The Impact of Emotional Recognition on Prejudice and Discrimination

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ABSTRACT:

Prejudice is a negative, generalized attitude towards a particular group of people. It exists in implicit (unconscious) and explicit (conscious) forms. Discrimination is the behavioral form of prejudice. Individuals with higher explicit prejudice have more difficulty identifying facial expressions, especially of out-group members (Andrzejewski 2009). I hypothesize prejudice and discrimination can be reduced by improving one's ability to recognize emotions (their own and others') through different online training programs. This study, conducted between November 2012 and March 2013, utilized 71 male and female Caucasian participants; all students at a large, Midwestern university enrolled in introductory psychology or communications classes, participating for class credit. Participants were told they were going to work with an African American student, and after measuring their explicit prejudice, they were trained to either recognize their own emotions, recognize others' emotions, or improve their vocabulary. Their explicit prejudice was reassessed and then they were taken to another room for the social interaction task. Participants were asked to choose a seat by a table. One of the chairs had a backpack (presumably belonging to their partner) on it. How far they sat from the backpack measured discrimination against their partner of a different race. The results using a univariate ANOVA showed that improving emotional intelligence decreases discrimination but has no effect on prejudice. Additionally, the effects that emotion training programs have on discrimination vary depending on whether someone has high or low alexithymia according to the TAS-20.

Perhaps one of the most inspirational novels in American history, To Kill a Mockingbird by Harper Lee, confronts the issue of post-civil war discrimination through the eyes of a young child, Scout Finch. Scout's father, Atticus Finch, is a lawyer with morality far ahead of his time. One lesson that Atticus teaches Scout defines her moral development throughout the novel; "You never really understand a person until you consider things from his point of view - until you climb into his skin and walk around in it" (Lee, 1960, p. 39).

This quote is exemplified through Scout's friendship with Boo Radley, her mysterious neighbor who never leaves his home. None of the children have seen Boo, but they nonetheless feared him and enjoyed playing games based on their anxiety about this mystery. Throughout the novel, Scout and her friends reluctantly accept small gifts, presumably from Boo, left in a knot in a tree outside his yard. Even though Boo leaves the children gifts, they continue to fear him. As the novel progresses, Scout fears Boo less and less until Boo finally leaves his house one night and saves Scout's life when she is attacked by a man angry at Atticus' legal defense of an African American. Upon seeing Boo for the first time, she recognizes his personhood and is able to act selflessly to make Boo most comfortable, demonstrating that the prejudice flooding her hometown would not affect her perspective.

Prejudice and discrimination, as exemplified in the book, are strongly tied to emotional experiences. Atticus describes how people can only understand others if they virtually live their experiences. Scout represents the importance of seeing others in person to fully understand their humanity. What about seeing Boo allowed Scout to fully connect with him and let go of her previous prejudices that he was something to fear? What about recognizing and understanding others' internal experiences makes one able to accept their behavior? To Kill a Mockingbird

shows that emotional intelligence and prejudice may be linked; however *how* they are linked can

be addressed in the current study.

     Prejudice and discrimination. Prejudice is a negative, generalized attitude towards a

particular group of people that is typically unjustified and directed towards an out-group

(Allport, 1954). Although prejudice may cause certain behaviors, it is important to note that the

categorization of prejudice specifically describes an emotional, internal experience. There are

two types of prejudice: implicit and explicit prejudice. Implicit prejudice describes an

unconscious negative feeling towards the targeted group (Greenwald & Banaji, 2005). This type

of prejudice cannot be controlled, as those who experience it are unaware of their own

prejudices. Explicit prejudice, on the other hand, is under conscious control. People experiencing

explicit prejudice are aware of their negative feelings towards particular out-groups, thus this

type of prejudice is measurable through self-report measures. The behavioral manifestation of

negative prejudice is discrimination. Discrimination occurs when people make the conscious

decision to behave in a negative way towards a particular group. Whereas prejudice is an internal

emotion and thus is difficult to control, discrimination is a deliberate behavior, thus it is easier to

manage than prejudice.

     There has been extensive research done on prejudice and potential techniques to reduce it

(Paluck & Green, 2009). One study used mimicry to reduce out-group prejudice (Inzlicht,

Gutsell, & Legault, 2012). When participants watched and then mimicked a video of either

African Americans or in-group members asking for glass of water, those who mimicked African

Americans showed decreased implicit and explicit prejudice as compared to those who mimicked

members of their in-group. This study suggests that mimicry can help reduce prejudice. Another

study used accountability for one's allocation of minority statuses to decrease prejudice (Dobbs

& Crano, 2001). Although this study effectively decreased prejudice, it used randomly generated groups to model a majority and minority, allowing prejudice as an emotion to be disconnected from the strong historical roots that entrenches prejudice in the real world. Thus, it is unclear whether accountability would have an impact in a laboratory setting using in-groups and out-groups. Using persuasive "professional testimony" to manipulate individuals' instinctive faith in experts may also attenuate prejudice (Levy et al., 1998). One study had participants read a scientific article describing personality as either fixed or malleable and then rate a series of individuals based on a number of personality traits. Individuals who had read an article about malleable personality showed less stereotyping towards out-groups than did individuals who read about fixed personality. These studies appear to assume that people are prejudiced only because they do not know any better or because of lack of contact with out-group members, and while education, publicity, and diversity have had an enormous impact on reducing visible explicit prejudice over time, the question remains; *are prejudice and discrimination connected to some other trait that could be an effective point of intervention?* Past studies have focused heavily on personal ignorance and have not fully considered how deficits in emotional intelligence might play a role in prejudice or discrimination.

  Emotional Intelligence. Emotional intelligence is the ability to recognize and describe emotions in one's self and others. There are many sub-categories that make up emotional intelligence. Two main subcategories of emotional intelligence are emotional recognition, which is the ability to identify and describe others' emotions, and self awareness, which is the ability to identify and describe one's own emotions. While many aspects of emotional intelligence (EI) are considered chronic traits, others are behavioral characteristics that can be changed. Trait EI is measured by self-report and is a static trait that is difficult to change. Ability EI is measured by

performance tests and is considered a dynamic cognitive ability (Petrides, Furnham, & Frederickson, 2004; Petrides, Furnham, & Mavroveli, 2007). Warwick and Nettelbeck (2004) found that the same individuals have different scores on the TMMS test, which measures trait EI, and the MSCEIT test, which measures ability EI. The distinction of these two scores within individuals suggests that there is an overt distinction between trait EI and ability EI. Thus, while both trait EI and ability EI fall under the general heading of emotional intelligence, they are separate characteristics within an individual that must be examined as distinct constructs.

