Can Evaluative Conditioning Change Explicit Attitudes Toward Self-Esteem?

Shantel Richardson
Saint John Fisher College

Follow this and additional works at: http://fisherpub.sjfc.edu/ur

Part of the Psychology Commons

How has open access to Fisher Digital Publications benefited you?

Can Evaluative Conditioning Change Explicit Attitudes Toward Self-Esteem?

Abstract

The present study used evaluative conditioning in attempt to increase participants' explicit self-esteem. The method of this study involved pairing pre-rated pictures, both positive and neutral, with pronouns relating to either the self or others. The self-pronouns used were me, myself, and mine. The pronouns relating to others that were used were they, them, and others. It was hypothesized that when self-pronouns were paired with positive pictures, the self-esteem of participants would increase. To counterbalance this, pronouns relating to others were paired with positive pictures. Results showed no significant interactions between group and self-esteem. No groups showed a significant increase in levels of self-esteem.

Can Evaluative Conditioning Change Explicit Attitudes Toward Self-Esteem?

Shantel Richardson

Pavlovian conditioning is a learning process in which a neutral stimulus (CS) is paired with an innate unconditioned stimulus (US), and the previously neutral stimulus produces a conditioned response (Walther and Langer, 2010). Evaluative conditioning is also a type of learning process, and it is often confused with Pavlovian conditioning. Evaluative conditioning focuses primarily on changing attitudes surrounding stimuli, whereas Pavlovian conditioning involves predicting and preparing for events. Evaluative conditioning is when a stimulus is paired with an unconditioned stimulus that has an evaluative quality (Walther and Langer, 2010). This leads to a liking or disliking of the conditioned stimulus. This is an important type of learning because it can help to improve attitudes about self-esteem, body image, minority groups, and much more. It can even influence brand choice and product choice.

Previous studies done on evaluative conditioning have been successful in changing implicit and/or explicit attitudes, and have even created a behavior change like in brand choice or food preference. Explicit attitudes are attitudes that we are consciously aware of and display for others to see. Implicit attitudes are attitudes that are internal and we are not consciously aware of them, making them involuntary (Walther and Langer, 2010). In order to measure implicit attitudes, the Implicit Association Test (IAT) is most often used. The IAT is a timed reaction task that requires participants to sort words into categories, and it measures the strength of association between similar types of words (Baccus, Baldwin, and Packer, 2004). Likert scales, which are rating scales in which participants can rate their responses from strongly

disagree to strongly agree, can be used to measure explicit attitudes.

Staats and Staats (1958) was one of the earliest studies done on evaluative conditioning. This study proved to be successful in conditioning by causing a change in explicit attitudes. Researchers paired national names, Dutch and Swedish, with valence words which caused an increase in explicit attitudes for the national name paired with positive words and a decrease in explicit attitudes for the national name paired with negative words. Similarly, Balas and Sweklej (2013) were able to change attitudes about the homeless through the use of evaluative conditioning. Instead of using national names, Balas and Sweklej (2013) paired pictures of the homeless with chocolate in order to create a change in explicit attitudes. This study was also similar to Staats and Staats (1958) because most participants were not aware of the relationship between the CS and US. In both studies, only explicit attitudes were increased. Likewise, French, Franz, Phelan, and Blaine (2013) focused on changing attitudes towards Middle Eastern people. Pictures of Middle Eastern faces were paired with positive words. The conditioning group showed an increase in implicit attitudes on the IAT towards Middle Eastern people. Evaluative conditioning can be used to change attitudes towards all groups of people, not just the homeless or minorities.

Evaluative conditioning has also been successful at changing attitudes about brands. Strick, van Baaren, Holland, and Knippenberg (2009) focused on novel energy drink brands. They paired energy drink brands with humorous advertisements, which created an increase in explicit

attitudes about the product. Strick et al (2009) demonstrated that evaluative conditioning can be used to increase explicit attitudes and possibly influence brand choice in the field of advertisement. This is a strategy companies can and often do use. When participants are primed with humor paired with an energy drink brand, they are more likely to pick that energy drink in a choice test. Strick et al (2009) are the only researchers within evaluative conditioning to have shown a change in implicit attitudes, explicit attitudes, and behavior change. Similarly, Gibson (2008) used brands. Coke and Pepsi, as their conditioned stimulus. These brands were paired with both positive words and positive pictures. This study is also similar to Strick et al (2009) because it showed a change in both implicit attitudes and brand choice. However, implicit attitudes towards Coke and Pepsi were only changed when participants felt neutral about the products. Gibson (2008) was able to successfully influence brand choice, but this only worked under cognitive load, which is when mental effort in the working memory is being used. Strick et al (2009) differed because they did not use cognitive load. It could be that cognitive load was necessary in the study done by Gibson (2008) because the brands in this study were well known by participants.

