

# Barnum Effect Analyzed in Relational Contexts to Priming and Self-esteem

Sean A. Page, Alic Berdin, Sirena M. Ibrahim

## Abstract

- This experiment is designed to observe the phenomena of the Barnum effect in relation to processes of human association
- We tested the effect of priming character traits across the variables of self-esteem and the concept called self-serving bias (SSB) which is an attempt to protect the ego by positively biasing their 'self' perception.
- Participants completed the Rosenberg self-esteem scale, and then told that a personality description would be generated based on their answers.
- Vignettes using negative, neutral, and positive trait words were randomly assigned for each participant to read.
- Three hypotheses were made, first it was predicted that those primed with negative trait vignette will have lower SSB than the positive vignette group.
- The second hypothesis was that those with low self-esteem primed with the negative trait vignette would show the lowest amount of SSB.
- Lastly, it was predicted that those with high self-esteem primed with positive words would show the Barnum Effect with higher SSB than those with high self-esteem in other conditions.
- Results indicated a positive correlation between those who received the negative trait vignette and lower SSB; however the negative trait vignette increased SSB for those with low-esteem.
- It was also indicated that those with high self-esteem who were primed with the positive trait vignette did have the highest SSB among those with high self-esteem.
- The literature of SSB and self-esteem have a strong association, with the added variable of priming and the use of the Barnum Effect, their association was lost in certain groups.
- Negative, neutral, and positive trait priming changes the association SSB has with high and low self-esteem.

## Introduction

- An individual's impression of oneself (self-esteem) can be attributed to a multitude of factors
- Internal attributions is the assumption that an internal factor (e.g. personality) affects behavior.
- External attributions are conceptualized as the situation being the main factor affecting behavioral outcomes (Silva & Duval, 2001).
- Self-Serving Bias (SSB) exemplifies the distinction between an individual's mentality of attributing positive successes to one's self and blaming failures on external factors.
- A positive correlation became evident when participants who contained a low self-esteem score was influenced by only negative and neutral oriented words.
- Coleman (2011) believes a SSB occurs as a desired method to maintain one's self-worth, thus making them unrealistically optimistic.
- Those who were seen as realistically pessimistic tended to possess a lower self-esteem and contain a lower SSB.
- While conducting the current research, there were important limitations that were incurred that are seldom discussed such as:
  - use of convenience samples of young adults, online research designs, placebo effects, and self-selection that may have occurred
- The current experiment**
- The purpose of this research was designed to observe the phenomena of the Barnum effect in relation to process of human association.
- This theory suggests that an individual will enable a Self-Serving Bias (SSB), which is a psychological defense mechanism to protect self-esteem (Sedikides, Campbell, Reeder, & Elliot, 1998).
- It was hypothesized that participants primed with a negative trait vignette will not commit the SSB and those who are primed with a positive trait vignette are more likely to display the characteristics of the SSB.

## Methods and Materials

### Participants

- The sample of this study included 72 women and 35 men totaling 107 participants. The average age of the participants was 26.54 years old ( $SD=13.083$ ). The subjects in the study volunteered and were not rewarded. The participants were not informed about the goals of the research that were being conducted.

### Measures

- The Rosenberg self-esteem scale was used to measure low and high self-esteem as an independent variable.
- After completing the self-esteem section participants are given one of three vignettes for each priming condition (our second independent variable).
- The vignettes are randomly assigned to each participant, each vignette is characterized in terms of the usage of positive, negative, and neutral words in the context of personality traits.
- After reading the vignettes participants are sent to a webpage consisting of a matrix of all words used regardless of vignette type (no longer in the context of personality descriptions).
- The matrix is set on a likert type scale from one (being not a description of their 'self') to seven (being an extremely good description of their 'self').
- Their response to positive, negative, or neutral oriented words acted as our dependent variables, the positive and negative selection of words categorized as our first dependent variable SSB, and the neutral word selection as our second dependent variable.
- Neutral vignette words consisted of: Passive, impartial, fair, unbiased, satisfactory, suitable.
- Positive vignette words consisted of: Generous, cheerful, ambitious, assertive, affectionate, optimistic, persistent.
- Negative vignette words consisted of: Tense, impulsive, moody, fearful, jealous, cynical, nervous.

