The Effect of Competitiveness on Person Perception: An Experimental Study

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The Effect of Competitiveness on Person Perception: An Experimental Study

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Abstract

The relationship between individual’s level of competitiveness and their perception of others is not one that has received research in the field. Highly competitive individuals have different factors that motivate their competitive nature, but all strive to win in interpersonal situations. How does the outcome of a situation, whether they win or lose, affect competitive individuals’ perceptions of their competitors? It is hypothesized that competitive individuals will have a more negative perception of their opponents personality if they lose compared to if they win.

Participants in this experiment were led to believe that they played nine rounds of Rock, Paper, Scissors against another participant, but actually played against a researcher who controlled the outcome of each round. Although none of the results were statistically significant, the outcome was found to be in the expected direction that highly competitive individuals who lost the game were less likely to describe their opponent in warm trait terms or rate them as warm on quantitative scales. The limitations of the study and future research topics are discussed.
The Effect of Competitiveness on Person Perception: An Experimental Study

The personality trait of competitiveness is one that has received little attention until fairly recently. Triplett (1898) is credited with the first study in the field of social psychology, which focused on the relationship between competitiveness and the presence of others. He found that cyclists rode faster when in the presence of others than when riding by themselves. Despite this early interest in competitiveness, the next wave of research dates back less than six decades (Turner, 1960). Since then, studies have been conducted to understand how competitiveness works in different types of scenarios, such as business deals or playground games. Research has also tried to understand the motivating factor that drives one to be competitive; is it the desire to better yourself through competition, or simply the need to be better than others in every way possible? Given that competitiveness is a multi-faceted and deceptively complex (Houston, McIntire, Kinnie, & Terry, 2000) trait, further research is needed to explore the role competitiveness plays in our perceptions and responses to social environments. Kurt Lewin’s famous statement that behavior is a function of the person and the environment is a good foundation for the purpose of this study; to determine if there is a relationship between one’s level of competitiveness and their perception of others.

The Person

As previously stated, competitiveness is a personality trait, a part of one’s identity. It is often defined as the desire to win in interpersonal situations (Helmreich & Spence, 1978). We all must face competitive situations at all stages of our lives and according to Fetsch and Yang (2005) American culture values the willingness to compete and the ability to win. American children are subjected almost every day to potentially competitive situations; do they share their toys or keep them to themselves, bring a homemade lunch to school or have enough money and
While these situations are seemingly trivial to adults, for children they are a form of competition. Garcia, Tor, and Schiff (2013) state that social comparison is an important source of competitive behavior, and it may be the earliest form of competition children experience. While there is no consensus on what age personality traits emerge and stabilize in childhood, Framm (2013) suggests that children do not understand competitiveness as a consistent behavioral tendency across situations until age 7 or 8.

After childhood, competitive situations continue to occur across a broad range of social domains. Employed adults know all too well how competitive the workplace can be. Helmreich, Spence, Beane, Lucker, and Matthews (1980) found that competitiveness was correlated with number of publications of university faculty. The more published the faculty member is, the higher they are held in regard by their environment. Fletcher, Major, and Davis (2008) warn managers to be cautious when encouraging competitive climates, because it has been associated with greater stress regardless of individual levels of competitiveness. Those low in competitiveness also had lower job satisfaction, organizational commitment, dedication to their work, and ratings of their supervisors in competitive work climates. Highly competitive individuals on the other hand seek out competitive occupations (Houston, Farese, & La Du, 1992). There is much research investigating the relationship between competitiveness and business or economics, or how one’s personality and their environment affect their behavior.

Part of who a person is, and thus an influence on their behavior, is the driving force behind their personality. People can be competitive for many different reasons, which affects how they express their competitiveness. Research has shown that late adolescents who compete to excel rather than to win have a higher self-esteem and less depression, and females who
compete to win report more loneliness and less close friendships (Hibbard & Buhrmester, 2010).