Besides product brand choice, evaluative conditioning can be used to influence attitudes about food choice. Wansink, Shimizu, and Camps (2012) used a priming procedure, which activates representations in memory, to explore whether or not kids would pick healthy foods if a superhero was believed to eat that healthy food. Results showed that kids were more likely to pick apples over French fries during the superhero priming procedure than the healthy food priming procedure. Even though kids were more likely to pick the

apples during the superhero priming, only 45% of kids chose apples in this condition. This could be due to the kids not perceiving the superheroes as admirable or they might not have been salient enough. This study could be replicated to see if it would work with more salient superheroes.

Other past studies have also used evaluative conditioning to change attitudes about food choice. Hollands, Prestwich, and Marteau (2011) proved to be successful in conditioning food choice and changing implicit attitudes. In this study, snacks foods were paired with pictures of negative health consequences. Results demonstrated that participants showed a stronger implicit preference for fruit compared to snacks. Also when given the ability to choose, participants chose fruit more than snacks. Hollands et al. (2011) were more successful in conditioning food choice when compared to Wansink, Shimizu, and Camps (2012). The use of aversive images by Hollands et al. (2011) may have been salient enough to influence food choice, whereas the use of superheroes may not have been.

More research has been done on evaluative conditioning and changing food preference. Ebert, Steffens, von Stülpnagel, and Jelenec (2009) used candy brands and paired them with valence words. Results showed an increase in implicit attitudes when candy brands were paired with positive words, however for brand choice, there was no effect. This could be due to the fact that the candy brands used, Milka and Hairbo, are mature brands. It could be harder to change people's preference for matures brand if they're not previously neutral. Gibson (2008) demonstrated this because researchers were only successfully able to increase attitudes towards Coke and Pepsi when participants were previously neutral.

Attitudes on self-esteem can also be conditioned through evaluative conditioning. Martijn, Vanderlinden, Roefs, Huijding, and Jansen (2010) used evaluative conditioning to change attitudes about self-body image. Pictures of the participants' bodies were paired with either smiling, frowning, or neutral faces. Conditioning was successful for explicit attitudes which was measured by the Rosenberg Self-Esteem Scale. This study could be a useful intervention for people who have low levels of body satisfaction. Similarly, Baccus, Baldwin, and Packer (2004) paired relevant self-words with pictures of smiling faces in order to cause a change in attitudes. Participants who underwent this conditioning phase showed an increase in implicit attitudes towards self-esteem. Martijn et al (2010) were able to change explicit attitudes and Baccus et al (2004) were able to change implicit attitudes. This poses the question as to why one type of attitude was changed in one study and another type of attitude was changed in the other study. Future research could be done to examine which self-esteem scales are the most effective at measuring self-esteem. Also, research could be done to test if it's easier to change implicit or explicit self-esteem.

Grumm, Nestler, and von Collani (2009) is another study that was successful at using evaluative conditioning to change attitudes on self-esteem. In their first experiment, the word "I" was paired with positive words. Without any other task, results showed an increase for implicit attitudes, but not explicit. The researchers then repeated this experiment, but following the conditioning, participants underwent an introspection manipulation. Participants were asked to write down as many desirable characteristics they believed they possessed. Following the introspection manipulation, participants then showed an increase in both implicit and explicit attitudes. Implicit attitudes were measured by the IAT and explicit attitudes were measured with the State Self Esteem Scale (SSES). Similarly, Hong and Chan (2009) used evaluative conditioning to change both explicit and implicit attitudes toward self-esteem. Implicit attitudes were again measured with the IAT, but explicit measures were measured by the Rosenberg Self Esteem Scale (SSES). Five words about the self and five words about a general other were paired with abstract paintings. Both implicit and explicit attitudes of self-esteem increased for the participants in the conditioning group.

The present study was done to determine if evaluative conditioning could change explicit attitudes towards self-esteem. It was hypothesized that when self-words were paired with positive images, participants' explicit self-esteem would increase. To counterbalance this, pronouns associated with others were also paired with positive images.

Method

Participants

The participants of this study were from a convenience sample. Fifty-eight participants enrolled in an introduction to psychology class at St. John Fisher College participated in order to gain credit in their course. Participants were recruited by the psychology department research participant software system (SONA). 18 participants were randomly assigned to the evaluative conditioning group (Me+/OthersN), 17 in the counterbalancing group (Others+/MeN), and 19 in the block-sub-block control group. No demographic material was obtained from these participants due to researcher error.

