

A Thesis Presented to
The Faculty of Alfred University

Decoding Human Nonverbal Communication:
Does Experience with Horses Enhance Skill Level?

by
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Preface

Horses are truly the strongest, most powerful, beautiful animals I have had the fortune with which to work. Horses have played a very large role in my life for the past 13 years. As a child who struggled with anxiety from a young age, working with horses always served as an escape from the stress of everyday life. When I am in the barn with the horses, I breathe a little deeper, I feel more supported, I feel love, I feel passion, and I feel a connection stronger than any other. Additionally, I believe horses pick up on things about me that no one else does. When I go to the barn, it seems as though the horses can tell exactly what is going on with me that day. They seem to have the ability to read my nonverbal communication and understand where I am at emotionally in that moment.

In response to my own personal experience with the therapeutic benefits of working with horses, I have developed an interest in areas like Equine Assisted Therapy (EAT) and more specifically Equine Assisted Psychotherapy (EAP). As a Psychology major, I have had the opportunity to take classes in EAP and Animal Assisted Therapy. Unlike other forms of psychotherapy, such as Cognitive Behavioral Therapy, EAP does not have as much empirical research to back it up. Therefore, in order to find support for a form of therapy that I am so passionate about I was eager to conduct research that could potentially support the use of EAP. Further, I am motivated to help pass along the therapeutic benefits of working with horses with others that may also find it beneficial.

I hope to become involved more deeply in EAP in the future. After taking classes in EAP I have been able to experience specifically the power of the metaphors that come out in EAP sessions. EAP is very unique when compared to other forms of therapy and there are a few elements that set it apart from other forms of therapy in my mind. First of all, EAP takes place in

a barn. In my opinion, this is the best place you could possibly have therapy take place. In each session, the horses play a unique role; they are meant to be observed instead of formally worked with. In other settings with horses, individuals are taught about how to interact with horses, how to take care of them, and how to ride them. Secondly, in EAP, the horses are not just a tool used in this form of therapy, but an integral member of the therapeutic team. Individuals are asked to complete tasks involving the horses without being given specific instructions. Through their actions and behaviors the horses teach clients a plethora of lessons. Lastly, therapists use *clean language* to allow individuals to interpret what they see and what they need to see in order to find benefits necessary for their specific situation. That being said, therapists do not label things in order to give clients the freedom to label things in the arena in a way that is most beneficial for them. The horses are meant to serve as metaphors for the things going on in client's lives. These elements are what make EAP so beneficial to individuals that do not succeed in the typical talk therapy settings. The EAP setting is unique in the way that it creates a less intimidating environment for individuals to achieve therapeutic change and benefits.

When interacting with other equestrians throughout my life, and, specifically in my time as an undergraduate college student, I have begun to notice a pattern in others' abilities to read nonverbal communication. I had a theory that after working with horses for such a long period of time, equestrians are more in-tune to nonverbal communication than the average person without experience with horses.

Aside from my own personal experience with horses, there is also past research that helped support my hypotheses that EAP could be beneficial for individuals. Individuals could find benefits in improving their nonverbal communication, improving their social interaction skills, ultimately improving their overall happiness. Nonverbal communication is the specific

element under investigation in terms of the effects of working with horses. Nonverbal communication is a form of communication that is often overlooked. However, nonverbal cues actually make up 93% of all meaning derived from human communication (Argent, 2012). Therefore, the ability to understand nonverbal cues is crucial in communicating with other individuals. Aside from conversing, decoding nonverbal communication is also a very important element of social interaction. Individuals with higher levels of nonverbal communication abilities are found to have higher quality relationships with others and are rated more positively by their peers (Burgoon, Bonito, Ramirez, Dunbar, Kam, & Fischer, 2002; Hodgins & Zuckerman, 1990; Riggio, 2006; Sternberg & Smith, 1985). Differences in nonverbal sensitivity exist among individuals based on differences in experience and practice of nonverbal sensitivity.

The research study that I completed for my Honors Thesis looked at the interaction between individuals' experience with horses and their nonverbal communication abilities. Participants in my study identified their level of experience with horses and completed two different kinds of tests measuring nonverbal communication abilities. The measures provided an opportunity for participants to demonstrate their nonverbal communication abilities through written examination and self-analysis assessing their own perception of their ability to decode nonverbal communication.

Based on past research, my own personal experience interacting with horses, and interacting with other equestrians, my hypothesis for the study was that individuals with more experience with horses would have a higher level of nonverbal communication abilities than individuals with less experience with horses. Directionally, the results I found provide preliminary evidence that more experience with horses is associated with greater nonverbal awareness.

The process of completing my research has been a very positive experience for me. I have never conducted my own study before and have learned a lot from the experience. Also, I found the work to be far less strenuous because I was studying something that is so near and dear to my heart. Throughout the research process I was able to connect with other individuals, talk to them about their experience with horses, and hear their own personal testimonials to the therapeutic benefits of working with horses. Aside from the learning opportunity this project has provided for me, I also feel fortunate to have had the opportunity to contribute to research surrounding a therapeutic approach that I full-heartedly believe in. I believe that EAP will continue to grow in popularity and I will continue to advocate for its effectiveness.

I hope to get my certification through the Equine Assisted Growth and Learning Association (EAGALA) in the near future. My dream is to have my own equine facility and create a program that works specifically with children and young adults that are struggling emotionally. I would like to create an environment at my barn that allows for emotional healing and helps individuals build character, trust, and become more well-rounded mentally and physically human beings. I am also interested in incorporating horses that have been rescued from abusive or neglectful homes and incorporate them into the program. I believe that interacting with a horse that has had a hard life is a great opportunity for individuals whom are also struggling to connect with someone that can relate personally to what they are going through. I look forward to exposing others to the therapeutic benefits of working with horses and passing along the love, passion, and confidence that blossoms from working with these kind and beautiful animals.

Abstract

This study explored whether experience with horses affected levels of human nonverbal sensitivity. I hypothesized that individuals with more experience with horses would have a higher sense of nonverbal sensitivity. Undergraduate students (N = 87; 55 female, 31 male, 1 other) participated in a quasi-experimental research design. Participants completed the Mini Profile of Nonverbal Sensitivity test (Mini Pons; Banziger, Scherer, Hall, & Rosenthal, 2011), the Perceived Decoding Ability Self-analysis (PDA; Zuckerman & Larrance, 1979), and a demographic survey. Results of a one-way ANOVA with each measure were not significant; however, the results directionally supported my original hypothesis. Results show that participants with no experience with horses had the lowest level of nonverbal sensitivity, participants with several years of experience with horses had higher levels of nonverbal sensitivity than those without experience with horses, and finally participants with more than five years of experience with horses had the highest level of nonverbal sensitivity. While experience with horses seems to be influential to human nonverbal sensitivity, the nature of the relationship between amount of experience with horses and ability to communicate well with other humans requires continued exploration. Future investigation of this relationship may be beneficial in supporting theories behind incorporating horses into a therapeutic setting.

Decoding Human Nonverbal Communication:

Does experience with horses enhance skill level?

Nonverbal communication is any kind of communication that does not use linguistics (Fernandez-Dols, 2013). This includes, but is not limited to: facial expressions, gestures, paralinguistic, body language, proxemics, eye gaze, and appearance. Like verbal communication, nonverbal communication requires a message, as well as a sender and receiver. In order to communicate successfully both the sender and receiver have to be able to understand and use the same codes as their counterpart. Language is adapted during varying contexts in order to create the most successful way to transfer information between individuals (Fernandez-Dols, 2013).

Nonverbal communication is an important element of human communication, 93% of meaning comes from nonverbal cues (Argent, 2012). Individuals communicate more effectively if their nonverbal communication matches their verbal communication. Also, nonverbal communication makes up for 60-65% of all social meaning existing in response to interactions between humans meaning (Argent, 2012). Therefore, nonverbal communication is a crucial skill to have in order to communicate effectively in a social setting.