Who we are and how we act can affect how our environment or those around us interact with us. If we face competitive situations every day we must determine what level of competition is healthy for us, what situations are really worth fighting to win. Studies have been conducted to help determine when cooperation is more beneficial than competition. Kelley and Stahelski (1970) found that competitive people were competitive at all times during a structured experimental game, regardless of the goal or who they worked with, but cooperative people showed more variation. Cooperative people may start out being cooperative but could be drawn into being competitive by another competitive person, and could recognize that they were drawn into the competition. The ability to recognize the affect others have on you is healthy, but it is an ability this study found only in cooperative individuals. Cooperative people were able to accurately perceive the other person’s effect on them, but it did not mention how they perceived the other person in general.

**The Environment**

Similarly to competitive situations, every day we are in situations that allow others to perceive us and our personalities, as well as allow us to perceive others. Every interaction and observation is a chance at perception, a skill that improves with practice. As we get older, our accuracy in personality perception increases (McLarney-Vesotski, Bernieri, & Rempala, 2006). As we are exposed more and more to varying personalities and grow more secure in our own personality, our perception skills solidify. Increased practice with the environment and a solid understanding of who one is as a person decreases the variance in one’s behavior. Repeated exposure increasing the accuracy of perception was also found in a study by Paulhus and
Reynolds (1995). Each time a set number of participants met, their rating validity increased and their rating variance decreased. In other words, they were able to perceive the other person more accurately after each meeting and the variance in their perceptions decreased. They were more likely to agree on a smaller number of traits after each meeting. Married couples are also higher in agreement of perception of each other’s personalities than dating couples or friendship dyads (Watson, Hubbard, and Wiese, 2000). Exposure to the environment has been shown therefore to increase the accuracy of our behavior.

There are other factors besides exposure that affect our accuracy in perceiving others. Along with the characteristics of the perceiver, there are the characteristics of the person being perceived and the setting of the perception, both of which could be considered the environment (Shrauger & Altrocchi, 1964). Age and exposure are part of the characteristics of the perceiver, as well as gender. Chan, Rogers, Parisotto, and Biesanz (2011) found that women are more accurate than men in perceiving what others are like in general, although there was no difference in perception of how others differ from the norm. The perceiver’s own beliefs must also be considered, including their biases. If they hold stereotypes or other biased beliefs about others, the accuracy of their perception may vary (Stern, West, & Schoenthaler, 2013). The characteristics of the person alter their behavior.

In terms of the nature of the interaction situation, Swann (1984) argued that research has underestimated the accuracy of person perception because it does not take into consideration the social aspect of the interaction. The true personality of the person being perceived is also largely important to an accurate perception. The accuracy of the perception relies heavily on the personality traits being easy to understand (Human & Biesanz, 2013). A study by Mignon and Mollaret (2012) found that both the target’s state and the state provoked by the target are
important in trait perception. In other words, both the personality of the person being perceived and how they provoke the personality of the person perceiving them are important. In order for someone’s personality to be accurately perceived, they must have traits that are easily perceivable and interact with the perceiver in a way that heightens the chance of accurate perception. If the interaction is by nature a casual and social one, perception may be different from an interaction that is by nature staged to showcase certain traits. Similarly, a person who hides their personality behind an air of neutrality will not be perceived as accurately as one who is open and embracing of their personality. Deception in the environment can alter how the person behaves.

The Interaction

How then, could the different motivators behind competitiveness affect how we perceive the personalities of others in different scenarios? Diekmann, Tenbrunsel, and Galinsky (2003) found that negotiators who expect to be dealing with a competitive individual actually exhibit less competitive behavior. They alter their behavior based on the environment. On the other hand, Houston, Kinnie, Lupo, Terry, and Ho (2000) found that competitive individuals may be more susceptible to competitive social cues. If these cues come from their perception of another person’s personality, then competitive individuals become more competitive when they perceive others to be like themselves. If the situation is one that requires a clear winner and a clear loser, research suggests that non-competitive people will back down and let the competitive person win, but competitive people will become even more competitive.

One example of such a situation is the childhood game of Rock, Paper, Scissors that nearly all American children will play at some point in their lives. The point of the game is simple, to beat your opponent’s choice of rock, paper, or scissors by choosing the correct hand.
Rock will beat scissors, scissors will beat paper, and paper will beat rock. However, both individuals must make their choice at the same time, which is where the game gains complexity. A person must determine what their behavior will be before they fully know the environment. If the same choice is made by both players it’s a tie, but this is a game used to determine a winner and a loser. While the basic rules of the game are simple, it is actually a game of strategy. You must try to guess what the other player will pick and make the correct winning choice, which many people do by trying to perceive the other player’s personality. If their opponent is perceived as timid or more cooperative, they will make a more aggressive choice such as rock, but if they’re perceived as aggressive or competitive, they may make the more timid choice of paper. The person must guess what the environment will be at the same time that they determine how they will behave.