Materials

Microsoft Office 2010 PowerPoint was used on a computer in order to display a slideshow. The pictures used in the slideshow served as the USs and were obtained from Lang, Bradley, and Cuthbert (2008). The researchers' International Affective Picture System (IAPS) provided pictures that were already tested for arousal and pleasure ratings. Participants viewed one of three PowerPoint presentations. For each set of participants, a different PowerPoint presentation was shown. For the first set, the PowerPoint presentation consisted of the self-words (CS) me, myself, and mine which were paired with positive pictures (US) that were obtained from the IAPS. Other pronouns (CS) they, them, and others were paired with neutral pictures (US) from the IAPS. An example of a positive picture (US) used was a picture of a group of friends, and an example of a neural picture (US) used was a picture of a chair. There were a total of 6 CSs and 60 USs. Both the CSs and USs were only presented for 1s each. A CS was always paired with a US, with 2s between the trials. The PowerPoint contained a total of 60 trials. Each CS was paired with a different US ten times throughout the presentation. For the second set of participants, the same type of PowerPoint was used. However, in this PowerPoint self-words (CS) were paired with neutral pictures (US) and other pronouns were paired with positive pictures (US).

The last group of participants were a part of the control group. They viewed a PowerPoint presentation in which the CSs and USs were arranged in a block-sub-block design. First all of the CSs were shown in a block, then all of the USs were shown in a block. No CSs and no USs were paired together. Each CS and US were still presented for 1s each with 2s between trials for a total of 60 trials.

In order to measure the participants' level of self-esteem throughout the study, the Rosenberg Self-Esteem Scale was used. Previous studies like Hong and Chan (2009) and Martijn et al (2010) used this scale to measure explicit self-esteem. To distract the participants from the purpose of the study, a distraction task was also used. It's a personality test to measure the level of narcissism in participants. Scores for this test were never calculated, it was simply used to distract the participants. It can be found at [http://personalitytesting.info/printable/narcis sistic-personality-inventory.pdf](http://personalitytesting.info/printable/narcissistic-personality-inventory.pdf).

The design of this study was a 3x2 mixed factorial. The first independent variable was the type of group, which consisted of three levels and is a between-subjects factor. Participants were in one of these three groups: Me+/OthersN, Others+/MeN, or block-sub-block. The second independent variable was the self-esteem scores from the Rosenberg Self Esteem Scale, which has two levels and is a within-subjects factor. Scores were taken both pretest and posttest.

Procedures

This study was conducted in November 2015. During three separate occasions, participants entered a room that contained a computer and projector. The room was a classroom at St. John Fisher College, in Rochester, New York. The researchers obtained informed consent before starting the experiment. The researchers reviewed the instructions for the study with the participants and asked them to complete the Rosenberg Self-Esteem scale. Participants then viewed one of the three PowerPoint presentations.

Following the participants viewing one of the PowerPoint presentations, they were asked to complete the distraction task. After the distraction task, they were asked to complete the Rosenberg Self-Esteem Scale one more time. Once all the participants were done, they were debriefed before leaving.

Results

The self-esteem scores from the participants were subjected to a repeated measures ANOVA having three levels of groups (Me+/OthersN, Others+/MeN, and block-sub-block) with two levels of self-esteem scores (pretest scores and posttest scores). The mean self-esteem scores for each group are presented in table 1 below. There was no significant interaction between group and self-esteem $F(2,51) = 2.15$, $p = .126$. No groups showed a significant increase in self-esteem scores from pretest to posttest.

TABLE 1

Mean Self-Esteem Scores

Group	Pretest Scores	Posttest Scores
Me+/OthersN	23.78	24.33
Others+/MeN	22.88	24.41
BSB	22.26	22.37

Discussion

The purpose of the present study was to use evaluative conditioning to increase participants' self-esteem. It was hypothesized that self-words paired with positive images would cause an increase in participants' explicit self-esteem. Results showed no significant interactions between group and self-esteem. None of the groups showed a significant change in self-esteem from pretest to posttest. The hypothesis was not supported by the results because participants in the Me+/OthersN did not show an increase in explicit self-esteem.

Previous studies have had success in increasing participant's self-esteem through evaluative conditioning. Martijn et al (2010), Grumm et al (2009), and Hong and Chan (2009) all were able to change participant's explicit self-esteem. Martijn et al (2010) and Hong and Chan (2009) both used the Rosenberg Self Esteem Scale, whereas Grumm et al (2009) used the State Self Esteem Scale. Baccus et al (2004) did not focus on explicit attitudes, but successfully changed implicit attitudes on self-esteem. These studies support the theory that evaluative conditioning can indeed increase attitudes toward self-esteem.