Human Nonverbal Communication

Individual differences exist among each person's ability to decode nonverbal communication (Riggio, 2006). Individual differences in ability to decode nonverbal communication exist because of personality factors, different levels of experience, and training. Akert and Panter addressed individual differences in nonverbal decoding ability based on levels of extraversion in an article published in 1988. Background research indicated that extraverts have a heightened ability to decode nonverbal communication. Extraverts, by nature, are more social, sensation seeking, and less sensitive to stimuli. Due to their tendency to be more social,

extraverts tend to be involved in more social interactions, resulting in more exposure to nonverbal communication. The results showed that extraverts were significantly better at decoding nonverbal communication than non-extraverts, indicating that exposure to more opportunities to interpret nonverbal communication leads to a heightened ability to decode it, as well (Akert & Panter, 1988).

Nonverbal communication, and communication in general, is very dependent on the context in which it is being used (Fernandez-Dols, 2013). In our society, individuals must adjust the form of communication being used based on the context of the environment. Differences in nonverbal communication also exist between diverse countries and cultures. Humans must adjust their communication style in order to communicate successfully with all different kinds of people: friends, siblings, family, authority figures, etc. Adjustments in communication style must be made due to the necessity for mutual understanding between the sender and receiver (Fernandez-Dols, 2013).

Nonverbal sensitivity is crucial in developing effective social interaction skills (Burgoon, Bonito, Ramirez, Dunbar, Kam, & Fischer, 2002). Results of a study published in 2002 showed that proximity and availability to nonverbal cues affected individuals' communication processes, social judgements, and task performance (Burgoon et al., 2002). Decoding nonverbal communication is also a part of larger elements of social interaction known as interpersonal sensitivity and social intelligence. Both are predictors of an individual's success in creating relationships as well as carrying out successful social interactions with others (Riggio, 2006; Sternberg & Smith, 1985).

Differences in decoding abilities can be observed starting at a young age. An article published in 1993 found that the presence of childhood psychopathology showed a correlation

with reported levels of nonverbal sensitivity (Russell, Stokes, Jones, Czogalik, & Rohleder). Boys recruited from mental health settings had lower levels of nonverbal sensitivity than boys recruited from classroom settings. A correlation between a child's ability to decode nonverbal communication, social incompetence, and self-control was also discovered in the same study. These correlations indicate that a child's ability to understand their peer's emotions ultimately affects the way in which a child adjusts socially (Russell et al., 1993).

Abilities in decoding nonverbal communication are also linked to different levels of success in relationships among college-aged roommates. Roommate pairs that both scored high on nonverbal decoding abilities rated their relationship with one another more positively than other roommate pairs, for example roommate pairs that were both low on decoding abilities or one is low and the other is high (Hodgins & Zuckerman, 1990). Male roommate pairs both scoring high on nonverbal decoding abilities reported their relationship with each other as significantly more open, close, and intimate than roommate pairs with varying scores in nonverbal decoding abilities or roommates with mutually low scores. Evaluations made by these same roommate pairs indicated that interactions between individuals with higher decoding abilities also identified that there was more emotional sharing, meaningful conversation, mutual disclosure, and high feelings of support. Similarly, individuals with higher decoding abilities are perceived as more socially competent, better marital partners, having more positive friendships, warmer towards others, more sympathetic, more responsible, less hostile, and less critical. In conclusion, this study indicates that higher levels of nonverbal decoding abilities lead to more quality relationships. Also, individuals with higher levels of decoding abilities are perceived by their peers in a more positive light making them more approachable and also more likely to be approached and befriended.

Animal Nonverbal Communication

Animal nonverbal communication is unique and different from the way in which humans interact with one another. Differences in nonverbal communication exist among every animal species.

Horses, as the animals most relevant to this study, communicate solely through nonverbal forms of communication. They are very reactive animals and have their own unique methods of communicating with one another and with the world (Williams, 2004). Horses communicate mainly through their body language. Body language used by horses includes changes in their face, ear movement, tail movement, and movement of other parts of their body. For example, when a horse has its ears laid back on its neck and its nostrils flared, this indicates that the horse is being aggressive or is angry. A horse that is swishing his/her tail is indicating annoyance or may be feeling frisky or energized. Horses express fear by widening their eyes, exposing the whites of their eyes, and raising their head. On the other hand, a happy horse has their ears forward, their head is level, and relaxation of the muscles in their face. Most of a horse's nonverbal communication is based on the fact that horses are prey animals, meaning that they are naturally flighty animals because they are constantly wary of a potential predator attack. Additional driving factors behind all horse behavior include: their high perceptive ability that is better than any other domesticated animal, their great memory for good and bad situations, the fact that they are herd animals and are easily dominated, their social nature, and their communication solely relying on nonverbal cues. This is crucial in understanding the way in which horses communicate. Although horses communicate differently from humans, in order to work well with horses' humans must be able to communicate solely through nonverbal communication.

Although humans and horses communicate in different ways they are similar to one another in many ways. Similar to humans, horses are social animals and are also members of a social hierarchy, meaning that they live among a community and learn what is socially acceptable and what is not by observing the behavior of their superiors (Argent, 2012). Horse behavior is driven by seeking approval from peers, gaining control, inclusion, and affection. Social interaction among horses is facilitated through touch, movement, and space. One can infer about the reactions of a horse by looking at their resistance, ear movement, ear position, and head position (Chamove, Crawley-Hartwick, & Stafford, 2002). The social nature of horses make them very relatable animals for humans to work with. As social animals as well, humans can learn and benefit from working with and observing the social nature of horses.

Human-animal Bond

Many people have found benefits in owning and spending time with animals. The relationship between human and animals has been labeled and more recently defined and described in more depth. The American Veterinary Medical Association (2018) refers to the relationship between humans and animals as the human-animal bond. The human-animal bond has been studied in the context of western civilization as something that promotes social interaction (Every, Smith, Smith, Trigg, & Thompson, 2017). This bond is defined as a mutually beneficial relationship between a human and an animal. Benefits include physical, psychological, and emotional components of an individual's well-being. This kind of bond has been experienced and talked about throughout our history, but has only recently started to be studied and measured in a quantitative way (2018).

Beck (2014) describes the biology of the human-animal bond. Evidence for the mutual benefits of the human-animal bond can be supported through the *biophilia hypothesis*, which

indicates that living things have a tendency to focus on life. According to previous findings, observing life can result in positive health effects including declined blood pressure, lower anxiety levels, and increased oxytocin. In my own personal experience creating relationships with pets allows humans to find social support that may be lacking in different areas of their life. In my opinion, individuals who struggle in social settings may find happiness in working with a horse because they are not judgmental of individuals that are different or may need work with communication. Observing living things has been found to result in decreased blood pressure and increased oxytocin levels (Beck, 2014). This may indicate that being around animals, like horses, can create a better environment for therapy, learning, and relaxation.

There are many different relationships that exist between humans and all kinds of different species of animals. One of the most commonly examined relationships is that between a human and horse. In a chapter about the connection between horse and human, Argent (2012) describes the relationship as being almost mystical and unexplainable. Humans and horses work well together because they are both social animals and both seek connections. Both mammals live based on the unspoken rules and regulations indicated through the social hierarchy. Both humans and horses also seek for a best friend, for most horses a human can be one of those best friends. In working together, a horse and rider must move in perfect synchrony with one another. The connection existing between the most talented horse and rider may indicate a heightened sense of ability to read nonverbal communication because a rider can change their behavior based on the nonverbal communication of their equine counterpart. The most talented horsemen and women are referred to as “horse whisperers” as if they have some sort of special power that allows them to communicate with another animal whom communicates differently from them.

Animals are sensitive to human nonverbal communication. An individual's confidence level, attitude, and level of experience interacting with horses affects the way in which horses respond to a person (Chamove, Crawley-Hartrick, & Stafford, 2002). Similar results are found when observing interactions between humans and dogs. Dogs interact differently with individual with previous experience with dogs versus those without any experience (Meyer & Forman, 2014). Horses show more resistance and more eye movement when interacting with individuals that have lower levels of confidence. Therefore, horse behavior changes based on the individual with which the horse is interacting. Horses provide feedback to each human by responding differently to each person they interact with (Chamove, Crawley-Hartrick, & Stafford, 2002).

