

THE PENNSYLVANIA STATE UNIVERSITY
SCHREYER HONORS COLLEGE

DEPARTMENT OF PSYCHOLOGY

THE EFFECTS OF MOOD ON EMOTION RECOGNITION

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FALL 2016

A thesis
submitted in partial fulfillment
of the requirements
for a baccalaureate degree
in Psychology/ Social Sciences
with honors in Letters, Arts, and Science

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ABSTRACT

Moods can be defined as long-lasting affective states that are experienced without concurrent awareness of their origins and it influences how a person uses information activated in memory to make a conclusion about their surroundings (Hanson & Pettijohn, 2014). People base moods on what has been previously learned. They tend to feel happy when the emotion is linked to a positive experience and feel sad when the emotion is linked to a negative experience. The present studies have examined the effects of mood on emotion recognition. Study one focused on the differences of two groups, one was a control group where an emotion was pre-determined, and the other group was asked to write about the saddest time they had experienced. It was hypothesized that those who were primed with sadness would not perform well on a task as compared to those who were not primed. The second study accentuated the first study and involved the differences between men and women. This study hypothesized that there will be differences between the sexes of the participants and how they score on the emotion recognition task.

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ACKNOWLEDGEMENTS

I would like to thank Dr. Benfield and Dr. Bernstein. I would never have been able to accomplish this goal without your guidance and support. I would like to thank my family for their support and also my girlfriend for her understanding. Thanks to all of my professors, mentors, and classmates who have been constant sources of knowledge and inspiration.

INTRODUCTION

Moods can be defined as long-lasting affective states that are experienced without concurrent awareness of their origins. Mood influences how a person uses information activated in memory to make a conclusion about their surroundings (Hanson & Pettijohn, 2014). It uses what has already been stored in the memory to elicit a response. Those in sad moods might be less likely to produce numerous ideas about their surroundings than those in happy moods. Very often, people base moods on what has been previously learned. They tend to feel happy when the emotion is linked to a positive experience and feel sad when the emotion is linked to a negative experience. Therefore moods are often the result of past experiences and not always based on the present circumstance. Mood affects information processing meaning that people in a sad state of mind process information more deliberately and definitively before making a judgment. People in a happy state of mind use a more automatic processing based on past experiences and symbols (Hanson & Pettijohn, 2014). Existing research shows that sad mood hinders emotional recognition, whereas happy mood enhances emotional recognition. Facial emotional expressions are important markers in how we communicate in a social setting. People generally rely on facial expressions to form emotions and to better understand emotions. The Reading the Mind in the Eyes Test (RME) is a widely used facial affect recognition test. The original version was first developed in 1997. It generally involves allowing participants to view photographs of only the eye region of the face that infer a complex mental state (i.e. anger, embarrassment, suspicious) and allowing the participants to express a feeling. The test has been used in many developmental stages to examine social interactions as well as emotional development (Hallerbäck, Lugnegård,

Hjärthag, & Gillberg, C. (2009). Research might show that the group primed with sadness will perform worse on the RME task compared to the control group.

Prior research has shown that mood affects emotional recognition, although most of the past research has focused on depressed patients and not as much on the normal variation of mood recognition in healthy adults. Beck's cognitive theory of depression and other theories such as mood-congruity theories show that a person's mood affects memory and social judgments (Shmid & Mast, 2010). Shmid and Mast (2010) conducted a research study to show that a healthy individual's mood (whether happy, sad or neutral) affects their ability to recognize happy versus sad emotions. Their study concluded that those people who were sad recognized sad facial expressions however happy people did not lean towards recognizing happy facial expressions more than sad ones (Shmid & Mast, 2010). Additional research elicits the use of music as a means of altering mood perceptions. Playing depressing or joyous music prior to mood recognition was a study performed by Bouhuys, Bloem & Groothuis (1995). Their research concluded that recognizing happy or sad facial expressions was significantly dependent upon the type of music played prior to the participants' interaction. These findings further substantiate the premise that facial expression recognition is related to mood and emotion.

