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Title

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

Permalink

<https://escholarship.org/uc/item/41m2g3j1>

Author

Gomez, Tiffany

Publication Date

2021-01-08

Data Availability

The data associated with this publication are within the manuscript.

By

A capstone project submitted for
Graduation with University Honors

University Honors
University of California, Riverside

APPROVED

Dr.
Department of

Dr. Richard Cardullo, Howard H Hays Jr. Chair, University Honors

Abstract

Acknowledgements

I would like to extend my sincerest gratitude to my incredible faculty mentor, Dr. Elizabeth Davis, for her hard work and dedication to help bring this project to fruition. The guidance and constant support I have received these past three years in her research lab have allowed me to gain a wealth of knowledge and has enabled me to grow as a researcher, student, and individual. Thank you to my amazing graduate student mentor, Angela Sillars, for always encouraging me and for taking the time to help me gain a stronger understanding of the various components of this project. Thank you to the graduate students and research assistants in the Emotion Regulation Lab. A big thank you to my mom for always encouraging me, being there for me through thick and thin, and for always believing in me. Finally, thank you to my family for their constant support and for always pushing me to reach my greatest potential. Without the vital contributions of these individuals, this project would not have been possible – and so, thank you again. The findings of the present study have been presented virtually at the University of California Riverside Undergraduate Research, Scholarship, and Creative Activity Symposium from May 18-May 29, 2020 as well as the R’PSYC Conference on May 21, 2020.

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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 in a higher-ranking job position will speak more often and freely make statements about other people, while people in lower ranking 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.

The way people communicate their personal experiences can vary across multiple modalities. Verbal communication provides people a medium to openly express their emotions, thought processes, and belief systems. Research has indicated that autobiographical memories contain two primary components: a verbal narrative that allows people to communicate these personal memories as well as visual imagery that enables people to make a distinction between

autobiographical memories and other types of memories (Rubin, 1995). Past research has found that people with certain mood and personality disorders communicate and recall past emotional experiences in a distinct manner. In one particular study, participants diagnosed with Post-Traumatic Stress Disorder (PTSD) were asked to provide a written account of a past trauma; participants who provided greater detail in their accounts of past trauma were ultimately more likely to utilize words associated with death, helplessness, and fear (Hellowell & Brewin, 2004). Similarly, when patients with Borderline Personality Disorder (BPD) were asked to describe specific memories relating to social rejection, many of these patients utilized more anger-related diction and their recollection of these memories were less specific in comparison to patients with Major Depressive Disorder (MDD) (Rosenbach & Renneberg, 2015). In essence, the words people use when describing their past emotional experiences can reveal much more than what is merely being presented at face value.

The manner in which people interpret and communicate their experiences is heavily intertwined with their emotions and overall functioning. The broaden-and-build theory of positive emotions states that discrete positive emotions, such as joy and contentment, can broaden someone's point of view (Fredrickson, 1998). Other theoretical perspectives explain the purpose of negative emotions in terms of the specific action tendencies they promote; in essence, negative emotions lead to a narrowed set of specific actions and choices (Fredrickson, 1998). For example, if a person experiences fear, this may cause them to feel the urge to escape from a particular situation such as in the case of feeling anxious before a job interview. Previous research has found links among self-esteem, depression symptoms, and word use. Utilizing Fredrickson's broaden-and-build hypothesis as a possible framework for how people recall memories, it is possible that factors such as depression symptomatology and highly labile self-

esteem may dampen a person's ability to communicate the positive aspects of a particular emotional experience.

A person's sense of self plays a critical role in various facets of their life. Self-esteem, the way in which people view and judge themselves, can fall on a spectrum ranging from high and low levels. The experience of high self-esteem often reflects a compassionate, balanced, and positive view of the self (Baumeister, Campbell, Krueger, & Vohs, 2003). In contrast, the experience of low self-esteem tends to relate to a more negative and critical perception of the self (Baumeister, Campbell, Krueger, & Vohs, 2003). In essence, one's self-esteem has the capacity to generate feelings of inadequacy or low self-confidence during times of high stress, like when taking an exam or preparing for a job interview.

