UC Riverside

UC Riverside Undergraduate Research Journal

Title

The Power Of Words: How Are Depression Symptoms And Labile Self-Esteem Related To Word Use?

Permalink

Journal

Authors

Gomez, Tiffany
Sillars, Angela
Davis, Elizabeth

Publication Date

2020

DOI

Copyright Information

Peer reviewed

The Power of Words: How Are Depression Symptoms and Labile Self-Esteem Related to Word Use?

Tiffany Gomez, Angela Sillars, & Elizabeth Davis
Department of Psychology

ABSTRACT

The way people talk about their emotional experiences can reveal information about how well they are functioning. Depression symptoms can include feelings of hopelessness and a saddened mood. Labile self-esteem is the fluctuations a person may experience in their self-esteem. Previous studies have found a relationship between self-esteem, depression symptoms, and word use; however, no research has yet examined the interaction between depression symptoms and labile self-esteem in predicting word use. The present study examines the main and interactive effects of depression symptoms and labile self-esteem in predicting the number of clout (language associated with confidence), achievement (goal-oriented language), and power (words related to superiority) words utilized to describe sad and happy emotional experiences. We predicted that the interaction between more depression symptoms and more labile self-esteem would relate to less use of clout, achievement, and power words when describing sad and happy emotional experiences. Participants answered surveys measuring depression symptoms and labile self-esteem. The Linguistic Inquiry and Word Count (LIWC) software was used to determine how much clout, achievement, and power words participants utilized when describing past sad and happy emotional experiences. The present study found that labile self-esteem was only significantly positively correlated with clout words used to describe a happy emotional experience. In contrast to our hypothesis, participants' self-reported depression symptoms were not linked to clout, power, and achievement words used to describe happy and sad emotional experiences. Finally, there were no significant interactions between labile self-esteem and depression symptoms in predicting words used to express a past emotional experience. The findings in this study provide a greater understanding of how factors that may affect a person's overall wellbeing, such as depression symptoms and labile self-esteem, are linked to how people recall and express past emotional experiences.

KEYWORDS: *Depression Symptoms, Labile Self-Esteem, Autobiographical Memories, Word Use, Young Adults, Emotional Experiences, CES-D, LIWC*

Tiffany Gomez

Department of Psychology

Tiffany Gomez is a fourth year Psychology major. She has been a research assistant for Dr. Elizabeth Davis's Emotion Regulation Lab since Spring 2017. This upcoming fall, Tiffany will be attending graduate school in order to obtain her PsyD in Clinical Psychology. In her graduate studies, Tiffany wants to find empirically based solutions to merge mental healthcare into the primary care setting and to further bring awareness on the importance of good mental health to the Latinx community.

FACULTY MENTOR
Elizabeth Davis, *Department of Psychology*
Dr. Davis is an Associate Professor in the Psychology Department. She received her PhD from UC Irvine. Her work examines the development of emotion regulation in childhood, to answer questions about what children can do at different ages to manage feelings, what contexts they do this within, and mechanisms that explain how and why emotion regulation is linked to healthy and unhealthy development. She is a past junior faculty recipient of the Distinguished Teaching Award from UCR's Academy of Distinguished Teachers.

THE POWER OF WORDS: HOW ARE DEPRESSION SYMPTOMS AND LABILE SELF-ESTEEM RELATED TO WORD USE

INTRODUCTION

Everyone remembers and talks about their emotional experiences differently. People may recall the joyous cheers and feelings of triumph as they walk across the graduation stage. Similarly, people may remember the profound sorrow and specific events associated with the loss of a loved one. The intricate details of these personal events can be classified as autobiographical memories (Cristofori & Levin, 2015). Tracking the specific linguistic phrases people utilize is vital because it can provide a plethora of information regarding people's personality, emotions, and can reflect how people process a past emotional experience (Tausczik & Pennebaker, 2010). Previous studies have found that people use more positive emotion words, such as "love" and "sweet", to describe a positive event, and more negative emotion words, such as "ugly" and "nasty", to describe a negative event (Kahn, Tobin, Massey, & Anderson, 2007). Past research has also found that people with a higher job position will speak more often and freely make statements about other people, while people with lower job positions are more self-focused and ask more questions (Tausczik & Pennebaker, 2010). Through these past studies, it is evident that people are very particular in their word choice, and how they speak is important. The goal of the current study is to illustrate the relationship between factors that relate to a person's overall wellbeing, such as depression symptoms and labile self-esteem, and how these factors may also relate to words used to describe an autobiographical memory.