While it is a childhood game many adolescents and even adults use the game to make decisions and break ties, usually for smaller arguments or situations. It can be used to determine what movie to see in theaters, who gets to drive the family car for a night out, or what team serves first in a game of volleyball. If there are multiple ties in a row which tends to happen at times, the player must try to correctly guess their opponents possible next choice in order to win. It is the researcher’s assumption that competitive individuals most likely will stick with their original choice or choose what would beat the tie. For example, if both players choose paper multiple times, a competitive person may choose scissors next because they know it will beat paper. Their personality knows what the environment has been in multiple rounds, so they may choose the behavior that satisfies their competitiveness.

In a game of Rock, Paper, Scissors, person perception occurs both during and after the game. While you may try to perceive the other player’s personality in order to make a winning
choice during the game, the overall outcome may alter your perception of their personality after the game. If a highly competitive individual loses, how might the game outcome affect their perception of the other player’s personality? Based on the research discussed, they may form a bias against the other player. By losing their competitive nature is being challenged, and they must justify the loss at the expense of the other person. They may perceive the other person’s personality as cold and ruthless, someone who will stop at nothing to win. They may also perceive them as highly intelligent, believing that only those of high intelligence could possibly beat them in a game. If a highly competitive individual wins, they may be more willing to perceive the other person in a positive light. They won the game because of their superior skills, but the other person wasn’t too bad. These outcomes would protect the self-concept of a highly competitive individual.

The same pattern of perception would not be expected of those low in competitiveness however. For individuals low in competitiveness, game outcome will most likely have little effect on their perception of the other player’s personality. They do not have the strong desire to win that those high in competitiveness have, so losing or winning would not alter their self-concept or self-esteem. Whether they win or lose, they will probably perceive the other person as a worthy opponent and focus on improving their actions rather than putting down those of the other player. They may still be upset about losing, but they will not perceive the other person in a negative light because of the outcome.

The purpose of this study is to determine what effect one’s level of competitiveness has on their perception of an opponent’s personality based on the outcome of a game. Rock, Paper, Scissors will be used to complete the study due to its simplistic and culturally understood rules. It is a game that players know well and feel like they can control, but in this study all control will
be held by researchers. The simplicity of Rock, Paper, Scissors will allow researchers to control the outcome of each game played by playing the game remotely or having players in separate rooms. In doing so the choices of the game can no longer be made at the same time, giving researchers the chance to determine what their choice should be in order for the player to win, lose, or tie. However, players will think their opponent is just another research participant like themselves. Accordingly, this study hypothesized that individuals high in competitiveness will have more negative perceptions of the other person’s personality if they lose the game compared to if they win. Conversely, individuals low in competitiveness will not have affected perceptions regardless of the game outcome.

**Methods**

**Stage 1**

**Participants**

A total of 79 undergraduate students enrolled in introductory level psychology courses at a small private liberal arts college in central Florida participated in the first stage of the study. The students ranged in age from 18 to 31 years old ($M = 19$, $SD = 2$), and included 62 females and 17 males.

**Measures**

Participants were e-mailed a link to an online survey. The survey consisted of questions from four different measures of competitiveness, as well as an informed consent form and basic demographic information including age and gender. The survey took an estimated 20-30 minutes to complete.

The Competitiveness Index Scale-Revised (Houston, Harris, McIntire & Francis, 2002) is a 14 item scale that is answered using a Likert scale from 1 being strongly disagree to 5 being
strongly agree. It is “designed to assess the desire to win in interpersonal situations” (p. 31), includes items such as “I will do almost anything to avoid an argument,” and has a Cronbach’s alpha of 0.87.