Another dimension of self-esteem that researchers are now placing focus on is labile self-esteem. Labile self-esteem looks at a person's tendencies to shift or experience fluctuations in self-esteem (Dykman, 1998). People with more labile self-esteem, or an unstable sense of self, may consistently change in how they perceive themselves. For example, a person with more labile self-esteem may generally have a high self-esteem but performing poorly on an exam can act as a catalyst for them to develop a negative sense of self. In contrast, an individual with less labile self-esteem, or a more stable sense of self, may have the same sense of self from day to day regardless of context or experience. More labile self-esteem has been linked to an increased risk for depressive symptoms among asymptomatic individuals following a life stressor, while people with low labile self-esteem did not show a special sensitivity to stress (Roberts & Monroe, 1992). Life stressors also have a stronger impact on people with more labile self-esteem (Roberts & Kassel, 1997).

Previous research has indicated that self-esteem is related to how people talk about their prior emotional experiences, but there has been a lack of attention to the link between labile self-esteem and word use. People with high self-esteem are more likely to remember certain events in more self-aggrandizing ways (Christensen, Wood, & Barrett, 2003). Often, people who recall past experiences tend to do so with the intent of enhancing their current self. Research has found that people with higher self-esteem have a tendency to recall more positive events as a way of verifying their positive sentiments about themselves during times of distress (Sutin & Robbins, 2008). In essence, if someone with high self-esteem begins feeling doubtful or inadequate (resulting, for example from, poor performance on an exam), they can try to remember “evidence” from past successes to reaffirm their sense of self and buffer the negative affect.

Along with self-esteem, depression can have detrimental effects on an individual’s overall well-being. Depression symptomatology can include increased feelings of hopelessness as well as anhedonia, a lack of positive affect and reduced interest in tasks that were once found to be pleasurable. Past research has indicated that people who report more depressive symptoms tend to experience fewer positive emotions (Gruber, Oveis, Keltner, & Johnson, 2011). Moreover, people with higher depressive symptomatology tend to experience less positive emotions such as happiness and pride, even in the face of positive stimuli, such as watching an amusing film (Gruber, Oveis, Keltner, & Johnson, 2011). Past research has also indicated a link between depressive symptoms and the way in which people recall previous emotional events. Older adults who were nondepressed have a greater bias towards retrieving more positive memories rather than negative memories (Serrano, Latorre, & Gatz, 2006). Furthermore, adults with depression tend to take longer to retrieve memories in comparison to nondepressed adults,

which could indicate cognitive impairment associated with depression (Serrano, Latorre, & Gatz, 2006).

In regard to the specific language people with depression utilize when recalling these emotional experiences, studies have found that people who report more depression symptoms use more first person singular pronouns, more negative words, and fewer positive words in comparison to people who have never experienced a depressive episode (Rude, Gortner, & Pennebaker, 2004). According to the Self-Awareness Theory, it is possible that solely focusing on the self can lead to more negative emotions and self-blame (Pyszczynski & Greenberg, 1987). Suicidal ideation and attempts are also a key symptom of depression. Researchers have found that suicidal poets tend to use more first-person singular pronouns as well (Wiltsey Stirman & Pennebaker, 2001). Therefore, it is not that surprising that people who report more depression symptoms also have a propensity to use first-person singular pronouns.

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

Several studies within the past decade have indicated a correlation between the specific words an individual utilizes when recalling a past emotional experience and their depressive symptoms. Previous studies have also illustrated a link between more labile self-esteem and depressive symptoms (Roberts & Monroe, 1992). Despite these findings, past research has overlooked whether labile self-esteem and depressive symptomatology interact to jointly have implications for the specific linguistic phrases someone uses when recalling a past emotional experience. Thus, the present study aims to examine (1) the direct relationship between labile self-esteem and word use, (2) the direct relationship between depression symptoms and word use, and (3) the interaction of self-esteem and depression symptomatology in relation to the specific language a person utilizes. Specifically, interview data from 90 UCR undergraduate students who were asked to recall different emotional experiences from their past will be examined for the number of “clout” words (specific language illustrating expertise and confidence), the number of “power” words (these illustrate dominance and status), and the number of words associated with achievement (these reference triumphs and failures) used as they recall sad and happy emotional experiences.

