Linguistic Correlates of the Quiet Ego in Narratives About the Self

Katherine Maurer

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Linguistic Correlates of the Quiet Ego in Narratives About the Self

BY

Katherine Maurer

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Linguistic Correlates of the Quiet Ego in Narratives About the Self

Katherine Maurer

Eastern Illinois University
Abstract
Increasingly, research has shown that the drive to elevate the self and the excessive pursuit of self-esteem have negative effects on well-being and mental health. In addition, many of the defensive and aggressive tendencies seen in psychological research can be seen as efforts to defend and elevate the self. In contrast to these tendencies, the quiet ego construct describes a state of ego balance characterized by an inclusive sense of identity, perspective-taking, detached awareness (mindfulness), and growth orientation. The quiet ego and related qualities have been associated with many positive outcomes. A body of research using the Linguistic Inquiry and Word Count (LIWC) software (Pennebaker, Booth, Boyd, & Francis, 2015), has shown numerous relationships between use of language and psychological processes such as self-focus and social relationships. The present study examined the relationship between quiet ego, as measured by scores on the Quiet Ego Scale (Wayment, Bauer, & Sylaska, 2015), and the use of words in selected categories measured by the LIWC in high- and low-point life event narratives. The study also examined the relationships between the selected LIWC variables and several measures of well-being, and between quiet ego and well-being. Results confirmed a correlation between quiet ego and increased well-being and decreased depression, anxiety, and stress symptoms. However, results showed no significant correlations between quiet ego and language use as measured by the LIWC. There were also no significant correlations between the selected LIWC variables and the well-being measures. Clinical implications of the research, limitations of the study, and future directions for research are discussed.
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Linguistic Correlates of the Quiet Ego in Narratives about the Self

Throughout human experience, shining examples of altruistic and prosocial behavior are connected with compassion, empathy, and often a long-range perspective, and not with self-interest. A growing body of research suggests that the persistent psychological elevation of the self—reflected in a hunger for increasing self-esteem and in the personality trait of narcissism—leads to poorer mental health and well-being outcomes, defensiveness and aggression, as well as less prosocial behavior. In response to these concerns, researchers have studied the ways that the self can achieve humility, mindfulness, compassion, and perspective-taking, and have described a state that encompasses many of these qualities known as the quiet ego. The quiet ego appears to enable prosocial behavior and personal growth, and is associated with many positive psychological outcomes. This study aimed to further understand the quiet ego concept by examining how the quiet ego might manifest in our use of language. A body of research on language use, enabled by software that captures rates of word use such as the Linguistic Inquiry and Word Count (LIWC) software (Pennebaker, Booth, et al., 2015), has shown numerous relationships between use of language and psychological processes such as self-focus and social relationships. Drawing on this research, this study examined the use of language in brief narratives about the self to any patterns that correlated with scoring on the Quiet Ego Scale, a measure of the quiet ego (Wayment, Bauer, et al., 2015).

The Problem of the Noisy Ego

It is nearly impossible to imagine human experience without the ability to create a conscious representation of the self. This ability likely enables many of the most
fundamental human behaviors of planning future activities, analyzing possible outcomes, and participating in complex social groups (Leary, 2004). The ability to be self-aware and experience self-conscious emotions and motivations allows us to navigate social relationships and effectively fulfill our fundamental need for connection with others (Leary, 2007a). It is also difficult to imagine many of the processes by which we create meaning in our lives without a sense of identity, and many of the objectives of psychology assume the importance of self-knowledge and self-actualization. The self can serve as a means for identifying with particular roles, values, and behaviors that guide and organize social behavior (Brown, Ryan, Creswell, & Niemiec, 2008). Identity as expressed and developed through a coherent self-narrative can support resilience and generativity, with themes of agency, communion, meaning-making, and redemption being highly predictive of well-being (Adler, Lodi-Smith, Philippe, & Houle, 2016; McAdams & McLean, 2013). The elevation of the self, expressed as self-esteem, self-confidence, or self-worth, is associated with some improved psychological outcomes and is proposed as a buffer against a wide range of stresses and psychological threats (Pyszczynski, Greenberg, Solomon, Arndt, & Schimel, 2004).

Definitions of the term self have varied. Dambrun & Ricard (2011) provide a brief definition useful for this study: "the perception that we have of our identity, which takes the form of a specific mental construct (p. 140)." A similar definition comes from Brown et al. (2008): "a mental model, formed from ongoing life experiences and cognitive elaborations on those experiences (p. 76)." In the context of quiet ego studies, the term ego is understood as interchangeable with self. Specifically, ego in this context focuses on affective self-evaluations, such as self-esteem or self-image, and on the self in relation
to others, such as in the degree to which construction of the self includes others (Bauer & Wayment, 2008). The self is a mental construct. However, in general, people tend to treat their mental self-constructs as if they were objectively real (Brown et al., 2008; Leary, 2007b). This tendency can lead to maladaptive reactions in response to any threat to the mental representation. These reactions, which include self-enhancing biases, egotism, excessive self-interest, and lack of perspective-taking, represent a noisy ego, a self unable to see itself as primarily constructed and obsessed with its own elevation and defense.

