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A CORRELATIONAL STUDY OF EMOTIONAL INTELLIGENCE AND
LANGUAGE STYLE MATCHING

By

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B.S. University of Central Florida, 2017

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ABSTRACT

Individuals subconsciously convey emotions through language. The present study investigates the relationship between emotional intelligence (EQ) and language style matching (LSM).

Emotional intelligence involves the ability to regulate, maintain, and express one's emotions and to perceive the emotion of others. LSM involves the phenomenon that when individuals talk they tend to mimic each other's word usage (Neiderhoffer & Pennebaker, 2002). The hypothesis of the present study is that individuals who are emotionally intelligent subconsciously match their language to their communication partner. Ten participants from the University of Central Florida's Psychology Department were given an emotional intelligence test. The participants were then asked to submit three text conversations stored in their phones, one in which they interpret as a positive encounter, another which they interpret as a negative encounter, and one interpreted as a neutral encounter. Bivariate correlations were used to analyze the data. The results did not support the hypothesis.

Keywords: Emotional Intelligence, Language Style Matching, Empathy

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INTRODUCTION

In 1995, Daniel Goldman published a groundbreaking book entitled *Emotional Intelligence*. The premise of the book was that I.Q. is a relatively poor predictor of happiness and success. Instead, the ability to empathize and manage one's own emotions turns out to be a far better predictor of positive outcomes. According to Salovey and Mayer (1990), emotional intelligence is "... the subset of social intelligence that involves the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions (p. 190)." In other words, emotional intelligence is a type of multifaceted intelligence that involves the ability to regulate, maintain and express one's emotions as well as to perceive the emotion of others.

An idea that may be related to emotional intelligence is language style matching (LSM). Language style matching refers to the subconscious verbal mimicry that happens during conversation. When we engage in social interaction, our verbal behaviors become synchronized (Ireland, 2014). Some are better able to achieve this synchronicity than others, and the present study explores whether people with increased EQ are better able to synchronize their language with their partners.

Both emotional intelligence and language style matching have advantages. Prior studies demonstrated that emotionally intelligent individuals obtain success in the workplace, academically, and in their personal relationships (Salovey & Mayer, 1990). The advantages of language style matching are evident in the personal lives of individuals that match their language with their conversation partners as they maintain better relationships (Ireland & Henderson,

2014). The purpose of the present study is to investigate whether or not these two skills are linked.

A study by Lopes, Grewal, Kadis, Gall, and Salovey, (2006) demonstrated that individuals who are more emotionally intelligent find more success in the workplace compared to others. In that study, a positive correlation between emotional intelligence and workplace success was found in a sample of 44 employees working for an insurance company. Employees with higher degrees of emotional intelligence received more benefits, such as merit increases, and held higher status within the company compared to their coworkers with lower emotional intelligence. The participants in this study took the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) and then the researchers compared their work histories. The work histories consisted of ranking within the company, peer rated stress tolerance, and salaries. Successful work histories were positively correlated with scores on the MSCEIT, demonstrating a significant relationship between people who are sensitive to emotion and workplace success. From this evidence, it appears that emotional intelligence is related to improved performance in the workplace.

Along similar lines, academic success is an additional advantage of high emotional intelligence. Marquez, Martin and Brackett (2006) found a relationship between emotional intelligence, behavior, and academic success. Their study investigated emotional intelligence, measured with scores on the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT), and social competencies that are predictive of school success in a sample of high-school students. Some of the social competencies included in the study were self-confidence, cooperation, leadership, and social sensibility. The study found that positive behavior is related to certain

characteristics of emotional intelligence, and higher academic standing. Other evidence demonstrates that emotionally intelligent individuals have good social skills. Lopes, Brackett, Nezlek, Schutz, Sellin and Salovey (2004) conducted two different studies establishing a positive correlation between managing emotions and positive social interaction. In the first study, researchers observed participants' interactions with friends; and the second study focused on the participants' interactions with the opposite sex. The researchers hypothesized that individuals who possess high emotional intelligence will not only perceive positive social interactions with friends and family but will actually have positive social interactions. The hypothesis was supported in both studies. For the first study, participants took the MSCEIT and then were asked to rate their friendships. Two of their friends also rated their friendship. Participants with higher MSCEIT also scored high in friendship relationship ratings. In the second study, participants also took the MSCEIT and were asked to keep a diary, which was used to observe their social interactions. The results showed that managing emotions predicted success with interacting with the opposite sex. In other words, the studies established that individuals who did well on the emotional intelligence test (MSCEIT) reported having positive feelings and positive emotional experiences while interacting with others. It makes sense that a person with high emotional competency would relate better to others and maintain successful social relationships.