I had four primary hypotheses in this study. First, I expected that self-esteem and depressive symptoms would be positively correlated, such that people reporting more labile self-esteem would report more depressive symptoms, whereas people reporting low labile self-esteem would report fewer depressive symptoms. The next three hypotheses I generated reflect the expected links between labile self-esteem, depressive symptoms, and word use during an interview about a past emotional experience. Based on the symptoms associated with depression including anhedonia and persistent sense of hopelessness, I hypothesized that participants would

use fewer words associated with clout, power, and achievement as reported depressive symptoms increased. I hypothesized that participants with more labile self-esteem would utilize less language linked to clout, power, and achievement in contrast to participants with less labile self-esteem. Finally, when looking at 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 the combination of more labile self-esteem and greater depressive symptoms.

Methods

Participants

Participants included 90 young adults ($Mage = 19.41$ 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 participants endorsed being Asian, 19% endorsed being Hispanic/Latinx, 13% of participants endorsed being White/Caucasian, nearly 2% endorsed being Black/African American, 2% endorsed being Native Hawaiian/Other Pacific Islander, 7% endorsed being more than one ethnicity, and 3% endorsed being part of an ethnic group not listed above. Nearly 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 completed various computer tasks and in-person tasks including an interview about their emotional experiences (the Autobiographical

Emotion Interview; AEI), described below. The specific words and linguistic phrases utilized by participants in this interview were then processed with the Linguistic Inquiry and Word Count (LIWC) software program. Participants were also asked to complete questionnaires that asked about their self-esteem and depression symptoms, as well as other family and personal characteristics. 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 provided responses to a five-question survey. The first four items in the survey were directly derived from Dykman's original LSE scale and 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 ($\alpha = .631$); however, the reliability for the first four items from Dykman's original scale was stronger ($\alpha = .866$).

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 responded on 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.” The CES-D score is the sum of the 20 questions in which scores range from 0-60. A score of 16 or more has been classified by researchers as the cutoff point for meaningful level of depressive symptoms (Radloff & Locke, 1980). Internal consistency for this questionnaire was very good (Cronbach’s $\alpha = .88$).

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 individual emotion; 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 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. Transcriptions were then analyzed by the LIWC software in order 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. More “clout” language is characterized by more 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

The present study aims to illustrate the link between labile self-esteem and depression symptomatology. Furthermore, the current study aims to examine the link between labile self-esteem, depression symptoms, and the specific linguistic patterns an individual utilizes when describing sad and happy emotional experiences. Along with this, the current study aims to answer the question of whether or not a specific interaction between labile self-esteem and self-reported depression symptoms is associated with word use in the context of happy and sad autobiographical memories. The results are organized into distinct sections. First, I outline the gender differences and participant scores on the CES-D questionnaire. I then illustrate the correlations among our study variables. Finally, I outline how the interaction between depression symptomatology and labile self-esteem is linked to word use.

Gender differences.

Previous research has indicated that women have higher rates of depression than men (Cyranowski, Frank, Young, et al., 2000) and men have higher self-esteem than women

(Zuckerman, Li, & Hall, 2016); therefore, the current study examined possible gender differences in self-esteem and depression symptomatology.

Gender differences in labile self-esteem and depression symptoms. There were no significant gender differences between women ($M = 14.265$, $SD = 8.193$) and men ($M = 13.391$, $SD = 9.675$) when reporting symptoms of depression ($t = -.560$, $p = .171$). There were also no significant gender differences in labile self-esteem ($t = -.540$, $p = .433$) between men ($M = 2.440$, $SD = 1.596$) and women ($M = 2.6228$, $SD = 1.323$). This lack of gender differences contrasts with findings from other studies demonstrating that women tend to report higher rates of depression than men (Cyranowski, Frank, Young, et al., 2000), and that men tend to report higher self-esteem than women (Zuckerman, Li, & Hall, 2016).