Another study published in 2018 looked at the characteristics of various horse behaviors in terms of their relationship with humans (Minero, et al., 2018). The researchers looked at the different behavior observed in the horses including aggression, fear, happiness, pushiness, and ease. The horses either avoided the person they were interacting with or did not. Reactions also included aggression, moving away from the human, or staying calm and showing signs of interest. Each human-horse interaction was observed for these different kinds of responses in the horses. The results showed that horses acted differently based on the human that they are interacting with. In order for humans to improve the interaction with that specific horse they have to adjust their behavior or approach (Minero, et al., 2018). Individuals that work with, train, or ride horses have to learn to understand all of the nonverbal cues of a horse in order to work most successfully with this specific animal.

Animal Assisted Therapy

In recent years after much talk about the mutually beneficial relationship existing between humans and animals (American Veterinary Medical Association, 2018) different forms

of therapy have become more popular. New therapy approaches include Animal Assisted Therapy (AAT), Equine Assisted Learning (EAL), Equine Assisted Therapy (EAT), and Equine Assisted Psychotherapy (EAP). These terms are often confused with one another. Equine Assisted Therapy references the general idea of incorporating horses into a therapeutic setting which can be implemented in many different ways. Equine Assisted Psychotherapy is a more structured form of EAT that has been used mainly through EAGALA. Equine Assisted Psychotherapy incorporates horses into the treatment team and process. In EAP clients learn from working with and observing the horses as opposed to learning about how to care for or ride the horses. These new forms of intervention create an opportunity for experiential learning, developing stronger social interaction skills, and also experiencing the physical and mental benefits that come along with working with animals (American Veterinary Medical Association, 2018; Every et al., 2017; Gosen & Washbush, 2004).

All of the newest forms of therapy have one thing in common; they are all forms of experiential learning. This means that they get individuals out of the classic therapeutic setting and allow individuals to learn and reach their therapeutic goals through hands on experience. Research has found that individuals remember 20% of what they hear, 50% of what they see, and 80% of what they do (Mandrell, 2014). Research published in 2004 showed that experiential learning is in fact an effective form of learning. Students whom were exposed to experiential learning had more successful learning outcomes then those that were exposed to traditional forms of learning, such as lecture and films (Gosen & Washbush, 2004). Individuals exposed to experiential learning showed increases in performance, self-confidence, group cohesion, self-regulation, and interpersonal effectiveness. Forms of therapy such as AAT, EAL, EAT, and EAP

use experiential learning as the basis of their practice. Interacting and working with animals is an experiential based therapy approach.

Animal-Assisted Therapy, any form of therapy including animals, has been found to be successful with populations that may not be as successful in a typical therapy setting. Researchers conducted a study in which they worked with a group of refugees and found that despite the language barrier working with animals allowed refugees to feel more socially connected, build rapport with AAT providers despite the language barrier, and break down barriers between different people (Every et al., 2017). Working with animals seems to break down the barriers that come along with human interaction and allows individuals to feel more comfortable with opening up to their peers.

The Equine Assisted Growth and Learning Association (EAGALA), an organization which has created their own approach to EAP as a form of experiential learning, was founded in 1999. EAGALA uses hands on interaction with horses in order to facilitate a client's journey in processing and working through the struggles and issues that arise in their everyday life (Krystosek, 2013). Horses react genuinely to people, are very intuitive, and communicate solely through nonverbal communication. In the EAGALA approach horses serve as a teacher while providing the opportunity for clients to find metaphors in their behavior, communication, and social interactions (Mandrell, 2014).

A short article in a nursing journal addresses a program that used Equine Assisted Learning (EAL) to help nurses improve their skill in interacting well with their patients (Blakeney, 2014). Due to the fact that horses are prey animals they are more observant of the things around them, making them experts at picking up on nonverbal cues and intentions of others. In interacting with horse's, the nurses in this program were able to learn more about how

their behavior effects the individual they are working with. Working with horses, which are such large and powerful animals, helped teach the nurses to be more observant and reactive to what external beings are trying to communicate nonverbally to them and ultimately helped them improve their relationships with their patients.

More benefits were found in a case study involving children ages 11-15 with reported emotional or behavioral problems that were exposed to Equine Assisted Therapy (EAT) (Burgon, Gammage, & Hebden, 2018). These children did not benefit from tradition forms of therapy and therefore were assigned to participate in EAT. Teachers of these children reported that these individuals were overall happier and more mindful after participating in EAT. Mindfulness is an important element when interacting with other individuals successfully, especially in reading nonverbal cues. More specifically, children with autism spectrum disorder also showed improvements in working with horses. The children showed improvements in social communication ability and sensory processing after participating in a series of therapeutic riding sessions, as reported by their parents and teachers (Ward, Whalon, Rusnak, Wendell, & Paschall, 2013).

There is not a lot of research surrounding the area of EAP because it is a relatively new form of therapy (Lee, Dakin, & McLure, 2016). It is a therapeutic approach that many people support and believe in however it is lacking quantitative research to back up that it is an effective therapeutic approach. Thus far, findings involving EAP include that it is beneficial in improving adolescent's ability to communicate and have good relationships, improveing abilities in setting boundaries, improving abilities in reading nonverbal cues, and improving self-awareness. Research needs to continue in this area in order to find more evidence that this form of therapy is in fact beneficial to clients.

Present Study

The present study works to fill the gap of knowledge explaining the mutually beneficial relationship between humans and horses. Equine Assisted Psychotherapy is a growing field and requires more research and evidential support to show how and why it is effective.

Past research shows us that nonverbal communication makes up 93% of conversational meaning and 60-65% of all social meaning, (Argent, 2012) and is a crucial element of social interaction skills (Burgoon, Bonito, Ramirez, Dunbar, Kam, & Fischer, 2002). Horses communicate solely through non-verbal communication: resistance, ear movement, ear position, and head position (Chamove, Crawley-Hartwick, & Stafford, 2002). In order to create a mutually trusting relationship with a horse an individual must be willing to learn the meaning of the nonverbal communication cues of horses. Individuals working with horses quickly adjust to decoding horse's nonverbal communication in order to understand what their body language is telling them. Previous research also shows that individuals remember 20% of what they hear, 50% of what they see, and 80% of what they do (Mandrell, 2014).

If individuals remember 80% of what they do this is an indication that experiential learning is the most successful type of learning. In working with horses individuals have to physically practice the use of nonverbal communication to communicate well with the horses. My hypothesis is that the ability to decode equine nonverbal communication will then carry over into one's ability to decode human nonverbal communication. In working with horses, one may become hypersensitive to nonverbal cues and I believe this is carried into human communication skills.

If results of this study do in fact find that level of experience with horses does in fact affect an individual's ability to decode human nonverbal communication then future research can continue to examine how this knowledge may contribute to future therapeutic strategies. Relationships between individuals with higher nonverbal sensitivity are rated as being closer and more positive when compared to relationships between individuals with low nonverbal sensitivity (Hodgins & Zuckerman, 1990). If experience with horses does in fact increase nonverbal decoding abilities then it may also help with things like interpersonal sensitivity and ultimately benefit individuals who struggle to create relationships with others.

Method

Participants

Data were collected from undergraduate students, all ages 18-24 ($M=20.15$, $SD= 1.552$). The total sample size was 87, with one being eliminated due to failure to complete the test. Participants were recruited from Introduction to Psychology classes, equine related classes, and the University Equestrian teams. The majority of participants (63.2%) identified as women, while 35.6% identified as men, and 1.1% as other. The majority of students, 65.5%, identified themselves as being a part of the College of Liberal arts and sciences. The distribution among the rest of the participants included: 12.6 % students of the Inamori School of Engineering, 9.2% students of the School of Art & Design, and 12.6% students of the College of Business. Other factors of the sample includes: 18.4% were Psychology majors, 3.4% had a minor in Psychology, 19.5% had a minor in an equine related area of study, 43.7% identified as being a member of the equestrian team, and 36.8% of participants are currently enrolled in Intro to Psychology. Lastly individuals identified what level of experience they had with horses: 31 had 0 experience, 27 had 1-5 years of experience, and 29 had 5+ years of experience.

