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Jackson College of Graduate Studies

**Social Perception and Implicit Self-Esteem**

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**Social Perception and Implicit Self-Esteem**

**A THESIS**

**APPROVED FOR THE DEPARTMENT OF PSYCHOLOGY**

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## Abstract

Three experiments investigated whether implicit self-esteem was influenced by various perceptual stimuli. It was predicted that positive comments, performance, and feedback would lead to high implicit self-esteem, whereas negative comments, performance, and feedback would lead to low implicit self-esteem. In Experiment 1, participants heard a positive comment, negative comment, or no comment about their appearance and then completed the self-esteem Implicit Association Test (IAT). In Experiment 2, participants completed an easy mathematics test, hard mathematics test, or no mathematics test and then completed the self-esteem IAT. Following the mathematics test, they completed the Future Event Scale (Andersen, 1990) and Interpersonal Expectancy Scale (Mather & Mather, 2009). Finally, in Experiment 3, participants received either positive false feedback about their performance on a mathematics test, negative false feedback about their performance on a mathematics test, or no feedback and then completed the self-esteem IAT. No significant effects of condition were found for any of the experiments. The self-esteem IAT was robust to a variety of manipulations. Furthermore, the largest differences between groups came from human contact and not computer contact. The influence of people and not computers on implicit self-esteem is interpreted as being evidence for the fundamental need to belong.

## Social Perception and Implicit Self-Esteem

Until recently, attitudes have been conceptualized as explicit, conscious, and active engagements that require an individual's attention and thought (Greenwald, McGhee, & Schwartz, 1998). However, the unconscious or implicit aspect of the evaluation of attitudes has become an integral part of social cognition that compliments explicit attitudes (Greenwald & Banaji, 1995).

The classic view of explicit self-esteem has been a useful strategy for predicting various types of relationships between attitudes and behaviors (Fergusson & Horwood, 2002). For instance, individuals who self-report high self-esteem tend to be more resilient to negative feedback and are better adjusted than those with low self-esteem (Rosenberg, 1965). Furthermore, those who indicate low self-esteem have been shown to be more susceptible to depression and more likely to resort to undesirable self enhancement strategies, like aggression or out-group derogation than more positive strategies (Zeigler-Hill, 2006). Cohen, Nisbett, Bowdle and Schwarz (1996) found that participants became more aggressive after an insulting comment towards them. Research has indicated that by gathering information from both implicit and explicit self-esteem can better predict an individual's behavior than if only one dimension was used (Baumeister, Campbell, Krueger, & Vohs, 2003; Donnellan, Trzesniewski, Robins, Moffitt, & Caspi, 2005).

A good theory to base explicit and implicit mechanisms is the dual process model (Epstein, 1994). The dual process model states that the operation and development of social cognition is established on both implicit and explicit principles, meaning implicit attitudes manifest themselves at the same time, but in a different fashion, than explicit attitudes. For example, when people are insulted, their explicit attitude can be controlled,



however the individual's implicit attitude will be affected negatively. Implicit attitudes are from experiential events and are considered automatic (Zeigler-Hill, 2006), whereas explicit behaviors and attitudes are cognitively controlled through rational and logical decisions.

### **Self-Esteem as a Predictor of Behavior**

What is the relationship between the implicit and explicit self-esteem? This topic is subject to debate. However, the prevailing opinion posits that there are four major types of self-esteem (Zeigler-Hill, 2006). The first opinion has been labeled "secure" self-esteem, which indicates that an individual has high implicit and high explicit self-esteem. This is likely the most stable and resistant to threats toward self esteem, due to the buffer effect (Dijksterhuis, 2004). The buffer effect occurs when someone has stable self-esteem and cannot easily be swayed by threats to the self-image, because of stable self-esteem.

In contrast, Zeigler-Hill (2006) suggested that having high explicit self-esteem alone is not necessarily as much of a benefit as earlier research indicated (e.g., Rosenberg, 1965). After examination high explicit self-esteem is only part of the story. For example, if implicit self-esteem is low, having high explicit self-esteem will result in more defensive and hostile approaches when threats to self-image occur, whereas secure self-esteem would lead to a constructive response. Low implicit self-esteem and high explicit self-esteem leads an individual to create a rationale for negative actions when engaging in undesired self-enhancement strategies like out-group derogation (Jordan, Spencer, & Zanna, 2005). High explicit self-esteem and low implicit self-esteem is referred to as "discrepant high" or "fragile," whereas low explicit and high implicit self-esteem is referred to as "discrepant low." Discrepant low self-esteem appears less often

than discrepant high and is likely a result of an acute onset of threats to someone with stable self-esteem. Furthermore, low implicit and low explicit self-esteem results in more depressed behaviors and lower motivation, whereas secure self-esteem would likely result in higher motivation and well-adjusted behaviors (Collange, Fiske, & Sanitioso, 2009).

Having fragile self-esteem is likely to elicit the most undesirable social behavior (Zeigler-Hill, 2006). Individuals with fragile self-esteem must constantly reassure themselves of their positive characteristics, even at the expense of someone else's character (Zeigler-Hill, 2006). A person may feel threatened more easily than someone with secure self-esteem and use threats, aggression, or out-group derogation as a self-enhancement strategy (Jordan, et al., 2005). Explicit self-esteem generally appears to be more resistant to change overtime, compared to implicit self-esteem. For example, in a situation in which an individual is subjected to consistent verbal abuse (e.g., by a caretaker) the person may rationalize the abuse to protect explicit self-esteem. In contrast, an individual's implicit self-esteem would likely falter over time due to the inability to rationalize abuse implicitly, possibly leaving the individual with discrepant high or fragile self-esteem.