The Personal Development Scale (Ryckman, Hammer, Kaczor & Gold, 1996) measures psychologically healthy competition and includes 15 items answered using a Likert scale from 1 being strongly disagree to 5 being strongly agree. A sample item includes “I value competition because it helps me to be the best that I can be,” and it has a Cronbach’s alpha of 0.90.

The Hyper-Competitive Scale (Ryckman, Hammer, Kaczor & Gold, 1990) measures hypercompetitiveness using a 26 item scale answered using a Likert scale from 1 being never true of me to 5 being always true of me. Hypercompetitiveness is defined as the indiscriminate need by individuals to compete and win and avoid losing at any cost as a means of maintaining or enhancing feelings of self-worth (Horney, 1937, chapter 10). A sample item includes “People who quit during competition are weak,” and it has a Cronbach’s alpha of 0.91.

**Procedure**

Participants were sent an e-mail asking if they would be interested in participating in a research survey. If they responded confirming their participation, they were given a unique five-digit number and a link to the online survey. The unique number ensured confidentiality during data collection. Once the study was completed, participants received course credit as compensation.

**Stage 2**

**Participants**

A total of 31 undergraduate students enrolled in introductory level psychology courses at a small private liberal arts college in central Florida participated in the second stage of the study,
but only 18 of those students had also participated in the first stage of the study. The 18 students ranged in age from 18 to 23 years old ($M = 19$, $SD = 1.26$), and included 17 females and 1 male.

A researcher recruited participants in the introductory courses, regardless of their participation in the first stage of the study. Participants were unaware that the two stages were connected, and were only told that the experiment was a senior student project. The connection was kept secret to ensure accurate results from the second stage.

**Materials**

In the experiment, participants used an IPad to send messages and a picture of themselves. They were given three index cards, one each for rock, paper, and scissors. They were also given a score sheet to track the choices of each round, with a chart at the top of the sheet that detailed how rock, paper, scissors works and how it would be scored.

**Procedure**

Participants arrived at the testing room and waited outside until a researcher greeted them. To create the impression that the experiment required two participants, two chairs were placed in the hallway. However, each session only involved one participant. To further reinforce the belief that the study would involve pairs of participants, each participant was then explicitly told there would be a second participant. In contrast to the deception, all messages and choices were in fact made by the second researcher.

The participant was brought into the testing room and followed a researcher into a smaller private room. The participant was told that the other researcher would work with the other participant upon arrival. They were then given an informed consent form to sign, and instructed by the researcher on how the experiment would run. They also had their picture taken on the IPad and sent their picture and name to the cell phone of one of the researcher’s. They
were then sent back a picture of a Rollins student the researcher’s introduced as Taylor. The female in the picture was a 21 year old Caucasian with brown hair. However, there were some participants who recognized the individual in the picture, so it was changed to an 18 year old Caucasian male with brown hair who does not attend Rollins College.

They played nine rounds of Rock, Paper, Scissors by choosing an index card each round and handing it to the researcher. The researcher stepped out of the room and showed the card to the second researcher, who used a concealed chart to determine whether the participant would win or lose the round. The second researcher then handed the correct card to the researcher, who showed the card to the participant. The participant recorded both choices on the score sheet, as well as the correct amount of points won or lost. This sequence occurred for three rounds, and then the researcher sent a text message to the participant that read “Having fun yet?” The participant was then given a chance to respond, and then three more rounds were played. Then the participant sent a text message to the other participant, who responded with “I’m really enjoying this.” If that response would have suggested to the participant that there was no second participant, the message was slightly altered to make the response more believable. For example, if the participant asked “Who do you think will win?” the message they received back was “I don’t know, I’m really enjoying this.”

A final three rounds were then played, and the totals were added up. The researchers verified the scores, and then gave the participant two questionnaires to answer. One questionnaire evaluated their perception of the other participant’s personality and choices, and included two open-ended questions designed for the study and a modified version of scales used by Kelley (1950) to measure first impressions. The open-ended questions were “Briefly describe the other participant’s personality” and “Briefly describe the communication and tone that you
received from the other participant.” The original Kelley assessment instrument included 15 scales, but only 10 were used to keep data relevant to the study. The other questionnaire evaluated the participant’s memory of the experiment. After both questionnaires were completed, the participant was taken to a separate room and debriefed. It was explained to them that there was no other participant present, but rather the second researcher in the other room. They were also instructed to keep the experiment and its details confidential.

