

# **Impact of Mood on Perception: A Mood Induction Study**

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**Abstract:** This experimental investigation aimed to examine mood's impact on perception (judgment). In this study, two types of mood (positive and negative) were induced through visual cues (video clips). Before and after induction, positive and negative affect scale (PANAS) was administered. After checking the induction of mood through PANAS, participants were asked to judge 12 faces (two types of faces clear and ambiguous) according to 8 emotions Bouhuys. Results showed that participants in the negative group showed biases towards negative emotions and the positive group perceived more positive emotions. According to these findings, negative mood leads to negative bias while perceiving facial expressions and mind wandering, which affects task performance and leads to irrelevant thoughts.

**Keywords:** Mood, Mood Induction, Perception

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## **1. Introduction**

Moods sustained affective states that impact numerous areas of intellectual processing, including consideration or concentration Derryberry & Tucker, [1] examination Wilson, [2] memory Bower [3] and basic leadership Loewenstein, [4]. Studies recommend that state of mind influences concentration regarding both emotional Lystad, Rokke, and Stout, [5] and non-emotional information Dreisbach, [6] Farach, Treat, & Jungé, [7]. State of mind has appeared to impact well-being Futterman, Kemeny, Shapiro & Fahey, [8] Weisse, [9] and information handling Forgas, Schwarz. Regularly, despite of anything, the immediate impacts of states of mind on well-being (specifically, safe working) are considered Weisse, [9] to the impediment of more in-direct impacts Stroebe & Stroebe, [10]. This is of specific concern, given that the immediate impacts of state of mind on well-being are fairly constrained (e.g. resistant framework working). Studies propose that mood state impacts people's data-preparing ability. Quickly, it is imagined that a positive state of mind builds heuristic handling, though a negative mood

increases orderly preparation. For instance, Bless, Böhner, Schwarz, and Strack, [11] found that people in a positive mood were less convinced by solid contentions than those in an impartial or somewhat discouraged mindset Bless, [12] Forgas, [13].

In existing literature, there are three parts of temperament. To start with, variety in mood, after some time, within an individual refers to a mood state Spielberger, [14]. Second, a segment of mood that is steady inside people, but fluctuates between people, is a mood trait Spielberger, [14]. Third, the induction of experimental mood can be utilized to inspire distinctive mood states. Especially, the impact of induced mood possibly can be directed by state and trait mood. In this study, (mood induction) can be used to check the influence on judgment of facial expressions. Perception is a very important phenomenon in everyday life, which can be affected by mood. Perception is a procedure that includes the acknowledgment and translation of upgrades that enroll on our faculties. Think of some as circumstances where your speedy perception can keep you from harmful situations. They can caution you to an auto that comes tearing cycle a twist in time for you to take aside from that. They can give you data that makes you aware of the things from which you should be aware, so evade a fall and genuine physical harm. Perception includes every one of the faculties however the vision is seemingly the most critical sense for people. Our sense organs can get electromagnetic vitality from nature and change it into electrical movement in the sensory system. Rookes & Willson, [15].

In investigating this part of individual perception, numerous analysts have focused on the persisting cognitive desires of the perceiver, frequently disregarding the short-term impact of fluctuating mood states. As Taylor, [16] noticed, the perceiver is regularly thought of as an animal "out of a Camus novel: alone, deprived of language, without feelings, looking backward". However much proof proposes that how the perceiver feels at the time is important among the most imperative effects on social judgments. Past examinations have demonstrated that individuals tend to discover others more alluring when they feel better Gouaux, [17] Clark & Waddell, [18] Griffitt, [19] Gouaux & Summers, [20] to pass judgment on others as more aggressive when they feel dreadful Feshbach & Singer, [21] and to decipher facial expressions Schiffenbauer, [22] get-togethers Clore, [23] or even interactive practices Forgas, [13] as per their overall mood state. Forgas & Bower, [24]