Studies also show that emotional intelligence (ability EI, in particular) is teachable. Being able to improve emotional intelligence is crucial, as problems with emotional recognition have been shown to interfere with health outcomes, wellbeing, and occupational success (Pool & Qualter, 2012). Studies show that teaching interventions for emotional learning are effective in children 5 to18 years old (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011), and effectively improved children's social and emotional skills, attitudes, behavior, and academic performance. A study by Pool and Qualter (2012) replicates this study in university students using an 11-week emotional training course, showing that it is possible to improve emotional self efficacy and some aspects of emotional intelligence.

One trait that is distinguished by having chronically low emotional intelligence is called alexithymia. Alexithymia is identified as the inability to verbalize or identify one's own emotions (Apfel & Sifneos, 1979). This often causes individuals to have difficulty empathizing and identifying others' emotions. Extensive research has been done in an attempt to improve the emotional intelligence of people who are chronically unable to recognize others' emotions (Silver & Oakes, 2001). Although alexithymia is an extreme problem to have, the effects of low emotional intelligence in general often mirror findings about how alexithymia affects

individuals, only to a lesser degree. Individuals with alexithymia have difficulty identifying

emotional facial expressions of others, reduced perceptual abilities, and impaired semantic

representations of emotional concepts; however these difficulties are not associated with any

specific emotional facial expression or valence (Grynberg et al., 2012). This suggests that

emotional intelligence is necessary for the ability to identify emotional expressions and mentally

represent emotional concepts, which in turn allows for appropriate social interactions.

Other research has found that college student participants with alexithymia see

themselves as more aggressive when interacting with people who are different than them in some

way, whether it is because of their group status or opinions (Konrath, Novin, & Li, 2012). These

studies provide valuable insights into how emotional intelligence can be a valuable tool in

dealing with intergroup relations and shines light on the idea that prejudice towards an out-group

could be fueled by an inability to recognize emotions.

Prejudice, Discrimination, and Emotional Recognition. Literature describing the exact

relationship between emotion recognition and prejudice is extremely limited. Some studies have

examined the relationship between empathy and prejudice (e.g. Stephan & Finlay, 1999),

however while empathy is a related condition associated with having low EI, they are two

inherently different concepts. While EI focuses on the ability to identify and describe emotions,

empathy refers to actually feeling someone else's thoughts, feelings, or attitudes and being

affected as if these thoughts were one's own. Thus, while studies about empathy are related to

EI, they are not sufficient in describing the connection between prejudice, discrimination, and

emotional recognition.

As mentioned in the previous section, studies suggest that individuals with alexithymia

feel more aggressive to out-group members than in-group members when they held different

beliefs on an important topic (Konrath, Novin, & Li, 2012). This suggests there is a relationship between prejudice and emotion recognition, and that EI is a valuable resource in reducing one's own discrimination against an out-group under conditions that evoke negative emotions. This finding is reinforced by a study suggesting that emotional intelligence may moderate the link between prejudice and discrimination. Although two individuals may have the same prejudices towards a minority group, the individual with higher emotional intelligence is less likely to act on those prejudicial attitudes (Pioro, 2005).

A dissertation study found that individuals with higher explicit levels of prejudice had more difficulty identifying facial expressions overall, and especially when the targets were out-group members (Andrzejewski, 2009). Thus, this study confirmed that more prejudiced people do indeed have lower emotional intelligence than less prejudiced people and that the processing involved in feelings towards out-groups is inherently different than that involved in feelings towards in-groups.

Past research establishes an association between emotional intelligence, prejudice, and discrimination; however it does not specify the causal direction between them. Although Andrzejewski's study was well designed and executed, it does not determine the direction of causality because it was correlational. Could deficient emotional intelligence be one of the major causes of prejudice? To date, there are few studies that even examine prejudice and emotional recognition as related experiences, and none that determine whether prejudice causes lower emotional competencies, or whether lower emotional competencies can lead to increased prejudice. My study was designed to demonstrate the connection between impaired emotional intelligence, prejudice, and discrimination, and show that prejudice can be reduced by improving one's ability to recognize and identify one's own and others' emotions.

The Current Study. The purpose of the current study is to better describe the connection between emotional intelligence, prejudice, and discrimination. In this study I attempted to determine the direction of causality between prejudice and EI. Specifically, I examined whether training people to have higher emotional intelligence (either other-oriented or self-oriented) would later reduce their prejudice and discriminatory behaviors.

 I began the study by informing Caucasian participants they would be working with an African American partner at the end of the study to activate prejudice or discomfort they may feel about interacting with an out-group member. Then, baseline measures of explicit prejudice were surveyed followed by a training program to improve emotional recognition in either one's self or others. Participants in the control group completed a training program to increase their verbal skills. Next, participants took post-training measures of explicit prejudice as well as racial salience. They were then led to another room for their "social interaction task," where discrimination was gauged based on how far away the individual sat from their partner.

I hypothesized that individuals randomly assigned to a training program to improve emotional recognition, either in one's self or in others, would show lower levels of explicit prejudice, racial salience, and discrimination compared to participants in the control condition.

This study has implications for reducing prejudice and discrimination in the general population. If I find that there are decreases over the course of the study in self-report measures of explicit prejudice, this would suggest that emotional recognition is involved in the expression of prejudice. If this is true, a focus on emotional recognition may lead to improved methods to reduce prejudice. Additionally, if this study shows that emotional training programs decrease the distance that participants sit away from their partner, it suggests that emotional recognition is

involved in discrimination as well, and indicates that discrimination can be reduced by improving EI.

Participants

Participants were 71 Caucasian undergraduates from the introductory Psychology subject pool who received credit for their participation. Nine participants were excluded for directly stating that they thought that their interaction partner did not exist. This left a final sample size of 62 (54.8% female; mean age=18.71, SD=.84).

Method

Design. This study used a three group experimental design, with several measures examining pre to post-training changes.

Procedure. Participants were first "introduced" to their partners by seeing their photocopied IDs, then completed some baseline questionnaires, were then randomized into one of three training conditions, completed some post-training questionnaires, and were finally taken to another room for the ostensible social interaction task.

Introduction to partner. Participants were asked for their photo IDs for a "social interaction task." Their IDs were photocopied, and the identifying information (eg name, student ID number, etc) was blacked out with a marker in front of them to ensure that the experiment was confidential. Participants were then told their photocopy was being exchanged with their partner's, who was in a different study being run simultaneously. They received a fake photocopy of an African American student of the same sex as them.

*Pre-training questionnaire*s. Participants were asked to fill out a short, paper questionnaire on how they anticipated working with their partner with items that participants ranked on a scale of 1 to 5 (1=strongly disagree, 5= strongly agree) in how well they describe the

participant's feelings. Examples of items on this questionnaire include, "I feel similar to my

partner" and "I feel nervous about interacting with my partner." Participants then completed

measures of explicit prejudice via online surveys to determine participants' baseline prejudice

levels. Filler questionnaires were embedded within these in order to disguise the true purpose of

the study.

