tijdens overleg.

Conclusie

Er zijn verschillende conclusies om toe te komen met betrekking tot het effect dat EALT heeft op de bewustwording van de non-verbale communicatie van de deelnemers. Ten eerste kan gesteld worden dat de theoretische basis van EALT inderdaad valide is. Het spiegel-effect van het paard kan met behulp van een trainer mensen helpen om zich bewuster te worden van hun non verbale communicatie. Daarnaast hebben de deelnemers het idee er wat van op te steken en kunnen zij duidelijke voorbeelden geven van situaties waarin zij het geleerde hebben toegepast op de werkvloer. In deze zin lijkt EALT te slagen in de gestelde doelen. Voor het bedrijfsleven kan EALT bijdragen aan de ontwikkeling van managers-competenties die gerelateerd zijn aan sociale ontwikkeling en leiderschap.

Summary

Background

    With the advent of a more philosophical research orientation since the second half of the last century, there has been more attention for the individual and his place in the world within the field of corporate communication (Matthews, 1996; Wicks, 2003). A popular subject in this this field is the study of leadership, in which, among other things, scientists try to discover what makes leader successful. Research has shown that interpersonal skills, such as nonverbal communication are an important predictor for a leader's success (McCall & Lombardo, 1983). Furthermore, these can also have an important influence on corporate performance (Bass & Yammarino, 1991); Church & Waclawski, 1999), motivation and culture (Goleman, Boyatzis & McKee, 2008; Sala, 2005).

    Because of this, it is important for managers' careers and corporate that they are conscious of their nonverbal communication. However, studies have shown that this counts for only 50% of all managers. De market for corporate training has acted on this opportunity by offering a wide selection of courses aimed at increasing managers' consciousness of their nonverbal communication. One of the newest forms of training is Equine-Assisted Leadership Training (EALT). The principle of this training type is that horses mirror the nonverbal communication of people, thereby making it more visible with the help of the trainer.

Main research questions

    In this study the effect of EALT in increasing consciousness of nonverbal communication in the corporate environment was studied through the following two main questions:

- *How does human-horse interaction contribute to increasing consciousness of non-verbal communication for participants of Equine-Assisted Leadership Training?*
- *What is the effect of Equine Assisted Leadership Training on participants´ consciousness of their non-verbal communication?*

Method

    To answer the main questions, two studies were performed. The first study aimed at explaining the role of the human-horse interaction in EALT. Using the Leary's Rose (Leary, 1957), an analysis was performed to see if these interactions significantly corresponded with human-human interactions. However, before this was possible a content analysis of 181 photos of horses was done to ascertain if Leary's Rose was useable to model horse behavioral patterns.

    The second study used interviews to investigate to what extent people thought they had learned something from the EALT training sessions. Three stages of interviews were held.

The first directly before the training, focusing mainly on motivation and expectation towards the training, the second directly after the training, focusing on what was learned about nonverbal communication and how participants expected to apply it and the third stage of interviews was held four weeks after the training, focusing on how people had actually applied what they had learned.

Results

The first study showed that human-horse interaction largely matches human-human interaction as modeled by Leary's Rose. This means that humans can indeed receive feedback on their nonverbal communication by using horses. In addition, findings confirm that horses mirror the behavior of humans. The results of the second study indicate that EALT has a positive influence on participants' consciousness of their nonverbal communication. However, instead of providing participants with completely new insights, it appears the training mainly reaffirms and sharpens the image people already have in a way that is confronting to them. In most cases participants indicate that the training helped them to better express themselves on the work floor and more accurately adjust themselves to their audience. In addition, a number of participants mentioned that the training helped them feel stronger during meetings.

Conclusion

There are various conclusions to be made regarding the effect EALT has on participants' consciousness of their nonverbal communication. First, it can be said that the theoretical basis of EALT regarding the human-horse interaction is indeed valid. De mirror-effect of the horse can help people become more conscious of their nonverbal communication when assisted by a trainer. Second, people feel they learn something from the training and they can give clear examples of how they applied what they had learned on the work floor. In this sense it seems EALT succeeds in its goals. In the corporate world EALT can contribute to the development of manager-skills that are related to social growth and leadership.

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1. Theoretic chapter

The study of leadership traditionally has a strongly rational inflection, supported by scientific research. In this, the focus was on identifying the concept and the development of more effective leadership in organizations. However, in the last decades of the previous century, a shift started from traditional, rational orthodox perspectives towards more philosophical perspectives on leadership (Lawler, 2005). The perception of moral breakdown in and beyond Europe, and the two world wars have contributed to this shift (Falzon, 2002). This development was also accompanied by the general scientific trend to pay more attention to understanding one's individual and social place in the world (Matthews, 1996; Wicks, 2003). An important outcome of these occurrences is that nonverbal communication was put in the spotlight as a research topic.

1.1 Nonverbal communication

One insight into nonverbal behavior was given by Roter et al. (2006), who said: "Nonverbal behavior is widely recognized as conveying affective and emotional information". Examples given by them were eye-contact, touch and posture. Verckens (1999) states that nonverbal communication has five categories: posture, interpersonal distance, facial expression, clothing and appearance, and how someone's personal space looks. That last category also indicates that nonverbal communication is not per definition a form of direct interpersonal communication. However, Oomkes (2000) does give most importance on body language and movement.

In this paper any mention of nonverbal communication will refer to Oomkes' factors of body language and movement. And those of Verckens' categories that overlap with these, which are posture, interpersonal distance and facial expression.

Nonverbal communication shows us a lot about someone. One of the most important components of this is displaying feelings, according to Mehrabian (1981). This process is visible by (unconsciously) communicating non-verbally about tension or relaxation, dominance or submission, closeness or revulsion and inclusion or exclusion (Oomkes, 2000).

A person's nonverbal communication has a lot of influence on how others evaluate him (Nisbett & Wilson, 1977), mainly because people are very good at detecting nonverbal communication (Ekman & Friesen, 1971; Hall, 1985). For example, people are able to interpret both negative and positive nonverbal cues at the same time (Bargh & Chartrand, 1999; Ekman, Friesen & Ancoli, 1980; Russel & Bullock, 1986). This type of interpretation works through an unconscious automatic process, but its outcome still registers as a

conscious perception (DiDonata et al., 2011; Nauta, 1971). Because of this a person can consciously focus on the verbal communication while the nonverbal information is processed unconsciously and still made available for any decision making.

Nonverbal communication is not always received in the same way (Erber & Fiske, 1984; Rice, Bender & Vitters, 1980). An example of this comes from research by Homer (1972), showing that between the sexes, the same form of nonverbal communication is not considered as positive. Where men accept assertive nonverbal communication from other men, they generally consider this unattractive when coming from women. Similarly, women with an assertive attitude are considered to be less desirable group members (Hagen & Kahn, 1975). This shows that nonverbal communication influences how someone is perceived by others and that various nonverbal behaviors are regarded in a different way between the sexes. Considering these outcomes, it is important for people to have a clear image of their own nonverbal communication and how others perceive it. Interestingly now, research has shown that people generally have a more positive impression of people perceive their nonverbal behaviors than they actually do (Wilson & Dunn, 2004).

1.2 Relation between nonverbal communication and successful leadership

Nonverbal communication influences others in the corporate environments as well as in the non-corporate environment. Many scholars have contributed to the research on nonverbal communication in this context, such as Leary (1957), McKee (1999), Yammarino (1991), Church & Waclawski (1999), Goleman, Boyatzis & McKee (2008) and McCall & Lombardo (1983). One of the focal points of corporate communication is leadership communication. It's important for managers to be able to communicate with their team or subordinates well. Research by McCall & Lombardo (1983) shows that having a nonverbal defensive posture could be a reason for managers being less successful. Leaders who have good interpersonal skills (which include more than just nonverbal communication) tend to be more successful than those who do not.

A leader`s nonverbal communication, among other things, could significantly influence team performance (Bass & Yammarino, 1991; Church & Waclawski, 1999; Goleman, Boyatzis & McKee 2008; McCall & Lombardo, 1983; Velsor & Leslie, 1995), team culture (Goleman, Boyatzis & McKee, 2008), and motivation (Goleman, Boyatzis & McKee, 2008; Sala, 2005). The behavior of top managers appears to have a stronger effect on culture than that of middle managers (Church, 1997; Sala, 2005). The influence of research into nonverbal communication can also be seen in the study of what makes people leaders (Goleman, 1998) and the relationships between social intelligence, self-consciousness and

leadership (Goleman & Boyatzis, 2008). In addition, the professional world is also showing more and more interest in these topics (Goleman & Boyatzis, 2008.

The results from research into the self-consciousness of leaders are especially interesting. A good example of this is research by Velsor, Taylor and Leslie (1993). They show that leaders' nonverbal communication significantly influences their team, but they also pointed out that the leaders themselves are not always conscious of their nonverbal communication style. In fact, many leaders are not even conscious that their appearance and nonverbal communication have any influence on the team to begin with. More recently Haijtema (2005) showed that almost 50 percent of the leaders are not conscious of their personal appearance at all.

There are many studies that suggest a relationship between managers' self-consciousness and their performance (Bass & Yammarino, 1991; Atwater & Yammarinno, 1992; Church, 1997). Generally, they show that the more conscious managers are of their own behavior, the more effective their colleagues consider them to be. McCarthy & Garavan (1999) state that self-consciousness of managers is essential for realizing excellence in management. Church (1997) and Sala (2005) both echo this sentiment and add that it is of particular importance that a manager is conscious of the kind of influence that his behavior can have.

Stoker says that among other things, leadership is a package of behaviors that influence the behavior of a group of subordinates (Stoker, 1998). This ability to influence others is facilitated by a number of independent brain functions (Velsor & Leslie, 1995). One of these functions are based on "mirror-neurons", whose only function is to detect (nonverbal) behaviors and initiate an imitation reaction (Goleman, Boyatzis & McKee, 2008). Because a leader sends out a certain kind of behavior, his team will mirror this behavior.

Another brain function that facilitates the influence of leaders on followers works through a different neuron group called "spindle cells". These cells construct extremely fast connections and make up our "social guidance system". This system comes into action when humans are forced to make judgments about the credibility or suitability of others for certain purposes (Goleman, Boyatzis, & McKee, 2008). This judgmental system is extremely accurate and fast. Finally, there is a third involved neuron group, called "oscillators", which have a direct connection to the controls of our physical body. Oscillators regulate when and how human bodies respond to each other (McKee, 1999). Humans are capable of performing the same action simultaneously, or in harmony, through the function of these cells.

In sum, being conscious of nonverbal communication is an essential skill for leaders in today's world. Nonverbal communication has been shown to have a significant influence on other people and in particular subordinates in work teams. Factors like performance, motivation and general team culture have a strong correlation with team leaders' consciousness of their non-verbal communication. There are several types of neurons which

are responsible for the ability of a leader's non-verbal communication to influence others, most of which lead to involuntary reactions in others. Because being conscious of one's nonverbal communication is so important, the next logical question is how we can improve it.