Proof is developing that nonverbal conduct, evaluated during an interaction, might be identified with the improvement or upkeep of depression Gotlib & Robinson, [25] McNeil, [26] Bouhuys

& van sanctum Hoofdakker, [27] Bouhuys & Albersnagel, [28]. Since the face is a vital channel for imparting emotional states Darwin, [29] Ekman, [30] one may conjecture that the handling of facial expressions assumes a job in the above-illustrated procedure of development and upkeep of depression. Of importance to the job of apparent facially communicated emotions is Beck's hypothesis of cognitive distortion of experience Beck, [31] and Bower's system model of feeling and cognition Bower, [23]. Concurring with these hypotheses, negative distorted reasoning impacts judgment of occasions and circumstances; the underlying emotional effect shaded how one perceives emotional stimuli. From these hypothetical perspectives, one would anticipate that a discouraged state of mind will prompt a negative predisposition in marking facial emotional expressions which will prompt more sorrow or depression, and so on Bouhuys, [32].

In a similar previous study, the researcher examined the effect of different mood states on the perception of facial expressions by using with-in group design and music influences for mood induction Bouhuys, [32] According to that study there is an effect of mood on a person's perception. The current study was an experimental investigation that explored the effect of different moods on a person's perception. In this study researcher explored the effects of different moods on the judgment of participants in Pakistani culture by using between-group design and visual cues for mood induction. The basic question of this research was how mood can alter a person's perception of facial expressions. It is a daily life phenomenon; people have different moods in different circumstances which can alter their daily routine. If a person is having a bad mood then it can lead him/her toward the wrong perception of things.

### **1.1 Objective**

To explore the effect on judgment of facial expressions (perception) after mood induction

### **1.2 Hypothesis**

1. The level of positive affect (mood) will be high in the positive group after induction, and negative affect will be high in the negative group after induction.
2. The level of perception of emotions (rejection and sadness) will be high in the negative group as compared to the positive group.
3. The level of perception of emotions (happiness and invitation) will be lower in the negative group than in the positive group.
4. The level of perception of emotions (anger and disgust) will be low in the positive group as compared to the negative group.

## **2. Method**

### **2.1 Participants**

The sample was taken from Bahauddin Zakariya University, 60 undergraduate and postgraduate students from the Department of Applied Psychology were selected through a systematic random sampling technique. The ages of participants were about 18 to 27 years ( $M=20.88$ ,  $S.D=2.05$ ). Both male ( $M=20.50$ ,  $S.D=1.15$ ) and female ( $M=21.04$ ,  $S.D=2.33$ ) students participate in this research study.

### **2.2 Materials/instruments**

The following are the instruments that have been used in this study.

### **2.3 Positive and Negative Affect Schedule (PANAS)**

To measure participants' mood states PANAS is being used. PANAS is a self-report measure. Different emotions are described by several words in this scale. Each word represents some emotions or feelings. Participants have to rate on a 5-point scale ranging from not at all to extremely applicable. Scores can be obtained by adding positive items; the sum of scores can be from 10 to 50. Higher levels of positive affect can be represented by higher scores. Scores can be obtained by adding negative items, the sum of scores can be from 10 to 50, with lower scores representing lower levels of negative affect can be represented by with lower scores.

### **2.4 Mood Induction Techniques**

Video clips have been used for mood induction. For that purpose, different clips were taken and shown to five neutral judges to evaluate them into three ranks highly, moderately, and less positive or negative. Then, four clips have been chosen for both positive and negative induction. Each video was 4 to 5 min long.

### **2.5 Faces**

Eight emotions were presented through faces Bouhuys, [32]. Those eight emotions are happiness, sadness, fear, anger, disgust, surprise, and invitation and rejection. The reliability of faces according to eight emotions was  $\alpha = .929$ . Faces were shown in random order, each

page contains one face. The participants were asked to judge the faces and gave rates ranging from 0% to 100%.