Racial attitudes were assessed using the pro-black attitudes scale (Katz & Hass 1988), the

Modern Racism Scale (MRS; McConahay, 1986) and the Feelings Thermometer (Figure 2;

Krysan, 2000). The pro-black attitudes scale (Katz & Hass, 1988) is a ten item questionnaire that

asks about how participants perceive the existence of discrimination in the United States.

Participants are asked to rank on a scale of 1 to 6 how much they agree with the list of statements

(1=strongly disagree, 6 = strongly agree). Statements include "Black people do not have the

same employment opportunities that Whites do" and "This country would be better off if it were

more willing to assimilate the good things in Black culture." This scale has been used in several

studies as a valid measure of explicit prejudice (Wittenbrink, Judd, & Park, 1997; Pratto et al.,

2004). The validity and reliability of this scale as a measure of prejudice is exemplified in a

recent study (Saucier & Miller, 2003) that showed that the pro-black attitudes scale, Modern

Racism scale (MRS), and the Attitudes towards blacks (ATB) scale are all moderately correlated

with the right wing authoritarianism (RWA) scale to show that the RWA scale could be used as a

measure of prejudice. The Modern Racism Scale (MRS; McConahay, 1986) was also used in the

Saucier and Miller study, exemplifying its validity as a measure of prejudice as well. The MRS

consists of seven items in which participants must rank how much they identify with the given

statements on a scale of 1 to 5 (1=strongly disagree, 5= strongly agree). Examples of items in the

scale are "It is easy to understand the anger of black people in America" and "Over the past few

years the government and news media have shown more respect to blacks than they deserve." In addition to the study above (Saucier & Miller, 2003), numerous studies have reinforced that this scale is a reliable and valid measure of explicit prejudice (Cunningham, Preacher, & Banaji, 2001; Wittenbrink, Judd, & Park, 1997). Our final measure of explicit prejudice, The Feelings Thermometer (Figure 2; Krysan, 2000), is a widely used ranking system for a number of different minority groups. There are 8 groups distinguished in our particular study: Blacks, Hispanics, Whites, Native Americans, Muslims, Immigrants, Gays and Lesbians, and Feminists. For each group, participants are asked "How would you rate this group?" based on a thermometer ranging from $0°$ to $100°$ ($0°$ =Very cold or unfavorable feeling, $100°$ = Very warm or favorable feeling). This simple measure has been to be more reliable and valid than other methods of measuring prejudice that are limited to 7 or 11 point categories as there are a wider range of possible answers allowing for more information to be provided with each answer and more accurate answers overall (Alwin, 1997).

Social desirability was assessed using the Marlowe-Crowne Social Desirability Questionnaire (Crowne & Marlowe, 1960). This 10 item scale includes a series of personal attitudes and traits. Participants are asked decide whether the statement is true or false as it pertains to them personally. Examples of items on this scale are "There have been times when I was quite jealous of the good fortune of others" and "When I don't know something I don't at all mind admitting it." Many studies have tested the reliability and validity of the Marlowe-Crowne Questionnaire and have found that the scale was satisfactory for measuring social desirability (Sârbescu, Costea, & Rusu, 2012; Tatman, Swodder, Love, & Cook, 2009).

Alexithymia was assessed using the Toronto Alexithymia Scale (TAS-20; Bagby, Parker, & Taylor, 1994). The TAS is a 20 item scale in which participants rank a series of statements by

how well they pertain to them personally. Items are ranked on a scale of 1 to 5 (1=disagree strongly, 5= agree strongly). An example of an item on this scale is; "When I am upset. I don't know if I am sad, frightened, or angry." Many studies have confirmed the reliability validity of the TAS-20 (Parker et al., 1993; Culhane et al., 2009; Parker et al., 2003).

Training Program. Participants were randomly assigned into 3 groups: a control group without any emotional recognition training, a self-oriented group who will be trained to recognize and verbalize their own emotions, and an other-oriented group trained to recognize others' emotions.

The *self-emotion recognition* module sought to help participants recognize their own feelings of anxiety and stress and learn to reduce them. A series of 4 videos from helpguide.org and associated readings takes approximately 30 minutes to complete and helps individuals to become more in touch with and have more control over their negative emotions.

Participants in the *other-emotion recognition* module completed the interactive CD-Rom called the Micro-Expression Training Tool (Ekman, 2003). This involves a pre- and post test whereby participants have to identify emotions that flash across a person's face, a training module to recognize micro-expressions, a slower-paced practice module, and a review of the training before the post-test. This takes approximately 30 minutes to complete.

Participants in the *vocabulary control condition* used "Word Command," a computer module that involved self-learning vocabulary flashcards for 15 minutes and then taking a quiz for 15 minutes. The quiz had timed questions (10 seconds each) with fill in the blank and multiple choice questions. At the end of the training and quiz, participants' quiz scores were recorded.

Post-Training Questionnaire. This online questionnaire uses the same scales used in the pre-training questionnaire, with an additional word stem completion task (Steele & Aronson, 1995). We created this task for our study by shortening a commonly used bank of word fragments. We selected relevant items from the 80 words in the Steele & Aronson study to create a 7 item scale in which participants have to fill in the blanks of word fragments missing letters. For every word participants complete, there are multiple possibilities for what the word could be. Within the overall task, there are two subscales: race-related words and negative-emotion related words. The four race-related words (Race, White, Slave, and Black) could also be neutral words depending on how participants filled in the blanks (eg. Rice, While, Block, Slate). The 3 negative emotion related words (Hate, Fear, Worry) could also be neutral alternatives (eg. Have, Four, World). How many words participants filled in as a race word or a negative emotion word as opposed to a neutral word acted as a measure of how much they were thinking about race or negative emotions respectively. Numerous studies have confirmed the validity and reliability of the word stem completion task in measuring salience of primed concepts (Spaan & Raaijmakers, 2010; Gilbert & Hixon, 1991; Tulving, Schacter, & Stark, 1982). Again, filler scales were added to the post-training questionnaire, yet only after the relevant scales to carefully avoid affecting the results. Participants also completed another short paper-and-pencil questionnaire with a short series of questions about how the participant perceives interacting with their partner.

Social Interaction Task. This is the final section of the experiment and it involves deception. Since the beginning of the study, the participant has been anticipating interacting with an African American partner of the same sex. At the end of this questionnaire, the researcher took the participant into a back room where their partner supposedly had been, but was currently in the bathroom and had left their backpack on one of the seats. The participant was instructed to

sit wherever they want, with the choice of 4 chairs, each successively linearly farther apart from the partner's backpack. The chair they chose to sit at acted as an indicator of explicit prejudice, as they were essentially choosing how close they wanted to sit with, thus how willing they were to directly engage with, their partner of a different race (Goff, Steele, & Davies, 2008).