Participants' Self-Report Depression Symptoms

Participants self-reported their depression symptoms using the CES-D. A score of 16 or more is considered to be clinically meaningful (Radloff & Locke, 1980). The severity of one's depression is based on the number of self-reported depression symptoms; depression can vary from mild (a score of 16 to 20) to moderate (a score of 21 to 25) to very severe (a score of 26 to 60) (Chawastiak, Ehde, Gibbons, Sullivan, Bowen, & Kraft, 2002). Of the 77 participants who provided information about depression symptoms, 26 participants scored 16 or higher on the CES-D scale. Twelve participants had mild depression (between 16 to 20 symptoms). Five participants had moderate depression, scoring between 20-25. Finally, nine participants reported more than 26 symptoms, consistent with severe levels of depression.

Correlations

Is labile self-esteem associated with depression symptomatology?

As hypothesized, 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.

Is labile self-esteem associated with word use in describing emotional experiences?

Happy. 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 use of 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.

Sad. Labile self-esteem was not significantly associated with clout ($r = -.086, p = .424$), achievement ($r = -.072, p = .505$), and power ($r = -.048, p = .656$) words used describe a sad emotional experience.

Are depressive symptoms associated with word use in describing emotional experiences?

Happy. Self-reported depression symptoms were not significantly associated with the number of clout ($r = -.034, p = .771$), achievement ($r = .60, p = .611$), or power ($r = -.045, p = .705$) words participants used when describing a sad emotional experience.

Sad. Self-reported depression symptoms were 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.

Summary of correlational results.

As predicted, labile self-esteem and depression symptoms were positively correlated. In partial support of my hypothesis, labile self-esteem was associated with clout words only when

participants described a happy emotional experience. In contrast to my hypothesis, depression symptoms were not associated with the number of clout, achievement, and power words participants utilized when describing sad and happy emotional experiences.

Linear Regressions Models Predicting Word Use.

For the following linear regression models predicting word use, we utilized the same organization of variables throughout. At the first step, we entered labile self-esteem and depression symptoms. At the second step, we entered the interaction of depression symptoms and self-esteem in predicting word use.

Clout words utilized to describe a happy emotional experience. At the first step of the model, we entered labile self-esteem and depression symptoms. This 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 utilized to express a happy emotional experience ($b = .9.312, t = 2.828, p = .006$). Depressive symptoms also significantly predicted the number of clout words utilized by participants to express a happy emotional experience ($b = -1.112, t = -2.079, p = .041$). At the second step, I entered the interaction of depression symptoms and labile self-esteem. This step was not significant $F\Delta(1, 70) = .021, p = .886, R^2\Delta = .103$, and the interaction effect was also not significant ($b = .038, t = .144, p = .886$), suggesting 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 utilized to describe a sad emotional experience. At the first step of the model we entered labile self-esteem and depression symptoms $F(2, 73) = .221, p = .802, R^2 = .006$, but this step was not significant. Labile self-esteem did not significantly predict clout words used to describe a sad emotional experience ($b = -1.018, t = -.300, p = .765$). Depression

symptoms did not significantly predict clout words utilized in a sad autobiographical memory ($b = -.140, t = -.254, p = .800$). At the second step, we added the interaction between depression symptoms and labile self-esteem. This step was also not significant $F\Delta (1, 72) = .764, p = .385, R^2\Delta = .016$. The interaction between labile self-esteem and depression symptoms did not predict clout words used during the sad emotional experience ($b = .237, t = .874, p = .385$), thus, no significant effects emerged from this model.

Achievement words utilized to describe happy emotional experience. For the first step of the model we entered labile self-esteem and depression symptoms $F (2, 71) = .129, p = .880, R^2 = .004$, however this step was not significant. This step revealed that labile self-esteem did not significantly predict achievement words used to express a happy autobiographical memory ($b = .004, t = .022, p = .982$). Depression symptoms did not significantly predict achievement words utilized to express a happy emotional experience ($b = .010, t = .369, p = .713$). At the second step, we analyzed the interaction between depression symptoms and labile self-esteem. This step was not significant $F\Delta (1, 70) = 2.154, p = .147, R^2\Delta = .033$. The interaction between labile self-esteem and depression symptoms did not predict achievement words used to describe a happy emotional experience ($b = -.019, t = -1.468, p = .147$). Thus, no effects emerged from this model either.