1. 3 Training for enhancing consciousness of non-verbal communication

In this part, the relationship between the different kinds of training that enhance leaders' consciousness of nonverbal communication will be discussed. The goal is to work towards a description of the properties of the studied training type "Equine-Assisted Leadership Training (EALT) en its relationships to comparable forms of training. The first type to be discussed is regular human communication, consciousness-enhancing and leadership training, and the second is Animal-Assisted Training and Animal-Assisted Therapy (unfortunately both abbreviate to AAT)

1.3.1 Regular leadership- and communication training

Regular training for leadership and communication development is a well-known phenomenon and widely accepted and applied in the business and scientific communities (Barling, Weber, & Kelloway, 1996). In these kinds of training, many outcomes such as enhanced self consciousness, motivation and assertiveness (Barling, Weber & Kelloway, 1996), reducing various communication problems (Car & Durand, 1985), enhanced leadership (Barling, Weber & Kelloway, 1996) have been proven or at least generally assumed. It is common for this type of training to rely on various kinds of metaphorical activities to elicit more authentic and genuine responses from the participants. Examples of this are role playing games, team survival trips and cooperative gaming.

In addition, training providers are very concerned with the transfer of what has been learned during the training to the reality of the workfloor (Van Wiel, 2002). According to van der Wiel (2002), there are multiple factors that influence training outcomes. One of these factors is motivation to learn, which in turn is influenced by learning goal orientation (Klein, Noe & Wang, 2006). In corporate training these factors often become relevant because people do not always attend corporate training sessions of their own volition. As such, motivation to learn can be limited when there is no or little learning goal orientation for a participant in this situation. Another factor that influences the learning outcomes of corporate training are the participants' expectations. Especially for training types that people are not commonly familiar with, skepticism and apprehensiveness can have an effect on the

willingness to learn. Tannenbaum et al.(1991) couple this with the importance of fulfillment of expectations, especially for repeat sessions. This influences the post-training attitude and is related to the development of post-training learning behaviors. Therefore, these factors are important when examining whether what has been learned actually ends up being applied on the work floor.

1.3.2 Animal assisted training and therapy

Animal Assisted Training (AAT) and Animal Assisted Therapy (AAT) are types of training and therapy that include animals. They aim for the same educational goals as the previously mentioned types of training (Goldman-Schuyler & Kaye-Gehrke, 2006). Both will be mentioned under one name in this paragraph, AATT.

In AATT sessions animals are considered to be a social facilitator, a companion, a substitute for close interpersonal relationships, and even a tool for increasing sensory stimulation (Barak,et al., 2001). There are multiple reasons for using animals instead of people in these sessions. Goldman-Schuyler & Kaye-Gehrke (2006) state that their most important reasons for using animals, in their case horses, in sessions are that they make a big impression on people as a result of their size and that animals provide honest feedback.

Therefore, animals such as cows (Mallon, 1994), dogs (Barak, et al., 2001; Mallon, 1992; Marx, et al., 2010), horses (Vidrine, Owen-Smith, & Faulkner, 2002; Pattnaik, 2004; Trotter, et al., 2008) and dolphins (Francois & Farnum, 2002) are successfully being used for a wide spectrum of purposes (Barker, at al., 1998; Francis, Turner & Johnson, 1985; Martin & Farnum, 2002; Rothe, et al., 2005; Schultz & Remick-Barlow, 2007). An example of the successful use animals for therapy is the research of Klontz, et al., (2007), where they find that therapy with horses can lead to a decrease in psychological stress and provide a positive influence on participant mood. Similar effects have been proven as a result of therapy with horses (Kovacs & Umbgrove, 2005), such as increased self-consciousness and increased recognition of limitations and possibilities (Kovacs & Umbgrove, 2005). A study by Russell-Martin (2006) showed that after the session, participants scored higher on emotional stability and rational assessment than the control group. Although these studies have not been on leadership training, they demonstrate that training with animals can have positive psychological effects.

1.3.3 The components of Equine-Assisted Leadership Training

Another form of AATT is Equine-Assisted Leadership Training (EALT). EALT, self is a relative new training method. In a small country such as the Netherlands, there are

approximately 250 providers of such training. In bigger countries as the United States and Canada is the figure much higher. Nevertheless, as evidenced by the limited number of scientific publications, it is apparent that the research community has not really picked up on this growing trend.

The effects of EALT

EALT is a form of Equine-Partnered Experience (EPE). EPE is a type of training that transforms the consciousness and motivation of individuals and teams (Strozzi, 2004). EPE sessions have proven the effect of using horses in training. Verified outcomes of these sessions are improved decision making, increase focus, observation and clarity, increased commitment to the participant's life and work and generally improved relationships with themselves and those around them (Strozzi, 2004).

The basic assumption of EALT is that it should produce sustainable changes in consciousness and more authentic behavior through behavioral feedback from the horse in response to what participants say and do as leaders (Kay-Gehrke, 2007). During sessions, participants are provided with the opportunity to be conscious about their non-verbal communication by observing themselves on camera, just as they are also made conscious of the horse's reaction to specific forms of human non-verbal communication.

However, there is no scientific evidence that specifically validates this process. It is, therefore, important to understand if and how the benefits of such equine-assisted training come to be, both by investigating the kind of techniques involved in implementing such a training and the people involved with it.

Arguments for the effect of EALT

Mirroring

According to providers of the training, EALT gives leaders the opportunity to become more conscious about their non-verbal behavior through the mirroring behavioral response of horses. This "mirroring" behavior is regarded as an outcome of their prey status and is their reaction to a sensed incongruence between intentions and behaviors (Kaye-Gehrke, 2007; Strozzi, 2004). In the natural world, their chances of survival depend on their ability to read the intentions and behaviors of other horses and species. Sensed incongruence between others' intentions and behaviors, like fear or suspicion in combination with leadership, are judged as unsafe (Kaye-Gehrke, 2007). This makes sense, because in times of a potential attack the leading stallion displays leading behavior towards the flock in combination with

suspicion towards the potential predator. The flock needs to be following as well as on their guard.

According to Kaye-Gehrke (2007), Strozzi (2004) and providers of EALT, horses can also be very sensitive to human intentions and behavior. Kaye-Gehrke further argued that horses and human beings have similar mental and emotional states and can develop strong sympathetic psychological and physiological responses to each other. The horses used in that research fit their heart rates to that of their human counterparts. Through their strongly developed sensitivity, horses show a communally coherent energetic relationship with human beings during an interaction.

The outcome of this sensitivity is the horse's response to specific human (in)congruences and type of intentions, similar to the response to their own kind. For instance, when a horse senses that a human wants to be the leader while also feeling distrustful or aggressive towards the horse, he will not be inclined to trust the human being. According to the statement the horse would instead give a flight response, also known as non-cooperative behavior.

This response behavior of the horse on a human being's intentions and behavior is what is meant by "mirroring". This lets the horse essentially function as an instrument to unearth a person's true feelings and behavior in an interaction. In the EALT, the assumption is that through the mirroring behavioral response of the horse, humans would become conscious about their non-verbal communication, as expressed through their body language.

Although the term mirroring is used frequently in EALT literature, a standard definition for the concept still does not exist. A similar concept in the social science, the chameleon effect, is a person's (un-)conscious imitation of the behavior of his interaction partner (Chartrand & Bargh, 1999). The purpose of this mirror behavior is to align with the current social environment. However, while this is similar to the mirroring effect it is not quite the same because the authenticity of the behavior in humans is ambiguous. Mirroring on the other hand is supposed to be a faithful representation of the horse's interpretation of the human`s intentions and behavior. This is due to the fact that horses do not have a frontal cortex. Therefore, horses can only respond or ignore. They are not capable of thinking about their behavior. (Grandin & Johnson, 2005).

The lack of clarity in the meaning and content of the EALT component called "mirroring" is disturbing for the following reasons. First, mirroring is one of the basic components of the EALT and the validity of the method stands or falls with the validity of this concept. Second, it assumes that a horse responds to human behavior in a similarly predictable pattern as it does to other horses. Third, it also suggests that horses have the same kind of behavioral types as humans, otherwise there could be no question of mirroring. None of these assumptions have actual scientific evidence to support them.

Correspondence between human and horse behavioral types

As mentioned earlier, there are still no published scientific studies on the possible similarity in behavioral types between human and horses or on the analysis of human-horse interaction patterns. However, much is known about human behavior and interaction patterns. The Rose of Leary (1957), for instance, is a well-known and often used method to schematize and analyze human behavior and interaction (Figure 1). Leary`s communication model is based on eight human behavioral types: leading, helpful, cooperative, dependent, withdrawn, defiant, aggressive and competitive. The goal of the model is to predict behavior and to clarify the effect of that behavior on others. It does not address human character, but it points out that every human behavior can produce other type of behavior and that it depends on the context, not someone's character. Leary stresses that every character or personality is capable of producing every one of the behaviors in the model. In sum, the model is about interaction patterns and not about providing typology of personalities.

The rose of Leary is an axial model, with both a horizontal and vertical axis. Figure 1, displayed below, is a depiction of the model. In this model, the horizontal axis displays against or together behavior towards others. The 'against' behavioral pattern, on the left part of this axis, is expressed by independent, steadfast, skeptical and critical behavior. The together behavioral pattern, on the right part of the axis, is expressed by the display of responsible, helpful, respectful, grateful and cooperative behavior.

The vertical axis is about dominant versus submissive. Dominant behavioral patterns, called above behavior in the model, are expressed by active, initiating, influencing, managing and motivating behavior. Submissive behavioral patterns, called below behavior, are expressed by passive, dependent, submissive, conforming and humble behavior. Note: in this thesis above and below behavior are called dominant and submissive behavior.

Figure 1: Rose of Leary
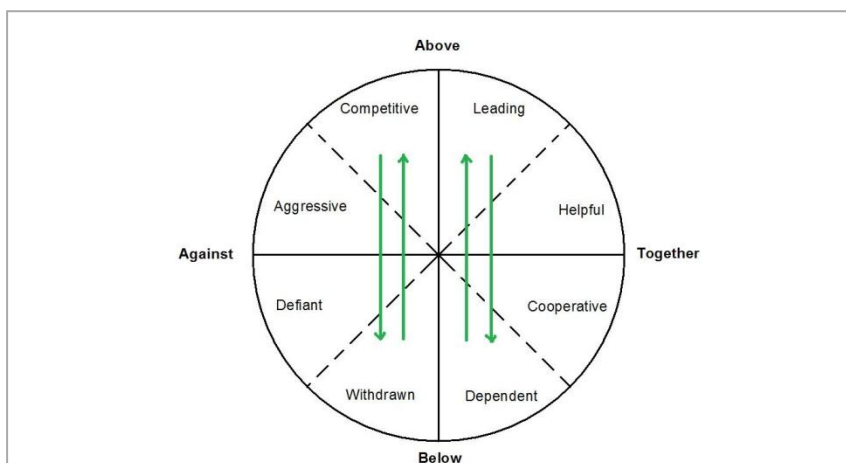
By combining the behavioral axes in a circle, the model becomes a rose with four areas: (1) Top-left: attack behavior (split between competitive and aggressive behavior), (2) bottom-left: defend behavior (split between rebellious and withdrawn behavior), (3) top-right: leading

behavior (split between leading and helpful behavior) and (4) bottom-right: follow behavior (split between cooperating and following behavior).

Leary proved the following behavioral interaction patterns:

- Together behavior evokes together behavior (symmetrical effect)
- Against behavior evokes against behavior (symmetrical effect)
- Dominant behavior evokes submissive behavior (complementary effect)
- Submissive behavior evokes dominant behavior (complementary effect)

If horses indeed have the same behavioral types as human as per Leary`s Rose then that could be an indicator that EALT can indeed be used to train people to be more conscious of their non-verbal communication.

1.3.4 Differences between EALT and related training categories

In previous paragraphs, the similarities between EALT and two other types of training were discussed. However, the differences between them are much more interesting for the purposes of this paper.