Shmid, Mast, Bombari, Mast, & Lobmaier (2011) brought another aspect into this research adding that moods are affected by a specific processing style which is dependent on the gender of the individual. It has been evident that women are more emotionally expressive and report greater levels of positive and negative emotions than do men (Rehman, Gollan, & Mortimer, 2008). Women tend to be better at communicating their good and bad moods with their spouses and are also more apt to seek help if their moods interfere with life's events

(Rehman, Gollan, & Mortimer, 2008). These differences in how men and women are affected by moods may lead into the concept that women are more adept at recognizing emotion and outperform men when performing tasks which lead to non-verbal communication skills (Thompson & Voyer, 2014). In the meta-analyses conducted by Hall which began in 1978 and concluded in 2000, women were overwhelmingly superior to men in their ability to identify non-verbal displays of emotions based on facial expressions, vocal prosody, postures and gestures (Thompson & Voyer, 2014). There also tends to be differences in the way men and women perceive moods related to factors such as socioeconomic background, adversities, and psychosocial factors. It cannot be ruled out that women recognize mood differently based on the hormone estrogen. Estrogen affects the levels of cortisol which is released during stressful or anxious moments and therefore allow women to perceive moods differently (Faravelli, Scarpato, Castellini, & LoSauro, 2013).

Just as estrogen has been a key factor in the recognition of emotions, oxytocin has also been linked to the improvement of mood recognition (Campbell, Ruffman, Murray, & Glue, 2014). It is a known fact that women tend to be more emotional, and their ability to recognize moods could simply be related to the oxytocin which is present in their brains, Oxytocin is a neurotransmitter that is present in both men and women, but in larger amounts in women (Campbell, Ruffman, Murray, & Glue, 2014). Oxytocin may facilitate communication between neuro transmitters in the brain and may increase the brain's ability to recognize moods (Campbell, Ruffman, Murray, & Glue, 2014).

Based on the previous research and because of the researcher's desire to learn more about the topic, a research study was conducted. The independent variable was defined as the mood, and the dependent variable was identified as emotion recognition.

Study One

In study one; the researcher examined the relationship between mood and emotion recognition between a control group and a group that was primed with sadness. It was hypothesized that the group primed with sadness would perform worse on an emotion recognition task than the control group.

Methodology

Participants

96 participants (59 Female; Average Age 36.85, SD=12.20) participated in an online study via Mechanical Turk for payment.

Materials

To test score for emotion recognition the participants were given 37 slides of a Reading the mind through the eyes task. There was one practice slide that was followed by 36 slides where their answers were recorded and used in the data set. The task involves showing a partial picture of a face that only includes the eyes and some of the surrounding area. Surrounding the picture is four emotions in which the participant must pick one that describes the emotion in which they are being shown.

playful

comforting



irritated

bored

Procedure

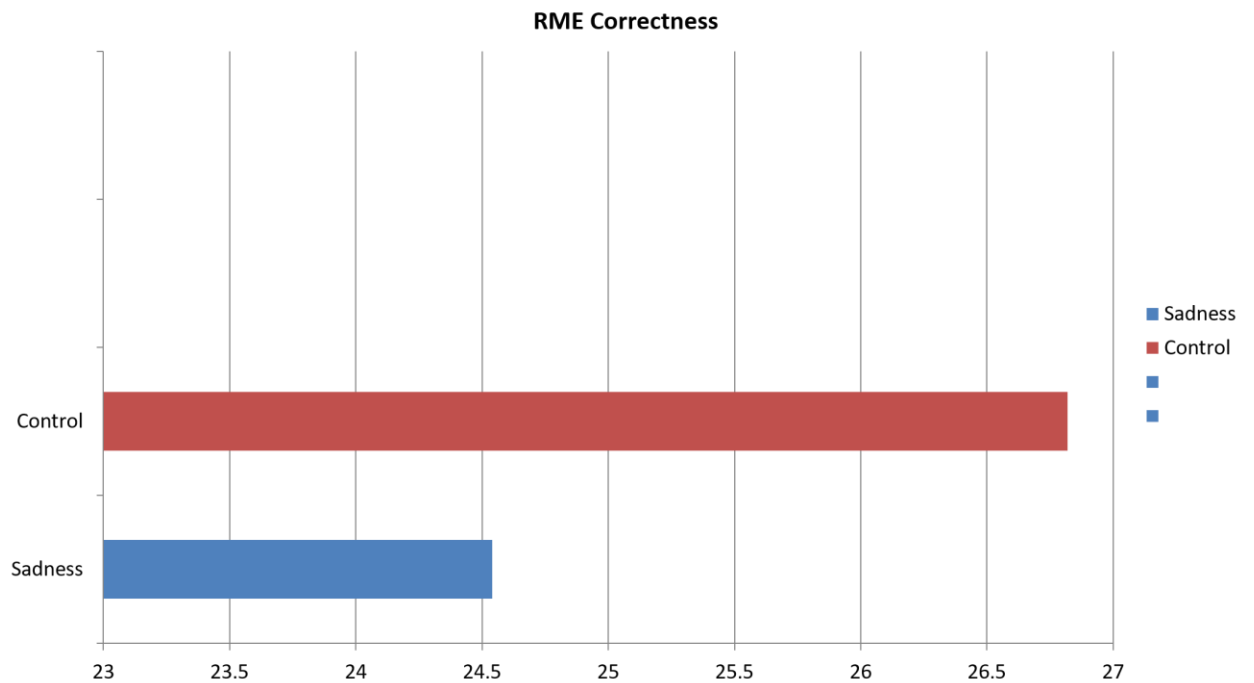
The participants were first given an online consent form and then were randomly assigned to two different conditions. EXPERIMENTAL CONDITIONS: The first condition included writing about a time that made you sad and the second condition consisted of describing your usual daily routine.