In order to recruit participants, the study was posted on the research board on the 4th floor of the Science Center, announced in equine related classes, sent through email to all equestrian teams, and posted on Facebook, specifically my personal Facebook page and the Alfred University Equestrian page. Participants identified how they learned about the study. About one-third (32.2%) of participants indicated that they learned about the study from the research board in the Science center, 33.3% learned about it through equestrian team or equine class announcements, and 34.5% reported that they found out about the study through other means.

Participants were compensated for participation in this study through class credit and the chance to enter a drawing to win one of two different gift cards. Participants who were enrolled in Intro to Psychology classes received three credits for participating in this study. All students participating in the study also had the opportunity to enter into a drawing to win one of two different gift cards: a \$25 gift card to Terra Cotta or a \$25 gift card to The Collegiate. All students who chose to be entered into the drawing were entered into an excel sheet in which they were assigned to a number. A random number generator was used to pick two numbers; the individuals whom were associated with these two numbers were contacted and each received one of the two gift cards.

Materials

Mini Profile of Nonverbal Sensitivity (Mini PONS)

The Mini PONS is a shortened multichannel version of the original PONS, which is a widely used test of nonverbal sensitivity (Banziger et al., 2011). The MiniPONS includes 64 short video clips that make up a 12-minute video that has scenes of the same woman using various forms of nonverbal communication. This video was accessed at <https://repository.library.northeastern.edu/files/neu:rx9167846>. For each video clip, participants answered a question about what happened in the scene. Participants chose one of two possible scenarios based on what they inferred from the nonverbal communication observed or heard in the video. The full PONS has high validity and has been used widely as a test of nonverbal sensitivity (Banziger et al., 2011). There is significant correlation between results found in the MiniPONS and the full PONS. This correlation is what indicates the validity of the MiniPONS.

Participants completed this test in a computer lab with the video being played on the screen and a physical copy of the answer sheet in front of them. Each participant had headphones in order to hear any sound involved in the videos. As the participants watched the video they answered the question that went along with each video. Each video clip was preceded by a number, in order to assure that the correct question coinciding with the clip was answered. An example of questions used for this test include options such as “admiring nature” or “helping a customer.” The participant indicated which scenario best described the video clip that they observed. The list of questions for this test are available in the appendix.

Perceived Decoding Ability (PDA)

The PDA self-analysis included 46 statements in which participants identified where they rate themselves on a scale from 1-7, 1 meaning disagree and 7 meaning agree (Zuckerman & Larrance, 1979). Some scores are reverse scored, for example “When someone dislikes me, I can usually not tell from his or her tone of voice.” A high score for this statement would indicate low perceived decoding ability, therefore the score was flipped to match other questions where a higher score indicates higher perceived decoding ability. On the key, each question is marked as indicating high or low decoding ability, see appendix for more information. This test demonstrates strong construct validity (Zuckerman & Larrance, 1979). In creating this test researchers demonstrated construct validity in a study comparing scores between the sexes. Both sexes marked that they were better at understanding facial expressions rather than tone of voice. This adds validity because tone of voice is more likely to be deceiving than facial expression. This test provided a different way to assess nonverbal sensitivity and therefore allowed for the opportunity to assess nonverbal decoding skills in two different ways: demonstrating ones’

decoding abilities through the PONS and assessing one's own perceived nonverbal decoding abilities with the PDA.

Participants completed this task on paper with a pen or pencil. They indicated for each statement where on the scale they would consider themselves to be. An example of a possible statement is "I can usually tell when someone feels affectionate even though the person does not say a word about it." The participants indicated where they considered themselves to fall on a scale from disagree to agree (1-7) in regards to their capacity to understand similar situations based on only nonverbal communication. Please see the appendix for the remainder of the PDA self-analysis statements.

Design

This study used a one-way, between-subjects, quasi-experimental design. The variables explored in this study are experience with horses and nonverbal sensitivity. The independent variable in this study is amount of experience with horses. In this context experience with horses is operationally defined as time spent grooming; interacting with; riding; and studying horse care, behavior, or training under the supervision of an equine professional at least once a week. In this study there are three levels of this grouping variable: No formal experience with horse, 1-5 years of experience with horses, and 5+ years of experience with horses. This is a quasi-experiment design because participants are placed into groups based on their existing experience with horses. This variable cannot be randomly assigned.

The dependent variable of this study is nonverbal sensitivity, which will be measured by a score on the Mini Profile of Nonverbal Sensitivity test (MiniPONS; Banziger, Scherer, Hall, & Rosenthal, 2011) (see appendix) and the results on a Perceived Decoding Ability (PDA;

Zuckerman & Larrance, 1979) self-analysis scale (see appendix). Both materials measure an individual's capacity to decode nonverbal communication.

Procedure

Upon arrival to the computer lab, of Herrick Library where the study took place, participants were thanked for signing up to participate in the study. At each computer there was an informed consent form. Once all participants arrived, all were asked to read the informed consent form (see appendix E). After reading over the information, the participants were asked to sign on the back of the consent form to agree to take part in this study. Also, on the back of the consent form, participants had the opportunity to provide their name and email to be entered into a drawing to win one of two \$25 gift cards to the Terra Cotta or The Collegiate. The consent forms were then collected by researcher. Participants were then given the test packet and instructed to direct their attention to the computer screen and questionnaires in front of them. Participants were then given the following instructions: "When I say you may begin, please plug your headphones in and press play on the video. The video is 12 minutes long and has a total of 64 short video clips. Before each clip there will be a number, and will make a sound to redirect your attention to the screen. Some of the clips have sound and some of them do not. Following the clip, please answer the question with the corresponding number on the answer sheet in front of you. Each question has two possible answers, please choose the best answer and answer the questions to the best of your ability. Make sure to look up quickly for the next clip after answering the question for the previous clip. Please do not pause the video or rewind at any point when watching the video. At the completion of the video please continue on to fill out the self-analysis and demographic survey (see appendix F) following the test in your packet. Does anyone have any questions? If there are no questions, please begin." At this point each computer

already had the video open, which was accessed at <https://repository.library.northeastern.edu/files/neu:rx9167846>, and participants just had to press play. Each computer was set on the same volume. Following the completion of this test, participants filled out the Perceived Decoding Ability self-analysis form and demographic form. The self-analysis required participants to rate themselves on a scale, from 1 meaning disagree to 7 meaning agree, in regards to their abilities relating to the statement they read. The demographic form included basic information such as gender, major, age, and level of experience with horses (No experience, 1-5 years of experience, 5+ experience with horses). Experience with horses was defined on the demographic survey as “grooming, riding, interacting with, and studying horse care/behavior/training under the supervision of an Equine professional at least once a week.” The demographic survey in its entirety can be found in the appendix. Each individual then received a debriefing form (see appendix G) at the completion of the study. Participants were then thanked cordially for their participation and excused.

Results

A one-way between-groups ANOVA revealed that there is no significant interaction effect of experience with horses and nonverbal sensitivity measured through performance on the Mini Profile of Nonverbal Sensitivity (MiniPONS), $F(2, 53.004) = 1.960, p = 0.151$. Scores on the Mini PONS were not significantly different when participants had no experience ($M = 47.2903, SD = 6.57872$) compared to participants with 1-5 years of experience with horses ($M = 48.8519, SD = 3.50498$) or even participants with 5 or more years of experience with horses ($M = 49.7586, SD = 2.87421$). Directionally, these results provide preliminary evidence that greater horse experience leads to greater nonverbal awareness; however, statistically, the results are not significant, meaning level of experience with horses does not have a significant effect on nonverbal sensitivity measured through the Mini PONS.

A second one-way between-groups ANOVA revealed that there is not significant interaction effect of experience with horses and nonverbal sensitivity measured through performance on the Perceived Decoding Ability self-analysis (PDA), $F(2, 55.660) = 1.367, p = 0.263$. Scores on the PDA were not significantly different when participants had no experience ($M = 230.13, SD = 34.58$) compared to participants with 1-5 years of experience with horses ($M = 238.56, SD = 23.41$) or even participants with 5 or more years of experience with horses ($M = 243, SD = 24.87$). Similar to the results reported above, directionally these results provide some support for the hypothesis; however, statistically, the results are not significant, meaning level of experience with horses does not have a significant effect on nonverbal sensitivity measured through the PDA.