When we compare EALT with regular communication and leadership training and AATT, the most notable thing is the difference in volume of published scientific work proving their effectiveness. For an example of the effects see: Barling, Weber & Kelloway (1996) and Car & Durand (1985). This can be explained by the limited amount of research into EALT. There is a particular lack of research about the training's effect on its stated main goals: enhanced self-consciousness and transfer of what has been learned to the work floor. However, even though there is a lack of specific research in this area, there is information on several factors on which expectations can be based.

First, while both kinds of training use a metaphor to reach their educational goals, they kind they use if obviously very different. While regular types of training use objects or activities as their metaphor (Van Wiel, 2002), EALT uses horses. As mentioned before, horses tend to make a big impression on human due to their size (Goldman-Schuyler & Kaye-Gehrke, 2006). This has the potential to make EALT sessions much more memorable for its participants. In addition, horses have been called noble creatures for centuries, which makes them distinct from other animals. In addition to their size, this could further enhance the impression they leave on people and as such theor recollection of events and what was learned.

Second is the different kind of reaction and reflection the training provokes. Because horses lack a frontal cortex, they do not have the ability to process information and choose a response cognitively (Grandin & Johnson, 2005). This allows them to act as a pure mirror, in contrast to conventional types of training where the mirror is ultimately another person, like another participant or the trainer, who is often subject to many internal and external influences. While EALT does suffer from this to some extent due to the need for an expert to interpret the horse's behavior, the potential loss of authenticity is much lower because many horse behaviors are obvious even to the untrained eye and horses are much easier to interpret than people. According to Tellington-Jones and Taylor (1995), EALT can be used to assess people much quicker than any other kind of training because of this.

While EALT and AATT both uses animal in a metaphorical way, they differ in type of goals. AATT generally has more therapeutic goals than EALT. In addition, even when the training goals do coincide, the type of animal used makes for a very different outcome. For instance, training with dogs can have similar therapeutic goals, but psychologically they respond very different because they are hunting animals and horses are prey animals.

1.4 Research questions

As explained in the previous parts, the literature shows that EALT has potential as a corporate training type focusing on increasing consciousness of the participants' nonverbal communication. However, the exact value and nature of the human-horse interaction component of this training type are as of yet unclear. This study aims to provide insight into this. The following main questions guide the research in this paper:

How does human-horse interaction contribute to increasing consciousness of non-verbal communication for participants of Equine-Assisted Leadership Training?

What is the effect of Equine Assisted Leadership Training on participants´ consciousness of their non-verbal communication?

In order to answer these questions two studies were conducted. The first study focuses on investigating the human/horse interaction component of EALT sessions and is guided by the following three sub-questions:

- *To what extent are horse and human behavioral patterns compatible?*
- *Do horses mirror human behavioral patterns?*

- *To what extent are human-horse behavioral interaction patterns comparable to human interaction patterns when applying Leary`s model of human interaction?*

The second study looks at actual EALT training experiences and examines the effect they have on participants. In addition, the following relevant question came up during the proceedings and will be answered as part of this study.

- *What is the influence of motivation and training expectation on the learning effect?*
- *Does and how get`s the learned as an outcome of Equine-Assisted Leadership Training being applied on the work floor?*

2 – Study 1

The first study is split up in two parts. The first part investigates whether it is possible to categorize horse behavioral patterns by using a model designed for humans. As explained in the previous chapter, being able to couple human and horse behavioral patterns would allow existing research to be used to test the assumptions at the core of EALT. The second part applies the model that was tested in the first part to actual EALT situations to examine whether model-based expected interactional behavior matches reality.

2.1 Model

The model used in Study 1 is the previously mentioned *Leary's Rose* (Figure 1). The reason for this is that this model is not only usable for coding behavior but it also provides predictions of interaction outcomes based on the initially displayed behavior. This makes the 'rose' suitable for both steps of this study.

According to Leary (1957), human behavior is divisible in eight categories: leading, helpful, co-operative, dependent, withdrawn, defiant and aggressive. An equivalent model for horse behavior or a definition of horse behavior that is compatible with the eight behavioral categories of Leary was not found.

2.2 Phase 1 – Modeling horse behavior

To determine whether it is possible to apply Leary's (1957) rose, a human behavioral model, to horse behavioral patterns, a corpus of horse imagery was compiled and content analysis was used to encode the displayed horse behaviors on the eight dimensions of the model. To create a robust corpus, at least 20 horse behavioral photos of each Leary`s eight behavioral types were gathered, ultimately totaling to 181 photos.

2.2.1 Method

The method of analysis in this study is photo-coding, a form of content analysis in which coders identify and classify elements on a photo, which is then used to compare with other data or for implementation in a model.

Procedure & Instrument

In this section the procedure for compiling and processing of the corpus of images for the photo analysis and subsequent coding will be described.

Compilation of horse behavioral corpus

The selection criteria for the photos in this corpus were:

- *The horse behavior is clearly divisible.*
  To avoid misinterpretations only pictures are included where the behavioral types are clearly visible.
- *At least half of the horse must be visible.*
  This second criteria is also there to reduce the risk of misinterpretations.

The corpus was compiled using two methods: internet searching and making photos. Photo selection through internet search was started by using the search images function of the Google search engine, which is the biggest search engine available. This was done by using variations of the terms as 'horse', 'pony', 'mare' or 'stallion'.

Because the internet search did not produce the required amount of pictures, additional material was produced by making photos of horses especially for this study. This was done at a private stable in Enschede, Holland. The focus of this stable is recreational riding. All of the photos were made by observing horses out and about, in their stables and during their workout or training. At all times, the photographer remained inconspicuous so that the horse behavior would not be influenced by the photographer's actions.

Coding of photos

The photos were coded by this researcher together with a second coder to ensure reliability. Each behavioral category (20 interactions) was analyzed by using content summation. The Cohen's Kappa, a measurement for inter-coder agreement was 0,937 which is a clear indication that horse behavioral types can be coded well by experienced equestrians.

The data was compiled by coding each of the 181 photos at one of the eight behaviors of the Rose of Leary (1957). An example of this coding is shown in Figure 2, where the horse shows defiant behavior.

Figure 2: Example of photo coding
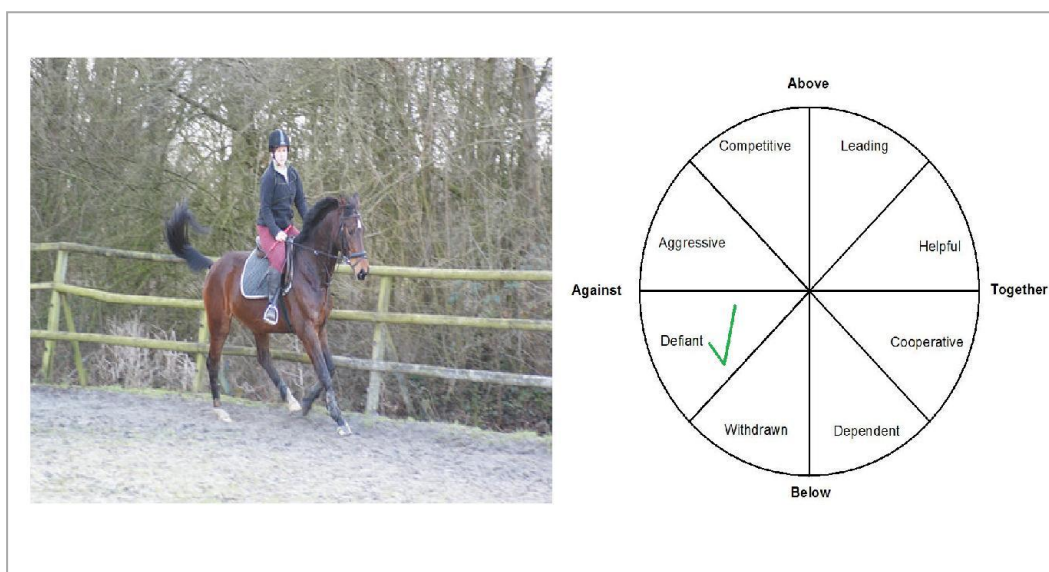
2.2.2 Results

This chapter presents the analysis of the data for this research. Data were in the form of a corpus of horse behavioral pictures. The corpus has been compiled by searching the internet and photographing horses for this purpose. The complete set of observation data can be found in the appendix section.

On the research question "To what extent are horse and human behavioral patterns compatible?" can be answered the following:

Horses have the same eight behavioral types as human: leading, helpful, cooperative, dependent, withdrawn, defiant, aggressive and competitive behavior

After analyses the horse behavioral expressions in each of the eight behavioral types zijn de kenmerken van de gedragingen beschreven. Dit is gedaan door te kijken naar de horse his basic position, ears, eyes, nose, head, nek, back, tail, movement and position. These results are shown in Table 1.

Table 1: Horse behavioral characteristics by each of the eight behavioral types

Behavioral categories	Leading	Helping	Cooperating	Dependent	Distrust	Rebellious	Aggressive	Competitive
Basic position	Relaxed/ focused	Relaxed/ focused	Relaxed/ focused	Tensed	Tensed and focused	Tensed	Tensed and focused	Tensed and focused
Ears	Towards object	Towards object, forward, sideward	Towards leader or side	Towards object Towards leader or side	Towards object	Straight towards object	Flat or regular backwards	Focused for or backwards
Eyes	Open and focused on object	Towards object	Relaxed eyelids	Closed or open, towards	Object focused raise eyelids, sclera	Object focused raise eyelids,	Object focused raise frowning eyelids,	Object focused raise or frowning eyelids,
Nose	Forgoing and open nose trills	Forgoing and sniffing	Relaxed nose trills	Nose trills backwards or front wards	Nose Trills open and raised	Nose Trills open and raised	Nose Trills open and sequestered	Nose Trills open and a bit raised
Head	Towards object	Towards object	In needed direction or towards	Towards object	High and towards object	High or in front of body	In front of body and to subject	High or in front of body or low
Nek	Relative high	High/ medium	Medium or low	Low/medium/ high	Tensed high	Tensed and in front of body or high	Tensed and in front of body or high	Mostly high or in front of body or low
Back	Relaxed focused or tensed	Relaxed focused	Relaxed	Submissive relaxed	Tensed	Tensed or round	Tensed	Tensed
Tail	Relaxed lifted	Relaxed lifted	Relaxed	Hanging	Lifted	Swishing, tensed and high	Swishing, tensed high, or tightly back	Bit lifted, hanging or between legs
Movement	Towards something or observing	In front with others	Depends on the asked	Depends on the asked or situation	Freezing or away from subject	Bucking and all kinds of refusing	Towards other, biting, threatening or	Towards other, biting, threatening or kicking
Position	Front	Front with others	With or between	Behind others	Wanting to leave	Wanting to get rid of/ away	Front/ between	Front/ between

2.3 Phase 2 – Modeling human-horse interaction

In this part Leary's (1957) model was applied to actual human-horse interactions to determine whether the interaction outcomes predicted by this model matched actual outcomes in the field. For this part, content analysis was used on videotaped human-horse interactions and observations coded on Leary's model. Next, observed interactions were compared to those predicted by the model.

2.3.1 Methods

Content analysis/ film coding was used om vast te stellen hoe interacties tussen mens en paard verlopen.

Compilation of human-horse interaction corpus

To stay as true as possible to the purpose of this research paper, the human-horse interactions used in this study were videotaped during actual EALT training sessions. For this, cooperation with providers of EALT training was sought.