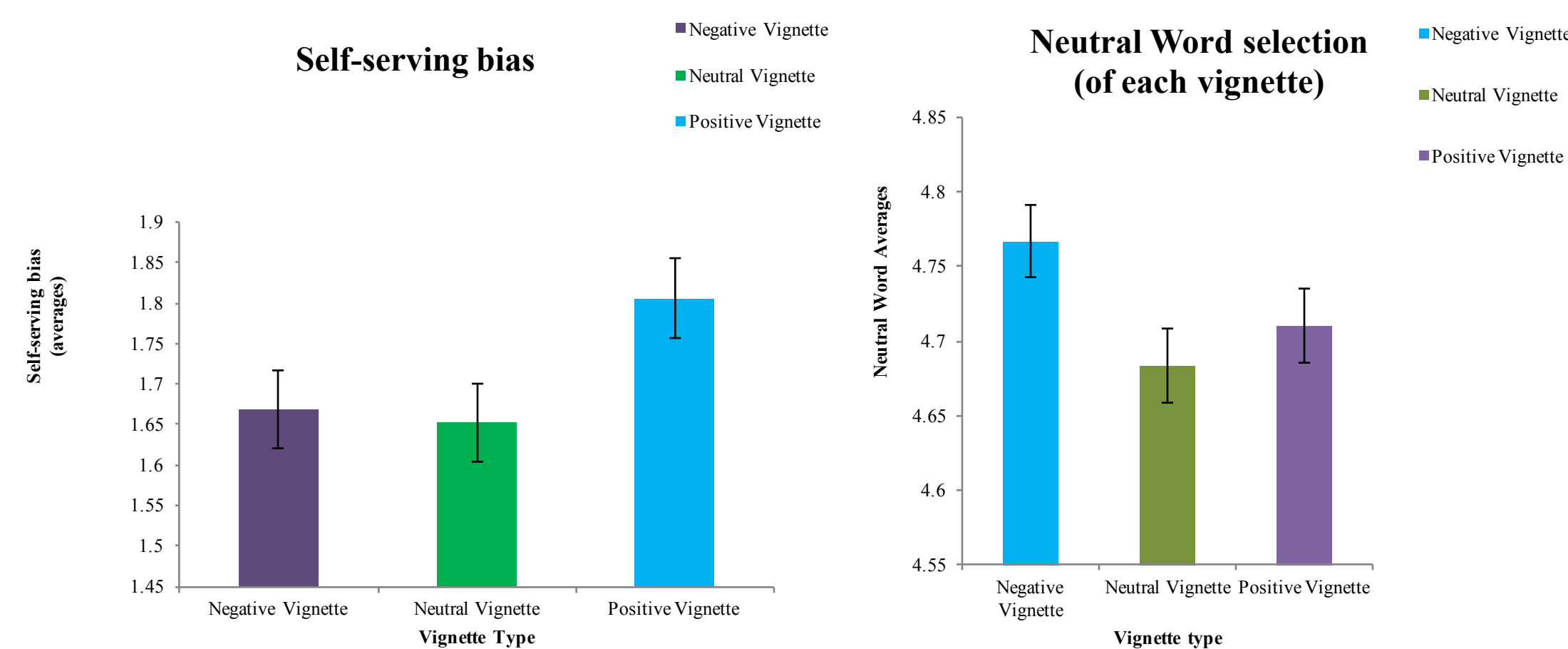


Figure 1: Mean differences for negative, neutral, and positive vignette types were randomly administered based on participant responses to their self-serving bias scores.

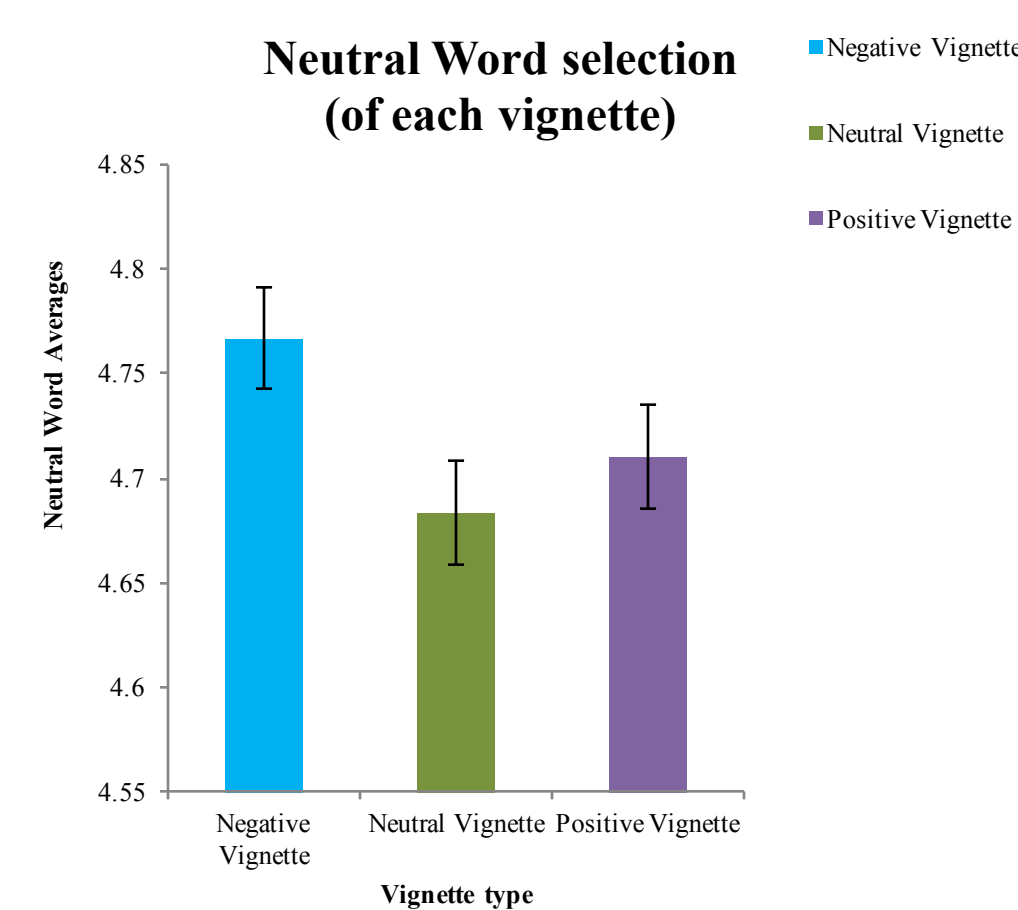


Figure 2: Participants' average scores in response to neutral oriented words based on whether they received the negative, neutral, or positive vignette type.