A person's sense of self plays a critical role in various facets of their life. Labile self-esteem refers to a person's tendencies to shift or experience fluctuations in self-esteem (Dykman, 1998). Life stressors have a stronger impact on people with a high lability in self-esteem (Roberts & Kassel, 1997). People with high labile self-esteem, or a more unstable sense of self, may consistently change in how they perceive themselves. For example, a person may generally have a high self-esteem, but performing poorly on an exam can act as a catalyst for them to develop a negative perception of themselves. On the contrary, an individual with less labile self-esteem, or a more stable sense of self, may have the same self-esteem from day to day regardless of context or experience. There has been a lack of research examining the relationship between labile self-esteem and word use, thus the current study aims to take a closer look.

Along with labile self-esteem, depression can have detrimental effects on a person's overall well-being. Depression symptomatology can include increased feelings of hopelessness as well as anhedonia-a reduced interest in tasks that were once found pleasurable. Previous studies have illustrated a link between depression symptoms and the way in which people recall previous emotional events. Studies have found that people who report more depression symptoms use more first-person singular pronouns, more negative words, and fewer positive words to describe an emotional experience, in comparison to people who have never experienced a depressive episode (Rude, Gortner, & Pennebaker, 2004).

Past research has demonstrated the detrimental effects of having a highly labile self-esteem and symptoms of low-grade depression on a person's ability to function. Therefore, it is not surprising that previous studies have found a relationship between labile self-esteem and depressive symptomatology. Highly labile self-esteem has been linked to an increased risk for depressive symptoms among asymptomatic individuals following a life stressor (Roberts & Monroe, 1992). Previous studies have illustrated the link between depression symptomatology and word use, along with the link between depression symptoms and labile self-esteem; however, past research has overlooked the interactive relationship between labile self-esteem and depression symptoms, which may be a stronger joint predictor of word use. The research conducted in the present study will provide more knowledge on how specific wellbeing factors can interact and permeate into the way people communicate their past experiences.

The Current Study
The current study examines the direct and interactive relationships among labile self-esteem, depression symptoms, and words used to describe past happy and sad emotional experiences. My study will investigate four main hypotheses. I hypothesized that participants with more labile self-esteem would utilize fewer clout, power, and achievement words in contrast to participants with more stable self-esteem. I hypothesized that participants would use fewer clout, power, and achievement words as reported depressive symptoms increased. Based on previous studies, I hypothesized that labile self-esteem and depressive symptoms would be positively correlated, such that people reporting high labile self-esteem would report more depressive symptoms. Finally, when examining the interactive relationship between labile self-esteem and depression symptoms in predicting word use, I hypothesized that people with the combination of low labile self-esteem and less depressive symptoms would use more clout, power, and achievement words than people with high labile self-esteem and greater depressive symptoms.

METHODS

Participants
Participants were 90 young adults (*M*age = 19.41 years, *SD* = 1.56, range: 17-26 years old; 62 women), who participated in the study in exchange for research credit for an introductory Psychology course. Racial and ethnic distribution varied; about 41% of partic-

ipants identified as Asian, 19% identified as Hispanic/Latinx, 13% of participants identified being White/Caucasian, 2% reported being Black/African American, 7% identified with more than one ethnicity, and 3% reported being part of an ethnic group not listed above. Approximately 15% of participants did not report their race/ethnicity.

Procedure

Undergraduate participants came to the Emotion Regulation Lab at the University of California, Riverside for a two-hour single session study. Informed consent was obtained from all participants before the study started. Participants were asked to complete questionnaires that asked about their self-esteem and depression symptoms, as well as other family and personal characteristics. Participants completed various computer tasks and in-person tasks including an interview about their emotional experiences (the Autobiographical Emotion Interview: AEI), described below. At the end of the study, participants were debriefed, thanked, and received research credit for their participation. All procedures were completed in English.