The selection of the companies started with an internet search for EALT providers in the Netherlands. By using Google's search engine with Dutch EALT-related terms, such as 'horse', 'pony' and 'mare', a list of over 200 companies was compiled. This list was then filtered to exclude companies based on the following criteria, in addition to geographic location and their public calendar when available:

1. *Every training given by the company has the same duration.* This way, differences caused by variation in duration and repetition are avoided as much as possible.
2. *The underlying ideology of the training is non–spiritual and based on rational principles.* Among providers of EALT different ideologies exist, which are at the most basic level divided into spiritual and rational ideologies. The spiritual training tends to be less focused on the effects of nonverbal communication than the rational version of EALT. Therefore, only rational EALTs are included.
3. *The trainers work with horses they are not familiar with.* This means the trainer's influence on the horse and on the training is as limited as possible and avoids situations in which the trainer (un)consciously provides the horse with cues.
4. *The basics of the training are based of Kolb`s (1976) learning model.* This creates an appropriate learning schedule. Possible outcomes for which no learning effect was established cannot be caused by the design of the training.

After this, eight EALT providing companies remained. These eight companies were then contacted by telephone. During this last selection round the research was explained to each company. Ultimately, two companies were willing to participate: 'Inzicht door paarden' and

'InnerQi'.

Context

Both involved companies are sole proprietorships. Their core business is organizing corporate training session in which horses are used as an objective reflection mechanism on participants' consciousness of attitude, behavior and non-verbal communication and the effects of attitude/behavior congruence and perceived persuasiveness. Based on these basic elements, various programmes are offered for different target audiences, focusing more on the specific practice of each particular group. Common examples of these are executive and management courses, general leadership training and teamwork sessions, but there are also programmes for people with a form of autism and/or behavioral problems.

The basic training methods of both companies are based on three phases. The first one is the in-take phase, which starts after a particular company comes up with a question that forms the basis of the training. The intake is used to define the training's main question and goal, but also for explaining how the training works and clarifying the role of the horse in particular.

Phase two consists mostly of the training itself. During the training, participants are given simple assignments to perform with a horse. In this phase basic feedback is given during the assignments, which helps the trainee process what is happening and complete the assignments successfully.

Finally, in the third phase, an evaluation of the training is given by the trainer and discussed with the trainee. The dialogue focuses on the way the trainee's non-verbal behavior influenced the behavior and cooperativeness of the horse and how this reflects on the trainee's work situation with a team of humans. To enable effective transfer of training, specific attention is given to the application of what was learned to the work floor. Each training session involves at least two humans (the trainer and the trainee) and at least one horse. Each trainer has extensive knowledge of both human and horse behavior.

Human participants

The participants of the EALT were from multiple kind of functions. Participants had a wide range of professional backgrounds, such as teacher and insurance advisor. This differs from the target audience expected for EALT in that only a small part of the participants had an actual management function. However all of them, whether voluntary or mandatory, participated in the leadership training to learn about non-verbal communication because they thought it relevant to their job. The mean age of the humans in the corpus is 32 years.

Data collection

To obtain the necessary data, every EALT the cooperating companies organized within a span of two months were attended and videotaped. The recording process was focused on capturing the interaction clearly and completely while being as inconspicuous as possible. The person doing the recording was part of a group of spectators at all times, while holding the camera in a non-obtrusive location. This ensured that the participants in the EALT who were currently engaged in a human-horse interaction did not feel unduly scrutinized, which could have severe consequences for the validity of the data due to the subject of this research because the participant could display behavior that is not in response to factors that are part of the interaction itself, be that conscious or non-verbal unconscious behavior.

The total amount of recorded interactions therefore came out at 38, with each interaction during between 2 and 16 minutes. Of these interactions, only those that satisfied the following two criteria were added:

1. *The human-horse interaction is clearly visible on the recording.*
    Only recordings were both the human and the horse, and their behaviors are fully visable are usable. This way the risk for misinterpretation of human and horse behavior is reduced.
2. *The human-horse interaction is not disturbed.*
    This means that observers or trainers have no verbal or nonverbal visible influence on the interactions and that no other disturbance occurs. This is because the interactions are otherwise vulnerable to external influences.

Because of these criteria 7 recordings were discarded, mainly because of a disturbed interaction. Because of this adjustment of the corpus, the observed range of duration on the interactions went from 2 to 16 minutes to 2 to 9 minutes.

Ultimately, 31 recordings were included in the corpus. This number is a bit smaller than the corpora used in the studies of Klontz, et al. (2007), Tramutt (2003), Kovacs and Umbgrove (2005), and Russel-Martin (2006). However, it is still a suitable quantity for qualitative research of this type (Baarda & Goede, 2007).

Coding of video recordings

The recordings (a corpus of 31 interactions) were coded by this researcher together with a second coder to ensure reliability. In each recording Leary's rose was used to code the behavior of both the human and the horse. However, in order to make a distinction between the human participants' conscious and unconscious non-verbal behavior, they were double-coded for both of these dimensions. Figure 3 is an example of the interaction coding. It shows not only the human direct and conscious goal orientated behavior, which is here coded as helpful, but also the non-verbal subconscious behavior, which is here coded as withdrawn. In this instance, the horse's response behavior is coded as cooperative.

Figure 3: example of coding of the interactions
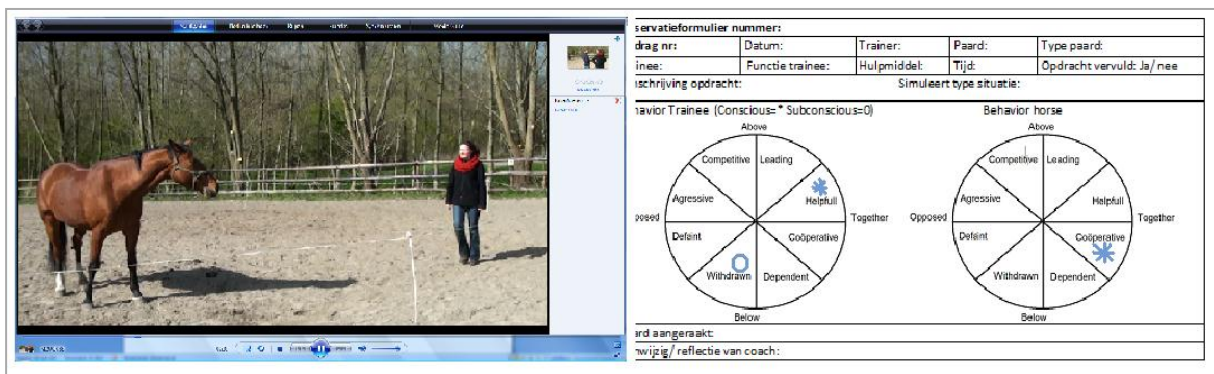
Coding for the video recordings was done by the same two trained horse experts who coded the photos in the previous research phase. The coding of the human behavior was done by two persons trained in observing human behavior. The Cohen`s Kappa for the conscious behavioral category was 0.88 and for the underlying (mostly partial) subconscious non-verbal behavioral category 0.83. This means that there was a high amount of agreement between the coders and that the coded data are usable to make statements about the interactions.

2.3.2 Results

The outcome of phase 1, which is that horses can produce the same types of behavior as humans, has made it possible to investigate the human-horse interaction patterns. The research questions in this section capture the interaction outcomes and the meaning of mirroring.

Interaction pattern

In the analysis a distinction has been made between three types of human behavior, conscious goal driven human behavior (184 interactions), underlying (mostly partial) sub-conscious emotion-driven human behavior (184 interactions) and the data where there was congruence between the human conscious goal-driven behavior and the underlying (mostly partial) sub-conscious emotion-driven behavior (122 interactions). The chi-square test has shown significant results for all the specified behavioral interaction patterns (Table 2). Because of this, it can be concluded that human-horse interaction significantly follows the pattern predicted by the Leary's (1957) Rose model.

Table 2: Chi-square results from interaction patterns

Human behavior type based human- horse interaction pattern	Chi-square
Conscious goal driven nonverbal behavior	X^2 (9, 184 interactions)= 93,54, p = 0.000
Underlying (mostly partial) subconscious emotion-driven nonverbal behavior	X^2 (9, 184 interactions)= 2,074^{E}2, p = 0.000
Human conscious goal driven = underlying (mostly partial) subconscious emotion-driven nonverbal behavior	X^2 (9, 122 interactions)= 1,829^{E}2, p = 0.000

Conscious goal driven human- horse interaction

The chi-square test of the conscious goal driven human-horse interaction (184 interactions) shows that there is a significant difference between the expected and actual turnout. This means that the difference is statistically significant (p<0.05), and it can therefore be concluded that the differences in these groups are not coincidental and there can be a conscious goal driven human-horse interaction based on Leary`s (1957) interaction model.

The conscious goal driven interaction shows human above-together behavior producing a matching horse below-together behavior (162 interactions, 61.1%), as predicted by the model. Similarly, in accordance with the model's prediction horse above-together behavior can be seen in response to human below-together behavior (10 interactions, 100%).

Additionally, human above-against behavior was shown in 50% of the interactions to result in horse below-against behavior (10 interactions).

However, while human below-against behavior was predicted to produce horse above-against behaviors, in all both cases where this behavior was displayed by the human, it instead produced below-against behavior in the horse as well. Chi square percentages of this interaction are shown in Table 3.

Table 3: Human-horse interaction patterns percentages

Human Behavior		Horse Behavior				
		Above- Together	Below-Together	Below-Against	Above-Against	N
Above- Together	*Conscious*	26,5%	61,1%	10,5%	1,9%	162
	Underlying	1,0%	92,3%	6,7%	0,0%	104
	Matching	1,0%	92,3%	6,7%	0,0%	104
Below-Together	*Conscious*	100,0%	0,0%	0,0%	0,0%	10
	Underlying	88,1%	4,8%	4,8%	2,4%	42
	Matching	100,0%	0,0 %	0,0 %	0,0 %	7
Below- Against	*Conscious*	0,0 %	0,0 %	100,0 %	0,0 %	2
	Underlying	53,6%	3,6%	32,1%	10,7%	28
	Matching	0,0 %	0,0 %	100,0 %	0,0 %	2
Above-Against	*Conscious*	0,0 %	10,0 %	50,0 %	40,0 %	10
	Underlying	0,0%	10,0%	60,0 %	30,0 %	10
	Matching	0,0 %	1,1 %	55,6%	33,3%	9

Comparison of the interactions with the most accurate variant of Leary`s model, the eight-factor model (Table 4, see next page) shows that only leading behavior (resulting in depending behavior; 35.4% based on 82 interactions), helpful behavior (resulting in cooperative behavior; 67.5% based in 80 interactions) and dependent behavior (resulting in leading behavior; 60.0% based on 5 interactions) are consistent with the model.