**Results**

The questionnaire pertaining to the participant’s perception of personality was analyzed in both qualitative and quantitative measures. Two open-ended questions were coded for warm, cold, and neutral personality traits. Warm was operationally defined as “Implies a positive trait, a desirable part of personality”, cold was defined as “Implies a negative trait, an undesirable part of personality”, and neutral as “A part of personality that is neither positive nor negative.” Each participant’s responses were coded, and the frequencies across four conditions were averaged; those high in competitiveness who won the game (HW), those high in competitiveness who lost the game (HL), those low in competitiveness who won the game (LW), and those low in competitiveness who lost the game (LL). Where individual participants ranked in competitiveness was determined by where their score fell in the distribution of all participants’ scores. Those in the 33rd percentile or lower were labeled as low in competitiveness, those in the 66th percentile or higher were labeled as high in competitiveness, and those between the 33rd and 66th percentile were labeled as neutral. The Competitiveness Index Scale-Revised (RCI) (Houston, Harris, McIntire & Francis, 2002), Personal Development Scale (PDCAS) (Ryckman, Hammer, Kaczor & Gold, 1996), and Hyper-Competitive Scale (HCAS) (Ryckman, Hammer, Kaczor & Gold, 1990) were each used to analyze results.
A series of two by two ANOVAs were calculated for RCI, HCAS, and PDCAS to determine if competitiveness had a main effect on person perception. This would assess the hypothesis that individuals high in competitiveness would have more negative perceptions of the other person’s personality if they lost the game compared to if they won. The two levels of the test were high or low competitiveness and winning or losing the game. For each test, the frequency of warm traits was the dependent variable and the level of competitiveness and game outcome were the fixed factors. When tested, RCI yielded a result of $F(1,1) = .136, p = .720$ for game outcome, $F(1,1) = .442, p = .521$ for level of competitiveness, and $F(1,1) = .267, p = .616$ for an interaction. HCAS found $F(1,1) = .1.301, p = .284$ for game outcome, $F(1,1) = .011, p = .920$ for level of competitiveness, and $F(1,1) = .011, p = .920$ for an interaction. PDCAS found $F(1,1) = .409, p = .546$ for game outcome, $F(1,1) = 1.136, p = .327$ for level of competitiveness, and $F(1,1) = 2.227, p = .186$ for an interaction, so none of the results were statistically significant. However when the results were graphed, those for RCI (see Figure 1) and PDCAS (see Figure 2) illustrated that results were in the expected direction.

Descriptive statistics were also found for trait use in each condition and for each scale. Overall, warm traits were the most used ($M = 3.38, SD = 1.78$) and ranged from zero to seven uses per individual participant. Neutral trait use ($M = 1.13, SD = 1.15$) ranged from zero to four for individual participants, and cold traits ($M = 0.13, SD = 0.34$) were either used only once per participant or not used at all. For RCI, no significant difference was found in the frequency of warm, cold, or neutral traits across conditions (see Figure 3). However, those in the LL condition had the highest frequency of warm traits. This same pattern of non-significant results was found for the PDCAS scale as well (see Figure 4). For responses grouped by HCAS scores,
those who won the game, regardless of their competitiveness level, described the other person using more warm traits than those who lost the game (see Figure 5).

The 10 quantitative scales on the questionnaire were also analyzed. Each scale used a structured response format that ranged from one to seven with opposing traits or bi-polar adjectives at either end of the scale. For example, on the scale to measure whether the other participant was proud or modest, scores of one, two or three were considered proud, four was neither proud nor modest, and five, six, and seven were modest. To explore the relationships between the 10 trait scales and measures of competitiveness, a series of correlational analyses were conducted (see Table 1). For the pair of warm and cold, the correlation with RCI was $r(14) = .222$, $r(14) = .077$ for HCAS, and $r(14) = .356$ for PDCAS. No correlations were found to be statistically significant.