### **Current Research**

There were two purposes of conducting the current studies. First, although much attention has been given to other measurements of implicit attitudes (e.g., Greenwald, McGhee, & Schwartz, 1998; Nosek & Banaji, 2001; Nuttin, 1985; Warrington & Weiskrantz, 1968), the current studies used a variation of the self-esteem Implicit Association Test (Greenwald & Farnham, 2000) to add data to show its effectiveness in

measuring implicit self-esteem and its reliability as an implicit measurement. Second, the studies were aimed to examine if implicit self-esteem is affected by the internalization of various induced social perceptions.

The self-esteem Implicit Association Test was used to measure average response times that indicated the strength of associations between negatively or positively valenced stimuli and the self. Shorter response times indicate a high strength of association, whereas longer response times indicate a low strength of association between positively or negatively valenced stimuli and the self.

In Experiment 1, a passive comment was made about a participant's intelligence, based only on appearance in a positive or negative way. The control group heard no comment and just completed the self-esteem IAT. It was hypothesized in the current experiment that participants' self-esteem would be increased in the positive comment condition and decreased in the negative comment condition, compared to the control group. In Experiment 2, frustration or a sense of accomplishment was induced by giving participants an easy, hard, or no mathematics test. Feather (1966) indicated that perceptual performance influenced future performance on trials, where initial negative performance inhibited performance on later trials. In contrast, initial success enhanced performance on subsequent trials. The current experiment examined whether perceptual performance influenced an individual's implicit self-esteem. This means that if an individual becomes frustrated or happy about their performance on a mathematics test, it will negatively or positively affect their self-esteem, respectively. Finally, in Experiment 3, participants received positive, negative, or no feedback about their performance on a mathematics test. It was hypothesized that false feedback would influence their implicit

self-esteem.

## **EXPERIMENT 1**

Social perceptions shape the way people think and feel about the world.

Experiment 1 investigated whether a conversation between two individuals (experimenter and confederate) would influence a participant's implicit self-esteem in a positive or negative fashion compared to a group that did not hear any comment about their appearance.

### **Method**

#### **Participants**

Thirty-six University of Central Oklahoma General Psychology students participated for partial fulfillment of a course research requirement. All participants were at least 18 years of age and were treated according to American Psychological Association ethical guidelines.

#### **Materials**

Materials included an informed consent form (see Appendix A) and verbiage used from Greenwald, McGhee, and Schwartz's (1998) Implicit Association Test to tell the participant what to do between the implicit association test blocks. Participants used Dell desktop computers with 15-inch monitors to complete the self-esteem Implicit Association Test (Dijksterhuis, 2004). The IAT was presented using Empirisoft's DirectRT software. DirectRT is a computer program used to record participants' response times to stimuli.

All participants were presented with the self-esteem IAT (Dijksterhuis, 2004; Greenwald & Farnham, 2000). The stimuli consisted of six self-relevant (I, me, myself,

mine, self, and my own) and six non-self-relevant words (they, others, theirs, his, her and them). The valenced stimuli were composed of either six pleasant (happiness, summer, smile, beach, free, and sun) or six unpleasant words (bomb, cancer, coma, mean, hell, and pest). Participants were to match the words with the “pleasant” or “me” on one side of the screen and “unpleasant” or “not me” on the other side of the screen, using the “c” or “m” keys, which denoted the left or right side of the screen respectively. Participants continued these tasks through five different blocks. Based on previous methodology, the relevant blocks used for data analysis were derived from the third and fifth blocks (Greenwald, Nosek, & Banaji 2003). Between the different tasks participants were instructed on how to respond to stimuli by using either the “c” or “m” keys representing either the left or right side of the screen.

The congruent block is when the “pleasant” and “me” are on the same side and the “unpleasant” and “not me” are on the other side. The incongruent block is when the “pleasant” and “not me” are on one side and “unpleasant” and “me” are on the other side. All computers were set up with a standard keyboard and mouse to complete the response time task.

### **Design**

A one-way between subjects analysis of variance (ANOVA) examined differences between groups in which comment type (positive, negative or no comment) was the independent variable. The dependent variable was a participant’s calculated average response times on the self-esteem IAT.

### **Procedure**

Before participants arrived, the confederate was waiting down the hallway, approximately 60 feet away (see Appendix B) within sight of the laboratory. The shades on the door were down, but the door was open, such that the confederate could see inside and the experimenter could see outside. After the participant arrived, the experimenter conspicuously signaled the confederate by making eye contact and closing the door. The participant was then seated in a cubicle that was approximately 13 feet from the door (see Appendix C), but was not within sight of the door. Once the participant signed the informed consent form, the form was held behind the experimenter's back to signal to the confederate to knock on the door. Once the confederate knocked on the door, the experimenter told the participant to "hold on just a second" and "please don't touch anything." The experimenter then opened the door, let the confederate inside and closed the door behind him. The confederate then said "What are you doing?" and the experimenter responded "Not much, just running participants." The confederate replied "Oh, I just saw the person who walked in and they don't look very smart, good luck with that!" (negative condition) or "Oh, I just saw the person that walked in and they look pretty smart, good luck with that!" (positive condition). After the comment, the confederate left the room. The experimenter then returned to the cubicle and asked the participant to follow the directions on the screen. In the control condition, participants completed the self-esteem IAT without hearing a comment.