Table 4: specified human-horse interaction

Human Behavior		Leading	Helpful	Cooperative	Dependent	Withdrawn	Rebellious	Aggressive	Competitive	# Obs.
					Horse Behavior					
Leading	*Conscious*	15,9%	6,1%	18,3%	35,4%	4,9%	15,9%	1,2%	2,4%	82
	Underlying	0,0%	0,0%	30,6%	57,1%	6,1%	6,1%	0,0%	0,0%	49
	Matching	0,0%	0,0%	30,6%	57,1%	6,1%	6,1%	0,0%	0,0%	49
Helpful	*Conscious*	18,8%	12,5%	67,5%	1,2%	0,0%	0,0%	0,0%	0,0%	80
	Underlying	0,0%	1,8%	92,7%	3,6%	0,0%	1,8%	0,0%	0,0%	55
	Matching	0,0%	1,9%	96,2%	1,9%	0,0%	0,0%	0,0%	0,0%	53
Cooperative	*Conscious*	60,0%	40,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	5
	Underlying	22,2%	77,8%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	9
	Matching	0,0%	100,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	2
Dependent	*Conscious*	60,0%	40,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	5
	Underlying	60,6%	24,2%	6,1%	0,0%	0,0%	6,1%	0,0%	3,0%	33
	Matching	66,7%	33,3%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	3
Withdrawn	*Conscious*	0,0%	0,0%	0,0%	0,0%	0,0%	100,0%	0,0%	0,0%	2
	Underlying	40,7%	11,1%	3,7%	0,0%	3,7%	29,6%	3,7%	7,4%	27
	Matching	0,0%	0,0%	0,0%	0,0%	0,0%	100,0%	0,0%	0,0%	2
Rebellious	*Conscious*	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0
	Underlying	100,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	1
	Matching	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0
Aggressive	*Conscious*	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0
	Underlying	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0
	Matching	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0
Competitive	*Conscious*	0,0%	0,0%	10,0%	0,0%	10,0%	40,0%	10,0%	30,0%	10
	Underlying	0,0%	0,0%	10,0%	0,0%	10,0%	50,0%	10,0%	20,0%	10
	Matching	0,0%	0,0%	11,1%	0,0%	11,1%	44,4%	11,1%	22,2%	9

Underlying (mostly partial) subconscious emotion-driven human-horse interaction

In the underlying (mostly partial) subconscious emotion-driven human-horse interaction category (184 interactions) the difference is also statistically significant (p <0.05), indicating that this deviation is not coincidental. Therefore, it can be concluded that, in accordance with the expectations, there can be human-horse interaction based on underlying (mostly partial) subconscious emotion-driven human behavior.

Percentages from the conscious goal driven interaction, show that human above-together behavior resulted in 92.3% of the cases in this specific interaction type in horse below-together behavior (104 interactions), human below-together behavior resulted in 88.1% of the cases in this specific interaction type in above- together horse behavior (42 interactions). Contrary to expectations, human below-against behavior resulted in 53.6% of the cases in this specific interaction type in below-together behavior of the horse (2 interactions). In the last type interaction, results show that human above-against behavior resulted in 50% of the cases of this specific interaction type in horse below-against behavior (10 interactions). The Chi square interaction percentages for these interactions are shown in Table 4.

In this behavior category the following interactions are in compliance with the eight scaled variant of Leary`s model (table 3): leading behavior (resulting in depending behavior; 57.1% based on 49 interactions), helpful behavior (resulting in cooperative behavior; 92.7% based on 55 interactions), cooperative behavior (resulting in helpful behavior; 77.8% based on 9 interactions), and dependent behavior (resulting in leading behavior; 60.6% based on 33 interactions).

Conscious goal-driven nonverbal behavior that was equal to the underlying (mostly partial) subconscious emotion-driven behavior, or 'matching' behavior

The results in the interaction category wherein the human's conscious goal-driven nonverbal behavior matched the underlying (mostly partial) subconscious emotion-driven behavior (122 interactions) are also statistically significant (p <0.05). This leads to the conclusion that human-horse interaction in a situation where the human shows matching conscious and subconscious behavioral types can be predicted by Leary`s interaction model.

Table 2 shows that the matching behavior category has rates that most closely match the expected interaction model. Here, human above-together behavior results in 92.3% of the cases in horse below-together behavior (104 interactions), human below-together behavior results in 100% of the cases in horse below-together behavior (7 interactions) and human

below-against behavior also results in 100% of the cases in horse below-against behavior (2 interactions). The fourth type, human against-above behavior, results in 55.6% of the cases in horse below-against behavior (9 interactions).

In the matching behavior category the following interactions are conform with Leary`s model (table 4): leading behavior (resulting in depending behavior; 57.1% based on 49 interactions), helpful behavior (resulting in cooperative behavior; 96.2% based on 53 interactions), cooperative behavior (resulting in helpful behavior; 100% based in 2 interactions), and dependent behavior (resulting in leading behavior; 66.7% based on 3 interactions).

2.4 Results of Study 1

This part contains the results of the mirroring and interaction studies, using the adjusted version of the rose of Leary.

2.4.1 The mirroring effect

After completing both phases of study 1, something can now be said about the mirroring effect provided by horses in EALT. The results shown in Table 3 and Table 5 specify the actual mirroring patterns. It seems that horses, with the exception of the below-against response, directly complement human behavior. The horse response to human below-against behavior is also complementary, but not just on the above-below axis, but also on the against-together axis. Figure 4, shown below, shows these patterns more clearly. In this figure the arrows represent the interactions. The butt end of the arrows is the human behavior and the head is the horse's response.
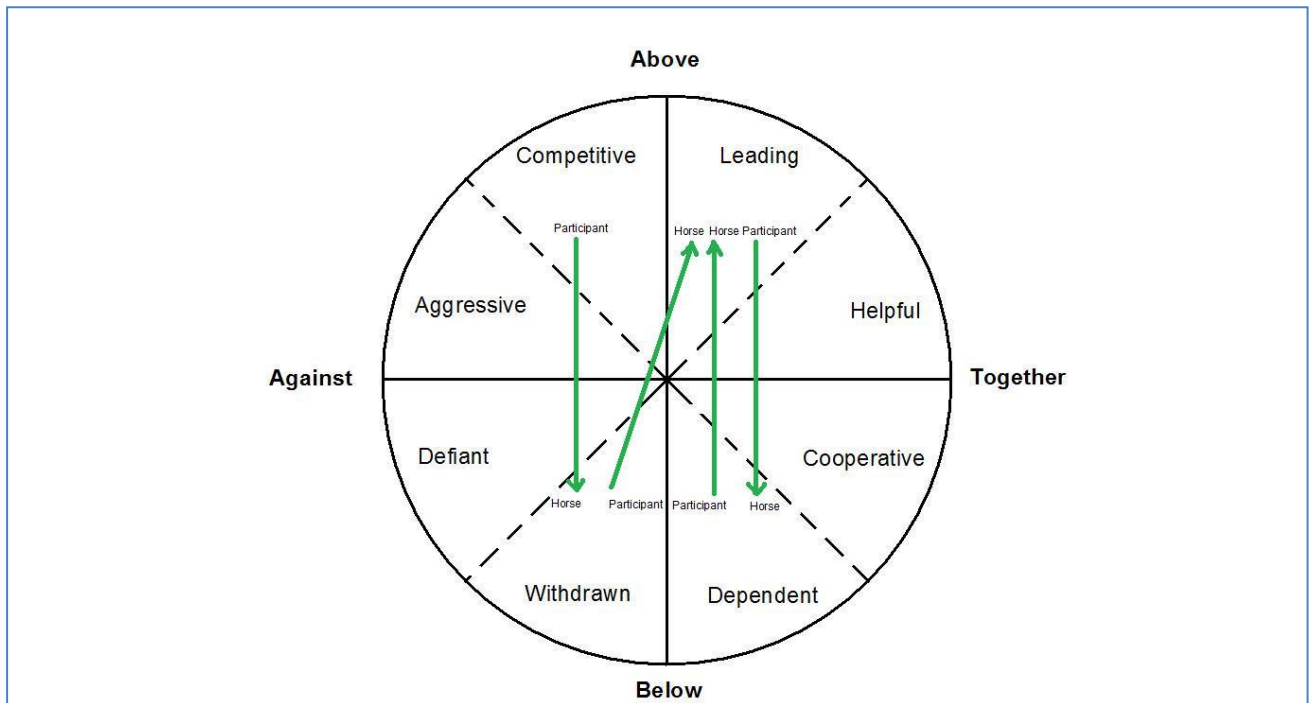
2.4.2 Modeling human-horse interaction with Leary`s model

The results from this study, summarized in table 5, show that human-horse interaction largely matches Leary's model. The divergence can be found in the below-against behavioral category. In this category, the expected behavioral response would be above-against, but results show horses responding with above-together behavior instead.

In Table 5 data on the adherence of the results to Leary's model are displayed. Also shown there is a division of the horse behavioral response on the different types of human behavior (conscious, underlying (sub)conscious, and matching).

The results of the horse response on the human categories of conscious (2 interactions) and matching (2 interactions) below-against behavior are excluded because of their low observation count. The other category, unconscious, shows human below-against behavior producing above-together behavior in horses (28 interactions).

Table 5: Results of the human-horse interaction analyzed with Leary`s (1957) model.

Leary`s human interaction model	Category	Measured human-horse interaction	%	n	Match
Above-together results in below-together	*Conscious*	Above-together results in below-together	61,1	162	√
	Underlying (sub) conscious	Above-together results in below-together	92,3	104	√
	Matching	Above-together results in below-together	92,3	104	√
Below-together results in above-together	*Conscious*	Below-together results in above-together	100,0	10	√
	Underlying (sub) conscious	Below-together results in above-together	88,1	42	√
	Matching	Below-together results in above-together	100,0	7	√
Below- against results in above- against	*Conscious*	Below- against results in below- against	100,0	2	X
	Underlying (sub) conscious	Below- against results in above- together	53,6	28	X
	Matching	Below-together results in below- against	100,0	2	X
Above-against results in below-against	*Conscious*	Above-against results in below-against	50,0	10	√
	Underlying (sub) conscious	Above-against results in below-against	60,0	10	√
	Matching	Above-against results in below-against	55,6	9	√

In sum, the results show that human-horse interactions are to a certain extent comparable to human interactions. The only deviation is the horse response to human below-against behavior. However, with the exception of this interaction type human-horse interactions do seem to be comparable to human interactions.

3 - Study 2

In this chapter the actual effects of EALT are examined by looking at how people think the training affected them. To obtain a clear picture of the development of people's attitude towards the training and its effects during the entire course of the process, interviews were done at three points in time: before the training, directly afterwards, and four weeks afterwards. The details of this process will first be elaborated after which the outcomes of the interviews will be discussed.

3.1 Method

In this paragraph it is described how the effect of EALT on creating change in consciousness of nonverbal communication was measured. First the method will be outlined, which is then followed by a presentation of the results.

3.1.1 Participants

The pool of respondents for this study consists of every participant who participated in one of the EALT that was attended by the researcher for the purposes of recording video data about human-horse interactions. To keep the study as streamlined as possible, all participants of who there was no interaction recording used in the previous study were cut out, leaving 31 interview participants. The last interview session, which took place four weeks after the training, only had 10 participants due to issues of time and availability. Every person selected for an interview agreed to participate.

Because these respondents are the same as those for the human-horse interaction study, their demographical data is identical as well. As mentioned before, the professional vocations of these participants are spread across a wide spectrum and do not generally fall into the expected target audience for EALTs. However, especially for the purpose of this study, which is the investigation of the workings of EALT from the participant's perspective, this spread provides a useful perspective on the benefits of EALT for a wide audience.

3.1.2 Instrument

For this study, interviews were chosen as the data gathering instrument. There are a number of reasons for this. The first is that the aim of this study is mainly to investigate the participants' perceptions of the training and its effects. This means that quantitative methods could potentially leave out a lot of useful information because there would be no way to

account for every participant's unique situation. Similarly, because this study investigates participants' consciousness of their non-verbal communication, it is difficult to determine beforehand how this would affect someone. As is often the case with training such as this, people might get something out of it that was not part of its design, but not in any way less valuable. The intangible nature of these outcomes would make using quantitative methods, such as surveys, very ineffective.