Table 1  
Mean Scores for Self-serving bias, Self-esteem, Word Type selection (positive, negative, neutral) for the Positive Vignette Type.

	Positive vignette	Negative Vignette	Neutral Vignette
Variable values based on vignette types:	M	M	M
Self-esteem scores	23.763	22.393	24.282
Self-serving bias scores	1.806	1.670	1.653
Positive trait selection averages	5.387	5.386	5.506
Neutral trait selection averages	4.711	4.767	4.684
Negative trait selection averages	3.553	3.676	3.835

N = 38 (positive vignette group); N = 30 (negative vignette group); N = 39 (neutral vignette group)  
Note: Higher scores indicate higher levels or averages of each variable.

## Results

- There was a positive relationship as self-esteem increased so did self-serving bias,  $r(105) = .215, p = .027$
- There was a positive relationship as self-serving bias increased, the scores toward neutral oriented words increased,  $r(107) = .247, p = .010$
- A weak correlation that was not significant was found,  $r(105) = -.116, p = .239$ . Self-esteem was not related to answers for neutral oriented words.
- A 3 x 2 between-subjects MANOVA was conducted to test whether there were differences in likert scale responses based on self-esteem (low, high) and vignette type (positive, negative, neutral).
- There was a main effect of self-esteem such that those with high self-esteem ( $M = 5.582, SE = .138$ ) had greater observed self-serving bias on positive words than those with low self-esteem ( $M = 5.209, SE = .112$ ),  $F(1, 99) = 4.417, p = .038$ .
- There was a main effect of self-esteem such that those with low self-esteem ( $M = 4.051, SE = .151$ ) scored higher on negative words than those with high self-esteem, ( $M = 3.361, SE = .185$ ),  $F(1, 99) = 8.334, p = .005$ .
- There was no significant interaction between vignette type and self-esteem for positive, ( $F(2, 99) = 2.766, p = .068$ ) negative, and neutral answers.

## Conclusion/Discussion

People were primed with one of three vignette types, and then were asked a series of questions from the Rosenberg self-esteem scale in relation to personality characteristics. We found that there was a correlation between participants who were primed with a negative trait vignette and not committing the self-serving bias to the degree of those who received a positive trait vignette. Furthermore, those who received the positive vignette displayed characteristics of the self-serving bias. The low self-esteem participants primed with the negative vignette did not display accurate personality trait descriptions compared to those given the neutral or positive vignettes. People primed with negative vignettes displayed lower accuracy ratings of personality descriptions compared to those primed with neutral and positive vignettes. It was demonstrated that people with low self-esteem were not influenced by any positive oriented words. Only a positive correlation was shown when the participants were given the negative and neutral oriented words. Those who are realistically pessimistic tended to have lower Self-serving bias, which is related to low self-esteem.

## Acknowledgements

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## References

- Rosenberg, Morris. 1989. *Society and the Adolescent Self-Image*. Revised edition. Middletown, CT: Wesleyan University Press.
- Sedikides, C., Cambell, W. K., Reeder, G. D., & Elliot, A. J. (1998). The self-serving bias in relational context. *Journal of Personality and Social Psychology, 2, 378-386*.
- Silva, P. J., & Duval, T. S. (2001). Predicting the interpersonal targets of self-serving attribution. *Journal of Experimental Social Psychology, 37, 333-340*.
- Srull, T. K., & Wyer, R. S. Jr. (1979). The role of category accessibility in the interpretation of information about persons: Some determinates and implications. *Journal of Personality and Social Psychology, 37, 1660-1667*.

- Campbell, W. K., & Sedikides, C. (1999). Self-threat magnifies the self-serving bias: A meta-analytic integration. *Review of General Psychology, 1, 23-43*.
- Coleman, M. D. (2011). Emotion and the self-serving bias. *Current Psychology, 30, 345-354*.
- Duval, T. S., & Silvia, P. J. (2002). Self-awareness, probability of improvement, and the self-serving bias. *Journal of Personality and Social Psychology, 1, 49-61*.
- Higgins, E. T., Rholes, W. S., & Jones, C. R. (1977). Category accessibility and impression formation. *Journal of Experimental Social Psychology, 13, 141-154*.
- MacDonald, D. J., & Standing, L. G. (2002). Does the self-serving bias cancel the Barnum effect? *Social Behavior and Personality, 30, 625-630*.