After the participants finished the self-esteem IAT, they were thoroughly debriefed with the experimenter and the confederate present. Participants were told that they were randomly assigned to the chosen condition before participating and that the comment was not personal. Then participants were told about the perseverance effect

(MacFarland, Cheam, & Buehler, 2007), which is when a person is told that something is not true (e.g., hearing a negative comment about themselves), but the person still believes it to be true. The participants were also assessed on whether or not they had become agitated or upset because of the comment. Then they were asked to rate their “gladness” that they participated in the experiment. Finally, participants were offered an opportunity to ask questions or offer comments or concerns regarding any aspects of the experiment.

### **Results**

The raw self-esteem IAT data were transformed using a logarithmic transformation (Greenwald, Nosek, & Banaji, 2003) taken from the third and fifth block of the self-esteem IAT. A one-way ANOVA analyzed differences between the positive comment ( $M = -.26$ ;  $SD = .18$ ), negative comment ( $M = -.18$ ;  $SD = .11$ ) and control condition ( $M = -.29$ ;  $SD = .15$ ),  $F(2, 33) = 1.83$ ,  $p = .18$ ,  $\eta_p^2 = .10$ , observed power = .35. Results indicated that there were no significant differences in implicit self-esteem by comment condition.

### **EXPERIMENT 2**

Experiment 2 hypothesized that inducing a feeling of competence or incompetence would influence an individual’s implicit self-esteem, such that competence would increase implicit self-esteem and incompetence would decrease self-esteem. Participants completed an easy mathematics test, hard mathematics test, or the control group completed no mathematics test. Following this, participants completed the self-esteem IAT to examine whether their self-esteem was negatively influenced by the frustration of a hard mathematics test or positively influenced because of their success on an easy mathematics test, compared to the control group. All participants then completed

the Interpersonal Expectancy Scale (Mather & Mather, 2009) and Future Event Scale (Andersen, 1990) to correlate interpersonal expectancy and perceptions of future events.

## **Method**

### **Participants**

Thirty-six University of Central Oklahoma General Psychology students participated for partial fulfillment of a course research requirement. All participants were at least 18 years of age and were treated according to APA ethical guidelines.

### **Materials**

Participants used Dell desktop computers with a standard keyboard and mouse and 15-inch monitor. The monitor was used for viewing the mathematics tests and self-esteem IAT. Empirisoft's MediaLab was used to present the random-ordered mathematics tests. In addition, Empirisoft's DirectRT was used to present the self-esteem IAT. Paper copies of the Future Event Scale (Andersen, 1990) and Interpersonal Expectancy scale (Mather & Mather, 2009) were given to participants to complete (see Appendix D). The participants rated how much they agreed with statements like "I am likely to be stuck in a boring and unfulfilling job" (Future Event Scale) and "Most people live a healthy and active life" (Interpersonal Expectancy Scale).

### **Design**

A one-way between subjects ANOVA examined group differences in IAT scores, in which mathematics test type (easy, hard and no test) was the independent variable. The dependent variable was a participant's calculated average response times on the self-esteem IAT.

### **Procedure**



Participants were randomly assigned to be in one of three conditions before they arrived in the laboratory. After they arrived, participants signed an informed consent form. Then they were presented with five easy mathematics questions, five hard mathematics questions, or no mathematics questions. After the mathematics test, participants immediately completed the self-esteem IAT. Participants then completed the Future Event Scale (Andersen, 1990) and Interpersonal Expectancy scale (Mather & Mather, 2009). Following the completion of the scales, participants were thoroughly debriefed about the nature of the study and were again assessed about their perception of the study. They were then asked if they had any questions concerning any aspect of the experiment, thanked, and dismissed.

### **Results**

Results indicated that there were no significant differences between the hard mathematics test ( $M = -.24$ ;  $SD = .10$ ), easy mathematics test ( $M = -.25$ ;  $SD = .09$ ) and no mathematics test ( $M = -.27$ ;  $SD = .13$ ) conditions,  $F(2, 33) = 0.38$ ,  $p = .69$ ,  $\eta_p^2 = .02$ , observed power = .11. The results indicated that mathematics test difficulty did not affect implicit self-esteem. There was, however, a significant positive correlation between the Future Event Scale and the Interpersonal Expectancy Scale,  $r(34) = .36$ ,  $p = .04$ . There was also a correlation approaching significance between the Interpersonal Expectancy Scale and the average response times,  $r(34) = .29$ ,  $p = .09$ . This may indicate a positive relationship between an individual's implicit self-esteem and their expectancy of others.

### **EXPERIMENT 3**

In Experiment 3, participants were led to believe that they did poorly or well on an easy mathematics test. It was hypothesized that participant's implicit self-esteem

would be influenced by positive false feedback, negative false feedback, or no feedback on the mathematics test, such that negative false feedback would decrease implicit self-esteem and positive false feedback would increase implicit self-esteem. All participants completed the self-esteem IAT to measure their implicit self-esteem.

## **Method**

### **Participants**

Thirty-six University of Central Oklahoma General Psychology students participated for partial fulfillment of a course research requirement. All participants were at least 18 years of age and were treated according to APA ethical guidelines.

### **Design**

A one-way between subjects ANOVA, examined group differences in which feedback type (positive, negative or no feedback) was the independent variable. The dependent variable was participant's calculated average response times on the self-esteem IAT.