Achievement words utilized to describe a sad emotional experience. At the first step of the model we entered labile self-esteem and depression symptoms $F (2, 73) = .104, p = .902, R^2 = .003$, but this step was not significant. Self-esteem did not significantly predict achievement words used to express a sad autobiographical memory ($b = -.070, t = -.451, p = .653$). Depression symptoms also did not significant predict the number of achievement words used to describe an emotional experience ($b = .006, t = .249, p = .804$). At the second step of the

model, we evaluated the interaction between depression symptoms and labile self-esteem. This step was not significant $F\Delta(1, 72) = .394, p = .532, R^2\Delta = .005$. The interaction between labile self-esteem and depression symptoms did not predict achievement words used to describe a sad emotional experience ($b = -.008, t = -.628, p = .532$).

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

Power words utilized to describe a sad emotional experience. For the first step of the model we entered labile self-esteem and depression symptoms $F(2, 73) = .023, p = .977, R^2 = .001$, but this step was not significant. This step found that self-esteem did not significantly predict language associated with dominance and superiority to express a sad autobiographical memory ($b = -.027, t = -.209, p = .835$). Depression symptoms did not significantly predict power words utilized to express a sad emotional experience ($b = .004, t = .178, p = .859$). At the second step, we analyzed the interaction between depression symptoms and labile self-esteem. This step was not significant $F\Delta(1, 72) = .701, p = .405, R^2\Delta = .010$. The interaction between labile self-esteem and depression symptoms did not predict power words used to describe a sad emotional experience ($b = -.009, t = -.837, p = .405$).

Summary. Both labile self-esteem and participants' self-reported depressive symptoms were significant predictors of the number of cloud words participants utilized to describe a happy

emotional experience. Neither depressive symptoms nor labile self-esteem predicted to participants' use of achievement or power words when describing past happy and sad events. In addition to these main effects, I tested the interaction of self-esteem and depressive symptoms, and found no joint effect of these predictors in relating to clout, power, or achievement words utilized by participants when sharing a happy or sad event.

Discussion

The current study explored the main and interactive links among depression symptomatology, labile self-esteem, and word use. Studying labile self-esteem is vital because highly *variable* self-esteem has been associated with a greater risk for developing depression symptoms in response to life stressors (Roberts & Monroe, 1992). Although there has been a lack of research on the link between labile self-esteem and word use, previous research has found that people with high self-esteem preferentially recall more positive events as a way of verifying their positive sentiments about themselves and to reaffirm their positive emotions during times of distress (Sutin & Robbins, 2008). Examining the link between depression symptomatology and word use is also equally important because it may have implications for a person's overall well-being and functioning. Previous research has found that people who report depression symptoms use more first-person singular pronouns, more negative emotion words, and fewer positive words in comparison to people who have never experienced a depressive episode (Rude, Gortner, & Pennebaker, 2004). Although past research has outlined the individual relationships among self-esteem, depression symptoms, and word use, less is known about the interaction between depression symptoms and labile self-esteem with word use. Given the established strong link between depression symptomatology and labile self-esteem, I reasoned that the interaction

between these two variables might be a stronger predictor of word use than either individual relationship.

Based on previous research, we hypothesized that there would be a positive association between more labile self-esteem and more self-reported depression symptoms. When examining the specific linguistic phrases people used to describe happy and sad autobiographical memories, I had four main hypotheses. I hypothesized that participants with more labile self-esteem would be linked to less use of clout, achievement, and power words when describing sad and happy emotional experiences. When examining the link between word use and depression symptomatology, I predicted that greater self-reported depression symptoms would be associated with less use of clout, achievement, and power words used to describe happy and sad autobiographical memories. When examining the interaction between labile self-esteem and depression symptoms in association with word use, I predicted that the combination between more labile self-esteem and greater self-reported depression symptoms would be linked to less clout, power, and achievement words in describing sad and happy emotional experiences, than we would see from participants with the combination of low labile self-esteem and less self-reported depression symptoms.