Measures

Labile Self-Esteem Scale (LSE). Participants responded to a five-question survey. The first four items in the survey were directly derived from Dykman's original LSE scale and directly measure the fluctuations in self-esteem a person may experience on a daily basis (Dykman, 1998). These four items included questions such as "How I feel about myself stays pretty much the same day to day" and "Compared to most people, my self-esteem changes rapidly." In addition to these four items, the present study included participants' responses to a single additional item, "I have a high self-esteem," that was not on Dykman's original LSE scale. Participants utilized a 7-point scale (1= strongly disagree; 7 = strongly agree) for all questions. Reliability for the five items for this measure was good (α = .631); however, the reliability for the first four items from Dykman's original scale was stronger (α = .866).

CES-D. Participants completed the Center for Epidemiologic Studies Depression Scale (CES-D) originally developed by former members of the Center for Epidemiologic Studies (CES), Ben Locke and Peter Putnam (Radloff, 1977). This 20-item questionnaire asks participants questions related to depression symptoms including feelings of worthlessness and depressed mood. Participants wrote their responses utilizing a scale from 0 to 3, in which 0 is "rarely or none of the time" and a 3 is "most or all of the time." The written survey included questions such as "I thought my life had been a failure" and "I had trouble keeping my mind on what I was doing." Internal consistency for this questionnaire was strong (Cronbach's α = .88).

Autobiographical Emotion Interview. The Autobiographical Emotion Interview (AEI) directly asks participants to recall an event in which they felt sad, scared, angry, and happy (Sillars & Davis, 2017). A research assistant would ask about each emotion; in turn, the procedure for each emotion phase of the interview was the same. The research assistant asked the participant to think about a time in which they felt a particular emotion, and to think of all the little details that accompany that event. After leaving the participant alone in the room for 2-3 minutes to think, the research assistant would reenter the room and ask the participant to verbally describe a past emotional experience based on the prompted emotion. Participants were then asked whether the event was something "they could handle" or if the event "was just too much;" however, participants' responses to this question were not included in the data analyses of the current report. Participants' descriptions of past sad and happy emotional experiences were examined for the number of clout, power, and achievement words used. The interview took approximately 15-20 minutes to complete and was recorded.

Data Processing

LIWC. The Linguistic Inquiry Word Count (LIWC) processing system categorizes various linguistic phrases in a multitude of research settings (Tausczik & Pennebaker, 2010). The LIWC program contains dictionaries that categorize and identify the different types of words people use. Participants' verbal descriptions of their past sad and happy emotional experiences during the AEI, were transcribed into an excel sheet. Participants' responses were distinctly linked to a unique ID number to maintain anonymity. This excel sheet was then analyzed by the LIWC software to determine the number of clout, power, and achievement words participants used to describe past happy and sad emotional experiences. "Clout" language is associated with confidence and status and is characterized by use of pronouns such as "we" and "you," and less use of first-person pronouns such as "I" (Kacewicz, Pennebaker, Davis, Jeon, & Graesser, 2013). Power language terms relate to dominance and can include words such as "superior" and "bully" (Pennebaker, Boyd, Jordan, & Blackburn, 2015). Achievement words reference triumphs and failures; this can include words such as "success", "win", and "better" (Pennebaker, Boyd, Jordan, & Blackburn, 2015).

RESULTS

Results are organized into sections based on the research questions and hypotheses described above. First, the individual links between labile self-esteem, depression symptoms, and the number of clout, power, and achievement words used to describe a happy and sad autobiographical memory will be described. Next, results will illustrate the link between depression symptoms and labile

self-esteem. Finally, analyses to examine the interaction between depression symptoms and labile self-esteem as a predictor for word use are presented

Correlations

Labile self-esteem and word use. Labile self-esteem was significantly positively associated with the number of clout words people used to describe a happy emotional experience ($r = .258$, $p = .016$). This indicates that greater fluctuations in self-esteem were associated with using more confidence and expertise words when describing a happy emotional experience. There was no significant association between labile self-esteem and the number of achievement ($r = .030$, $p = .786$) and power ($r = -.005$, $p = .960$) words used to describe a happy experience. Labile self-esteem was not significantly associated with clout ($r = -.086$, $p = .424$), achievement ($r = -.072$, $p = .505$), or power ($r = -.048$, $p = .656$) words utilized to describe a sad experience.