### **Procedure**

Participants came into the laboratory and signed the informed consent. Then participants completed the same easy mathematics test as Experiment 2. After the test was taken, the computer appeared to be automatically scoring participants' answers, then said "Congratulations, you received 4/5 correct" (high competence condition) or said "Sorry, you received 1/5 correct" (low competence condition). The control condition only completed the self-esteem IAT. Participants were then debriefed about the nature of the study. Following the debriefing, participants were assessed about their attitude toward the study and thanked for their participation.

## Results

Results indicated that there was no significant differences between the high competence condition ( $M = -.24$ ;  $SD = .14$ ), low competence condition ( $M = -.28$ ;  $SD = .14$ ), and the control condition ( $M = -.20$ ;  $SD = .12$ ),  $F(2, 27) = .74$ ,  $p = .49$ ,  $\eta_p^2 = .05$ , observed power = .16. The results indicate that performance false feedback did not affect individuals' implicit self-esteem.

## Discussion

The hypothesis that implicit self-esteem would be influenced by induced perceptions was not supported. However, findings suggest that significant effects may be observed in Experiment 1 with increased power, due to the average response times indicating a trend in the negative condition. In Experiment 2, there were no significant effects between the easy, hard, or no mathematic test groups. However, there was a significant correlation between the Future Event Scale and the Interpersonal Expectancy Scale as predicted. This reinforces previous research indicating that future event and interpersonal expectancies are related. There was also a correlation approaching significance between the Interpersonal Expectancy Scale and the average response times on the self-esteem IAT that was not predicted. This may indicate a relationship between an individual's perception of future events and their implicit self-esteem. This means that high self-esteem is related to positive perceptions of future events. The Future Event Scale predicts an individual's perception of how life will be, based on current experience. Further analysis would need to be done to draw any conclusions regarding whether the correlation between implicit self-esteem and positive perceptions are in fact positive.

In Experiment 3, there were also no significant differences between groups. Participants reported that they were still disappointed that they missed one question (high

competence condition) although it was aimed to make them feel good, indicating that the test was likely too easy or that the positive condition wasn't positive enough. However, false feedback seemed unrelated to implicit self-esteem regardless of the perceptions it induced. In addition, it is possible participants did not believe they only missed one question.

It is interesting to note that among the three separate studies, the means and standard deviations for response times remained clearly similar. Using each study as a predictor variable and the mean IAT's as the outcome variable, it was determined that there was no significant differences in response times between studies. This demonstrates the robustness of the self-esteem implicit association test under various manipulations. It is also important to note that the largest observed difference in average response times was the negative comment in Experiment 1 compared to any other differences in the other studies. One explanation for the large difference comes from the fundamental need to belong (Baumeister & Leary, 1995), which states that individuals have a psychological need to feel connected to the others. The rejection of their appearance may violate that fundamental need. To test the need to belong, participants could be involved in a game with other people (establishing the need to belong) and then rejected from the game later on. Then the participants' implicit self-esteem could be measured using the self-esteem IAT.

The fundamental need to belong requires two criteria (Baumeister & Leary, 1995). First, a person needs frequent, pleasant interactions that are conflict-free with another person. Second there should be a mutual care for each other's welfare. This may aid in explaining why such resistance to the comment manipulation was encountered,

because there was either no human contact or not enough time with a person to establish both criteria. Further tests would need to establish if in fact resistance was encountered or if there was simply no relationship. In addition, Maslow (1943) hierarchy of needs states that the need to belong comes only after the basic needs of life are met (e.g., food, water, and safety), but before self-esteem, which may provide another explanation for resistance. Without the need to belong criteria being met, it is difficult to influence an individual's self-esteem without a perceived, meaningful relationship between the experimenter, confederate and the participant.

### **Limitations**

There are some issues implicated by using the IAT that warrant critical attention (Fazio & Olson, 2003). First, critics claim that it is difficult, if not impossible, to know what is being measured through the test. However, there is data to suggest a correlation between explicit measurements of self-esteem and implicit measurements of self-esteem (Greenwald, McGhee, & Schwartz, 1998). Is it measuring an individual's perceptions of associations or society's influence on an individual's perceptions? In addition, the IAT has been criticized for not correlating, under certain conditions with other implicit measurements for the same phenomena. This can be problematic, because if the measurements do not correlate, it is difficult to be seen as a reliable measurement. Furthermore, critics of the implicit field also posit that there is no way of knowing if information being presented is in fact internalized implicitly or if it is consciously evaluated. However, if significance is found for Experiment 1, some of the problems would be addressed. For example, by influencing implicit self-esteem in real time, societal influences can be removed as a potential source of immediate attitude change.

This means that using the self-esteem IAT is likely measuring an individual's affect at that moment and not their global affect. Other issues may include the use of the false feedback in Experiment 3. The high competence condition was not perceived to be positive. By comparing the three levels of the independent variable, it was determined by average response times that the high competence condition had an opposite effect than predicted, though the result was non-significant.

### **Future Directions**

In Experiment 1, participants reported not hearing the comment or if they did hear it, they reported that they did not think that the confederate was talking about them. In a future study, a smaller room should be used, so participants could more easily hear the conversation and make no mistake about who the comment was about. In addition, increasing the sample size would also increase power, increasing the chance of detecting an effect.