The skill of emotional intelligence is rooted in empathy. Ioannidou and Konstantikaki (2008) define empathy as “the *capacity* to share and understand another’s *state of mind* or emotion. It is often characterized as the ability to *put oneself into another’s shoes*, or in some way experience the outlook or emotions of another being within oneself” (p. 118). In other words, empathy aids us in better understanding the emotions of others. Researchers have

demonstrated that the mirror neuron system plays a significant role in the ability to empathize (Kaplan & Iacoboni, 2006). Mirror neurons are cellular circuits in the brain that internally mimic the motor action that is being performed by another person. It has been observed that mirror neurons allow us to empathize with others through the process of subconscious mimicry. This has been demonstrated by Kaplan and Iacoboni (2006) who showed participants an animation of a cup. While the animation was going on, the participants were hooked up to an fMRI machine which was used to analyze the mirror neurons in the brain. Following the fMRI, the participants were given an empathy test. Participants who scored high on empathy also showed more activation within the mirror neuron area. Indeed, there is a connection between empathy and mirror neurons and mirroring.

The research on mirror neurons shows that physical mimicry is connected to understanding and empathy. Similarly, verbal mimicry, also called language style matching (LSM), has been found to be helpful in a host of personal areas such as determining a person's emotional state, getting along better with others and maintaining great personal relationships. Neiderhoffer and Pennebaker (2002) defined language style matching as being like a figurative dance of words in which one person leads the conversation, and then the second person follows the conversation by replying in a similar way as the first person. This verbal mimicry continues throughout the conversation. Basically, language style matching is a game of verbal mimicry in which both players copy each other's language style.

Language style matching (LSM) is a helpful skill to possess in that individuals who match their language during conversation are more socially aware and get along better with others and have better relationships with others. Ireland and Henderson (2014) studied group

dynamics using LSM. The aim of this investigation was to study a group's conversations while they deliberated and negotiated. The group conversations were recorded and analyzed using LSM software to study language under pressure. The study showed that participants with high LSM were more "socially attuned (p.7)." In other words, individuals scoring high on LSM measures were more aware of how they came across to the other participants and were aware of their relationship with the other participants.

Furthermore, language style matching has been linked to better relationships and getting along with others. Ireland, Slatcher, Eastwick, Scissors, Finkel, and Pennebaker (2010) conducted two studies in which they observed participants engaging in speed dating. In the study, 187 participants interacted with the opposite sex in a conversation for a total of 4 minutes. Each of the 187 participants talked to 12 different partners. The results of the speed dating conversations found that in order to find romantic success with a partner, the individuals had to match their language. While this study dealt with romantic relationships, the findings hold true for other types of relationships.

Studying language is not only crucial for examining social relationships, but also for investigating emotions. Recent language style matching (LSM) research looked at language style matching and emotions. The writings of famous poet couples Elizabeth Barrett/Robert Browning and Sylvia Plath/ Ted Hughes, revealed that higher degrees of language style matching is associated with greater happiness within couples. It is no secret that Plath and Hughes had a tumultuous relationship; therefore, after analyzing Plath and Hughes' writing, the researchers found that their language style matched more when they were happy than towards the end when they were struggling. Moreover, when letters between Barrett and Browning, known to be a

more stable couple, were compared, the couple had higher language style matching throughout their relationship. In fact, even at their lowest relationship point they demonstrated a higher degree of language style than Plath; and had their highest LSM at their happiest relationship point (Ireland & Pennebaker, 2010). These findings not only demonstrate that individuals' language style matches more when they are happy, but also that LSM is higher overall between couples who are more stable.

On the other hand, negative emotion, specifically anger, can also be associated with a high degree of language style matching. James Pennebaker (2011) described verbal mimicry or language style match as a form of engagement. Angry people are highly engaged; thus, when a person is extremely mad at their conversation partner, their language style matching is going to be increased. This increase occurs because language style matching is related to paying close attention to the conversation and the individual (Pennebaker, 2011). The rationality of being angry and matching what the other person is saying makes sense in that both parties are paying full attention to defend their position. This finding is particularly interesting to the present study, as it will aid in explaining why participants may have a high degree of language style matching when they produce the negative text conversation.

In general, individuals portray emotions subconsciously during conversation. Essentially our words convey our emotional states and reveal where our attention lies at any given time; therefore, the purpose of the present study is to explore the relationship between emotional intelligence and language style matching. Participants will be asked to take an EQ test and to submit 3 text interactions they had recently: a positive interaction, a negative interaction, and a neutral interaction. The hypothesis is that participants with higher EQ will score higher on LSM,

and this will be especially true for the positive and neutral interactions. Participants with low emotional intelligence are expected to show only the high degree of awareness and attention required to increase LSM during the negative emotion texts; whereas participants with high emotional intelligence are expected to maintain social awareness and attention to conversational partners during all interactions.