Results

Descriptive Statistics. Participants who participated in either of the emotional recognition training programs sat significantly closer to their partner than participants who took the control vocabulary training program $(F(1,60)=4.011, p=0.05)$. An ANOVA using training program to predict chair shows that participants who had taken an emotional training program would sit an average of 1.98 (SE=0.12) seats away, whereas control participants would sit an average of 2.36 (SE=0.16) seats away.

The effect of either emotion training on Chair selection
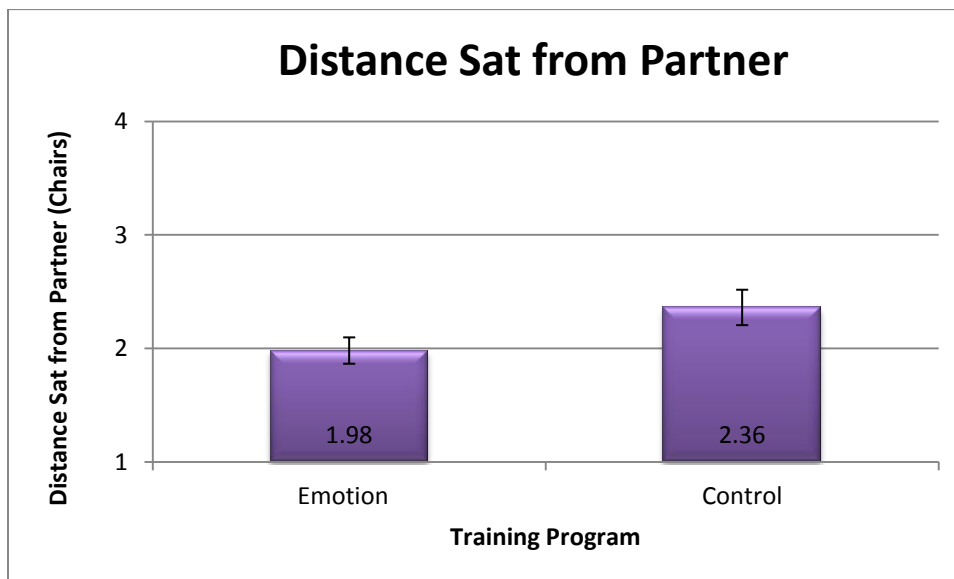
When the participants were split by alexithymia based on how they scored on the TAS-20 (>52= High alexithymia, ≤ 52= Low alexithymia), there was a significant difference in whether

different training programs effectively reduced the distance participants sat from their partner,

p=0.038. Participants who scored high in alexithymia sat significantly closer to their partner after

the other-emotion training (M=1.56, SE=0.24), while the self-training (M=2.38, SE= 0.25) had

the same effect as the control condition (M=2.43, SE=0.19). Participants who scored low in

alexithymia sat closer to their partner after the self-emotion training (M=1.92, SE=0.21), but the

other-emotion training (M= 2.17, SE=.21) had exactly the same effect as the control condition.

(M=2.25, SE= 0.25).

The effect of alexithymia on which training affected distance from partner.
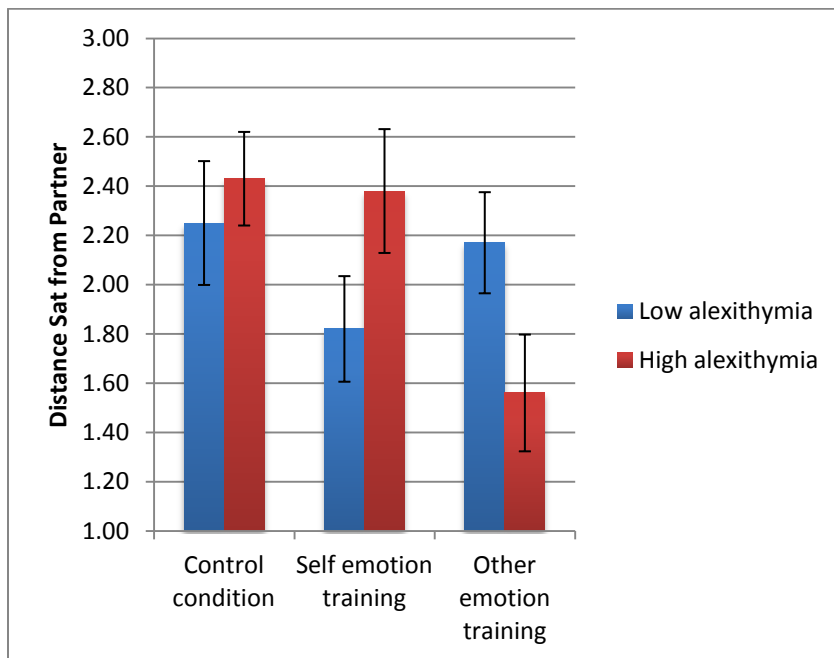
Racial Salience. I examined the effect of condition on the race-based word-stem

completion task. In order to do this, I first identified the words in the word-stem completion task

that have racial significance (race, white, black, and slave) and made a scale for each word to

distinguish participants who answered the racial term instead of its potential non-racial

alternative (1=race word, 0=alternative). I then combined the scales of each race word through

simply adding together their results from each scale and ran an ANOVA with condition predicting race salience (4=high racial salience, 0=low racial salience). I found that there were no significant changes in racial salience after receiving either type of emotion training, p=0.93 (See Table 1).

I then wondered whether any sort of emotion training would have an effect on racial salience. To do this, I combined the two emotion training conditions into one group (Either Training=1, Control=0), and ran an ANOVA with condition predicting racial salience. I again found that there were no significant prevalence of race-words for the control versus either training condition, p=0.92.

Self-report measures of explicit prejudice. I next examined the effect of condition on the *feelings thermometer ratings* (Krysan, 2000) (Figure 2) toward out-group members (Blacks, Hispanics, Native Americans, Immigrants, LGBT, and Feminists). In order to do this, I first calculated a change score for each out-group (e.g. Ratings of Blacks after training minus ratings of Blacks at baseline), and then ran an ANOVA with Condition predicting each change in out-group rating. Overall, there were no significant changes in feelings toward various out-group members, either individually or as a group, after receiving either type of emotion training, ps >0. 25 (See Table 2).

I also wondered whether any kind of emotion training would have an effect on out-group ratings. To do this, I combined the two emotion training conditions into one group, and ran an ANOVA with Condition (1=any emotion training, 0=control training) predicting each out-group rating. I again found that there were no significant changes in feelings toward various out-group members, either individually or as a group, after receiving both types of emotion training, ps >0. 15.