Current research requires more support reflecting self-esteem's variations after the need to belong is established through creating meaningful contact with participants. The need to belong should also be adjusted to work with other social models like prejudice. For example, it has been demonstrated that prejudice can be reduced by simply imagining positive interactions with out-group members (Turner & Crisp, 2010). This could be further investigated for the possibility that after prejudice is reduced, to evaluate whether participants would become particularly sensitive or insensitive to negative remarks from out-group members. After prejudice reduction, a comment similar to that in Experiment 1 may be made by a confederate. Differences between reduced prejudice and non-reduced prejudice would be analyzed and predicted that reduced prejudice

individuals would be less sensitive to remarks than non-reduced prejudice individuals.

Currently, researchers in the implicit field only possess a vague understanding of how implicit stimuli influence implicit responses and how explicit stimuli influence explicit responses. Further examination of how self-esteem patterns are manifested through various social situations is required. For example, can the discrepancy in self-esteem become congruent (e.g. high explicit and low implicit self-esteem)? Research on implicit social cognition is still very much in its infancy; however, intriguing results have pointed researchers into a new frontier of possibilities.

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## Appendix A

### UNIVERSITY OF CENTRAL OKLAHOMA INFORMED CONSENT FORM

Experimental Psychology Research Project Title: Perception and Implicit Responses

Researcher(s) and contact information: Robert Mather, Ph.D., (405) 974-5474, [rmather@uco.edu](mailto:rmather@uco.edu). You may also contact the Research Administrator at (405) 974-5707 or [uco-admin@sona-systems.net](mailto:uco-admin@sona-systems.net)

A. Purpose of this research: The purpose of the current research is to measure one's perception and implicit responses to various stimuli in controlled conditions. The investigation is also looking at how implicit responses are affected by, externally stimulated perceptual phenomena.

B. Procedures/treatments involved: If consent is given by the participant, they will be seated in front of a computer that will be used to complete their task.

C. Expected length of participation: No more than 1 hour(s). (1 credit)

D. Potential benefits: There are no direct benefits to the participant. This study will further the knowledge base in predicting implicit responses and personal perceptions in particular social situations.

E. Potential risks or discomforts: There will be no harm or discomfort anticipated in the research greater than what is ordinarily encountered in daily life or during routine physicals or psychological examinations or tests.

F. Medical/mental health contact information: If you would like to visit with someone regarding sensitive or special concerns about this project or other issues please feel welcome to visit the UCO Student Counseling Center at (405) 974-2215 or [http://www.uco.edu/student\\_counseling](http://www.uco.edu/student_counseling) (Bruce Lochner, Ph. D., Director).

G. Contact information for researchers appears above. You may also contact the Research Administrator at (405) 974-5707 or [uco-admin@sona-systems.net](mailto:uco-admin@sona-systems.net)

You may also contact the Institutional Review Board:

Dr. Jill A. Devenport  
Chair, UCO Institutional Review Board

ADM 216  
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405-974-5479 phone  
405-974-2526  
405-974-3825 fax  
jdevenport@uco.edu - email

H. Explanation of confidentiality and privacy: Your name or identity will not be associated in any way with the research findings; information about you remains confidential and will not be kept after the semester ends. Your name or other uniquely identifying information will never be in any record that can be identified with you. We do not request student ID numbers either.

Results are reported only about groups of people or by a number that conceals your identity. All results are reported in summary form, except on occasion when an individual example may be given, at which time no name or other identifiable information will be given. Anonymous data are stored in electronic or hard copy form by individual researchers. Only the student researchers and their instructors have access to the data.

Most psychology journals expect that researchers retain data for five years following publication. Individual researchers destroy anonymous data after the standard retention period (see above) has passed. Records (separate from research data) regarding which students completed their participation assignments are purged from electronic sources or shredded by individual instructors/researchers after final grades are recorded.

The fact that you did or did not participate in a specific experiment or study is part of a record available to your General Psychology instructor. General Psychology instructors have to know which studies you completed in order to know how much research participation credits each you earned (in order to determine whether that course requirement was satisfied). They do not need nor do they receive any other information.

I. Assurance of voluntary participation:

#### AFFIRMATION BY RESEARCH PARTICIPANT

I hereby voluntarily agree to participate in the above listed research project and further understand the above listed explanations and

descriptions of the research project. I also understand that there is no penalty for refusal to participate, and that I am free to withdraw my consent and participation in this project at any time without penalty. I have read and fully understand this Informed Consent Form. I sign it freely and voluntarily. I acknowledge that a copy of this Informed Consent Form has been given to me to keep.

Participant's Printed Name:

\_\_\_\_\_

Participant's Signature: \_\_\_\_\_

Date \_\_\_\_\_

**\*\*\* By signing this, I affirm that I am at least 18 years of age.**

J. For more information: If you would like more information about the results of this study, you can get the complete details after we have collected all our data. There are four ways to do this:

- 1) Come to the Oklahoma Research Day conference.
- 2) Ask your General Psychology instructor for access to this semester's study summaries.
- 3) Request that the researcher e-mail or mail you the study results.
- 4) Make an appointment for a telephone or in person visit with the researcher.

## Appendix B



*Figure 1.* This is the view from the laboratory into the hallway. The confederate was seated at the end of the hallway on the bench on right side, approximately 60 feet away.

## Appendix C



*Figure 2.* This is the view from the laboratory front door approximately 13 feet away from where the participant sat in cubicle 2.

## Appendix D

### Scales Used for Exploratory Purposes

Please answer the following questions by circling the number that best represents your answer.

#### FES

For each of the following items, please select the number that best represents how likely you think the event will happen to you at some point in your life.