A major limitation of the present study was the sample used. The sample was a convenience sample because it consisted of college students who were required to participate in order to gain credit for their class. This sample was not representative of the general population. Another limitation of the study are the interruptions that occurred during the PowerPoint presentations. During some of the presentations, people walked into the room, which pulled the attention of the participants away from the PowerPoint. If the participants didn't view enough of the CS-US trials in the PowerPoints, then it could have influenced the conditioning process.

One strength of this study was the type of groups used. A counterbalancing group was used alongside the evaluative conditioning group. A counterbalancing group reduces the chance that the order of factors adversely influences the results. A block-sub-block control group was also incorporated into this study. This is an effective type of control group because there is no pairings of the

pronouns (CSs) and pictures (USs), so it shouldn't cause a conditioning effect.

Future research can be done on the different types of self-esteem scales, and which ones most accurately measure self-esteem. Past studies done on evaluative conditioning and self-esteem have used both the Rosenberg Self Esteem Scale and the State Self Esteem Scale. It's possible that they could have different implications. Some of the previous studies were successful at increasing explicit self-esteem, whereas other studies increased implicit self-esteem. Research could be done to examine if it's easier to change implicit or explicit attitudes on self-esteem. Although this study didn't measure contingency awareness, which is the awareness of the pairings between CS and US, other studies could do this to test if it's necessary for evaluative conditioning. Overall, much more research can be done on the use evaluative conditioning to change self-esteem and what methodology is the most effective.

References

Balas, R. & Sweklej, J. (2013). Changing prejudice with evaluative conditioning. *Polish Psychological Bulletin, 44*(4), 379-383.

Baccus, J.R, Baldwin, M.W, & Packer, D.K. (2004). Increasing implicit self-esteem through classical conditioning. *Psychological Science, 15*(7), 498-502.

Ebert, I. D., Steffens, M. C., von Stulpnagel, R., & Jelenec, P. (2009). How to like yourself better, or chocolate less: Changing implicit attitudes with one IAT task. *Journal of Experimental Social Psychology, 45*, 1098-1104.

French, A.R., Franz, T.M., Phelan, L.L., & Blaine, B.E. (2013). Reducing Muslim/Arab stereotypes through evaluative conditioning. *The Journal of Social Psychology, 153*, 6-9.

Gibson, B. (2008). Can evaluative conditioning change attitudes toward mature brands? New evidence from the implicit association test. *The Journal of Consumer Research, 35*, 178-188.

Grumm, M., Nestler, S., & von Collani, G. (2009). Changing explicit and implicit attitudes: The case of self-esteem. *Journal of Experimental Social Psychology, 45*(2), 327-335.

Hollands, G.J., Prestwich, A., & Marteau, T.M. (2011). Using aversive images to enhance healthy food choices and implicit attitudes: An experimental test of evaluative conditioning. *Health Psychology, 30*, 195-203.

Hong, Z. & Chan, D. K-S. (2009). Self-esteem as a source of evaluative conditioning. *European Journal of Social Psychology, 39*(6), 1065-1074.

Lang, P.J., Bradley, M.M., & Cuthbert, B.N. (2008). *International affective picture system (IAPS): Affective ratings of pictures and instruction manual. Technical Report A-8.* University of Florida, Gainesville, Fl.

Martijn, C., Vanderlinden, M., Roefs, A., Huijding, J., & Jansen, A. (2010). Increasing body satisfaction of body concerned women through evaluative conditioning using social stimuli. *Health Psychology, 29*(5), 514-520.

Staats, A.W. & Staats, C.K. (1958). Attitudes established by classical conditioning. *The Journal of Abnormal and Social Psychology, 57*, 37-40.

Strick, M., van Baaren, R.B., Holland, R.W., & van Knippenberg, A. (2009). Humor in advertisements enhances liking by mere association. *Journal of Experimental Psychology: Applied, 15*, 35-45.

Walther, E. & Langer, T. (2010). For whom Pavlov's bell tolls: Processes underlying evaluative conditioning. In J.P. Forgas, J. Cooper, & W. D. Crano (Eds.), *The psychology of attitudes and attitude change*, 59-74. New York, NY: Psychology Press.

Wansink, B.M., Shimizu, M., & Camps, G. (2011). What would batman eat?: Priming children to make healthier fast food choices. *Pediatric Obesity, 7*, 121-123.