I was also interested in seeing if perhaps participants' self-reported prejudice as measured by the *Modern Racism Scale* would be affected by the different training programs. In order to measure this, I calculated the percentage change in modern racism using the pre- and post-test scales and ran an ANOVA predicting change in modern racism based on condition. I found that there was no significant change in modern racism caused by different emotional training programs, $p=0.64$. I combined the emotional training conditions once again to see if either training program would have an effect by running an ANOVA with the collapsed condition, however results were not significant, $p=0.88$.

Behavioral measure of discrimination. The main purpose of this study was to see whether the different training programs would have a direct, measurable impact on discrimination. To measure this, I had participants select where to sit from a linear series of 4 identical chairs along a table, successively farther away from the seat taken by a black backpack where their anticipated partner was presumably going to sit. I labeled the chairs 1 through 4 based on their distance from the backpack (1=next to partner, 4= farthest away). I ran an ANOVA predicting distance from partner based on condition and results were not significant ($p=0.12$), however there was a significant difference between the other-focused training group and the control, $p=0.05$, while all other ps>0.18. The results of this ANOVA showed that people in the other-focused training group send to sit the closest to their partner (M=1.91, SE=0.16 seats), while the self focused group tended to sit around the second chair (M=2.05, SE=0.17 seats), and the control group tended to sit the farthest away (M=2.36, SE=0.16 seats) (Table 3).

I then examined whether any emotional training program would reduce the distance the participants sat away from their perceived partner compared to the control. To test this, I ran the collapsed emotional training condition against the chair in an ANOVA and found that

participants who had taken an emotional training program would sit an average of 1.98

(SE=0.12) seats away, whereas control participants would sit an average of 2.36 (SE=0.16) seats

away, F(1,60)=4.01,p=0.05. Thus, emotional training programs for improving either one's own

emotions or others' emotions significantly reduce the distance that participants sit away from

their partner.

   The impact of emotional training programs on high versus low alexithymia individuals. I

next examined whether alexithymia played a role in how the different emotional training

conditions impacted how far individuals sat away from their partner. To do this I split the data

file into two groups: high alexithymia and low alexithymia. High alexithymia was categorized as

having a 52 or higher on the Toronto Alexithymia Scale (TAS-20; Taylor, Ryan, & Bagby,

1986). The TAS-20 uses cut off scoring so that anyone who scores less than 52 does not have

alexithymia, those who have scores above 61 definitely have alexithymia, and those in the 52 to

61 range possibly have alexithymia (Bagby, Parker, & Taylor, 2008). Thus, I used 52 as a cut off

score to distinguish between participants who definitely do not have alexithymia and those who

have alexithymia or have traits of alexithymia. Once I split the data file, I ran a 2-way ANOVA

to determine whether there were different effects in how training programs affected

discrimination. Results showed a significant interaction between alexithymia and training

condition, p=0.04. Within the low alexithymia group, individuals who experienced the self-

training program sat closer to their partners (M=1.92, SE=0.21), but the other-emotion training

(M= 2.17, SE=0.21) had exactly the same effect as the control condition (M=2.25, SE= 0.25).

Within the high alexithymia group, the other-training reduced the distance that individuals sat

from their partner (M=1.56, SE=0.24), while the self-training (M=2.38, SE= 0.25) had the same

effect as the control condition (M=2.43, SE=0.19) (Table 4).

Discussion

The results of this study demonstrate that emotional training programs only have an effect in reducing discrimination, and not self-report explicit prejudice. Also, the effect that training programs have on how far away participants sit from their partner, thus how effectively discrimination is reduced by targeting specific types of emotional intelligence, is determined by whether one has high alexithymia or low alexithymia as determined by the Toronto Alexithymia Scale (>52= high alexithymia) and whether the training program targets one's own or others' emotions.

Emotional Training Programs Reduce Discrimination. Discrimination was the main variable in this study that I anticipated the training programs would affect. As I hypothesized, Caucasian participants who took an emotional training program sat significantly closer to their African-American partner than controls. I believe that discrimination was reduced by both emotion training programs because the emotion training programs increased participants' emotional intelligence, or at least heightened their awareness of their emotional intelligence, which is an important moderator when dealing with one's own feelings about a particular out-group. The past studies discussed in the introduction show that emotional intelligence and prejudice are definitely linked, and that emotional intelligence may also be the defining feature that moderates between prejudice and discrimination (Pioro, 2005). It makes sense based on past studies that increasing one's emotional intelligence would result in their decreased discrimination against out-groups.

Although my hypothesis was confirmed, I must consider whether it is possible that participants sat beside their African American partner for some other reason besides race. It does

not appear that there are any other factors influencing seat choice in this study; however it is a possibility that may be valuable in future research.

Emotional Training Programs and Alexithymia. Individuals with high alexithymia only experienced a reduction in discrimination when they were trained to recognize other people's emotions, but not their own, whereas participants with low alexithymia only experienced a reduction in discrimination when they were trained to recognize their own emotions, but not others' (Table 4, Figure 1.). In normal (low alexithymia) individuals, perhaps these emotion training programs are helpful because they are either increasing awareness of their own emotions or learning to identify expressions that they already have seen and can recognize. Individuals with high alexithymia, on the other hand, lack the emotional capital needed as a foundation for these self-emotion training programs to work. Thus, a 30-minute program designated to improve emotional recognition and identification in oneself may be less helpful when participants have limited prior knowledge of one's own emotional states. The self training focuses on self management and recognizing your own anger to properly prevent internal stress. Individuals very high in alexithymia probably found this training confusing and unhelpful because of its relative ambiguity, which could explain why self-training had no more effect on reducing discrimination than the control for the high-alexithymia group.

On the other hand, the other emotion training was very formulaic, with a clear set of rules and clear right and wrong answers. There were a select number of emotions that participants were taught to distinguish, and each of them was represented by the exact same facial expression across several unique faces. Although this task was training emotional intelligence, it relied to a certain extent on other forms of intelligence to simply memorize and label. Because this program was more formulaic than the self-training, it was most likely easier for individuals with

alexithymia to understand and apply. Low alexithymia individuals, on the other hand, probably had more difficulty overall with the other-emotion training because it forced them to remove their intuition from emotion identification and think of it in a formulaic way. In this training condition, having prior inclinations about what certain emotions are may have been disadvantageous (or at least not helpful) for participants as they were forced to mediate between what they think based on training and what they feel based on intuition.

As a result of these differences, individuals with low alexithymia would probably have difficulty learning using the other-emotional recognition training employed in this study, but would find the self-emotion training to be a helpful reminder of what they already know, whereas individuals high in alexithymia would most likely struggle with the ambiguous self-emotion training but excel in the formulaic other-emotion recognition training. Thus, it makes sense why individuals high in alexithymia would sit closer to their partner after the other-emotion training but not the self emotion training, while individuals low in alexithymia would sit closer to their partners after the self-emotion training but not the other emotion training. Both reflect changes to emotional intelligence, but how to access that emotion intelligence is limited based on what other types of intelligence abilities participants have and how to best teach them so that they understand the concepts presented.