METHODS

PARTICIPANTS

A sample of 10 students who currently attend the University of Central Florida were recruited for participation in this ongoing study. The participants were not excluded based on age, ethnicity or background, but all participants were required to be 18 or older. Of the 10 participants, there were 7 Caucasian participants, 1 African American participant, 1 Native American participant and 1 mixed raced or other participant. The average age for the participants was 26 years with a standard deviation of 7.82. Participants were informed that they would be asked to provide text/electronic conversations stored on their phone or computer. It was emphasized that no names or identifying information should be associated with these conversations and that the researchers wanted to examine what contributes to excellent communication

MEASURES

Emotional Intelligence Test: Bar-on Emotional Quotient Inventory(EQI).

The original EQI test consists of 133 questions; however, the version used for our study is a shorter version that included only 51 statements. Participants respond to each statement using on a 5-point scale; *1 Very Seldom or Not True to me to 5 Very Often True of me or True of me.* (Dewda & Hart, 2000). A sample question is “I’m a fairly cheerful person.” The full scale is included in Appendix A. The internal reliability is good for this test, ranging from .76 to .93. The test-retest reliability ranged from .46 to .80 (MHS, 2002).

Language Style Matching.

James Pennebaker's language style matching application was used to analyze the degree of language style matching present in each text interaction. The application is found online at <http://www.utpsyc.org/synch/input.php>. For the LSM application, there are two boxes that are provided for the individual to input each part of the conversation. Before submitting the texts, there are a few questions to answer. These questions include what the relationship is of the conversation partners, what type of writings are the inputted conversations such as are they texts, how in synch do you feel the partners are and finally what is the age of the partners. The final step is to submit everything and the program computes a number between 0 and 1 indicating the degree of linguistic overlap between the 2 conversational partners.

PROCEDURES

Initially, participants logged in to the SONA website. From there, they were directed to the Survey Gizmo website. The first page was an informed consent. Once consent was given by moving on to the next page, the Bar-on Emotional Quotient Inventory (EQI) was administered. Next, the participants were asked to provide a recent electronic conversation that they considered positive. They simply copied and pasted the conversation into a dialog box. The participants were then asked to do the same for a neutral and then a negative conversation. The final section of the study involved a demographic questionnaire in which participants provided basic information about themselves, such as age and academic year, see Appendix B for the entire questionnaire. Lastly, participants were thanked for their time and given the appropriate extra credit.

RESULTS

Pearson Bivariate correlations were computed to test the hypotheses. An adjusted alpha level of .01 was used to avoid capitalization on chance. Table 1 shows means and standard deviations for the EQI and LSM. Table 2 shows the using bivariate intercorrelations.

Table 1 Means and Standard Deviations for EQI and Different Types of LSM.

| | EQI | LSM | LSM | LSM |
|-------------------|------|----------|----------|---------|
| | | POSITIVE | NEGATIVE | NEUTRAL |
| MEAN | 2.00 | .739 | .707 | .638 |
| STD. DEVIATION | 1.05 | .179 | .127 | .189 |

Table 2 A Correlation Matrix of EQI and the Different Types of LSM

| | | EQI | LSM positive | LSM negative | LSM neutral |
|------------------|---------------------|-------|-----------------|-----------------|----------------|
| EQI | Pearson Correlation | 1 | -.333 | -.083 | -.529 |
| | Sig. (2-tailed) | | .348 | .819 | .116 |
| LSM_posi tive | Pearson Correlation | -.333 | 1 | .510 | .431 |
| | Sig. (2-tailed) | .348 | | .132 | .213 |
| | N | 10 | | 10 | 10 |
| LSM_neg ative | Pearson Correlation | -.083 | .510 | 1 | .467 |
| | Sig. (2-tailed) | .819 | .132 | | .173 |
| | N | 10 | 10 | | 10 |
| LSM_neu tral | Pearson Correlation | -.529 | .431 | .467 | 1 |
| | Sig. (2-tailed) | .116 | .213 | .173 | |
| | N | 10 | 10 | 10 | |

After analyzing the bivariate correlations, there were no significant relationships established. The relationship between EQI and LSM for positive text interactions was not significant, $r = -.333$, $p = .348$. Likewise, the relationship between EQI and LSM for negative text interactions was not significant, $r = -.083$, $p = .819$. Finally, the relationship between EQI and LSM for neutral text interactions was not significant, $r = -.529$, $p = .116$. Notably, the neutral

and negative correlations were in the opposite of the hypothesized direction though not significant. Thus, the hypothesis was not supported.