1. To be stuck in a boring and unfulfilling job.  
Extremely unlikely- -5 -4 -3 -2 -1 0 1 2 3 4 5 -  
Extremely likely

2. To have enough money to satisfy all my desires.  
Extremely unlikely- -5 -4 -3 -2 -1 0 1 2 3 4 5 -  
Extremely likely

3. To be very lonely when I am old.  
Extremely unlikely- -5 -4 -3 -2 -1 0 1 2 3 4 5 -  
Extremely likely

4. To have the recognition of many of my colleagues.  
Extremely unlikely- -5 -4 -3 -2 -1 0 1 2 3 4 5 -  
Extremely likely

5. To regret a decision I have made in my life.  
Extremely unlikely- -5 -4 -3 -2 -1 0 1 2 3 4 5 -  
Extremely likely

6. To live the lifestyle I have always dreamed of.  
Extremely unlikely- -5 -4 -3 -2 -1 0 1 2 3 4 5 -  
Extremely likely

7. To divorce or experience the death of a mate.  
Extremely unlikely- -5 -4 -3 -2 -1 0 1 2 3 4 5 -  
Extremely likely

8. To contract a fatal disease.  
Extremely unlikely- -5 -4 -3 -2 -1 0 1 2 3 4 5 -  
Extremely likely

9. To have what I consider to be the perfect job.  
Extremely unlikely- -5 -4 -3 -2 -1 0 1 2 3 4 5 -



Extremely likely

10. To be institutionalized (e.g., prison or asylum) in the next 20 years.

Extremely unlikely- -5 -4 -3 -2 -1 0 1 2 3 4 5 -

Extremely likely

11. To achieve my goals during my life.

Extremely unlikely- -5 -4 -3 -2 -1 0 1 2 3 4 5 -

Extremely likely

12. To live a sexually fulfilled life.

Extremely unlikely- -5 -4 -3 -2 -1 0 1 2 3 4 5 -

Extremely likely

13. To be satisfied with many of the major decisions I have made during my life.

Extremely unlikely- -5 -4 -3 -2 -1 0 1 2 3 4 5 -

Extremely likely

14. To feel that I have made no contribution to others or society within my life time.

Extremely unlikely- -5 -4 -3 -2 -1 0 1 2 3 4 5 -

Extremely likely

15. To lose my mental facilities when I am older.

Extremely unlikely- -5 -4 -3 -2 -1 0 1 2 3 4 5 -

Extremely likely

16. To experience a great financial loss.

Extremely unlikely- -5 -4 -3 -2 -1 0 1 2 3 4 5 -

Extremely likely

17. To be able to live in the home (in the location) I have always dreamed of.

Extremely unlikely- -5 -4 -3 -2 -1 0 1 2 3 4 5 -

Extremely likely

18. To be able to cope successfully even when under a great deal of pressure from my job.

Extremely unlikely- -5 -4 -3 -2 -1 0 1 2 3 4 5 -

Extremely likely

19. To work with people I do not like.

Extremely unlikely- -5 -4 -3 -2 -1 0 1 2 3 4 5 -

Extremely likely

20. To win the lottery.  
 Extremely unlikely- -5 -4 -3 -2 -1 0 1 2 3 4 5 -  
 Extremely likely

21. To retire at the age of 40 and do all the things I would like to do.  
 Extremely unlikely- -5 -4 -3 -2 -1 0 1 2 3 4 5 -  
 Extremely likely

22. To have a loved one die in the next year.  
 Extremely unlikely- -5 -4 -3 -2 -1 0 1 2 3 4 5 -  
 Extremely likely

23. To enjoy doing some of the things I would like to do in the next ten or fifteen years.  
 Extremely unlikely- -5 -4 -3 -2 -1 0 1 2 3 4 5 -  
 Extremely likely

24. To be responsible for someone's physical or emotional suffering.  
 Extremely unlikely- -5 -4 -3 -2 -1 0 1 2 3 4 5 -  
 Extremely likely

25. To live a healthy and active life until the end of my life.  
 Extremely unlikely- -5 -4 -3 -2 -1 0 1 2 3 4 5 -  
 Extremely likely

26. To experience unhappiness with my relationships for several years.  
 Extremely unlikely- -5 -4 -3 -2 -1 0 1 2 3 4 5 -  
 Extremely likely

Please answer the following questions by circling the number that best represents your answer.