After the participants were randomly assigned they were welcomed to the study and told about the different tasks they would be asked to participate in. They then completed questions asking about their age, sex and race. After those questions were completed they were asked to describe either a time that they were sad or describe their daily routine depending on what condition they were randomly assigned to. After the writing task was completed, the participant then completed the Reading the Mind through the Eye (RME) task.

The RME task consisted of the participant first doing one practice trial and then completing 36 actual trials. The RME task displayed a picture of a face but it only showed the eyes and nose of the facial expression. The participants were then given four different emotions and asked to choose the correct one that the face was expressing. Finally, after the RME task was completed the participants were thanked for completing the study.

Study Results and Discussion

It was hypothesized that there would be a significant difference between the control group and the sadness group in relation to their RME score. To analyze the data, we conducted an independent sample t-test. We compared participants primed to think about a sad event with those primed with a control condition. This yielded a significant difference, $t(94)=2.02$, $p=.046$. Participants primed with sadness ($M=24.54$, $SD=6.62$) performed worse on the RME task than did those in the control condition ($M=26.82$, $SD=3.77$).



We found some significant differences between the group that was primed with sadness than those in the control condition who were instructed to talk about a daily routine.

Those who wrote about a sad time in their life helped generate feelings of sadness which affected their ability to distinguish different facial expression during the RME task.

This information can help us to understand emotions and social interactions in a greater way. From this study, we are now able to gather the knowledge that the emotion of sadness does have a significant effect on how those with the sadness might view others and their facial emotions. The limitation on this study is that we only tested the one emotion which was sadness. Future research could look further into other emotions; such as, happiness, anger or fear.

Since mood affects information processing, it would be encouraged to study these areas of other emotions to observe how they might affect our ability on emotion recognition in others. Since there was a significant difference between the two groups, it would also be in our great interest to research not only if there is a difference between those who experience different emotions and reading faces but also to ultimately ask why there is a difference between these two groups.

Study Two

Similar to Study One, Study two explored the differences between mood and emotion recognition. Study Two added a third experimental condition, a happy condition, along with the sadness and control conditions. This study hypothesized that there will be differences between the sexes of the participants and how they score on the emotion recognition task. The Researcher particularly examined the differences between the sexes and specific categories of the emotion recognition task.

Methodology

Participants

152 participants (97 Female; $SD=12.98$) participated in an online study via Mechanical Turk for payment.

Materials

As in study one, 37 RME slides were used. 36 were used for the data and one was used in the beginning as a practice question.