DISCUSSION

The hypotheses for this study were not supported. No significant relationships were found between emotional intelligence and language style matching. While there is previous evidence that a relationship exists between social awareness and verbal mimicry (Ireland & Pennebaker, 2010), no evidence was found in the present study between EQ and LSM. For the 10 participants in the study, the relationship is not apparent.

There were several limitations of the present study. One of the most glaring limitations of the current study is the low number of participants. It should be noted that this is an ongoing study and with more data, a relationship between EQ and LSM may reveal itself. With so few participants, there is not conclusive evidence for the results; i.e. more research must be performed. In addition to the low participation, the scoring of the EQI was limited to the general EQ score without taking gender into account. Another limitation was that the conversations submitted were very short. Overall, the participants averaged about one to two sentences per conversation instead of the 2 minutes' worth of conversation they were asked to provide. The fewer the words they provided, the more unreliable were the LSM values.

Emotional intelligence is a valuable skill that needs to be understood more clearly. The results of this ongoing study may shed light on this important concept. More research needs to be conducted to reveal how our linguistic patterns underscore our social skills.

APPENDIX A: EMOTIONAL QUIOTENT INVENTORY

APPENDIX A: EQI QUESTIONS

1. Very seldom or Not true of me

2. Seldom true of me

3. Sometimes true of me

4. Often true of me

5. Very often true of me or True of me

1. I'm a fairly cheerful person.
2. I like helping people.
3. I'm unable to express my ideas to others.
4. It is a problem controlling my anger.
5. My approach in overcoming difficulties is to move step by step.
6. I don't do anything bad in my life
7. I feel sure of myself in most situations.
8. I'm unable to understand the way other people feel.
9. I prefer others to make decisions for me.
10. My impulsiveness creates problems.
11. I try to see things as they really are, without fantasizing or daydreaming about them.
12. Nothing disturbs me.
13. I believe that I can stay on top of tough situations.

14. I'm good at understanding the way other people feel.
15. It's hard for me to understand the way I feel.
16. I feel that it's hard for me to control my anxiety.
17. When faced with a difficult situation, I like to collect all the information about it I can.
18. I have not told a lie in my life
19. I'm optimistic about most things I do.
20. My friends can tell me intimate things about themselves.
21. In the past few years, I've accomplished little.
22. I tend to explode with anger easily.
23. I like to get an overview of a problem before trying to solve it.
24. I have not broken a law of any kind.
25. I care what happens to other people.
26. It's hard for me to enjoy life.
27. It's hard for me to make decisions on my own.
28. I have strong impulses that are hard to control.
29. When facing a problem, the first thing I do is stop and think.
30. I don't have bad days.
31. I am satisfied with my life.
32. My close relationships mean a lot to me and to my friends.
33. It's hard to express my intimate feelings.
34. I'm impulsive.
35. When trying to solve a problem, I look at each possibility and then decide on the best way.

36. I have not been embarrassed for anything that I've done.
37. I get depressed.
38. I'm able to respect others.
39. I'm more of a follower than a leader.
40. I've got a bad temper.
41. In handling situations that arise, I try to think of as many approaches as I can.
42. I generally expect things will turn out all right, despite setbacks from time to time
43. I'm sensitive to the feelings of others
44. Others think that I lack assertiveness.
45. I'm patient.
46. I believe in my ability to handle most upsetting problems.
47. I have good relations with others.
48. It's hard for me to describe my feelings.
49. Before beginning something new, I usually feel that I'll fail.
50. It's difficult for me to stand up for my rights.
51. People think that I'm sociable.

APPENDIX B: DEMOGRAPHIC SURVEY

APPENDIX B: DEMOGRAPHIC SURVEY

1. What is your academic standing?
 - A. Freshman
 - B. Sophomore
 - C. Junior
 - D. Senior
 - E. Other
2. How old are you?
3. Would you describe yourself as:
 - A. American Indian/Native American
 - B. Asian
 - C. Black/African American
 - D. Hispanic/Latino
 - E. White/Caucasian
 - F. Pacific Islander
 - G. Other
4. What is your marital status?
 - A. Single
 - B. Married
 - C. Divorced/separated/widowed
5. Did problem in your negative text get resolved?
 - A. Yes
 - B. No
6. Are you a good communicator?
 - A. Yes
 - B. No
7. Emotional Intelligence is a type of intelligence that involves the ability to regulate, maintain and express one's emotions as well as perceive the emotion of others. Do you believe that emotional intelligence is important in your everyday life?
 - A. Yes
 - B. No

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