In order to analyze other elements of the data I ran an ANCOVA to see if scores on the PDA were a predictor of scores on the Mini PONS. The results were non-significant.

Discussion

The current study looked at the relationship between experience with horses and individual differences in nonverbal communication decoding abilities. Individuals identified themselves as having no experience with horses, 1-5 years, or 5+ years. In this study experience with horses was defined as “grooming, riding, interacting with, and studying horse care/behavior/training under the supervision of an Equine professional at least once a week.” Each participant watched and answered questions coinciding with the Mini PONS (Banziger et al., 2011) and performed a self-analysis of their decoding abilities with the PDA (Zuckerman & Larrance, 1979). Directionally, the results yielded some support that more experience with horses yield better developed nonverbal communication abilities. However, the statistical analyses were not significant. Results showed that the mean score on both the PDA and Mini PONS increased as the level of experience with horses increased. Additionally, based on the ANOVA both dependent variables failed the Levene's Test for homogeneity of variances, meaning that the groups being compared were already different before they were compared. Individual differences, such as these, were not accounted for because random assignment to groups could not be performed.

There may also be other elements that contributed to the results of the study. Individual differences in nonverbal sensitivity could exist due to other factors such as experience with other animals, different levels of experience with horses, area of study, etc.

In this study, experience with horses was defined as “grooming, riding, interacting with, and studying horse care/behavior/training under the supervision of an Equine professional at least once a week.” However, variation within this definition can also exist, for example someone with 5+ years of experience may live on a horse farm and spend every day around

horses or may be an individual that has taken one riding lesson a week for the last 5 years. The individual that lives on a farm is more likely to have been influenced by working with horses when compared to the individual that has a riding lesson once a week. In future research it may be necessary to operationally define experience with horses in a different way. This difference could also be potentially observed in differences of nonverbal sensitivity among individuals with a minor in equine related studies versus those that do not.

Other factors to consider are elements such as experience with other animals or area of study. If a participant had significant experience with dogs, cats, or other domesticated animals he/she may also have a heightened sense of nonverbal communication because of experience interacting with different animals that also communicate mainly through nonverbal communication. Secondly, area of study or profession may also play a factor in observed differences among individuals. As an example, individuals that study or work in a Psychology based profession are more likely to have a heightened sense of nonverbal sensitivity because decoding nonverbal communication is a part of their day-to-day job.

In future research individuals with similar diagnoses could be assigned to regular talk therapy, no therapy, or Equine Assisted Therapy. Levels of nonverbal sensitivity could be measured before and after a 6-8-week series of sessions to see if working with horses does have an effect on nonverbal sensitivity. In future research data could be collected from individuals participating in beginner riding classes. Individuals could have their nonverbal sensitivity measured before and after the class and the levels could be compared. Also, ideally future research would have a sample size that was a better representation of the general population as opposed to one small part of the popular, such as the college population accessible in my study.

Nonverbal sensitivity may also be measured in different ways in which individuals have to practice their nonverbal communication abilities.

Other interesting areas to explore in response to this study are things such as characteristics found in equestrians as well as differences in training techniques or approaches. In training horses' individuals have varying approaches to training. Some believe that the relationship between horse and riding is based on creating dominance over the horse through a more aggressive and firm way of training. Others work to build a trusting relationship by training based on the personality and talents of the specific horse. I believe that it would be interesting to see if individuals who base their training off of creating a trusting relationship with the horse may have higher levels of nonverbal sensitivity than those who merely assert their dominance.

The results found in this study can help to continue research surrounding the therapeutic benefits of working with horses. Individuals with heightened levels of nonverbal sensitivity have been found to have more successful social interactions (Hodgins & Zuckerman, 1990). If experience with horses leads to heightened nonverbal sensitivity then mental health professionals can begin to use Equine Assisted Therapy as a way to help individuals who have deficits in interpersonal interaction skills such as individuals with Autism Spectrum Disorder. Also, many individuals seek help in order to improve their relationships with others, EAT may be a good form of therapy for individuals looking to improve the quality of their relationships.

In order to show empirical support for the use of Equine Assisted Therapy, it is important that research continues to be done involving human-horse interaction and its therapeutic benefits. There is a lot of support for this kind of therapy by individuals that have worked with and love horses. However, in order for EAT to become a more popular form of intervention empirical evidence needs to be generated in order to indicate what benefits result in EAT.

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Appendix A

Personal Identifier: _____

MiniPONS Instructions & Answer Sheet

In the video you will see and/or hear 64 recordings of a woman's face, body and voice. Some recordings show only the face, or the body, or the voice (without picture), other recordings show combinations of face and voice or body and voice. For each recording, you should circle the description on the answer sheet (A or B) that best describes the situation you think she is in. Some of the clips are extremely short -less than 2 seconds-so it is essential that you look up promptly after circling your answers.

Question 1	A. Admiring nature	B. Helping a customer
Question 2	A. Expressing jealous anger	B. Threatening someone
Question 3	A. Leaving for a trip	B. Ordering food in a restaurant
Question 4	A. Expressing motherly love	B. Nagging a child
Question 5	A. Expressing strong dislike	B. Helping a customer
Question 6	A. Expressing deep affection	B. Nagging a child
Question 7	A. Expressing jealous anger	B. Nagging a child
Question 8	A. Expressing deep affection	B. Admiring nature
Question 9	A. Talking about one's wedding	B. Expressing deep affection
Question 10	A. Criticizing someone for being late	B. Talking about one's divorce
Question 11	A. Talking about the death of a friend	B. Talking to a lost child
Question 12	A. Expressing jealous anger	B. Helping a customer
Question 13	A. Returning a faulty item to a store	B. Expressing strong dislike
Question 14	A. Expressing motherly love	B. Nagging a child
Question 15	A. Talking about one's divorce	B. Asking forgiveness
Question 16	A. Admiring nature	B. Asking forgiveness
Question 17	A. Saying a prayer	B. Talking about one's wedding
Question 18	A. Saying a prayer	B. Threatening someone
Question 19	A. Nagging a child	B. Talking to a lost child
Question 20	A. Ordering food in a restaurant	B. Threatening someone
Question 21	A. Threatening someone	B. Expressing strong dislike
Question 22	A. Leaving on a trip	B. Trying to seduce someone
Question 23	A. Talking to a lost child	B. Helping a customer
Question 24	A. Returning a faulty item to a store	B. Expressing motherly love
Question 25	A. Ordering food at a restaurant	B. Expressing jealous anger
Question 26	A. Expressing jealous anger	B. Criticizing someone for being late

Question 27	A. Admiring nature	B. Saying a prayer
Question 28	A. Criticizing someone for being late	B. Talking about the death of a death
Question 29	A. Expressing motherly love	B. Threatening someone
Question 30	A. Asking forgiveness	B. Nagging a child
Question 31	A. Expressing motherly love	B. Talking to a lost child
Question 32	A. Expressing gratitude	B. Talking to a lost child
Question 33	A. Leaving on a trip	B. Saying a prayer
Question 34	A. Expressing gratitude	B. Expressing motherly love
Question 35	A. Expressing motherly love	B. Returning a faulty item to a store
Question 36	A. Expressing strong dislike	B. Ordering food at a restaurant
Question 37	A. Talking about one's divorce	B. Returning a faulty item to a store
Question 38	A. Expressing deep affection	B. Talking about the death of a friend
Question 39	A. Criticizing someone for being late	B. Expressing gratitude
Question 40	A. Trying to seduce someone	B. Expressing deep affection
Question 41	A. Nagging a child	B. Criticizing someone for being late
Question 42	A. Talking about the death of a friend	B. Expressing jealous anger
Question 43	A. Returning a faulty item to a store	B. Talking about the death of a friend
Question 44	A. Talking about one's wedding	B. Expressing gratitude
Question 45	A. Returning a faulty item to a store	B. Talking about one's divorce
Question 46	A. Leaving on a trip	B. Talking about one's wedding
Question 47	A. Returning a faulty item to a store	B. Helping a customer
Question 48	A. Ordering food in a restaurant	B. Criticizing someone for being late
Question 49	A. Criticizing someone for being late	B. Expressing gratitude
Question 50	A. Talking about one's wedding	B. Talking about one's divorce
Question 51	A. Trying to seduce someone	B. Talking about a lost child
Question 52	A. Talking about one's wedding	B. Talking about the death of a friend
Question 53	A. Nagging a child	B. Saying a prayer
Question 54	A. Expressing deep affection	B. Admiring nature
Question 55	A. Talking to a lost child	B. Expressing gratitude
Question 56	A. Nagging a child	B. Talking to lost child
Question 57	A. Leaving on a trip	B. Expressing deep affection
Question 58	A. Expressing jealous anger	B. Talking about a lost child
Question 59	A. Expressing motherly love	B. Criticizing someone for being late
Question 60	A. Threatening someone	B. Expressing strong dislike
Question 61	A. Criticizing someone for being late	B. Helping a customer
Question 62	A. Leaving on a trip	B. Nagging a child