The Effect of Emotional Training Programs on Prejudice vs. Discrimination. I believe that the emotional training programs had such a huge impact on discrimination and not explicit prejudice because of the nature of emotional intelligence. As discussed in the introduction, there are two types of emotional intelligence: Trait EI and ability EI. Whereas trait EI is measured through self-report measures and is considered a static trait, ability EI is measured through maximum-performance tests and may be subject to intervention (Petrides, Furnham, &

Frederickson, 2004; Petrides, Furnham, & Mavroveli, 2007). Similarly, explicit prejudice must

be measured through self-report scales and was not at all affected by emotional training

interventions, while discrimination was measured through a behavioral performance scenario and

was significantly affected by emotional training programs. Perhaps the emotional intelligence

used to cope with prejudice is inherently trait EI, while the emotional intelligence used to

moderate discrimination is ability EI. This would explain why explicit prejudice appears to be

static in the face of countless efforts to reduce it (as described in the introduction), while

discrimination can be combated through socialization, education, and emotional recognition

improvement programs like the one in this study.

Racial Salience, as measured by the word-stem completion task, showed not to be

significantly affected by training condition. Moreover, there was not much of a pattern in the

training conditions versus the control that would suggest that even if I were to increase the

sample size, there would not be a connection between racial salience and condition. It is difficult

to say why I found null results, however I speculate that the reason that these findings are not

significant lies in the structure of the emotional training programs I implicated. Both the self and

other emotion trainings were completely unbiased in terms of race. They both involved examples

from a representative sample of the population, including various minority groups as well as

many Caucasian individuals.

While this study aimed to show how emotion recognition and prejudice overlap, they are

still inherently different traits. Thus, increasing someone's awareness of their own emotions or of

others' emotions may not have an impact on racial salience without some sort of race-based

event to activate this salience. When organizing the study, I left a picture of the participant's

partner to the side, visible in the periphery, that I hypothesized would fuel any internal feelings

of anxiety or prejudice throughout the study. Perhaps because the discussion of one's partner was nearly an hour before the racial salience measure was taken and the emotional training program did not focus on minority groups at all, participants were no longer thinking about their upcoming social interaction and thus did not feel anxiety about the upcoming event that may increase racial salience. It is likely that even if race was on individuals' minds, the separate conditions did not affect the extent to which they thought about it.

　　Another possibility for why I found no significant changes in racial salience between the training conditions is that emotional recognition is simply not connected to racial salience. Unlike the self-report measures of prejudice and behavioral measures of discrimination, cognitive awareness of race is not an emotional phenomenon and may not be relevant in this study. The change in the feelings thermometer ratings (Figure 2.) towards various out-groups and change in the modern racism scale were used in this study as measures of explicit prejudice. There were no significant differences in participants' feelings towards any of the minority groups or changes in modern racism between the different training conditions. Although it is again difficult to say why I did not find the results I anticipated, one explanation could be because I did the pre- and post-measure within a single lab session and participants were motivated not to change their answers. Another possible explanation for the results in the feelings thermometer and change in modern racism is that these scales focus too heavily on the general concept of the out-group, for example many questions in the modern racism scale ask about conditions for "Blacks in America" and the feeling thermometer asks about individuals' feelings towards "Blacks" and other generalized minorities. I believe that the prejudice I target by training emotional intelligence is more directed towards individuals based on the more personal nature of the training. Thus, it is possible that because the training focused so strongly on emotional

intelligence at a personal level, it would have no impact on such a general target in these explicit prejudice measures. A third and final hypothesis I have for these null results relates to what I discussed in the introduction about trait versus ability EI and how they are conceptualized. Trait EI is measurable through self-report, thus it makes sense that prejudice measured through self-report questionnaires (explicit prejudice) would be connected to the emotional intelligence expressed in the same way. This suggests, however that like trait EI, explicit prejudice is also a trait that cannot be easily changed through teaching.

Strengths and limitations to the study. This study is a valuable contribution to the current literature because it is the first study of its kind to establish causality between emotional recognition and discrimination. Additionally, this study distinguishes how emotional training programs may need to be specifically tailored to individual needs: low alexithymia individuals may need more ambiguous trainings that remind them of their already present intuitions, whereas high alexithymia individuals appear to benefit from more structural, systematic guidance, as they have no previous emotional capital to build off of. Most previous studies that have implemented programs to raise EI by having a class with one curriculum or one specific training program, it is a novel idea to think of EI training as a unique experience. Although it had previously been accepted that EI could be learned, it was not considered how, just like in any other subject, there are numerous learning styles that must be accounted for so that the main purpose of the lesson reaches everyone.

The behavioral measure of this study was a valuable tool that stands apart from other measures of discrimination because it does not ask participants to hypothetically interact with a partner or interact over a computer with no social contact; the chair selection task gauges how partners actually plan on socially interacting with another live human being.

There were additional limitations to the study that may have had an impact on the results. The first and biggest limitation, I believe, is that the study is only over the course of an hour and a half yet includes both pre and post measures. As a result, patients remember their pre-test answers when answering the post-test answers and feel obligated to maintain them.

The second limitation to this study was that I did not have an implicit association test, thus there was no way to test implicit prejudice. Instead, I used the word-stem completion task, however this only tested racial salience which is not necessarily the same thing.

Future Directions. To correct for the limitations of this study, it makes sense in the future to have studies with interventions such as these that require pre-and post-monitoring of different traits to have the study scheduled over a longer period of time or to only administer post tests. Moreover, the explicit prejudice scales I used involved static reports of feelings towards general out-groups; in the future it would be beneficial to measure implicit prejudice using a more dynamic scale, such as the Implicit Association Test (Greenwald, McGhee, & Schwartz, 1998) that can shift more easily in different situations and is outside of the conscious control to prevent tampering with the results based on a recent memory of one's last response.

Conclusion. In conclusion, emotional intelligence has strong ties to the expression of racial discrimination. It was found that there is a causal relationship between emotional intelligence and discrimination, and that improving one's emotional recognition abilities directly decreases participants' expression of discrimination. While past studies show that prejudice is also tied to emotional intelligence, this was not found in this study. It is possible that different types of prejudice are affected by emotional intelligence in different ways, and that the explicit prejudice I focused on was too general for a personal emotional training to have an effect; however future research needs to be done to determine whether more personal measures of

explicit prejudice are affected by training. Alexithymia also has a significant role in determining how emotional training programs impact participants. I found that individuals with high alexithymia only had a reduction of discrimination after the other-emotion training, while individuals with low alexithymia only had a reduction of discrimination after the self-emotion training. This could be related to learning styles and how whether or not an individual has previous emotional capital could impact their ability to learn in different ways. My study shows the possibility of combating discrimination by improving emotional recognition, which has a spectrum of implications in future research and society.