In addition, another aim of this phase of the research was to investigate how participants of EALT transfer what they have learned to their daily (working) lives. Similarly to investigating participants' perceptions about EALT, this kind of purpose does not lend itself well to quantitative methods because the focus is on the nature of the effect as opposed to the properties of its occurrence (Philipsen & Vernooy-Dassen, 2004).

The type of interview used in this study is semi-structured, which means that the interview questions where only partly determined beforehand. The reason for choosing a semi-structured format over a structured one is twofold. First, during the interview the interviewer is free to formulate new questions or change the sequence. Second, the interviewer is free to add questions or topics he or she feels are necessary to add value to the interview. The advantage of this method is that it leaves room for spontaneous relevant thoughts, insights, opinions, feelings and facts to reveal themselves. This has positive implications for the internal validity of the conclusions to be drawn (Dekker et al., 1999). As mentioned before, a quantitative method such as a survey can never account for things the researcher is not conscious of beforehand.

For this part of the study, three different interviews where done with each participant. However, due to time and opportunity limitations, the final phase was cut short and only 10 participants were interviewed a third time. The reason for this setup was to ask each questions at the most opportune time. The first interview was focused on the motives, motivation, and expectations towards the training and was consequently taken before participants began their training session. The second interview was focused on what the participants felt they had gained from the training, and was taken immediately afterwards. Finally, the third interview focused on the application and transfer of what was learned to the participants' daily lives, so it was taken 4 weeks after the training took place in order to give the participants time to process and a chance to implement any new insights.

Table 6 gives an overview of the interviews, themes and interview questions. The interview questions in table 6 are in English, these are translations of the actual question which were asked in Dutch. Because the study was done in Holland, the interviews were performed in Dutch.

Table 6: Themes and questions of the three interviews

Interview version	Interview characteristics		
	Participants	Themes	Interview questions
1	31	*Motive*	Why are you participating in this EALT?
		Motivation	Who initiated the sign up for this training?
		Expectations	What are your expectations for this training?
			What are your expectations and feeling in regards to working with a horse?
			What are your expectations and feeling in regards to working with the trainer?
2	31	*Feeling afterwards*	What did you think about the training?
		Matching expectations and experience	Did your expectations of the EALT match your experience of it?
			What were the similarities or differences?
		Learned	Did you learn something about your nonverbal communication during the EALT?
			If yes, what is it?
		Expected application/ transport	Do you expect that the learned is applicable to the work floor?
			How would be applicable?
		Corporate value	Does EALT have value as a corporate training? Why and how?
3	10	*Personal value*	To what extent do you feel you have learned something about your nonverbal communication?
			And what?
		Transportability of learned	Have you applied this recently in your work or private life?
		Corporate value	To what extent does this training have value for managers?

3.1.3 Procedure

Participants were first informed about the interviews by the cooperating training providers, 'Inzicht door paarden' and 'InnerQi'. During a phone conversation they were told the research goal and that their anonymity is ensured. The researcher reiterated this question before the start of the training (because each participant would also have their participation in the training recorded on video for Study 1). Thirty-one participants whose interactions were also recorded on video were chosen for an interview and agreed to take part.

As mentioned previously, the first two interviews were taken immediately before and after the participants had finished their training session. These interviews were conducted by interviewing participants face-to-face and were recorded with a recording machine for later reference by the researcher. This provided the researcher with the opportunity to transcribe the interview later and focus on the flow of the interview itself in the present. In addition, a face-to-face interview format was deemed important for this part of the research because emotion and indeed, non-verbal communication, has a large part in the research topic. In addition, this format was easy to use because the researcher was already present at the same location as the participants.

Four weeks after the EALT, 10 of the previously interviewed participants received a telephone call for the last interview (see also Table 1). The reason for this is that the participants of the EALT training were very geographically dispersed and doing this interview in a face-to-face format was logistically impossible. The original intention was to interview all 31 participants a third time, but time and opportunity limitations precluded this.

After all the interviews were conducted, they were transcribed and analyzed. Content analysis was used to code the statements in the interviews based on the factors of influence they described, such as motivation or learning goals. To assist with coding the qualitative research software 'Weft' was used. The analysis itself was based on the constant comparative method (Creswell, 1998; Wester & Peters, 1999). During the first phase, the exploration phase, keywords in the interviews were coded. In the second phase, it was verified whether the resulting fragments dealt with the concept's keyword as expected. In the following reduction phase the fragments were searched for key indicators, which were then used in the final phase to select fragments for use to answer the study's questions and produce the results.

3.2 Results of study 2

In this part the results of the interview sessions will be discussed in order of the interview questions. All statements by participants have been translated from the original Dutch statements. The complete interviews are included in appendix 1.

For each question a comparative analysis was done to make sure there were no unaccounted-for difference between answers given by participants of sessions by providers "InnerQi" and "Inzicht door paarden". Generally speaking, no remarkable difference were found between these two groups.

3.2.1 Learning effect

One of the main goals of the training and consequently of this research paper revolves around how it supposedly increases participants' consciousness of their nonverbal behavior. As such, it is important to find out if the participants actually felt the training had accomplished this.

All participants did describe three kinds of learning effect, the kind of experienced learning varied from recognition, confirmation and clarification. Haijtema (2005) describes that most leaders are not conscious of their personal appearance and how their body communicates with people. Similarly, Nisbett & Wilson (1977) showed that people are often not conscious that they are being evaluated by others based on their appearance. As such, training such as EALT could make a difference in this case, possibly leading participants to a kind of 'epiphany' about their non-verbal communication.

However, as it turned out, a number of participants indeed describe gaining new insight, but none actually gave a description that comes close to big changes in consciousness. Participants mainly mentioned gaining more insight in how they come across to others.

Yeah, yea, it really is an consciousness thing, it just gives you a bit more insight. (participant 3)

I thought it was a very useful exercise. I learned a lot about the things that need attention. And also how horses and therefore humans respond to my behavior. When you don't show confidence it's hard to get people on your side when you want them to. The way you handle this has a great influence on how people respond. (participant 23)

Learning trough confirmation and recognition

What stood out is that nearly all participants mentioned a kind of confirmation. They spoke about recognizing something of themselves that they already knew, but were not really actively conscious of or perhaps trying not to think about. It seems that many participants are conscious of their non-verbal communication, but not always happy with it.

> *I thought it was very interesting, and also difficult to hear because many characteristics are very recognizable. It is very confrontational that a horse can really show you that. (participant 8)*

> *The ways you have when you stand upright, reach out, wait and then give up after a while. Those sorts of things are all very recognizable. (participant 5)*

Learning trough clarification

However some statements indicated that non all participants hadden a clear image of nonverbal communication. This becomes clear by the way participants consider clarification of their nonverbal communication and how others perceive them as a learning point.

> *Yes, yes it definitely gains you a bit of self-consciousness, about how you act, you know, just a little bit of insight. (participant 3)*

> *At the very least you've gained insight in how communication works from your side and from the other's side. (participant 4)*

> *Very nice, also very educational to gain some insight into my colleagues. When you do something, you get a certain reaction. I think that I will now be able to better understand when they give a particular response to something I do. (participant 9)*

> *I learned a lot about how I come across. I always thought that I came across as very quiet, a bit shy, but apparently it's a bit more aggressive than I thought. I think I can deal with people in a better way now. I now understand much better how they perceive me. (participant 18)*

Learning trough the horse`s mirroring behavior

In the theoretical chapter it is explained how horses mirror human behavior and in the results of the interaction study it was found that horses indeed have mirroring behavior comparable to that of humans. Here, participants also described what they had learned through the horse's mirroring even without being prompted.

> *Well I have learned something. These things were not new, but it was like a mirror being held up. Like, this is the way it is. So yes it was certainly useful for me. I do think the horse can be used as a tool, as a mirror. (participant 1)*

> *It is really funny to see all the recognizable things. All the characteristic that are mirrored. (participant 9)*

In sum, EALT increases participants' consciousness of their nonverbal behavior through recognition, confirmation and clarification. This learning effect is facilitated by the mirror behavior of the horse.

3.2.2 Motivation, learning goal, expectations and fulfillment of EALT.

The second study looks at actual EALT training experiences and examines the effect they have on participants. In addition, the following relevant question came up during the proceedings and will be answered as part of this study.

This interview session focused mainly on participants' motivation to participate and the expectations they had beforehand. As discussed in the theoretical background of this research, these factors can play a large role in determining training outcomes, both short-term and long-term. The interviews are include in appendix 1.

Results generally reveal that EALT has a conscious increasing effect on nonverbal communication. With the exception of one, all participants stated that they had learned something about their nonverbal communication. What is remarkable is that most participants did not profess to have any real expectations of the training or any strong learning goals beforehand and did not feel especially motivated (albeit not unmotivated either), while still being under the impression that the training had been very beneficial to them. In this chapter participant statements about these outcomes will be presented

Motivation

The first expected negative influence on learning outcomes, based on Klein, Noe and Wang's research (2006), is low motivation trough mandatory participation. Many participants indicated that their reason for participation was that their employer had made them, or that a group they were part of was made to.

> *Um, well this session has been arranged for us so I have had no influence in signing up. (participant 6)*

> *The group arranged everything so I had little to say about it, but I'm just going to things happen and see where they end up. (participant 11)*

However, at first glance it seems that the mandatory participation does not have an important limitation effect on the learning potential. Nearly all the EALT participants who stated in some way that the training had been mandatory for them also indicated afterwards that they felt EALT had an effect on how conscious they were of their nonverbal communication.

As a possible mitigating factor, most of the participants whose participation was mandatory reported that curiosity about the training and about what a horse could "say" about someone's nonverbal communication was an important reason for the motivation they had.

> *I'm very curious, I really want to know how horses will react to me. I assume that animals respond just as primally as humans, so by looking at how animals respond to you know what people think of you. (participant4)*

> *Maybe I could just not contain my curiosity and signed up just to find out what it was like. But for that reason only. (participant 6)*

The learning outcomes of participants who stated that participation was their own initiative or at least voluntary were in line of expectation, which is to say, similar to the other group. Participants' motivation is in this case also often stated to be curiosity about the particular training type.

> *I don't have any experience with horses, but the training seems very nice to me. I'm mainly curious about the impact of what the horse does on myself. What does the horse show about my communication? (participant 22)*

Learning goals

As mentioned before, interview results show that, in contrast to the assertion of Klein, Noe and Wang (2006), learning goals were not associated with training outcomes of increased consciousness of non-verbal communication. Expectations were that only the participants with learning goals related to consciousness of their non-verbal communication would indicate having learned about this. And in accordance with these expectations, the participant group with learning goals related to consciousness of their non-verbal communication did learn about this. However, this group was less than half of the participants.

Most of the participant group had different learning goals, such as horse or group dynamics related, or did not have any goals at all. Still, these participants all stated later that they had learned something about their nonverbal communication.

In accordance with what was mentioned before, the group without any learning goals consisted mostly of participants for whom participation had been made mandatory by their employer.

> *Well no, because I do not know what to expect from this training. But I'm just going to be open to it. (participant 26)*

> *Of course I hope to learn something, but at this moment I do not know what. I came here blank. (participant 29)*

The participants who stated that they wanted to get to know each other better and also cooperate in a better were all people who had signed up for the training as a team. Their goal was to learn more about teamwork and initially they had no real concept of the value of nonverbal communication in this context.