In line with one of my hypotheses and consistent with current literature, 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. When looking at word use, labile self-esteem was only significantly positively associated with clout words used to describe a happy emotional experience. This indicates that participants who experience greater fluctuations in their self-esteem utilized more clout words to describe happy emotional experiences in contrast to participants with a more stable sense of self. In contrast to my

hypothesis labile self-esteem was not linked to clout words used to describe a sad emotional experience. Furthermore, labile self-esteem was not linked to the number of achievement and power words used to describe happy and sad emotional experiences. Contrary to my hypothesis, self-reported depression symptomatology was not linked to the number of clout, achievement, and power words used to describe sad and happy autobiographical memories.

Given that labile self-esteem was significantly positively correlated with clout words used to describe a happy emotional experience, it was not surprising to find that labile self-esteem also significantly predicted clout words in a happy emotional experience in the regression model as well. Consistent with the findings in our correlations, labile self-esteem neither predicted the number of clout words used to describe a sad experience nor the number of power and achievement words used to express sad and happy autobiographical memories. Participants' self-reported depressive symptoms also significantly predicted clout words used to describe a happy emotional experience. Depression symptoms did not predict power and achievement words utilized to describe sad and happy emotional experiences. In contrast to my hypothesis, depression symptomatology and labile self-esteem did not interact to predict clout, power, and achievement words used to describe a happy and sad emotional experience.

Along with examining the results for my hypotheses, the current study did not find any significant gender differences in labile self-esteem and depression symptomatology. Furthermore, the present study found that 26 participants in our sample reported meaningful levels of depression symptoms, ranging from mild to moderate to severe depression.

In contrast to my original hypothesis, 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 more 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 on 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 my 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 wellbeing when diagnosing and treating psychopathology symptoms.

The findings of the present study are tempered by some limitations. For example, the labile self-esteem scale participants completed in this study 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, this 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 having this extra item is further demonstrated in the reliability measure. The scale containing all five questions was given to participants to measure labile self-esteem and had good reliability ($\alpha = .631$); however, the reliability for the first four questions from the original Dykman LSE scale and excluding the fifth question had stronger reliability ($\alpha = .866$). We utilized the original four questions on Dykman’s LSE scale in analyses with depression symptoms and word use, ultimately omitting the possible effects the fifth question may have had in skewing the results. Although we utilized the original four questions on Dykman LSE scale for the results section, the assessment of participants’ labile self-esteem may have been affected by the fact that participants nevertheless answered all five questions.

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

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

Participants' ethnic and cultural influences may have affected the types of memories recalled during the AEI. Previous research has found that European and Euro-American adults are able to access memories in greater detail compared to Asian adults (Wang, 2001). Past research has also found differences in the way Euro-American and Chinese mothers talk with their preschool children about shared past experiences (Wang & Fivush, 2005). American mothers utilize a more elaborative conversational style in which they expand on various topics and provide supplemental information based on their children's responses (Wang & Fivush, 2005). On the contrary, Chinese mothers are more pragmatic and provide little embellishment on personal details (Wang & Fivush, 2005). These cultural variations in expressing personal memories may have manifested in our sample as well. Our participants in our study who endorsed being Asian may have been more succinct in the manner in which they communicated their happy and sad emotional experiences; as a result, the LIWC programming system may have coded fewer clout, power, and achievement words due to the lack of detail provided in these memories. The participants in our sample who endorsed being Caucasian, in contrast, may have elaborated on their autobiographical memories, quite possibly utilizing more clout, power, and achievement words. Future research can potentially take a closer look at how participants' ethnic and cultural backgrounds may influence the way they recall and express past emotional

experiences. Furthermore, future research can examine differences in word use across various cultures.

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 wellbeing.

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