This self, or ego, is conceptualized and constructed by the individual within his or her historical and cultural context (Baumeister, 1987; Cushman, 1990; Markus & Kitayama, 1991). From the Middle Ages to the late 20th century, Baumeister (1987) argues that Western self-knowledge and self-definition became progressively more problematic, with the self a more complex and hidden construct. The self was no longer easily defined by prescribed social roles and behaviors, and self-definition thus became an individual problem. Cushman (1990) argues that the Western postindustrial self has grown more bounded and isolated, leading to a self that lacks a sense of meaning and experiences constant emotional hunger and drive to consume. At the same time, in the late 20th and early 21st century, research suggests that the elevation of the self has reached historic highs, with broad analyses showing a striking increase in measures of self-esteem, but also in self-focus, narcissism, and accompanying unrealistic expectations in young adults (Twenge, 2013). These factors set the stage for an increasingly noisy ego, which can amplify some of human beings’ worst tendencies.

The noisy, defensive ego has a potentially dangerous ability to distort reality. Social psychology experiments have demonstrated many of the darker human tendencies...
in defense of the self. Leary (2007b) summarizes a number of these. Self-serving attributional biases are well-established and widespread, and often occur at the expense of compassion and perspective-taking. People tend to overestimate their positive qualities compared to others, and to underestimate how many others also possess their positive traits (false uniqueness). There is an overall tendency to protect self-concept by attributing one's own successes to intrinsic factors and failures to extrinsic factors, while reversing this pattern for others—assuming that others' failures are due to their intrinsic personal qualities and not circumstances. This is called the fundamental attribution error. This thinking error increases the tendency to wrongly blame others for their own suffering. At the same time, people overestimate how many others share their views (the false consensus effect), and self-serving biases include the belief that one is not susceptible to bias, blinding people to their prejudices and tendency to confirm their own beliefs. These can all be seen as protective activities of the self, and they distort our views of reality and limit our ability to learn from and connect with others (Leary, 2007b). Self-serving attributional biases extend to things and people closely connected with the self, leading quickly to ingroup-outgroup thinking and resulting prejudice, hostility, and aggression (Leary, 2007b). Given that self-defensiveness increases the desire to favor and elevate one's in-group, the reflexive defense of the ego has implications for society, relationships, and moral behavior. It interferes with the perspective-taking critical to navigating an increasingly diverse and complex society. Indeed, prejudice, racism, mistaken beliefs in a just world, and political and cultural polarization are among the greatest threats to a peaceful and equitable society.
In addition to distorting reality, excessive self-focus and a defensive, noisy ego limit our potential for altruistic and prosocial behavior. The cognitive distortions associated with defense of the self increase belief in a "just world," in which people get what they deserve and others have in some way brought their own deprivation or suffering upon themselves. Narcissistic personality tendencies have become increasingly prevalent in U.S. cohorts (Twenge, Konrath, Foster, Keith Campbell, & Bushman, 2008). These traits are associated with reduced interest in communal relationships and in increased self-enhancement at the expense of others, expressed in behaviors such as manipulation, taking credit from others, materialism, status-seeking, and impulsivity (Campbell & Buffardi, 2008; Twenge et al., 2008). Narcissistic tendencies are associated with greater aggressiveness in response to social threats (Stucke & Sporer, 2002; Twenge et al., 2008). Twenge (2013) observes reductions in empathy and civic and community involvement that have paralleled increases in self-esteem and narcissistic personality traits. Despite an increasingly tolerant culture, rates of concern for others and civic engagement among emerging adults have declined over the last several decades (Twenge, 2013). Materialism (a characteristic of the narcissistic personality) and excessive consumption of goods and experiences in service of self-enhancement have environmental as well as social consequences, driving demand for resources and unnecessary consumer goods.

In addition to the dangers of the noisy ego for society, evidence is growing that excessive self-focus is not good for the self. In parallel with trends of increased self-esteem and narcissism, mental illness rates have increased. Causation between these two cannot be assumed, but, at minimum, we can conclude that self-enhancement has not led
universal to increased psychological well-being. Kwan, Kuang, & Zhao (2008) attempt to unravel the pros and cons of self-enhancement for psychological adjustment, as research has shown that self-enhancing tendencies can be positive or negative. They conclude that, although self-enhancement can be helpful in some situations, it tends to do more harm than good in social and interpersonal relationships, harming overall psychological adjustment. A balanced ego that can self-enhance at times, but without making it a compulsion, seems ideal. Twenge et al. (2010) find striking increases in psychopathology in American young adults, as measured by the MMPI. These parallel many noisy ego tendencies in the same cohorts, such as narcissistic personality traits, materialism, excessively high expectations for personal attainment, and excessive self-focus. The authors propose that much of this change in psychopathology is the result of increased focus on extrinsic goals, such as money and status, and reduced focus on intrinsic goals, such as connection and meaning in life. Their findings are consistent with many epidemiological studies showing large increases in anxiety and depression over the past several decades.