The pair of warm and cold was also used to calculate two by two ANOVAs using the same fixed factors, but replacing warm traits as the dependent variable. This would also assess the hypothesis that individuals high in competitiveness would have more negative perceptions of the other person’s personality if they lost compared to if they won. For RCI $F(1, 1) = .197$, $p = .666$ for game outcome and level of competitiveness, and $F(1,1) = 1.776$, $p = .212$ for an interaction. HCAS found $F(1,1) = .586$, $p = .463$ for game outcome, and $F(1,1) = .012$, $p = .915$ for both level of competitiveness and an interaction, and PDCAS found $F(1,1) = .042$, $p = .845$ for game outcome, $F(1,1) = 2.042$, $p = .203$ for level of competitiveness, and $F(1,1) = 3.375$, $p = .116$ for an interaction. None of the results were statistically significant, but when graphed RCI (see Figure 6) and PDCAS (see Figure 7) once again showed the expected direction that those high in competitiveness rated those they lost to as colder than those they beat in the game. The
similar results for both the quantitative warm and cold scale and the qualitative warm traits demonstrated that both were reliable tools of analysis.

**Discussion**

Overall, the results failed to support our hypothesis that those high in competitiveness that lost would have a more negative view of the other person because the results were not statistically significant. However, the study did indicate that those high in competitiveness tended to view the other participant in a more positive or warmer light if they won. Their behavior did change based on the environment or game outcome. Finding results in the expected direction despite the lack of statistical significance implies that there was not enough power to find significance, but further research with a higher power may find significant results. An unexpected finding was that for both the RCI and PDCAS scales, those low in competitiveness who lost the game had the highest average of warm trait words used in the open-ended questions. Those with a low level of competitiveness were expected to perceive the other person as warmer than those with a high level of competitiveness would, but it is not understood why losing would be cause for a warmer perception than winning. This unexpected result could become a separate future study.

There were limitations to the study, both seen and unseen. The small number of participants was a somewhat expected limitation due to the need for participants to complete both stages of the study. Also, the study was designed to have participants complete the second stage one at a time, which also limited the amount of total participants. Future studies may be able to alter the methods or have the space available to run multiple participants at a time while maintaining the anonymity of the other participant playing the game.
An unseen limitation of the study was participants breaking the confidentiality of the study. Towards the beginning of the second stage, one participant who had already completed the study gave specific details of the second stage to fellow classmates, who then informed researchers during their debriefing. Slight changes then had to be made to the procedure of the study, and six participants who had completed the study prior to the changes could not be used. Their data may have altered results, but it is unlikely that they would have given enough power to make results significant. All participants who completed the study after changes were made were asked during the debriefing specifically if they had been informed about the study beforehand. That is also when it was revealed that the other participant was actually the second researcher, and all participants appeared to have genuine shocked reactions to the deception. If the researcher felt that their reaction was not genuine or thought they were not being truthful about being told about the study beforehand, their data was not included in analysis.

An additional unseen limitation was the lack of inter-rater reliability in coding the open-ended questions for personality traits. Researchers expected that individuals who had not participated in the study and were unaware of the hypothesis or purpose of the study would be most accurate in categorizing the personality traits used, but this was not found. Potential explanations for the lack of reliability include having too few categories which increases the likelihood that chance played a factor, and having unclear operational definitions of the categories. Raters were also asked to categorize the traits as they believed the general population would, so their personal categorization may have differed. They were also given the traits out of context, so they were not able to see what questions were being asked or what traits individual participants used together. Categorizing the traits given the context and question being asked may increase inter-rater reliability.
The study was in a way designed to be broad enough to allow future researchers to expand upon the data found. The topic of competitiveness could be examined with greater scrutiny, potentially focusing on a specific aspect of competitiveness such as personal development that was only briefly examined in this study. Another possible study could examine the relationship between altered person perception and altered memory of the event, if such a relationship exists.

The effect of gender may be a relevant future topic of research as well. While the original picture used to represent the other participant was a female, after the confidentiality breach the picture was changed to that of a male. All but one of our participants were females, so how competitively they behaved in the game may have been affected by their belief that they were playing against a male. Their understanding of the environment may have altered their behavior and expression of their personality, but if gender played a role the extent of its effects is currently unknown. It is the researcher’s belief that females would feel more at ease expressing their competitiveness if playing against another female rather than a male, which could be a potential hypothesis for future studies.