Question 63	A. Expressing jealous anger	B. Saying a prayer
Question 64	A. Returning faulty item to a store	B. Talking about the death of a friend

Appendix B
MiniPONS Answer Key

Question 1	A. Admiring nature	B. Helping a customer
Question 2	A. Expressing jealous anger	B. Threatening someone
Question 3	A. Leaving for a trip	B. Ordering food in a restaurant
Question 4	A. Expressing motherly love	B. Nagging a child
Question 5	A. Expressing strong dislike	B. Helping a customer
Question 6	A. Expressing deep affection	B. Nagging a child
Question 7	A. Expressing jealous anger	B. Nagging a child
Question 8	A. Expressing deep affection	B. Admiring nature
Question 9	A. Talking about one's wedding	B. Expressing deep affection
Question 10	A. Criticizing someone for being late	B. Talking about one's divorce
Question 11	A. Talking about the death of a friend	B. Talking to a lost child
Question 12	A. Expressing jealous anger	B. Helping a customer
Question 13	A. Returning a faulty item to a store	B. Expressing strong dislike
Question 14	A. Expressing motherly love	B. Nagging a child
Question 15	A. Talking about one's divorce	B. Asking forgiveness
Question 16	A. Admiring nature	B. Asking forgiveness
Question 17	A. Saying a prayer	B. Talking about one's wedding
Question 18	A. Saying a prayer	B. Threatening someone
Question 19	A. Nagging a child	B. Talking to a lost child
Question 20	A. Ordering food in a restaurant	B. Threatening someone
Question 21	A. Threatening someone	B. Expressing strong dislike
Question 22	A. Leaving on a trip	B. Trying to seduce someone
Question 23	A. Talking to a lost child	B. Helping a customer
Question 24	A. Returning a faulty item to a store	B. Expressing motherly love
Question 25	A. Ordering food at a restaurant	B. Expressing jealous anger
Question 26	A. Expressing jealous anger	B. Criticizing someone for being late
Question 27	A. Admiring nature	B. Saying a prayer
Question 28	A. Criticizing someone for being late	B. Talking about the death of a death
Question 29	A. Expressing motherly love	B. Threatening someone
Question 30	A. Asking forgiveness	B. Nagging a child
Question 31	A. Expressing motherly love	B. Talking to a lost child
Question 32	A. Expressing gratitude	B. Talking to a lost child

Question 33	A. Leaving on a trip	B. Saying a prayer
Question 34	A. Expressing gratitude	B. Expressing motherly love
Question 35	A. Expressing motherly love	B. Returning a faulty item to a store
Question 36	A. Expressing strong dislike	B. Ordering food at a restaurant
Question 37	A. Talking about one's divorce	B. Returning a faulty item to a store
Question 38	A. Expressing deep affection	B. Talking about the death of a friend
Question 39	A. Criticizing someone for being late	B. Expressing gratitude
Question 40	A. Trying to seduce someone	B. Expressing deep affection
Question 41	A. Nagging a child	B. Criticizing someone for being late
Question 42	A. Talking about the death of a friend	B. Expressing jealous anger
Question 43	A. Returning a faulty item to a store	B. Talking about the death of a friend
Question 44	A. Talking about one's wedding	B. Expressing gratitude
Question 45	A. Returning a faulty item to a store	B. Talking about one's divorce
Question 46	A. Leaving on a trip	B. Talking about one's wedding
Question 47	A. Returning a faulty item to a store	B. Helping a customer
Question 48	A. Ordering food in a restaurant	B. Criticizing someone for being late
Question 49	A. Criticizing someone for being late	B. Expressing gratitude
Question 50	A. Talking about one's wedding	B. Talking about one's divorce
Question 51	A. Trying to seduce someone	B. Talking about a lost child
Question 52	A. Talking about one's wedding	B. Talking about the death of a friend
Question 53	A. Nagging a child	B. Saying a prayer
Question 54	A. Expressing deep affection	B. Admiring nature
Question 55	A. Talking to a lost child	B. Expressing gratitude
Question 56	A. Nagging a child	B. Talking to lost child
Question 57	A. Leaving on a trip	B. Expressing deep affection
Question 58	A. Expressing jealous anger	B. Talking about a lost child
Question 59	A. Expressing motherly love	B. Criticizing someone for being late
Question 60	A. Threatening someone	B. Expressing strong dislike
Question 61	A. Criticizing someone for being late	B. Helping a customer
Question 62	A. Leaving on a trip	B. Nagging a child
Question 63	A. Expressing jealous anger	B. Saying a prayer
Question 64	A. Returning faulty item to a store	B. Talking about the death of a friend

Appendix C

Perceived Decoding Abilities Test (PDA)

(Agree) 7 – 6 – 5 – 4 (Neutral) – 3 – 2 – 1 (Disagree)

Please circle the number that best represents your abilities in relation to the following statements, 7 meaning agree, 4 meaning neutral, and 1 meaning disagree.

1. I can usually tell when someone is angry from his or her tone of voice
7 – 6 – 5 – 4 – 3 – 2 – 1
2. When someone dislikes me, I usually cannot tell from his or her tone of voice
7 – 6 – 5 – 4 – 3 – 2 – 1
3. I can usually tell when someone feels hostile from the person's tone of voice
7 – 6 – 5 – 4 – 3 – 2 – 1
4. I can usually tell if someone is angry by his or her facial expressions
7 – 6 – 5 – 4 – 3 – 2 – 1
5. When someone dislikes me, I usually cannot tell from his or her facial expression
7 – 6 – 5 – 4 – 3 – 2 – 1
6. I can usually tell when someone feels hostile from the person's facial expression
7 – 6 – 5 – 4 – 3 – 2 – 1
7. I can usually tell when someone is afraid from the person's tone of voice
7 – 6 – 5 – 4 – 3 – 2 – 1
8. When someone feels sad, I usually cannot tell from his or her tone of voice
7 – 6 – 5 – 4 – 3 – 2 – 1
9. I can usually tell when someone feels guilty from the person's tone of voice
7 – 6 – 5 – 4 – 3 – 2 – 1
10. I can usually tell when someone is afraid from the person's facial expression
7 – 6 – 5 – 4 – 3 – 2 – 1
11. When someone feels sad, I usually cannot tell from his or her facial expression
7 – 6 – 5 – 4 – 3 – 2 – 1
12. I can usually tell when someone feels guilty from the person's facial expression
7 – 6 – 5 – 4 – 3 – 2 – 1
13. I can usually tell when a person approves of something from his or her tone of voice
7 – 6 – 5 – 4 – 3 – 2 – 1
14. I can usually tell when someone is happy from the person's tone of voice
7 – 6 – 5 – 4 – 3 – 2 – 1