## 2.6 Procedure

For this study firstly ethical approval was taken. The researcher explained the purpose of the study and consent from participants was taken. True lab settings were created, and mood induction was administered individually during the experiment. In this study, the sample of 60 students was further divided into two groups. The researcher asked the participants to complete a measure of mood (Positive and Negative Affect Scale) so that their current mood state can be measured. After that with the participant's consent, the researcher induced a positive mood in one group and a negative mood in the other group. After the induction of mood participants were again asked to complete PANAS to measure their current mood and after that participants were given faces and asked to judge each face and rate them on a scale and data were collected. After completing the experiment researcher debriefed the participants about the experiment and answered every question of the participant. To those who are negatively induced after experimenting positive videos have been shown to them to compensate for their negative mood.

## 3. Results

For this purpose, SPSS (Statistical Package for Social Sciences) has been used. Different statistical analyses have been run according to the nature of the hypothesis of the study. ANOVA, T-test, and Mixed-model ANOVA have been used to assess the data.

**Table 2 Psychometric Properties of Measurement Scales**

| Scales                                     | No. of items         | <i>Alpha</i> | <i>M</i> | <i>SD</i> | <i>Kurtosis</i> | <i>Skewness</i> | <i>Range</i>  |                  |
|--------------------------------------------|----------------------|--------------|----------|-----------|-----------------|-----------------|---------------|------------------|
|                                            |                      |              |          |           |                 |                 | <i>Actual</i> | <i>Potential</i> |
| Positive and Negative Affect Scale (PANAS) | Positive Affect (10) | .793         | 28.70    | 7.93      | -.916           | .076            | 18-43         | 10-50            |
|                                            | Negative Affect (10) | .701         | 20.20    | 6.83      | -.531           | .718            | 10-40         | 10-50            |

Note: M= Mean, SD= Standard deviation

Table 2 shows the Cronbach's Alpha of scales which represents the reliability of the scales.

**Table 1a Descriptive Statistics and t-test for Positive and Negative affect in positive group (N=30)**

| Outcome         | Pretest  |           | Posttest |           | <i>t</i> | Cohens<br>'d | 95% CI    |           |
|-----------------|----------|-----------|----------|-----------|----------|--------------|-----------|-----------|
|                 | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> |          |              | <i>LL</i> | <i>UL</i> |
| Positive Affect | 28.7     | 7.93      | 35.0     | 6.85      | -5.193** | -0.95        | -8.78     | -3.82     |
| Negative Affect | 20.2     | 6.83      | 12.1     | 4.42      | 5.017**  | 0.92         | 5.75      | 10.04     |

Note: M= Mean, SD= Standard deviation, LL= Lower limit, UL= Upper limit \*  $p < .05$ , \*\* $p < .01$

Tables 1a and b show the results of before and after induction effects. According to table 1a, there are significant results before and after induction in group 1 which shows that manipulation was correctly done, and mood was induced because there is a clear difference in the mean of positive and negative affect in before and after conditions in group 1.

**Table 1b Descriptive Statistics and T-test for Positive and Negative affect in the negative group**

| Outcome         | Pretest  |           | Posttest |           | <i>n</i> | <i>t</i> | Cohens'd | 95% CI    |           |
|-----------------|----------|-----------|----------|-----------|----------|----------|----------|-----------|-----------|
|                 | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> |          |          |          | <i>LL</i> | <i>UL</i> |
| Positive Affect | 31.0     | 8.77      | 25.8     | 7.45      | 30       | 3.509**  | 0.64     | 1.45      | 4.09      |
| Negative Affect | 27.8     | 7.89      | 32.6     | 7.09      | 30       | -5.342** | -0.98    | 2.74      | 6.18      |

Note: M= Mean, SD= Standard deviation, LL= Lower limit, UL= Upper limit \*  $p < .05$ , \*\* $p < .01$

According to Table 1b, there are significant results before and after induction in group 2 which shows that manipulation was correctly done, and mood was induced because there is a clear difference in the mean of positive and negative affect in before and after conditions in group 2.