Depression symptoms and word use. Self-reported depression symptoms were not significantly associated with the number of clout ($r = -.034$, $p = .771$), achievement ($r = .060$, $p = .611$), or power ($r = -.045$, $p = .705$) words participants used when describing a happy emotional experience. Self-reported depression symptoms were also not significantly associated with the number of clout ($r = -.069$, $p = .552$), achievement ($r = -.007$, $p = .952$), or power ($r = .006$, $p = .956$) words used to describe a sad emotional experience.

Is labile self-esteem associated with depression symptomatology? Labile self-esteem was significantly positively associated with depression symptoms ($r = .676$, $p < .001$), such that greater fluctuations in self-esteem were associated with more depression symptoms, as self-reported on the CES-D.

Linear Regressions Models Predicting Word Use

For each of the following linear regression models predicting word use, we utilized the same organization of variables. In the first step, we entered both labile self-esteem and depression symptoms to determine if either variable significantly predicted clout, power, and achievement words. In the second step, we entered the interaction between depression symptoms and self-esteem in predicting word use.

Clout words used to describe a happy experience. The first step was significant $F (2, 71) = 4.047$, $p = .022$, $R^2 = .102$. Labile self-esteem was a significant predictor for the number of clout words used to express a happy experience. ($b = .9.312$, $t = 2.828$, $p = .006$); however, depression symptoms did not significantly predict the number of clout words used to explain a happy experience ($b = -1.112$, $t = -2.079$, $p = .041$). When entering the interaction of

depression at the second step, this step was not significant $F\Delta (1, 70) = .021$, $p = .886$, $R^2\Delta = .103$, and the interaction effect was also not significant ($b = .038$, $t = .144$, $p = .886$). This finding suggests that labile self-esteem and depression symptomatology did not interact to predict word use. Moreover, incorporating the interaction in step two did not improve the model fit.

Clout words used to describe a sad experience. The first step of the model $F (2, 73) = .221$, $p = .802$, $R^2 = .006$, was not significant. Labile self-esteem ($b = -1.018$, $t = -.300$, $p = .765$) and depression symptoms ($b = -.140$, $t = -.254$ $p = .800$) did not significantly predict clout words used to describe a sad autobiographical memory. The second step was not significant $F\Delta (1, 72) = .764$, $p = .385$, $R^2\Delta = .016$, indicating that labile self-esteem and depression symptoms did not interact to predict clout words used to describe a sad experience ($b = .237$, $t = .874$, $p = .385$).

Achievement words used to describe happy experience. The first step of the model $F (2, 71) = .129$, $p = .880$, $R^2 = .004$ was not significant. Labile self-esteem ($b = .004$, $t = .022$, $p = .982$) and depression symptoms ($b = .010$, $t = .369$, $p = .713$) did not significantly predict achievement words used. The second step of the model was not significant $F\Delta (1, 70) = 2.154$, $p = .147$, $R^2\Delta = .033$. Labile self-esteem and depression symptoms did not interact to predict achievement words used to describe a happy experience ($b = -.019$, $t = -1.468$, $p = .147$).

Achievement words used to describe a sad experience. The first step of the model $F (2, 73) = .104$, $p = .902$, $R^2 = .003$ was not significant. Labile self-esteem ($b = -.070$, $t = -.451$, $p = .653$) and depression symptoms ($b = .006$, $t = .249$, $p = .804$) did not significantly predict the number of achievement words used to describe a sad experience. The second step of the model was also not significant $F\Delta (1, 72) = .394$, $p = .532$, $R^2\Delta = .005$. Labile self-esteem and depression symptoms did not interact to predict achievement words used to describe a sad experience ($b = -.008$, $t = -.628$, $p = .532$).

Power words utilized to describe a happy emotional experience. The first step of the model $F (2, 71) = .209$, $p = .812$, $R^2 = .006$ was not significant. Neither self-esteem ($b = .076$, $t = .523$, $p = .602$) nor depression symptoms ($b = -.015$, $t = -.629$, $p = .532$) significantly predicted power words used. The interaction entered in the second step was not significant for the model step $F\Delta (1, 70) = .120$, $p = .730$, $R^2\Delta = .008$ and for the specific interaction effect ($b = -.004$, $t = -.346$, $p = .730$).