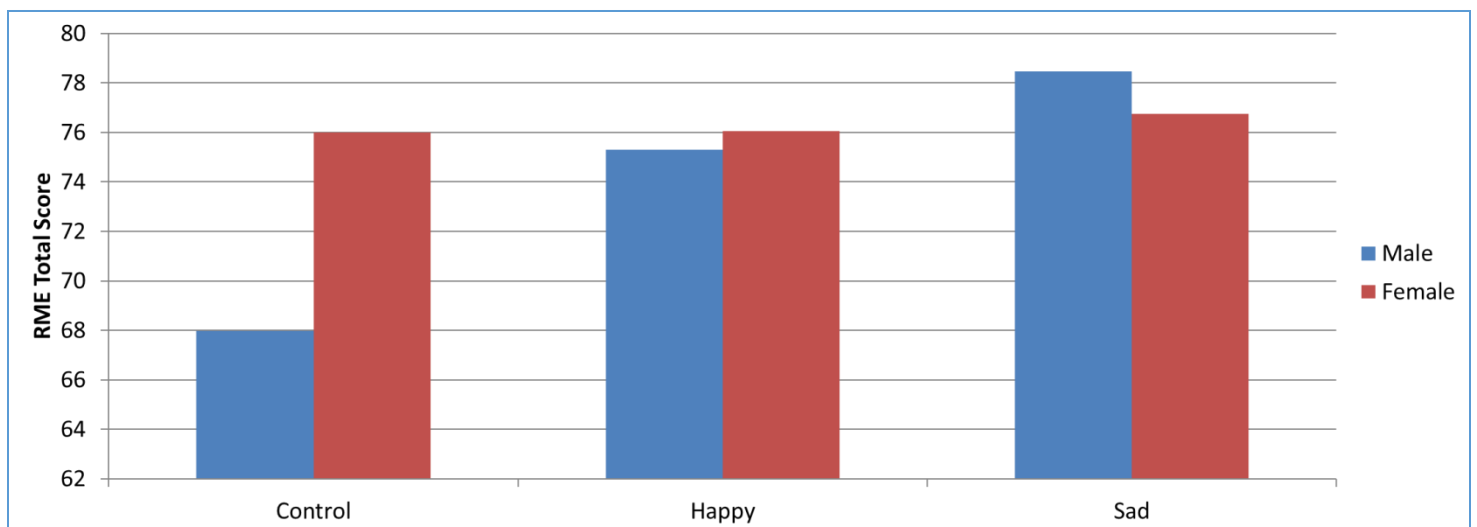
Procedure

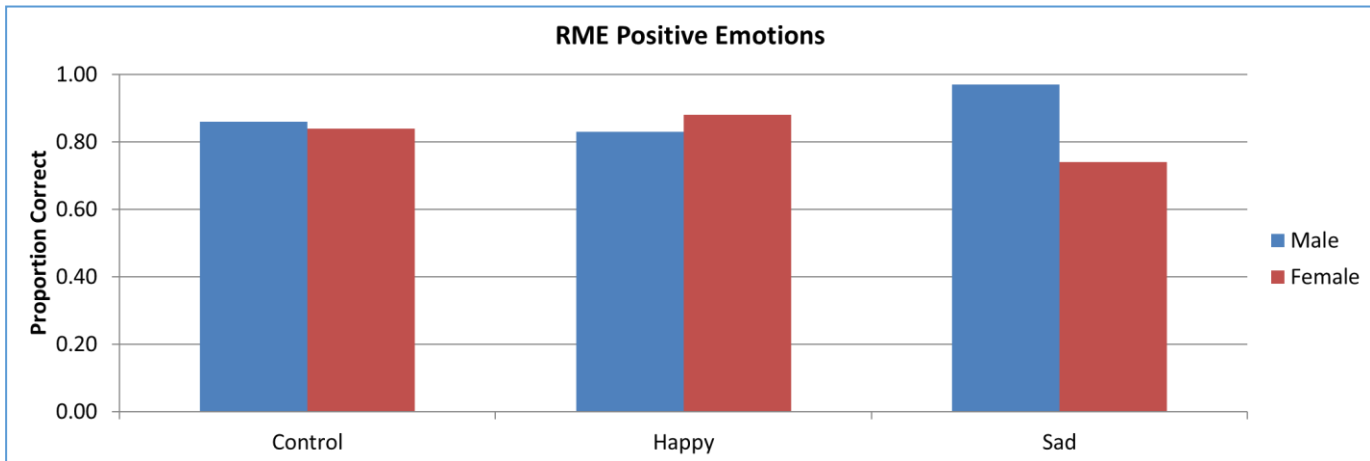
The participants were first given an online consent form and then were randomly assigned to three different conditions. The first condition included writing about a time that made you sad, the second condition consisted of describing your usual daily routine, and the third condition included telling about the happiest time in your life. After the participants were randomly assigned they were welcomed to the study and told about the different tasks they would be asked to participate in. They completed a few questions asking about their age, sex and race. After those questions were completed they were asked to describe either a time that they were sad, happy or describe their daily routine depending on what condition they were randomly assigned to. After the writing task was completed, the participant then completed the Reading the Mind through the Eye (RME) task. The RME task consisted of the participant first doing one practice trial and then completing 36 actual trials. The RME task displayed a picture of a face but it only showed the eyes and nose of the facial expression. The participants were then given four different emotions and asked to choose the correct one that the face was expressing. Finally, after the RME task was completed the participants were thanked for completing the study. The RME items were then categorized into different groupings which were positive, negative, serious, interpersonal, lost in thought, certain/ convinced, skeptical/ cynical, and other.