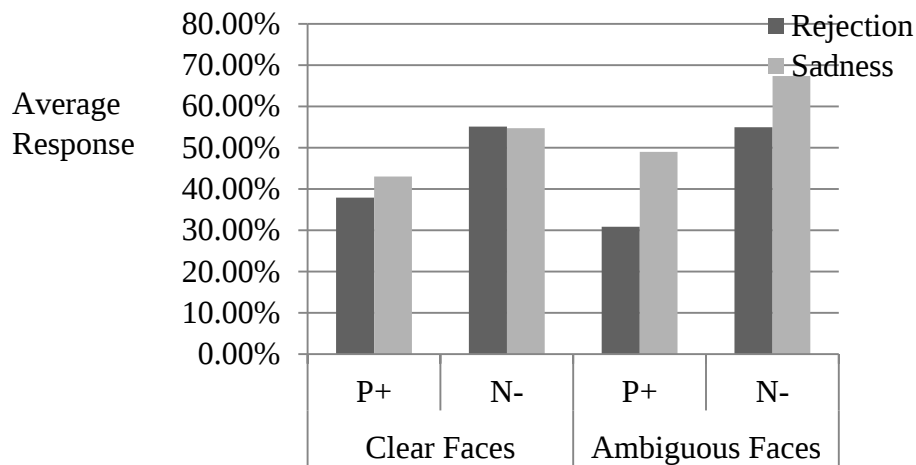


Figure 1

Figure 1 shows the effect of different mood states (positive and negative) on the perception in the percentage of responses according to emotions in two types of faces clear and ambiguous. Black color bars represent the emotion of rejection and grey color bars represent the emotion of sadness. P+ represents the positive mood-induced group and N- represents the negative mood-induced group. As seen in this chart perception of emotions (rejection and sadness) was high in the negatively induced group as compared to the positively induced group. And average level of responses to negative emotions is high in ambiguous faces as compared to clear faces in the negatively induced group.