15. When someone feels confident, I usually cannot tell from his or her tone of voice
7 - 6 - 5 - 4 - 3 - 2 - 1
16. I usually tell when a person approves of something from his or her facial expression
7 - 6 - 5 - 4 - 3 - 2 - 1
17. I can usually tell when someone is happy from the person's facial expression
7 - 6 - 5 - 4 - 3 - 2 - 1
18. When someone feels confident, I usually cannot tell from his or her facial expression
7 - 6 - 5 - 4 - 3 - 2 - 1
19. When someone feel grateful, I can usually tell from his or her tone of voice
7 - 6 - 5 - 4 - 3 - 2 - 1
20. I cannot tell when someone I impressed from the tone of his or her voice
7 - 6 - 5 - 4 - 3 - 2 - 1
21. When someone tries to please me, I can usually tell from the person's tone of voice
7 - 6 - 5 - 4 - 3 - 2 - 1
22. When someone feels grateful, I can usually tell from his or her facial expression
7 - 6 - 5 - 4 - 3 - 2 - 1
23. I usually cannot tell when a person is impressed from the person's facial expression
7 - 6 - 5 - 4 - 3 - 2 - 1
24. When someone tries to please me, I can usually tell from his or her facial expression
7 - 6 - 5 - 4 - 3 - 2 - 1
25. I usually cannot tell how other people feel from their tone of voice
7 - 6 - 5 - 4 - 3 - 2 - 1
26. I can usually tell how a person is feeling by listening to the way in which he or she says things
7 - 6 - 5 - 4 - 3 - 2 - 1
27. I usually cannot tell how people feel from their facial expressions
7 - 6 - 5 - 4 - 3 - 2 - 1
28. I can usually read a person's face like an open book
7 - 6 - 5 - 4 - 3 - 2 - 1
29. I am usually unaware of people's feelings
7 - 6 - 5 - 4 - 3 - 2 - 1
30. I usually try very hard to understand how others feel
7 - 6 - 5 - 4 - 3 - 2 - 1
31. I am often surprised that other people pick up on cues that I seemed to miss
7 - 6 - 5 - 4 - 3 - 2 - 1
32. I am often slow to realize if people don't really want me around

7 - 6 - 5 - 4 - 3 - 2 - 1

33. Sometimes one really has to ignore what people are saying and pay attention to their body language and tone of voice

7 - 6 - 5 - 4 - 3 - 2 - 1

34. I usually decide whether I like someone from their nonverbal cues, not from what they say to me

7 - 6 - 5 - 4 - 3 - 2 - 1

35. People have often told me that I'm insensitive in social situations

7 - 6 - 5 - 4 - 3 - 2 - 1

36. I think I'm better than most people I know at picking up on subtle cues

7 - 6 - 5 - 4 - 3 - 2 - 1

37. I think I have a lot of insight into people

7 - 6 - 5 - 4 - 3 - 2 - 1

38. Often when people don't tell me how they feel, I catch on anyways

7 - 6 - 5 - 4 - 3 - 2 - 1

39. I can often tell what a person is going to say before he or she says it

7 - 6 - 5 - 4 - 3 - 2 - 1

40. When someone is lying, I can usually tell from his or her facial expression

7 - 6 - 5 - 4 - 3 - 2 - 1

41. I usually cannot tell when a person is nervous from the person's tone of voice

7 - 6 - 5 - 4 - 3 - 2 - 1

42. I can usually tell when someone is surprised from his or her tone of voice

7 - 6 - 5 - 4 - 3 - 2 - 1

43. I can usually tell when someone is lying from his or her facial expression

7 - 6 - 5 - 4 - 3 - 2 - 1

44. I usually cannot tell when a person is nervous from the person's facial expression

7 - 6 - 5 - 4 - 3 - 2 - 1

45. I can usually tell when someone is surprised from his or her facial expression

7 - 6 - 5 - 4 - 3 - 2 - 1

46. I can usually tell when someone feels affectionate even though the person does not say a word about it

7 - 6 - 5 - 4 - 3 - 2 - 1

Appendix D

Perceived Decoding Abilities Test (PDA) **Key**

(Agree) 7 – 6 – 5 – 4 (Neutral) – 3 – 2 – 1 (Disagree)

Please circle the number that best represents your abilities in relation to the following statements, 7 meaning agree, 4 meaning neutral, and 1 meaning disagree.

1. I can usually tell when someone is angry from his or her tone of voice **(H)**
7 – 6 – 5 – 4 – 3 – 2 – 1
2. When someone dislikes me, I usually cannot tell from his or her tone of voice **(L)**
7 – 6 – 5 – 4 – 3 – 2 – 1
3. I can usually tell when someone feels hostile from the person's tone of voice **(H)**
7 – 6 – 5 – 4 – 3 – 2 – 1
4. I can usually tell if someone is angry by his or her facial expressions **(H)**
7 – 6 – 5 – 4 – 3 – 2 – 1
5. When someone dislikes me, I usually cannot tell from his or her facial expression **(L)**
7 – 6 – 5 – 4 – 3 – 2 – 1
6. I can usually tell when someone feels hostile from the person's facial expression **(H)**
7 – 6 – 5 – 4 – 3 – 2 – 1
7. I can usually tell when someone is afraid from the person's tone of voice **(H)**
7 – 6 – 5 – 4 – 3 – 2 – 1
8. When someone feels sad, I usually cannot tell from his or her tone of voice **(L)**
7 – 6 – 5 – 4 – 3 – 2 – 1
9. I can usually tell when someone feels guilty from the person's tone of voice **(H)**
7 – 6 – 5 – 4 – 3 – 2 – 1
10. I can usually tell when someone is afraid from the person's facial expression **(H)**
7 – 6 – 5 – 4 – 3 – 2 – 1
11. When someone feels sad, I usually cannot tell from his or her facial expression **(L)**
7 – 6 – 5 – 4 – 3 – 2 – 1
12. I can usually tell when someone feels guilty from the person's facial expression **(H)**
7 – 6 – 5 – 4 – 3 – 2 – 1

13. I can usually tell when a person approves of something from his or her tone of voice

(H)

7 - 6 - 5 - 4 - 3 - 2 - 1

14. I can usually tell when someone is happy from the person's tone of voice (H)

7 - 6 - 5 - 4 - 3 - 2 - 1

15. When someone feels confident, I usually cannot tell from his or her tone of voice (L)

7 - 6 - 5 - 4 - 3 - 2 - 1

16. I usually tell when a person approves of something from his or her facial expression

(H)

7 - 6 - 5 - 4 - 3 - 2 - 1

17. I can usually tell when someone is happy from the person's facial expression (H)

7 - 6 - 5 - 4 - 3 - 2 - 1

18. When someone feels confident, I usually cannot tell from his or her facial expression

(L)

7 - 6 - 5 - 4 - 3 - 2 - 1

19. When someone feel grateful, I can usually tell from his or her tone of voice (H)

7 - 6 - 5 - 4 - 3 - 2 - 1

20. I cannot tell when someone I impressed from the person's tone voice (L)

7 - 6 - 5 - 4 - 3 - 2 - 1

21. When someone tries to please me, I can usually tell from his or her tone of voice (H)

7 - 6 - 5 - 4 - 3 - 2 - 1

22. When someone feels grateful, I can usually tell from his or her facial expression (H)

7 - 6 - 5 - 4 - 3 - 2 - 1

23. I usually cannot tell when someone is impressed from the person's facial expression

(L)

7 - 6 - 5 - 4 - 3 - 2 - 1

24. When someone tries to please me, I can usually tell from his or her facial expression

(H)