**IES**

1. Most people will live a healthy and active life.  
 Strongly Disagree- 1 2 3 4 5 6 -Strongly Agree

2. Few people are capable of true compassion.  
 Strongly Disagree- 1 2 3 4 5 6 -Strongly Agree

3. When I meet people, I usually expect that they will be friendly.  
 Strongly Disagree- 1 2 3 4 5 6 -Strongly Agree

4. People are often insensitive to the needs of others.  
 Strongly Disagree- 1 2 3 4 5 6 -Strongly Agree

5. People will usually treat others with respect.  
Strongly Disagree- 1            2            3    4    5    6    -Strongly Agree
6. People will generally help others in need.  
Strongly Disagree- 1            2            3    4    5    6    -Strongly Agree
7. People typically have good intentions toward others.  
Strongly Disagree- 1            2            3    4    5    6    -Strongly Agree
8. Most people will do whatever they can do to avoid hard work.  
Strongly Disagree- 1            2            3    4    5    6    -Strongly Agree
9. If people can mess things up, they generally will.  
Strongly Disagree- 1            2            3    4    5    6    -Strongly Agree
10. Most people will cheat to get ahead.  
Strongly Disagree- 1            2            3    4    5    6    -Strongly Agree
11. People can be trusted  
Strongly Disagree- 1            2            3    4    5    6    -Strongly Agree
12. Most people live by the “golden rule” (treat others as you would like to be treated).  
Strongly Disagree- 1            2            3    4    5    6    -Strongly Agree
13. Most people will live the lifestyle they have always wanted.  
Strongly Disagree- 1            2            3    4    5    6    -Strongly Agree
14. People will often tell lies if they can get away with it.  
Strongly Disagree- 1            2            3    4    5    6    -Strongly Agree
15. People cannot be relied on to keep their promises.  
Strongly Disagree- 1            2            3    4    5    6    -Strongly Agree
16. Most people will strive to be fair.  
Strongly Disagree- 1            2            3    4    5    6    -Strongly Agree
17. Most people will blame others for things that go wrong.  
Strongly Disagree- 1            2            3    4    5    6    -Strongly Agree
18. People have trouble being faithful to others.  
Strongly Disagree- 1            2            3    4    5    6    -Strongly Agree
19. People are generally capable of achieving their goals.  
Strongly Disagree- 1            2            3    4    5    6    -Strongly Agree
20. I expect most people I meet to be bright, intelligent, individuals.

Strongly Disagree- 1            2            3    4    5    6    -Strongly Agree

21. Most people will take advantage of others if they get the chance.

Strongly Disagree- 1            2            3    4    5    6    -Strongly Agree

22. Most people will deliberately say or do things to hurt you.

Strongly Disagree- 1            2            3    4    5    6    -Strongly Agree

23. Most people do not really care what happens to others.

Strongly Disagree- 1            2            3    4    5    6    -Strongly Agree

24. Most people are likely to succeed in reaching their goals.

Strongly Disagree- 1            2            3    4    5    6    -Strongly Agree

## Appendix E

### *Self-Esteem IAT Vocabulary for All Experiments*

*Categories:* Me, Not Me, Pleasant, Unpleasant

*Self-related words:* I, Me, Myself, Mine, Self, My Own

*Non-self related words:* They, Others, Theirs, His, Her, Them

*Positive trait words:* Happiness, Summer, Smile, Beach, Free, Sun

*Negative trait words:* Bomb, Cancer, Coma, Mean, Hell, Pest

### **Self-Esteem IAT Instructions**

In the next task, you will be presented with a set of words to classify into groups. This task requires that you classify items as quickly as you can while making as few mistakes as possible. Going too slow or making too many mistakes will result in an uninterpretable score. This part of the study will take about 5 minutes. The following is a list of category labels and the items that belong to each of those categories.

#### *Keep in mind*

Keep your index fingers on the 'e' and 'i' keys to enable rapid response.

Two labels at the top will tell you which words or images go with each key.

Each word or image has a correct classification. Most of these are easy.

The test gives no results if you go slow -- Please try to go as fast as possible.

Expect to make a few mistakes because of going fast. That's OK.

For best results, avoid distractions and stay focused.

Put your middle or index fingers on the keys "c" and "m" of your keyboard.

Words representing the categories will appear at the top one-by-one in the middle of the screen. When the item belongs to a category on the left, press the key "c"; when the item

belongs to a category on the right press the key “m”. Items belong to only one category. If you make an error an X will appear, fix the error by pressing the other key.

This is a time sorting task. GO AS FAST AS YOU CAN, while making as few mistakes as possible. Going too slow or making too many errors will result in an un-interpretable score. This task will take about 5 minutes to complete.

See above, the categories have changed. The items for sorting have changed as well. The rules however are the same. When the item belongs to a category in the left, press the “c” key; when the item belongs to a category on the right, press the “m” key. Items belong to only one category. An X appears after an error – fix the error by pressing the other key. GO AS FAST AS YOU CAN. Press space bar to begin.

See above, the four categories you saw separately, now appear together. Remember that each item belongs to only 1 group. For example, if the categories “Pleasant or Me“ and “Unpleasant or Not Me“ appeared on separate sides above – words meaning flower would go in the “Pleasant or Me “ category not the “Unpleasant or Not Me “ category.

The “blue” and “green” labels and items may help to identify the appropriate category. Use the “m” and “c” keys to categorize items into the four groups’ left and right and correct errors by hitting the other key. Press space bar to begin.

Sort the same 4 categories again. Remember to go as fast as you can with making as few mistakes as possible. The “green” and “blue” labels and items may help to identify the appropriate category. Use the “c” and “m” keys to categorize items into the four groups’ left and right and correct errors by hitting the other key. Press Space Bar to Begin.

Notice above, there are only two categories and they have switched positions. The concept that was previously on the left is now on the right and the concept that was previously on the right is now on the left. Practice this new configuration.

Use the “c” and the “m” key to categorize items left and right and correct by hitting the opposite key. Press the Spacebar to Begin.

See above, the four categories above now appear in a new configuration.

Remember, each item belongs to only one group. The “green” and the “blue” labels and items may help identify the appropriate category. Use the “m” and the “c” key to categorize items into the four groups’ left and right and correct errors by hitting the other key. Press the Spacebar to Begin.

Sort the same 4 categories again. Remember to go as fast as you can with making as few mistakes as possible. The “green” and “blue” labels and items may help to identify the appropriate category. Use the “c” and “m” keys to categorize items into the four groups’ left and right and correct errors by hitting the other key. Press Space Bar to Begin

*Note.* The categorical words will be displayed in position, at the same time the instructions are displayed.