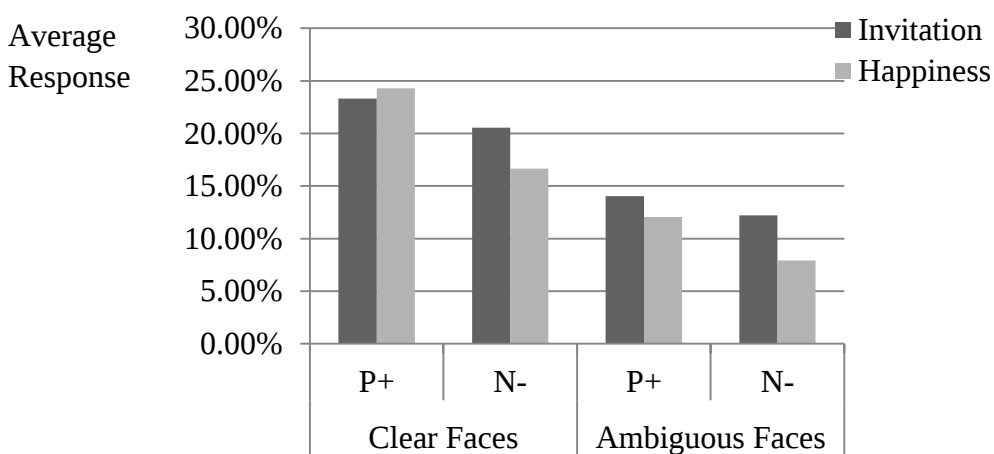
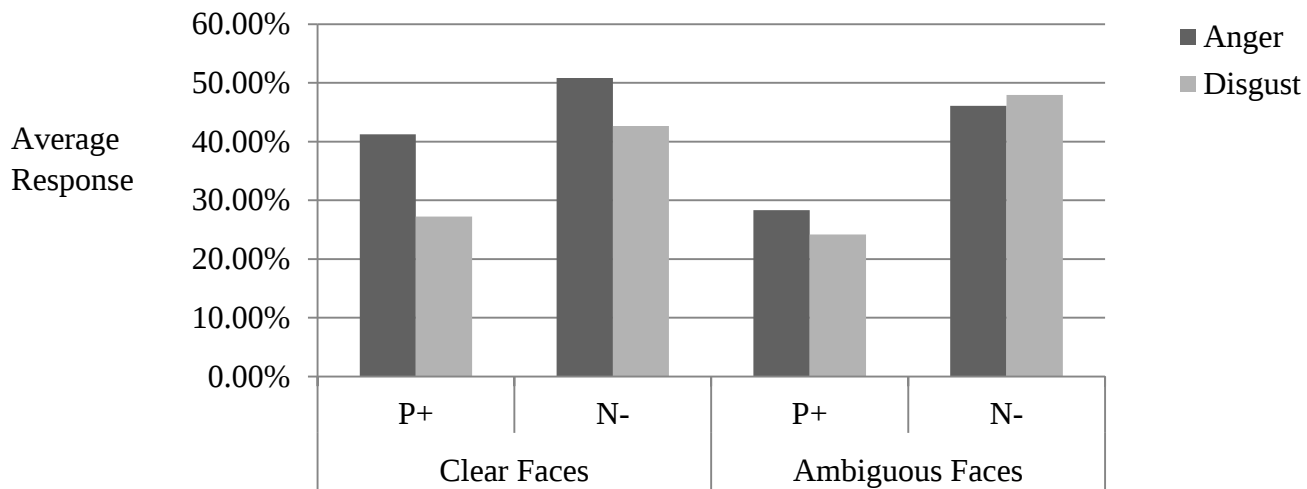


Figure 2

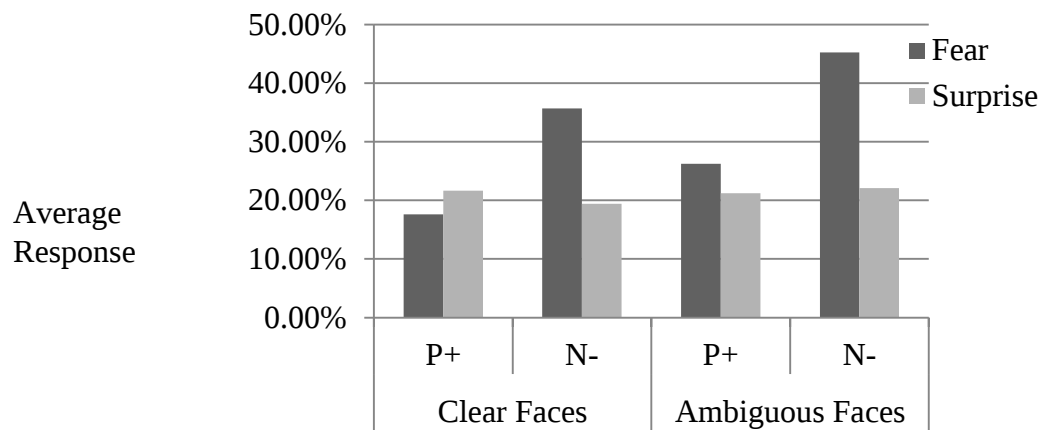
Figure 2 shows the effect of different mood states (positive and negative) on the perception of the percentage of responses according to emotions. Black color bars represent the emotion invitation and grey color bars represent emotion happiness. P+ represents the positive mood-

induced group and N- represents the negative mood-induced group. As shown in the chart invitation and happiness levels were high among the positively induced group in both clear and ambiguous faces as compared to the negatively induced group. And average level of perception of these positive emotions is low in ambiguous faces as compared to clear faces in the negatively induced group.