7 - 6 - 5 - 4 - 3 - 2 - 1

25. I usually cannot tell how other people feel from their tone of voice (L)

7 - 6 - 5 - 4 - 3 - 2 - 1

26. I can usually tell how a person is feeling by listening to the way in which he or she says things (H)
7 - 6 - 5 - 4 - 3 - 2 - 1
27. I usually cannot tell how people feel from their facial expressions (L)
7 - 6 - 5 - 4 - 3 - 2 - 1
28. I can usually read a person's face like an open book (H)
7 - 6 - 5 - 4 - 3 - 2 - 1
29. I am usually unaware of other people's feelings (L)
7 - 6 - 5 - 4 - 3 - 2 - 1
30. I usually try very hard to understand how others feel (H)
7 - 6 - 5 - 4 - 3 - 2 - 1
31. I am often surprised that other people pick up on cues that I seemed to miss (L)
7 - 6 - 5 - 4 - 3 - 2 - 1
32. I am often slow to realize if people don't really want me around (L)
7 - 6 - 5 - 4 - 3 - 2 - 1
33. Sometimes one really has to ignore what people are saying and pay attention to their body language and tone of voice (H)
7 - 6 - 5 - 4 - 3 - 2 - 1
34. I usually decide whether I like someone from their nonverbal cues, not from what they say to me (H)
7 - 6 - 5 - 4 - 3 - 2 - 1
35. People have often told me that I'm insensitive in social situations (L)
7 - 6 - 5 - 4 - 3 - 2 - 1
36. I think I'm better than most people I know at picking up on subtle cues (H)
7 - 6 - 5 - 4 - 3 - 2 - 1
37. I think I have a lot of insight into people (H)
7 - 6 - 5 - 4 - 3 - 2 - 1
38. Often when people don't tell me how they feel, I catch on anyways (H)
7 - 6 - 5 - 4 - 3 - 2 - 1
39. I can often tell what a person is going to say before he or she says it (H)
7 - 6 - 5 - 4 - 3 - 2 - 1
40. When someone is lying, I can usually tell from his or her facial expression (H)

7 - 6 - 5 - 4 - 3 - 2 - 1

41. I usually cannot tell when a person is nervous from the person's tone of voice (L)

7 - 6 - 5 - 4 - 3 - 2 - 1

42. I can usually tell when someone is surprised from his or her tone of voice (H)

7 - 6 - 5 - 4 - 3 - 2 - 1

43. I can usually tell when someone is lying from his or her facial expression (H)

7 - 6 - 5 - 4 - 3 - 2 - 1

44. I usually cannot tell when a person is nervous from the person's facial expression (L)

7 - 6 - 5 - 4 - 3 - 2 - 1

45. I can usually tell when someone is surprised from his or her facial expression (H)

7 - 6 - 5 - 4 - 3 - 2 - 1

46. I can usually tell when someone feels affectionate even though the person does not say a word about it (H)

7 - 6 - 5 - 4 - 3 - 2 - 1

Agreement with items followed by (H) indicates high perceived decoding ability. Agreement with items followed by (L) indicates low perceived decoding ability

Appendix E

Consent Form

Dear Research Participant:

In this study you will be filling out a demographic survey, watching video clips and responding to questions by choosing which scenario better explains what you observe in the video, and filling out a self-report in which you will evaluate your abilities to read similar situations. The study should take a maximum of 45 minutes to complete. This study is meant to further the knowledge of individual differences in reading the intentions of individuals based on various communication styles. As a participant you are expected to try your best in every aspect of the study in order to make sure that the study is receiving accurate results. This study is voluntary and subjects may withdraw at any time without any consequences.

There are no known risks associated with your agreement to participate in this research; you will only be experiencing situations and asked to complete tasks that carry the same level of risk you can expect in everyday educational activities. If, however, you experience any emotional distress as the result of participating in this study, psychological treatment is available through Alfred University Counseling Services (607) 871-2300, which is part of the free health services in the Crandall Wellness Center. This project has undergone independent reviewed by the University's Human Subjects Research Committee (HSRC) to assure that no aspect of this research involves more than this low level of risk to participants.

This study is not designed to benefit any individual participant, but rather to add to knowledge about the responses of people in general. Participation in this study will provide you with an opportunity to learn more about research methods in psychology. If you so desire, you may also contact the researchers at the emails listed below to obtain information about the results of the study.

The records in this study will be kept private and stored in a locked room in the Psychology Department after the study is completed. All of your responses and personal information collected will be completely anonymous and confidential. There will be no link between any personally identifying information and your data; your participation is completely anonymous. In any published report of this research, we will not include information that would make it possible to identify a participant.

You will receive 3 research credits in your psychology course to compensate you for the time you spent participating in this study. You may also choose to provide your name and email below to enter into a drawing for two chances to win a gift card for Terra Cotta or The Collegiate. Staying here after signing this letter implies your consent to participate in the study. You will receive credit even if you choose to leave certain questions unanswered or if you choose at any time to discontinue participation. At the conclusion of the study, you still have the option to withdraw your data without penalty. If you choose not to participate in this study, you may fulfill your course research requirement by participating in other studies or through alternative assignments. Contact your instructor for information about alternatives to participating in research.

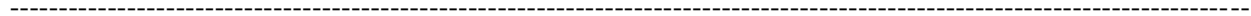
The primary researcher for this study is Gabrielle Warren, and you may contact the researcher at gcw1@alfred.edu for answers to questions about the study. Dr. Beth Johnson and Dr. Lynn O'Connell are the faculty supervisors of Gabrielle Warren. You may also contact Dr. Johnson via email at JohnsonBC@Alfred.edu or Dr. Lynn O'Connell at oconnelm@alfred.edu with questions or concerns about the study. If you have questions about research participants' rights, you may contact the Human Subjects Research Committee chair, Dr. Danielle Gagne, at (607) 871-2873 or hsrc@alfred.edu.



Your signature indicates that you have read the material presented above and agree to participate.

Signature: _____ Printed Name: _____

Date: _____



Interested in the chance to win one of two gift cards? After the completion of the study there will be a drawing for a \$25 gift card to either Terra Cotta or The Collegiate. If you would like the chance to win a gift card please provide your name and email address below!

Name: _____ Email: _____

Appendix F

Subject #: _____

Demographics

****Please circle the answer that applies to you****

College of Study:

Inamori School of Engineering

School of Art & Design

College of Business

College of Liberal Arts and Sciences

Are you a Psychology major? Yes No

Are you earning a minor in Psychology? Yes No

Are you earning a minor in Equine related studies? Yes No

Are you on the Alfred University Equestrian Team? Yes No

Are you currently enrolled in Intro to Psychology? Yes No

Age: _____

Gender: Woman Man Non-binary Other: _____

Past Experience with horses: In this case experience with horses is defined as grooming, riding, interacting with, and studying horse care/behavior/training under the supervision of an equine professional at least once a week

No formal experience with horse

1-5 years of experience with horses

5+ years of experience with horses

How did you learn about this study?

Research Board on the 4th floor of the Science Center

Facebook

Equestrian Team of Equine related Class Announcements

Other: _____

Appendix G

Debriefing Statement

This study was conducted to explore differences in nonverbal sensitivity. The research question being explored was whether differences in nonverbal sensitivity existed between individuals based on their amount of experience with horses. The hypothesis of the study was that individuals with significant experience with horses will have a higher sense of nonverbal sensitivity than those with no experience with horses. Knowledge of this heightened nonverbal sensitivity may provide information about the effects of working with horses. The subject being explored in this study was originally generalized in the consent form in order to assure that results found were accurate and not influenced by previous knowledge regarding the focus of the study. You earned **3** research credits by participating in this study and also indicated if you would also like to be entered into a drawing for one of the two \$25 gift cards, to the Terra Cotta or to The Collegiate.

There are no known risks associated with your agreement to participate in this research; you only experienced situations and completed tasks that carry the same level of risk you can expect in daily life. If, however, you experienced any emotional distress as the result of participating in this study, psychological treatment is available through Alfred University Counseling Services (607) 871-2300, which is part of the free health services in the Wellness Center.

The primary researcher for this study is **Gabrielle Warren**, and you may contact the researcher at **gcw1@alfred.edu** for answers to questions about the study. Dr. Beth Johnson and Dr. Lynn O'Connell are the faculty supervisors of this project; Therefore, you may also contact either Dr. Johnson via email at JohnsonBC@Alfred.edu or Dr. O'Connell via email at oconnelm@alfred.edu with questions or concerns about the study. If you have questions about research participants' rights, you may contact the Human Subjects Research Committee chair, Dr. Danielle Gagne, at (607) 871-2873 or hsrc@alfred.edu.

Please do not discuss the details of this study with any of your classmates or friends.

Thank you for your participation in this study!