Power words utilized to describe a sad emotional experience. The first step of the model was not significant $F (2, 73) = .023$, $p = .977$, $R^2 = .001$. Labile self-esteem ($b = -.027$, $t = -.209$, $p = .835$)

and depression symptoms ($b = .004$, $t = .178$, $p = .859$) did not significantly predict power words used to express a sad experience The second step of the model was not significant $F\Delta$ (1, 72) = .701, $p = .405$, $R^2\Delta = .010$. Labile self-esteem and depression symptoms did not interact to predict power words used to describe a sad emotional experience ($b = -.009$, $t = -.837$, $p = .405$).

DISCUSSION

The current study examined the direct and interactive relationships among labile self-esteem, depression symptoms, and the number of clout, power, and achievement words utilized to describe past happy and sad emotional experiences. Four hypotheses were investigated. First, we hypothesized that participants with more labile self-esteem would use fewer clout, power, and achievement words to describe sad and happy emotional experiences. Second, that there would be less use of clout, power, and achievement words as depression symptoms increased. Third, I predicted that there would be a positive association between high labile self-esteem and more self-reported depression symptoms. Fourth, I hypothesized that the combination of high labile self-esteem and more self-reported depression symptoms would be linked to fewer clout, power, and achievement words used to describe sad and happy emotional experiences. Overall, hypotheses were partially supported. Each finding is discussed in turn below.

In contrast to our original hypotheses, the present study found that labile self-esteem was positively associated with the number of clout words used to describe a happy experience. In other words, the more people's self-esteem fluctuated, the more clout words they used when talking about a happy autobiographical memory. Previous studies have found that people high in clout language, speak with confidence and greater assertiveness, while people low in clout language are more uncertain and hesitant (Jordan, Sterling, Pennebaker, & Boyd, 2019). It is possible that this relationship emerged because participants with a highly variable sense of self may have referenced autobiographical memories that reaffirm their positive views of themselves. As a result, participants with more labile self-esteem may have had a greater boost of confidence and joy as they described their happy autobiographical memory than participants with low labile self-esteem. These findings not only provide more knowledge on the links between labile self-esteem and word use, but further emphasize the idea that aspects of people's wellbeing, such as self-esteem, may be reflected in the way people communicate and process their past experiences. Moreover, these findings imply the idea that people with more labile self-esteem may speak differently about their past happy emotional experiences and may have a potential bias in the types of memories they recall, in contrast to people with low labile self-esteem; however, more research is needed on the relation between labile self-esteem

and other word categories coded by LIWC.

In line with our hypothesis, labile self-esteem and depression symptoms were positively associated, such that greater fluctuations in sense of self were linked to more self-reported depression symptoms. This is consistent with literature indicating that people with more fluctuations in self-esteem have an increased risk for depressive symptoms (Roberts & Monroe, 1992). A key symptom of depression is feeling worthless, and these feelings are often also experienced by people with low self-esteem; therefore, it is not surprising that someone with highly variable self-esteem may concurrently experience more depressive symptoms. The findings in the present study are important because clinicians and researchers can gain a better understanding of the interconnected nature of these variables. Moreover, clinicians can consider both facets of well-being when diagnosing and treating psychopathology symptoms.

The insights from the present study findings are tempered by some limitations. For example, the LSE questionnaire used here included an extra item, "I have high self-esteem." Including this extra question, that was not on the original LSE scale developed by Dykman, may have altered the way participants thought about and reported their labile self-esteem. The first four questions for the scale directly (and reliably) measure labile self-esteem; however, the added fifth item, "I have high self-esteem," appears to only measure overall levels of participants' self-esteem rather than lability in self-esteem. The effects of this extra item are further demonstrated in the scale reliability calculations. The scale containing all five questions had acceptable reliability ($\alpha = .631$); however, the reliability computed using only the first four questions from the original Dykman LSE scale was improved ($\alpha = .866$). Thus, the present study may not have received an accurate measure of participants' labile self-esteem because participants answered all five questions. We utilized the original four questions on Dykman's LSE scale in the measure included in the correlations and regression models, ultimately accounting for the possible effects the fifth question may have had on the results.