## Appendix F

### Statements Used in Experiment 1

Confederate: "What are you doing?"

Experimenter: "Not much just running subjects."

Confederate: "Oh, I just saw the person who walked in and they don't look very smart, good luck with that!" or "Oh, I just saw the person who walked in and they look pretty smart, good luck with that!"

### Math Questions

Easy:

$$X + 6 = 7$$

$$7X = 56$$

$$6X + 7 = 31$$

$$56 / 8 = ?$$

$$18 * 4 = ?$$

$$9 * 7 = ?$$

$$16X + 4 = 36$$

$$8 * 4 = ?$$

$$12 * 13 = ?$$

$$17 + X = 44$$

Hard:

$$4(X + 6) + 4 = 12X$$

$$56 * 2 + 4 * 7 / 4$$

$$4671 / 13.4 = ?$$

$$(765 * 17) + 20 - 16 = ?$$

$$88X / 11X + (6 * 7) = ?$$

$$17 * 44 + 63 - 18 / 2$$

$$56X = 7 - 7X$$

$$7(3 + 8X) = 15X$$

$$27 * .20 + 45 = ?$$

$$16 * .025 + 16 = ?$$



## Appendix G

### **Debriefing Experiment 1**

Thank you for participating. In this experiment we were studying the effects of feedback and competence perception on Implicit Self-Esteem. You were subjected to one of three possible conditions. You possibly heard someone say that you were smart looking, not smart looking or you were not subjected to any of the above. In these cases it is important to remember that the comments that you have heard today are erroneous and that you were randomly assigned to the condition that you were subjected to prior to your arrival. This means that whatever comment you heard was for experimental purposes to investigate the possibility that it had an immediate and/or direct effect on your implicit self-esteem. It was necessary to deceive some participants in order to assess their real responses to the situation. Furthermore, there is a phenomenon called the “perseverance effect,” which is when someone who is told that something, holds it to be true and then is informed that it was actually false, but still holds it to be true. In this case we want to make sure that in the negative feedback condition (when you heard someone say you didn’t look smart) that you understand that the statement is for experimental purposes and that you should have no reason to hold it to be true. Additionally, the final survey you were to complete was designed to help determine what people tend to perceive in interpersonal situations and in future event expectations.

Feeling embarrassed or distressed about being deceived under these experimental circumstances is a normal feeling. If you are still distressed, you may contact the UCO Student Counseling Center at (405) 974-2215 or [http://www.uco.edu/student\\_counseling](http://www.uco.edu/student_counseling). If you would like to know more information about your participation in this experiment

you may also contact the Institutional Review Board at (405) 974-5479. If for any reason you're not comfortable with your experience in this experiment, you may withdraw the data that has been produced by your participation.

## Appendix H

### **Assessment Questions Experiment 1**

For Experimental Group: Did you hear the derogatory comment?

For Experimental Group: If you heard the comment, how did it make you feel?

For All Groups: How interested are you in this experiment? (0 Not at all - 7 Extremely).

For all Groups: How glad are you that you participated in this experiment? (0 Not at all - 7 Extremely)

### **Debriefing Experiment 2**

Thank you for participating. In this experiment we were studying the effects of competence perception on Implicit Self-Esteem. You were subjected to one of three possible conditions. You were randomly assigned to relatively easy math questions, relatively hard math questions or no math questions. In these cases it is important to remember that you were randomly assigned to the condition that you were subjected to prior to your arrival. This means that whether you experienced difficult, success or no condition your participation was for experimental purposes to investigate the possibility that it had an immediate and/or direct effect on your implicit self-esteem. Additionally, the final survey you were to complete was designed to help determine what people tend to perceive in interpersonal situations and in future event expectations. If you have any questions concerning any portion of this study please refer these questions to the experimenter at this time. However, if you have no questions then please press the spacebar to complete the experiment. Then please inform the experimenter that you have completed the experiment. Thank you again for your participation.

### **Experiment 3 Debriefing**

Thank you for participating. In this experiment we were studying the effects of false feedback on Implicit Self-Esteem. You were subjected to one of three possible conditions. You were randomly assigned to receive feedback stating you completed 1 out of 5 correctly, 4 out of 5 correctly. In these cases it is important to remember that you were randomly assigned to the condition that you were subjected to prior to your arrival. This means that whether you experienced high competence, low competence or no feedback your participation was for experimental purposes to investigate the possibility that it had an immediate effect on your implicit self-esteem. It was necessary to deceive some participants in order to assess their real responses to the situation. Furthermore, there is a phenomenon called the “perseverance effect”, which is when someone who is told that something, holds it to be true and then is informed that it was actually false, but still holds it to be true. In this case we want to make sure that in all conditions, that you understand that the scoring is for experimental purposes and that you should have no reason to hold it to be true. Additionally, the final survey you were to complete was designed to help determine what people tend to perceive in interpersonal situations and in future event expectations.

Feeling embarrassed or distressed about being deceived under these experimental circumstances is a normal feeling. If you are still distressed, you may contact the UCO Student Counseling Center at (405) 974-2215 or [http://www.uco.edu/student\\_counseling](http://www.uco.edu/student_counseling). If you would like to know more information about your participation in this experiment you may also contact the Institutional Review Board at (405) 974-5479. If for any reason you're not comfortable with your experience in this experiment, you may withdraw the data that has been produced by your participation.

## Appendix I



*Figure 3.* This is the view of inside cubicle two. Note that from where the participant was seated, the front door could not be seen.