> *As a team, we want to get know each other better and also function in a better way. (participant 3)*

> *Well we wanted to have better cooperation with our team, so that is the motivation. (participant 12)*

In addition, 6 participants had a horse-related learning goal. Their primary motivation for signing up was to learn about the way their nonverbal communication affected their horse and they had no real notion about how the training could benefit them in other ways.

> *Well I have a horse with which I have a few contact or communication problems. I hope this helps me get a better understanding of these problems. (participant 25)*

> *Dealing with horses better. That is the most important thing here, at least for me. Human behavior is easy to understand for me. But horse behavior, it is important to know about that and till today I have had no experience with horses. (participant 31)*

The general outcomes follow those about motivation in that despite not having learning goals related to increased consciousness of nonverbal communication, these participants still felt their experience had taught them something valuable about this.

Expectations

Finally, following in the footstep of the previous two factors, the interview study did not provide any support for the conception that positive expectations would enable better learning outcomes than otherwise. Similarly, Farr and Middelbrooks' (1990) theory that negative expectations have a negative effect on learning outcomes was not supported either. This counts both for participants who had negative expectations of the training itself, but also for the reasonable amount of participants who primarily had negative expectations regarding the role of the horse and having to work with it.

> *I'm terrified of horses, so I have not looked too much at what can I do and what I can expect. I have been assured that it is not dangerous and that I don't have to do anything I don't want to. (participant 5)*

> *I must be honest, I have great respect for horses and I normally give them a wide berth. (participant 26)*

Among the participants who stated they had learned from the experience there was also a small group who did not have any expectations of the training at all. Responses by these participants were similar to those given by those participants who experienced little motivation to participate in the training (for the various reasons given earlier) and some participants indeed fall into both these groups. A common reason being given (in addition to forced attendance, which was mentioned earlier) is that people are just trying something new, without even really thinking about it.

> *I do not know what awaits me, I know that animals respond in a certain way to someone's actions. But I also know that animals react to fear, so that might confuse things. (participant 3)*

> *I step go into it with an open mind and just experience it. (participant 14)*

Despite not finding a lot of support for expected theories, the participants who did have positive expectations and also felt they were fulfilled, also reported that they learned something from the training. However, most were not specific about nonverbal communication. At best, this could be considered implicit in their statements.

Yes definitely, especially because of the reflection, and the specific self-reflection with the recorded material. It helps you learn your own strengths and weaknesses. (participant 30)

Well I am especially very curious whether it could show me my role within this group.(participant 12)

Learning what people can expect from me. How do I come across to others. (participant 18)

Finally, a number of participants said they were very positive about participating in this training, or even excited. These participants were generally not participating because of corporate motives however.

Yes, very nice. I think it is really fun. I come from what is pretty much a horse family so I really enjoyed this. I also have a horse together with my colleague Karin. So I think it's great fun to do this with horses.(participant 2)

As described, the training outcomes reported by these participants were positive.

Fulfillment

According to Tannenbaum et al., (1991), the fulfillment of training goals and expectations has a strong influence on post-training long-term learning attitudes. However, in the previous interview session it was found that not all participants had any goals or expectations to be fulfilled. Despite the absence of these, there is still what can be considered as the 'mission statement' of the training itself. While participants might not all have personal goals and expectations, there is still the implicit expectation that the training will meet its own goals, even if participants were skeptical about it. As such, post-training attitudes towards the training can still be important for learning outcomes.

Following this it is an interesting outcome that all the participants experienced the EALT as positive, even most of the participants who experienced doubt or had a skeptical attitude beforehand. However there are differences in which particular factors contributed to the positive experience for them.

One of the most common factors was the participants' impression about the educational value of the training. Considering this is the main purpose of the training, this is not very surprising.

Very nice and very educational. Also to understand my colleagues. For example, why you get a certain reaction to the things you do. I think this helps me better understand my colleges. (participant 10)

It was very nice and helpful. Good things were said and also very recognizable things. (participant 11)

Something that often accompanied these sentiments was "pleasant surprise" about the training. This was often the case for participants who were skeptic beforehand, or who did not have any expectations or learning goals, but not exclusively so.

> *I thought it was very interesting. I am always interested in people, personalities and characters, and this is a very different way to work with that. Actually you do not know in advance what you can expect, so it's very funny to see what you are able to recognize through it. Characteristics that are actually mirrored. Yes I found it very interesting. (participant 9)*

> *Frankly, in advance I thought I would just go into it open minded. I did not have many expectations but I did have some doubts whether the training would contribute to something. But yes, the few things we had in mind I did indeed see back during the training. (participant 10).*

Another factor that could explain fulfillment and positive experience among participants is that many participants consider the training to be a lot of fun. A common factor is the positively contributing role of the horse in the training, which is further supported by the fact that almost all participants characterized the interaction with the horse as positive.

> *Yes it was so much fun, I went in with an open mind and without any expectations. I'm very excited about it and I thought it was great fun. (participant 30)*

It should be noted that there was one participant who was skeptical before the training and remained skeptical about its effect afterwards. However, this participant still reported the EALT as a positive experience that showed some recognizable things. The participant indicated that the origin of the doubt is in the fact that the trainer has to translate the horse's behavior. They did not recognize the behavior of the horse themselves and because she was forced to accept the honesty of the horse during a training in which honesty plays a large role, they felt cornered and experienced distrust for the horse. The fact that participants cannot properly recognize and interpret the behaviors of the horse is a core issue in the EALT literature and most providers try to mitigate this by explaining the behavioral expressions of the horse during the intake phase and by being very clear and inclusive about them during the training. However, as the results show, this is now always enough.

> *Well I really had no expectations. I'm still not really sure what to think about it. On the one side, I'm like, this is so funny, because I recognize a lot. And I do think a training making use of horses like this can work for behavior analysis. But on the other hand, you might be able to say that about just about any kind of situation that fits that person, so I'm not entirely sure about the role of the horse in this. It might just be that you're reading things into his behavior because you want or expect them to be there. (participant 7)*

Together these results paint a different picture than expected. The lack of confidence or learning-goals did not seem to have any clear influence on the learning effect of EALT. In

addition, there was also no real difference between neutral or positively oriented participants in this regard. This conclusion is based on the fact that nearly all participants clearly describe a learning effect that is part of the EALT training goals.

3.2.3 Application of the learned

In the theory discussion, a distinction is made between training that is suitable for corporate purposes and training that is mainly useful as a group activity. The crucial factor here is that the results of training for corporate purposes need to be transferrable to the work floor. While this factor had initially not been part of the research, the relevance of this concept quickly became clear during the interviews. In this section are the results of asking participants about their views regarding this.

Expected application of the learned

While discussing this subject, it became clear that most people first think of how they could theoretically apply it on the work floor. They reason it out hypothetically instead of thinking practically about how they would actually integrate anything they have learned into the situations they encounter on a daily basis.

> *It's something you keep in mind if you do a project with someone. Something to be conscious of, because it could be a weakness of that person. Or of myself, of course. So in that regard, I definitely consider it something that is applicable to the workplace.* (participant 10)

When specifically asked if they had any concrete ideas about practical implementation of what has been learned, not one participant could provide a clear answer. Common responses were that they needed more time to process or that they believed the way this would affect them would avail itself to them during the normal course of things.

> *I think it's a little too soon for myself to process it. The trainer already asked me if I was the kind of person who felt a strong need to do things right the first time without any delays, and yes, that's me. Now I had to walk an entire lap before the horse gave me any attention at all, so I was able to take things more slowly when the situation called for it. So at the very least, I have that to transfer, but other than that I don't know. I think there is more, but it's a little too soon to say. (Participant 5).*

> *I think that still has to come, yes, I wouldn't dare to say yet. (participant 8)*

It is clear that at this stage, directly after the training, participants have no real idea about the application of what they have learned to their daily (professional) life. Nearly all participants acknowledge the educational value of the training and a small majority can

theorize how the training connects with the corporate context, but none of any concrete purpose in mind (such as "I think being conscious of this now will change the way I deal with customers considerably", for example).

Because of this outcome, the third phase of interview sessions has increased in value, as they will now be the only source of information regarding the implementation of what has been learned during these training sessions.

Application of what has been learned

Four weeks after each training session had taken place is the third interview conducted. Almost all the participants who were interviewed four weeks after the training were still positive about the training and its learning potential. This matches what Tannenbaum et al., (1991) said about positive training fulfillment outcomes affecting long term attitudes.

> *Well I have learned something. These things were not new, but it was like a mirror being held up. Like, this is the way it is. So yes it was certainly useful for me. I do think the horse can be used as a tool, as a mirror. (participant 1)*

> *Yes I had fun, I learned a lot through it. (participant 6)*

The participant who was not very positive about the training at this time was also skeptical about the effect of the training during the interview directly after the session.

> *No, there was some recognition, but it was no eye-opener. (participant 4)*

However, the most important discovery is that at this point 7 out of the 10 participants who were contacted had found a way to put what they had learned to use. During the interviews, it became apparent that this took place in two ways. The first is subtle in that some participants felt more confident about using their body in general and said that the training affected them in a general way.

> *I am more conscious now and sometimes that already helps to become a little bit tougher. To take a deeper breath before you go ahead with a conversation or just to sit straight. (participant 3)*

The second way is that people actively linked back to the training during a situation and adjusted themselves to improve their position.

> *Well I was already conscious of how I do it to a reasonable degree. But it was an extra confirmation, which was very pleasant. In the recent week I had certain situations during my work where I had brief flashes back to the training. It is a convenient way to stay true to yourself. (participant 8)*

> *I have used it during my work. Some colleagues also indicated that they liked it that I am non-verbal as verbally more clear. Because it helps them know where they stand. (participant 6)*

In addition, there was also a small group of participants who said they had kept the training in mind, but had not applied anything they had learned from it.

> *Good question. I have not really used it concretely however I did keep it in mind. No, I haven't actually applied it yet. (participant 2)*

Even more interesting was a participant who professed at this time to be so anxious during the training session itself that she would rather just try and forget it ever happened.

> *Well during this training I was so paralyzed by fear that it is not really appropriate for me. Perhaps it could be in situations where I am just afraid. But these have not occured since. (participant 7)*

Initially, there had been some doubts about the usefulness of training which styles itself as Leadership Training for people who did not necessarily fulfilled leadership roles. However, most participants felt that EALT can be useful for every kind of professional because the reason why it might be useful for leaders are considered similarly useful for non-leaders.

> *Yeah totally, it doesn't even matter if you're a manager or have another function. It helps to gain insight into yourself. This will certainly help. (participant 1)*

> *Well I think everyone can learn something from it. It's really nice to see how a horse mirrors humans. The mirroring effect is educational for everyone. (participant 5)*

Summarizing, the most important outcome is that a large majority of participants has found a purpose for the training after four weeks since their training. Participants report implementing what they have learned in one of two ways. One of these could be considered a conscious and the other a subconscious manner. It stands to reason that participants will generally implement in a way that is some combination of both, but this cannot be found in the interview data. Regrettably, because the third interview phase does not include all participants for reasons stated before, this amounts to not much more than conjecture.

4 - Discussion

This chapter begins with a conclusion and a summary of the findings resulting from the thorough analysis of the data from human-horse interaction and EALT effect studies. This is followed by a discussion of the implications of the studies and their limitations. Finally, the chapter closes with suggestions for future research.