Since participants had quite a bit of liberty in terms of the memories they recalled and talked about during the AEI, it is possible that participants had a particular bias in recalling memories. In other words, some participants may have disclosed more personal memories while other participants may have been more private. Moreover, some participants may have been more detailed in their responses. As a result, the types of memories participants recalled, and the level of detail provided may have affected the word categorization by the LIWC program. Despite this limitation, it was important to have provided participants with the latitude to speak freely in order to best capture how people would naturally communicate about a past emotional experience. Moreover, responses

The Power of Words: How Are Depression Symptoms and Labile Self-Esteem Related to Word Use

were still structured, given that the AEI prompted participants to think about a specific memory linked to a particular emotion.

The present study adds to a growing body of research on the direct and interactive links among depression symptoms, labile self-esteem, and word use. Future research can expand on the link between depression symptoms and words used to describe the experience of other emotions, such as anger and fear. While the present study did not find an interaction between depression symptomatology and labile self-esteem in predicting word use, future research can further examine if these variables interact to predict other linguistic phrases coded by LIWC. Communication is powerful. Tracking word use enables researchers to gain a better understanding of the way people express a past emotional experience and what that means for personal wellbeing.

ACKNOWLEDGMENTS

REFERENCES

Cristofori, Irene., & Levin, Harvey S. (2015). Chapter 37 - Traumatic brain injury and cognition. *Handbook of Clinical Neurology*, 128, 579-611. DOI: https://doi.org/10.1016/B978-0-444-63521-1.00037-6

Dykman, M. Benjamin. (1998). Integrating Cognitive and Motivation Factors in Depression: Initial tests of Goal-Orientation Approach. *Journal of Personality and Social Psychology*, 74 (1), 139-158. DOI: 10.1037//0022-3514.74.1.139

Jordan, Kayla N., Sterling, Joanna., Pennebaker, James W., & Boyd, Ryan L. (2019). Examining long-term trends in politics and culture through language of political leaders and cultural institutions. *Proceedings of the National Academy of Sciences of the United States of America*, 116 (9), 3476-381. DOI: https://doi.org/10.1073/pnas.1811987116

Kacewicz, Ewa., Pennebaker, James W., Davis, Matthew., Jeon, Moongee., & Graesser, Arthur C. (2013). Pronoun Use Reflects Standings in Social Hierarchies. *Journal of Language and Social Psychology*, 33 (2), 125-143. DOI: https://doi.org/10.1177/0261927X13502654

Kahn, Jeffrey H., Tobin, Renee M., Massey, Audra E., & Anderson, Jennifer A. (2007). Measuring Emotional Expression with the Linguistic Inquiry and Word Count. *The American Journal of Psychology*, 120 (2), 263-286. DOI: 10.2307/20445398

Pennebaker, J.W., Boyd, R.L., Jordan, K., & Blackburn, K. (2015). The Development and Psychometric Properties of LIWC2015. Austin, TX: University of Texas at Austin.

Radloff, Lenore Sawyer. (1977). The CES-D Scale: A Self-Report Depression Scale for Research in the General Population. A*pplied Psychological Measurement*, 1 (3), 385-401. DOI: https://doi.org/10.1177/014662167700100306

Roberts, John E., & Kassel, Jon D. (1997). Labile Self-Esteem, Life Stress, and Depressive Symptoms: Prospective Data Testing A Model of Vulnerability. *Cognitive Therapy and Research*, 21 (5), 569-589. DOI: https://doi.org/10.1023/A:1021861503072

Roberts, J.E., & Monroe, S.M. (1992). Vulnerable self-esteem and depressive symptoms: Prospective findings comparing three alternative conceptualizations. *Journal of Personality and Social Psychology*, 62 (5), 804-812. DOI: https://doi.org/10.1037/0022-3514.62.5.804

Rude, S. S., Gortner, E. M., Pennebaker, J. W. (2004). Language use of depressed and depression-vulnerable college students. *Cognition and Emotion*, 18 (8), 1121-1133. DOI: 10.1080/02699930441000030

Sillars, Angela, & Davis, Elizabeth L. (2017). Children's challenge and threat appraisals vary by discrete emotion, age, and gender. *International Journal of Behavioral Development*, 42 (5), 506-511. DOI: https://doi.org/10.1177/0165025417739178

Tausczik, Yla R., & Pennebaker, James. (2010). The Psychological Meaning of Words: LIWC and Computerized Text Analysis Methods. *Journal of Language and Social Psychology*, 29 (1), 24-54. DOI: 10.1177/0261927X09351