**Figure 3**

Similarly, to Figures 1 and 2, figure 3 shows the effect of different mood states (positive and negative) on the perception of the percentage of responses according to emotions. Black color bars represent the emotion of Anger and grey color bars represent emotion disgust. P+ represents the positive mood-induced group and N- represents the negative mood-induced group. As seen in this chart perception of emotions (anger and disgust) in clear and ambiguous faces was high in the negatively induced group as compared to the positively induced group.



**Figure 4**

In Figure 4 Black color bars represent the emotion of fear and grey color bars represent the emotion of surprise. P+ represents the positive mood-induced group and N- represents the negative mood-induced group. The chart clearly shows that emotional fear was high among those who were negatively induced as compared to those who were positively induced, and emotional surprise is almost the same, a little bit high in the positive group in clear faces as compared to the negative group. In ambiguous faces, negative group scores were a little bit high as compared to the positive group.

#### **4. Discussion**

This study aimed to explore the impact of different mood states on perception of facial emotional expressions. Past literature shows a great amount of work on mood induction and its effect on other phenomena in other cultures and countries. There are very few works done in Pakistan on induction of mood there is a few experimental researches done in Pakistan. So, this study was aimed to explore the impact of induced mood on perception. In past research, researchers examined the effect of different mood states on the perception of facial expressions Bouhuys, [32] The results were significant there is an effect of mood on a person's perception. People's capacity to realize viewpoint invariance empowers them to recognize the images as being the same individual Sinha, [33]. A negative mood leads to more negative emotional judgment.

This study was done to explore the impact of induced mood on the judgment (perception) of facial expressions through 12 faces and 8 emotions. Table no 3a shows the before and after conditions of mood in the group (positive group). As clearly shown in the table the results are significant  $p < 0.01$ , there is a clear difference before and after positive mood induction in the

group. According to past literature, when a positive stimulus is presented to humans to induce a positive mood, it can change their current mood state Schneider, Gur, Gur & Muenz, [34]. So, the hypothesis was accepted that there would be a high positive effect in the positive group as compared to the negative group (table 3b) and there would be a high level of negative effect in the negative group as compared to the positive group after induction of positive and negative mood.

According to the past study related to depressed mood and emotions perceived in faces Bouhuys, [32] it was hypothesized that negative mood leads healthy participants towards perception bias. So as shown in the results chapter, the hypothesis is accepted that perception bias occurs according to a person's mood. In the first figure, the average scores of participants' responses on rejection and sadness emotions of face (judged by participants) are presented through graphs, as it clearly shows there is a difference in scores of positive group and negative group. Rejection and sadness levels both are high in the negative group as compared to the positive group. So, the hypothesis is accepted that the level of rejection and sadness will be high among the negative group as compared to the positive group. Similarly, in the second figure, invitation and happiness scores are shown through graphs. There is a difference between negative and positive group results and it clearly shows the level of happiness and sadness is high in the positive group as compared to the negative group. So, the hypothesis about happiness and invitation emotion is accepted. In Figure 3 disgust and anger emotions score are presented through a graph and there is also a clear difference between the negative and positive groups. The level of emotions disgust and anger (judged in faces) is high in the negative group as compared to the positive group. According to Figure 4, the level of fear is high in the negative group as compared to the positive group. Surprise has different levels in each group. So, according to the results of this study, it can be concluded that negative or positive mood does affect a person's perception or judgment.

#### ***4.1 Limitations, Suggestions, and Implementation***

Different mood induction techniques should be used to check the other possibilities and explore other areas. According to this study, it is proven that negative mood does affect our daily life phenomena like perception. This study can be used in organizational settings to know why a person shows biased perception towards anything and how can one improve the environment of

an organization or in an educational setting even in a home setting, the environment should be positive and avoid negativity so that errors in these daily life phenomena can be resolved.

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