References

Allport G.W. (1954). *The nature of prejudice*. Reading, MA: Addison-Wesley.

Alwin, D. F. (1997, February). Feeling thermometers versus 7-point scales: Which are better? *Sociological Methods & Research*, *25*(3), 318-340. doi:10.1177/0049124197025003003

Andrzejewski, Susan A., "An examination of the relation between prejudice and interpersonal sensitivity" (2009).Psychology Dissertations.Paper 2. http://hdl.handle.net/2047/d10019182

Apfel, R., & Sifneos, P. (1979). Alexithymia: Concept and Measurement. *Psychotherapy and Psychosomatics*, *32*(1-4), 180-190. doi:10.1159/000287386

Bagby, R. M., Parker, J. D., & Taylor, G. J. (2008, February 16). Toronto Alexithymia Scale (TAS-20). In *Association for Contextual Behavioral Science*. Retrieved March 30, 2013

Crowne, D. P., & Marlowe, D. (1960). A new scale of social desirability independent of psychopathology. Journal of Consulting Psychology, 24, 349-354.

Culhane, S. E., Morera, O. F., Watson, P. J., & Millsap, R. E. (2009). Assessing measurement and predictive invariance of the toronto alexithymia Scale–20 in U.S. anglo and U.S. hispanic student samples. *Journal of Personality Assessment, 91*(4), 387-395. doi: 10.1080/00223890902936264

Cunningham, W. A., Preacher, K. J., & Banaji, M. R. (2001). Implicit attitude measures: Consistency, stability, and convergent validity. Psychological Science, 12, 163-170.

Dacre Pool, L., & Qualter, P. (2012). Improving emotional intelligence and emotional self-efficacy through a teaching intervention for university students. *Learning and Individual Differences, 22*(3), 306-312. doi: 10.1016/j.lindif.2012.01.010

Davis, M. H. (1980). A multidimensional approach to individual differences in empathy. *JSAS Catalog of Selected Documents in Psychology, 10*, 85.

Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The impact of enhancing students? social and emotional learning: A meta-analysis of school-based universal interventions. *Child Development, 82*(1), 405-432. doi: 10.1111/j.1467-8624.2010.01564.x

Dobbs, M. & Crano, D. (2001). "Outgroup accountability in the minimal group paradigm: Implications for aversive discrimination and social identity theory." Personality & Social Psychology Bulletin, vol 27(3), 355-364.

Ekman, P. (2003). *Micro expression training tool*. N.p.: Mozgo Media.

Gilbert, D. T., & Hixon, J. G. (1991). The trouble of thinking: Activation and application of stereotypic beliefs. *Journal of Personality and Social Psychology*,*60*, 509– 517.

Goff, P. A., Steele, C. M., & Davies, P. G. (2008). The space between us: Stereotype threat and distance in interracial contexts.*Journal of Personality and Social Psychology*, *94*(1), 91-107.

Greenwald, A. G., & Banaji, M. R. (1995). Implicit social cognition: Attitudes, self-esteem, and stereotypes. *Psychological Review*, 102, 4–27.

Greenwald, A. G., McGhee, D. E., & Schwartz, J. K. L.(1998). Measuring individual differences in implicit cognition: The Implicit Association Test. *Journal of Personality and Social Psychology, 74*, 1464-1480.

Grynberg D, Chang B, Corneille O, Maurage P, Vermeulen N, et al. (2012) Alexithymia and the Processing of Emotional Facial Expressions (EFEs): Systematic Review, Unanswered

Questions and Further Perspectives. PLoS ONE 7(8): e42429.

doi:10.1371/journal.pone.0042429

Taylor, G. J., Ryan, D., Bagby, R. M. (1986). "Toward the development of a new self-report

alexithymia scale". Psychotherapy and Psychosomatics, 44, 191-199.

Tulving, E., Schacter, D. L., & Stark, H. A. (1982). Priming effects in word-fragment

completion are independent of recognition memory. *Journal of Experimental

Psychology: Learning, Memory, and Cognition*, *8*, 336– 342.

Harris, A. (2006, November 17). A personal account of efforts to end segregation in a southern

school system. In *Connexions*. Retrieved from http://cnx.org/content/m14113/latest/

Inzlicht, M., Gutsell, J. N., & Legault, L. (2012). Mimicry reduces racial prejudice. *Journal of

Experimental Social Psychology, 48*(1), 361-365. doi: 10.1016/j.jesp.2011.06.007

Katz, I., & Hass, R.G. (1988). "Racial ambivalence and American value conflict: Correlational

and priming studies of dual cognitive structures". Journal of Personality and Social

Psychology, pp. 55, 893-905.

Konrath, S., Novin, S., & Li, T. (2012, August). Is the relationship between alexithymia and

aggression context-dependent? Impact of group membership and belief

similarity. *Personality and Individual Differences*, *53*(3), 329-334.

Krysan, M. 2000 Prejudice, politics, and public opinion: understanding the sources of racial

policy attitudes. *Annual Review of Sociology,* 26, 135-68

Lee, H. (2006). *To Kill a Mockingbird* (50th ed., p. 39). N.p.: Harper Perennial Modern Classics.

Levy, S. R., Stroessner, S. J., & Dweck, C. S. (1998). Stereotype formation and endorsement:

The role of implicit theories.*Journal of Personality and Social Psychology*, *74*(6), 1421-

1436. doi:0022-3514/98/S3.00

MacCann, C., & Roberts, R. (2008). New paradigms for assessing emotional intelligence:

Theory and data. Emotion, 8, 540–551.

McConahay, J. B. (1986). Modem racism, ambivalence. and the modem racism scale. In J. F.

Dovidio & S. L. Gaertner (Eds.), Prejudice, discrimination. and racism (pp. XX-XX). San

Diego. CA: Academic

Paluck, E. L., & Green, D. P. (2009). Prejudice reduction: what works? A review and assessment

of research and practice.*Annual Review of Psychology*, *60*(3), 339-367.

doi:10.1146/annurev.psych.60.110707.163607

Parker, J., Bagby, R., Taylor, G., Endler, N., & Schmitz, P. (1993). Factorial validity of the 20-

item Toronto Alexithymia Scale.*European Journal of Personality*, *7*(4), 221-232.

Parker, J. D. A., Taylor, G. J., & Bagby, R. M. (2003). The 20-item toronto alexithymia scale:

III. reliability and factorial validity in a community population. *Journal of Psychosomatic

Research, 55*(3), 269-275. doi: 10.1016/S0022-3999(02)00578-0

Petrides, K. V., Furnham, A., & Maroveli, S. (2007). Trait emotional intelligence: Moving

forward in the field of EI. *Oxford University Press*, 151-166.