Competitiveness is a trait all humans possess in some capacity, but varies widely from individual to individual. It is usually appropriate to have a healthy level of competitiveness, but when that level is high enough to alter your perception of others it has the potential to be maladaptive. Having a personality factor that is strong enough to alter the environment can negatively affect one’s behavior, making it inappropriate given the environment and may negatively affect the person. Constantly having a more negative view of others simply because you did not win can in turn affect how others view you, becoming a vicious cycle of negativity. Some have argued that this style of perception, known as “mirror-image perceptions,” are what
fuels terrorism (Shamir & Shikaki, 2002). The ability to recognize how your personality traits alter your view of others can only be helpful, and the first step to recognition is awareness. This study is only the beginning to understanding how competitiveness affects our view of those we compete against, and opens the door for future investigation.
References


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<tr>
<td>8. Irritable/Good Natured</td>
<td>.119</td>
<td>-.173</td>
<td>-.131</td>
<td>-.710**</td>
<td>.574*</td>
<td>-.063</td>
<td>.000</td>
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<tr>
<td>9. Generous/Ungenerous</td>
<td>-.164</td>
<td>-.067</td>
<td>-.052</td>
<td>.514*</td>
<td>-.282</td>
<td>-.161</td>
<td>-.112</td>
<td>-.538*</td>
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<tr>
<td>10. Humorous/Humorless</td>
<td>.012</td>
<td>.217</td>
<td>-.076</td>
<td>.641**</td>
<td>-.337</td>
<td>.086</td>
<td>-.346</td>
<td>-.613*</td>
<td>.479</td>
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<tr>
<td>11. Ruthless/Humane</td>
<td>.055</td>
<td>-.266</td>
<td>-.117</td>
<td>-.469</td>
<td>.768**</td>
<td>.351</td>
<td>.102</td>
<td>.629**</td>
<td>-.210</td>
<td>-.106</td>
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<tr>
<td>12. Dominant/Submissive</td>
<td>.045</td>
<td>-.242</td>
<td>.229</td>
<td>-.690**</td>
<td>.611*</td>
<td>.562*</td>
<td>-.069</td>
<td>.398</td>
<td>-.223</td>
<td>-.261</td>
<td>.595*</td>
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<tr>
<td>13. Friendly/Unfriendly</td>
<td>-.036</td>
<td>.188</td>
<td>.019</td>
<td>.690**</td>
<td>-.508*</td>
<td>.051</td>
<td>-.069</td>
<td>-.883**</td>
<td>.622*</td>
<td>.688**</td>
<td>-.567*</td>
<td>-.493</td>
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Note. *Correlation is significant at the 0.05 level (2-tailed), **Correlation is significant at the 0.01 level (2-tailed)
Figure 1. A graph of a two by two ANOVA using warm traits as the dependent variable and RCI level of competitiveness and game outcome as the fixed factors. Those who were high in competitiveness displayed the expected direction to use more warm traits when they won the game rather than when they lost.
Figure 2. A graph of a two by two ANOVA using warm traits as the dependent variable and PDCAS level of competitiveness and game outcome as the fixed factors. Those who were high in competitiveness displayed the expected direction to use more warm traits when they won the game rather than when they lost.
Figure 3. The average of warm, cold, and neutral traits used in open-ended questions based on the RCI scale. No differences were found between participants high or low in competitiveness or those who won or lost the game.
Figure 4. The average of warm, cold, and neutral traits used in open-ended questions based on the PDCAS scale. No differences were found between participants high or low in competitiveness or those who won or lost the game.
Figure 5. The average of warm, cold, and neutral traits used in open-ended questions based on the HCAS scale. Participants who won the game used more warm traits, regardless of their level of competitiveness.
Figure 6. A graph of a two by two ANOVA using a warm/cold scale rating as the dependent variable and RCI level of competitiveness and game outcome as the fixed factors. Those who were high in competitiveness displayed the expected direction to rate their opponent as warmer when they won the game rather than when they lost.
Figure 7. A graph of a two by two ANOVA using a warm/cold scale rating as the dependent variable and PDCAS level of competitiveness and game outcome as the fixed factors. Those who were high in competitiveness displayed the expected direction to rate their opponent as warmer when they won the game rather than when they lost.