Results and Discussion

It was hypothesized that the emotion manipulations would cause differences in RME total scores as well as differences in specific categories of RME faces. To test this, 2 X 3 ANOVAs comparing Sex of Participant (male/female) X Emotion Condition (control/sad/happy) were conducted on the different RME accuracy calculations. For RME total, results showed a marginally significant interaction between sex and condition, $F(2, 152)=2.50, p=.086$. Specifically, men in the control group ($M=67.99, SD=2.80$) score significantly lower than men in the sad ($M=78.47, SD=3.21$) or happy conditions ($M=75.31, SD=3.03$). Those higher scores for men in the emotion manipulation conditions were comparable to all the scores for women, including the control group.

Similar sex X condition interactions were shown for RME positive face recognition ($F[2,152]=3.13, p=.039$), RME serious face recognition ($F[2,152]=4.96, p=.008$), and RME interpersonal thoughts ($F[2,152]=4.17, p=.017$). In each case, the emotion manipulation improved male participant performance on emotion recognition. Women however, showed either no differences (interpersonal) or a decrease in recognition ability (RME positive and RME serious). No significant main effects or interactions were shown for RME scales that were thought or cognitively oriented (i.e., RME lost in thought, RME certain/convinced, RME skeptical/cynical) rather than emotional or interpersonal.





This information can help us to understand emotions and social interactions along with affects gender plays into this processing of information. From this study, we have learned that men are outperformed in emotion recognition tasks by women without regard to the conditions they were placed in. However, when men were exposed to sadness or happiness they performed better in the task than men who were in the neutral or control condition. Future research should evaluate other aspects of this study. Other emotions could be factored in as a condition; such as, fear, anger or disgust. Further research could use other forms of emotion recognition instead of using RME. As a researcher, I would like to continue this study investigating other forms of emotion recognition tasks such as emotion recognition in audio samples or voice samples. Using one form of testing in this study is a limitation of the overall experiment that could be improved upon. I would also like to further investigate various demographics to see if race or ethnicity would show differences in addition to the gender differences that were shown within Study Two.

Discussion

We can conclude that these studies have proven the hypotheses to be true. Mood influences how a person uses information activated in memory to make a conclusion about their surroundings. Mood affects information processing meaning that people in a sad state of mind process information more deliberately and definitively before making a judgment. People in a happy state of mind use a more automatic processing based on past experiences and symbols. Existing research shows that sad mood hinders emotional recognition, whereas happy mood enhances emotional recognition. Looking further into moods, it can be speculated that they are affected by a specific processing style which is dependent on the gender of the individual. Hormones as well as past experiences and socioeconomic statuses may alter how a man and a woman recognize emotions. The information that was elicited from the studies can help us to understand emotions and social interactions in a greater way. From these studies, we are now able to gather the knowledge that the emotions of sadness and happiness do have a significant effect on how those possessing the moods might view others and their facial emotions. The limitations of these studies are that only sadness and happiness were tested. Future research could look further into other emotions; such as, anger, fear, surprise and disgust. Since there was a significant difference between males and females in the second study, it would be in my great interest to research the causes of these differences between males and females as well.

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