4.1 Conclusion and Summary of Findings

Despite gaining in popularity and being offered by over 200 providers in the Netherlands alone, there is surprisingly little scientific evidence for one of the main underpinnings Equine-Assisted Leadership Training: the usage of a horse to provide participants with a mirror for their nonverbal behavior. Questions about the nature of the mirroring effect and the role it plays in the EALT goal of increasing participants' consciousness of non-verbal communication have yet to be answered. The studies in this research paper have tried to find these answers and provide insight into EALT phenomenon in general.

4.1.1 The human-horse interaction

The research in this paper started by testing the idea that human and horse nonverbal behavioral patterns are compatible and can be represented by the same behavioral model. For this purpose, the Leary's Rose (Leary, 1957) was used because it is a seasoned model and can be used to predict nonverbal behavioral responses. The first study tested whether horse behavior could indeed be represented by this model and came back with positive results. A clear horse behavior could be attributed to each of the model's 8 behavioral types.

The next step was to test whether the model could predict nonverbal behavior for human-horse interactions the same way it does for human-human interactions. Because the function of the horse in EALT is to act as a mirror for nonverbal behavior and the humans are assumed to not generally be very conscious of this, the horse must be able to pierce the veil of the human's conscious goal-driven nonverbal behavior and respond to his or her unconscious nonverbal behavior.

The results of this study were generally positive, but deviated from Leary's model in the prediction of one nonverbal behavioral response. While human nonverbal below-against behavior was predicted to produce horse nonverbal above-against behaviors, in both cases where this behavior was displayed by the human, it instead produced nonverbal below-

against behavior in the horse as well. One possibility is that this is a consequence of learned behavior by the horse, but that particular phenomenon will be elaborated on later, because it constitutes an important limitation of this study. However, despite this deviation, the results of the study are close enough to Leary's model to accept it as generally applicable to human-horse interactions, especially if this deviation is taken into account during the training.

Comparable to human mirroring behavior (Chartrand & Bargh,1999), this study found that horses also produce a complementary behavioral response on each specific human behavior. This confirms Kaye-Gehrke's (2007) theory, which states that a horse gives a mirroring response to human behavior.

The value of the comparing human-horse interaction to human-human interaction is that managers and others can train themselves by interacting with horses to develop desirable behavior in a corporate environment. Based on the lack of consciousness that many leaders have about their personal appearance and nonverbal behavior, as was discussed in the theoretical background chapter, and how much they influence their team trough nonverbal communication, which has also been previously discussed, EALT session could be very beneficial to people in such positions. For these effects however, the EALT trainees do have to be conscious of the similarities in behavior and they also have to understand them. Without understanding the process, application on the work floor is unlikely (van der Wiel, 2002).

4.1.2 The effect of EALT

Similar to regular communication training (Barling, Weber & Kelloway, 1996) and other forms of animal assisted therapy (Kovacs & Umbgrove, 2005), this study found that EALT has an effect on participants' self-consciousness. More specifically, results suggest that the main effect of EALT on participants is that it triggers recognition, confirmation and clarification of the impression they already have of their non-verbal communication. In contradiction with the expected negative influence of anxiety for horses based on the work of Tannenbaum et al., (1991) this effect was not observed during this study. Similarly, low motivation, learning goals and expectations all did not seem to matter much for the eventual results of the training.

Interview results reveal that the recognition and confirmation of their own knowledge about their nonverbal communication came through the mirroring response of the horse during the training. A participant stated that the interaction and the response of the horse to it is like a mirror being held up in front of him. Following one of van der Wiel's (2002) main points for learning through training, most trainees do understand the learning method. In other words: the meaning of the horse behavioral responses and how it reflects on themselves.

What is learned during EALT sessions generally ends up being applied to the work floor. This study found that application of what is learned during EALT sessions takes various forms, but is generally processed either consciously or subconsciously. The first observed

form is an increased consciousness of non-verbal communication that in makes the participant feel tougher during conversations and better able to stand their ground. The second form is that the training contributes to the ability of the participants to express themselves more clearly than before, which is an unconscious effect of the training. The third observed form is the ability to match behavior to their public more accurately, which is a conscious effect.

There is room for improvement where it comes to non-verbal communication in the corporate world (Haijtema, 2005; Velsor, Taylor & Leslie, 1993). In this research, EALT has been shown to affect participants' perceptions of their nonverbal communication, with nearly all reporting increases in consciousness.

4.2 Limitations

4.2.1 Limitations of human- horse interaction study

The first limitation is based on the deviation of one interaction pattern with the pattern that was expected. Based on Kaye-Gehrke's (2007) theory that the horse's response is based on their sensory capability and the described similarity in influencing neurons during interactions as humans, it was expected that human-horse interaction would be in accordance with a human interaction pattern. This was the reason for using Leary`s model to analyze the interactions. The theory behind that model states that everyone can produce any kind of behavior, depending on the context. So the type of response depends on the behavior of the person who initiated. However, there is a field called typology, wherein it is assumed that personal preferred behavioral styles influence the behavioral response (Johnson & Johnson, 1987). Considering the deviating outcome in one of the patterns, the use of a model that does not include personal preference in behavioral styles could be a limitation in the explanatory power of the research.

The second limitation is the treatment of horses learning capacity regarding correctness of response. Horses can learn how to behave (McCall, 1990) and are highly sensitive to cues. This could mean that that when horses sense positive feeling by the trainee as response on a particular behavior, the horse could repeat this behavior to receive the feeling by the trainee again. This could influence the validity of the interaction study to such an extent that it would become a self-fulfilling prophecy on part of the researchers and trainer. However, because different horses were used within and between training sessions, participants only interacted with the horse for a limited time and sessions were only day-long, it is not expected that horses developed any real routines.

The third limitation can be found in the multiple levels of interpretation during the observation parts of the studies. Although attempts were made to reduce interpretation bias by using multiple coders for both the human and horse behaviors, there are still reliability issues because the reliability of both human coders and horse coders can interact with each other during the coding of the interactions. For example, if only one of the two coders gets the behavior wrong, the interaction already does not follow the model anymore and identifying these instances post-hoc is difficult. Besides that, the limited amount of interactions that were coded did not help with this. Future research might address these issues by coding more interactions.

4.2.2 Limitations of EALT effect study

Interviews were used to study the effects of EALT. The first and most important limitation of this study is related to this method and concerns the possibility of socially desirable answering among the participants. Because participants have been actively engaged in the training for a large part of their day and are conscious of the status of the cooperation between researcher and trainer, it is not unlikely for them to give answers that they think will please both parties. The questions about the effects of the training are suspect in particular. However, the third wave interviews help with this to some extent because they took place over the phone, and participants would feel less social pressure compared to when the researcher was sitting right across from them. Considering participants could describe detailed ways in which the training had benefitted them during the weeks prior to the third interview, it can be assumed that there was indeed an effect however.

The second limitation of the interviews is that they did not completely address a potential effect on the actual acceptation of the learned. Between human and horses there is a difference in hierarchical power, as is exemplified by their different positions in the food chain and made practice by the subordinate life horses are used to and people expect when considering horses and horseback riding. According to Yukl (2006), this kind of power difference can affect the effectiveness of the training's influence. During the EALT, the horse-human interaction is a substantial part of the influence process and its main component is the mirroring behavior of the horse. In one way, the horse actually takes the role of judge and confronts participants with the reality of their non-verbal behavior. However, for this to work, participants need to accept the 'authority' of the horse in this. Yukl's (2006) research indicate that the of the horse diminutive power compared to the human participant could affect the participant's acceptation of what the horse 'tells' him or her. The fact that participants almost only state confirmation and recognition of their non-verbal behavior instead of new insights might be a clue for this. However, there are two things mitigating this

issue. The first is that the participants are extensively briefed during their intake on the role of the horse, its psychology and the way its behavior will be interpreted. Knowing the theory and reasoning behind the role of the horse, it should be easier to accept it as an authority during the session itself. In addition, the final interpretation of the horse's behavior in regards to the human participants always comes from the training. The horse itself does not communicate his take on the participant's non-verbal communication back directly. As such, the authority of the trainer, which should not be compromised and essentially be higher than the participants themselves, will most likely (partly) mitigate doubts the participant might have about the outcome.

The third limitation of the study is the exclusion of various possible influences on the transfer of training. Statements of participants who are terrified about the horse indicated that they had problems learning and applying what they had learned because at the time they were mainly focused on their fear for the horse. This is an example of a personal factor affecting the outcome of the training, which raises a question about the influence of personal factors. What is remarkable about this is that these participants still stated that they had learned something about their non-verbal communication, despite the level of mental stress during their interaction with the horse. Lazarus and Cohen (1977) note that coping with high-stress situations often does not lead to good learning outcomes and leave a negative impression. One reason why this could be is that the participants did indeed learn something and it was indeed confirming of what they knew, but it was focused on adapting their non-verbal behavior for coping with horses. This would also explain why these participants also give less conclusive answers about how they applied what they had learn to their work environment. Naturally, like was mentioned before, there is always the danger of socially desirable answers being given by participants, especially in a case like this, where the participant might want to excuse themselves for the outcome of their interaction.

A fourth limitation is related to the findings of the effect study and the possible influence the frequency of the training might have. Repetition seems to be one of the mean indicators of successfully associative learning according to Rock (1957). Therefore, the fact the EALT session are only one day long and not repeated could mean that the potential of EALT is not fully tapped. This could can be a limitation for the generalizability of the results when comparing the outcomes of this study with those that deal with training types that do features repeat sessions.

4.3 Recommendation for further research

Based on the discussion above there are multiple leads for future research. This research used a setup that examined not only the effect of the training type, but also at how this effect was established. When studying any training type, it is important for the contribution to the knowledge on training in general that both of these aspects are investigated, so the gained insights can become a logical part of the literature.

As described in the limitations there is reason to suspect that behavioral preference as posed by Johnson and Johnson's (1987) typology could also influence human-horse interaction. Further research into the possible influence of this typology on the interactions should be interesting because it could give insight in how character traits might influence this kind of training. In particular, it could also be interesting to investigate if there is any reason to assume a similar dynamic regarding the horse's personality. Aside from this, the research could benefit from a replication of the study with a much larger corpus of interactions and an equal number of interactions for each behavioral category to make the results more solid.

Another recommendation for further research is also related to the human-horse interaction. The current research showed that human-horse interaction is comparable to Leary`s (1957) human interaction model. It would be interesting if future studies could investigate whether human-horse interactions are also comparable to other human behavioral models like the 'intervening inversely when encountering resistance to intervention' theory of Kloosterboer and van Vliert (1987). For EALT providers this might provide new ways to develop the training type and for science this could provide broader theorizing on the subject.

The fourth recommendation for further research has scientifically as well as practical value. Like described before, the horse`s learning behavior (McCall, 1990) was not included as part of the study design. This means that it is not clear if and when a learned response was given instead of a natural response based on the participant's behavior. Insight in whether this indeed happens and after how many interactions can give guidelines on the proper frequency of use of a horse in EALT.

Investigating whether hierarchical power differences indeed have an effect on the training outcomes of participants could be another useful addition to the knowledge about this type of training, in addition to contributing to the literature on human-animal interaction in general. Finally, the effects found in this study were based on a one-day training variant. Considering that repetition can influence the effectiveness of associative learning (Rock, 1957), repetition of EALT could increase the level of consciousness participants develop about their non-verbal behavior and communication. Further research could investigate the potential of this.

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