Pioro, I. (2005, September). Using emotional intelligence as a moderator of prejudice. *Selection

& Development Review*, *21*(4), p. 9-10.

Pratto, F., Sidanius, J., Stallworth, L.M., and Malle, B.F. (1994). Social dominance orientation:

A personality variable predicting social and political attitudes. *Journal of Personality and

Social Psychology* 67(4), 741-763.

Raskin, Robert N. and Calvin S. Hall (1979), "A Narcissistic Personality Inventory,"

Psychological Reports, 46, 55-60.

Sârbescu, P., Costea, I., & Rusu, S. (2012). Psychometric properties of the marlowe-crowne

　　　social desirability scale in a romanian sample. *Procedia - Social and Behavioral*

　　　Sciences, 33(0), 707-711. doi: 10.1016/j.sbspro.2012.01.213

Saucier, D., & Miller, C. (2003). The Persuasiveness of Racial Arguments as a Subtle Measure

　　　of Racism. *Personality and Social Psychology Bulletin*, *29*, 1303-1315.

　　　doi:10.1177/0146167203254612

Silver, M., & Oakes, P. (2001). Evaluation of a new computer intervention to teach people with

　　　autism or asperger syndrome to recognize and predict emotions in others. *Autism, 5,* 229-

　　　316.

Spaan, P. E. J., & Raaijmakers, J. G. W. (2010). Priming effects from young-old to very old age

　　　on a word-stem completion task: Minimizing explicit contamination. *Aging,*

　　　Neuropsychology, and Cognition, 18(1), 86-107. doi: 10.1080/13825585.2010.511146

Steele, C. M., & Aronson, J. (1995). Stereotype threat and the intellectual test performance of

　　　African Americans. Journal of Personality and Social Psychology, 69, 797– 811.

Stephan WG, Finlay K. 1999. The role of empathy in improving intergroup relations. *J. Soc.*

　　　Issues 554:729–44

Tatman, A., Swodder, M., Love, K., & Cook, M. (2009, March). Psychometric Properties of the

　　　Marlowe-Crowne Social Desirability Scale With Adult Male Sexual Offenders. *Sexual*

　　　Abuse, *21*(1), 21-34. doi:10.1177/1079063208325203

Warwick, J., & Nettelbeck, T. (2004). Emotional intelligence is…? *Personality and Individual*

　　　Differences, 37(5), 1091-1100. doi: 10.1016/j.paid.2003.12.003

Wittenbrink, B., Judd, C., & Park, B. (1997). Evidence for Racial Prejudice at the Implicit Level

and Its Relationship With Questionnaire Measures. *Journal of Personality and Social

Psychology*, *72*(2), 262-274.

Tables and Figures

Table 1. Effect of Training Condition on Racial Salience

	Other-training Mean (SE)	Self-training Mean (SE)	Control Mean (SE)	F,p
Racial Salience	2.48(.30)	2.32(.31)	2.36(.29)	F(2,59)=.07,p=.93

Table 2. Effect of Training Condition on Changes in Feelings Thermometer Ratings of Outgroup

Members

Group	Other-training Mean (SE)	Self-training Mean (SE)	Control Mean (SE)	Outcome
Blacks	-0.30 (1.34)	.53(1.38)	2.05(1.28)	$F(2,58)=.83$, p=.44
Hispanics	1.25(.94)	.79(.96)	.68(.90)	$F(2,58)=.11$, p=.90
Whites	-.45(.80)	1.05(.82)	.68(.76)	$F(2,58)=.95$, p=.39
Natives	-.70(.90)	.53(1.01)	1.59(.94)	$F(2,58)=1.41$, p=.25
Muslims	1.05(1.35)	1.84(1.39)	2.05(1.29)	$F(2,58)=.16$, p=.86
Immigrants	2.55(1.28)	1.32(1.32)	.46(1.22)	$F(2,58)=.70$, p=.50
LGBT	.25(1.18)	1.58(1.21)	.91(1.12)	$F(2,58)=.31$, p=.73
Feminists	1.55(1.33	2.11(1.36)	1.82(1.27)	$F(2,58)=.04$, p=.96
Outgroups (general)	.81(.76)	1.24(.78)	1.36(.73)	$F(2,58)=.15$, p=.86

Note: Positive numbers indicate more positive feelings at post-intervention period compared to

baseline, and negative numbers indicate more negative feelings at post-intervention compared to

baseline.

Table 3. The Effect of Each Training Condition on Behavioral Prejudice

	Self-Emotion Training Mean (SE)	**Other-Emotion Training Mean (SE)**	**Control Training Mean (SE)**	**F,p**
Behavioral Prejudice (Distance from Partner)	1.91 (.16)	2.05 (.17)	2.36 (.16)	F(2,59)=2.09, p=.12

Table 4. Distance Sat from Partner between Training Programs with High v. Low Alexithymia

	Control Training	Self Training	Other Training
Low alexithymia	2.25 (.25)	1.82 (.21)	2.17 (.21)
High alexithymia	2.43 (.19)	2.38 (.25)	1.56 (.23)

F(2,56)=3.47, p=.038

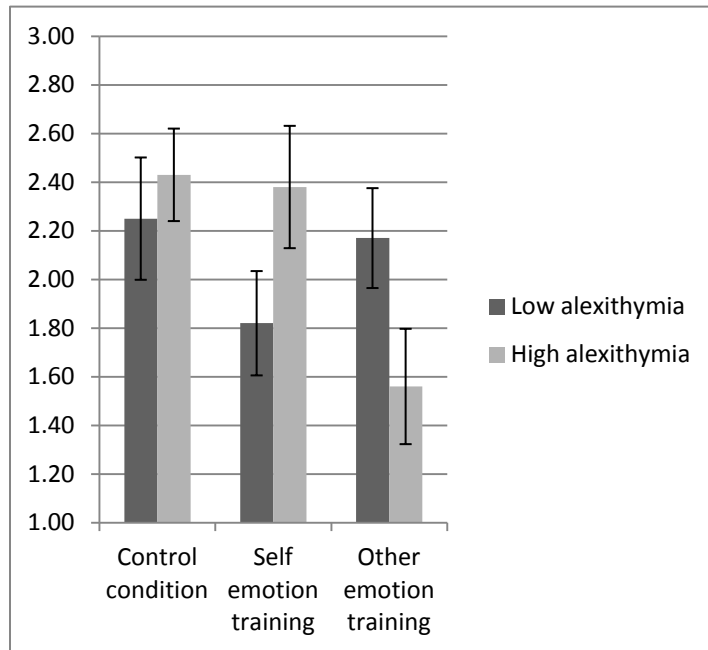*Figure 1. The Effect of Alexithymia on Discrimination between Training Conditions.*

Figure 2. Feelings Thermometer to Rate Various Out-Groups