Research has begun to question the role of self-esteem in the well-being of the individual. As research has caught up with Western culture’s enthusiasm for self-esteem building, findings have not supported the universal benefits of high self-esteem. An extensive review (Baumeister, Campbell, Krueger, & Vohs, 2003) found that high self-esteem is not correlated with educational or occupational success, nor with improved relationships, and does not prevent delinquency or risky behavior in adolescents. At the same time, high self-esteem in some forms has the potential to magnify antisocial behaviors. People with high self-esteem may treat their own social groups more favorably
compared to out-groups, and some subcategories of high self-esteem such as narcissism and defensiveness are associated with increased aggression and antisocial behavior (Baumeister et al., 2003).

The problems associated with high self-esteem are often linked to the problem of insecure high self-esteem. Self-esteem that is high, but highly contingent on external events and affirmation, leads to an excessive focus on the self and greater maladaptive use of self-protective and self-enhancement strategies (Kernis, Lakey, & Heppner, 2008; Kernis, 2003), whereas secure high self-esteem rooted in a more authentic functioning of the self does not seem to cause these problems (Kernis, 2003). Crocker & Park (2004) suggest that many of the problems with self-esteem stem not from having self-esteem, but from the relentless pursuit of self-esteem. This pursuit “interferes with relatedness, learning, autonomy, self-regulation, and mental and physical health” (p. 407) in addition to often driving focus away from more prosocial goals. The runaway ego can ultimately undermine well-being and trap a person in a self-enhancement feedback loop. Baumeister & Vohs (2001) propose narcissism as an addictive pattern of self-enhancement and esteem. Narcissism provides the short-term benefit of enhanced self-esteem and positive affect at long-term cost of less effective performance, poorer relationships, and tendencies toward corruption and aggression (Campbell & Buffardi, 2008).

Moving Towards a Quiet Ego

It becomes clear that the primacy of an independent self, with its tendencies to defend and enhance itself at all costs, is not a path toward durable happiness and meaning, and likely has significant costs to society as well as to the individual. What are the alternatives to the defensive, excessively esteem-seeking self? Several lines of
research have converged on a state of being that balances concern for self and others known as the quiet ego.

Drawing on their work examining a co-occurring set of characteristics—authenticity, mindfulness, and secure high self-esteem—Heppner & Kernis (2007) first proposed the construct of the quiet ego. The quiet ego reflects a state of reduced ego involvement, reflected in increased mindfulness and authenticity. In contrast to the noisy ego, the quiet ego lacks defensiveness and reflexive self-enhancement. It is a state in which a person is able to detach from the constructed self enough to counter the self’s narcissistic and aggressive tendencies. The quiet ego is an overall perspective on the self that draws in affective, cognitive, and behavioral elements (Wayment, Wiist, Sullivan, & Warren, 2011) and thus has wide potential to inform a person’s approach to life. The quiet ego can be studied as a durable personality trait, as a mental state that can be induced to some degree by interventions, and as a developmental stage (Wayment & Bauer, 2017). Drawing on numerous areas of research, Bauer & Wayment (2008) identified four central components of this state, which are inclusive identity, perspective taking, detached awareness, and growth. These reflect two general dimensions of ego balance and personal growth. Ego balance refers to a balance of concern for self and other; a state in which the self is neither repressed nor overly elevated. Ego balance allows for the self to exist without constantly seeking its own enhancement. Personal growth refers to the ability to mindfully observe and reflect on immediate events and to place these events in context and act with a long-range view, one that seeks meaning and self-actualization. See Figure 1 for the relationship between quiet ego and these dimensions and components.
The components of inclusive identity and perspective-taking both represent a state of ego balance—a balance between concern for the self and other. The quiet ego state does not describe a repressed or erased ego, or a state of complete communion with others, but, rather, a state in which this balance is achieved. Also important to this state is a balance of positive and negative appraisals of self and others, reflecting a realistic view that does not excessively seek positive evaluations of the self (noisy ego) or gravitate excessively to negative self-evaluation (squashed ego) (Wayment, Bauer, et al., 2015). Inclusive identity represents the cognitive component of ego balance—a broadened psychosocial identification. It describes a state of seeing the self and others as part of an interconnected whole, with a conceptual understanding of “the unifying aspects of other individuals’ humanity” (Bauer & Wayment, 2008). It is reflected in the degree to which one identifies with others, sees similarities between self and others, and understands the self to have shared qualities with others (Wayment, Bauer, et al., 2015). With regards to self-construal (i.e., how the self is constructed), self-concept expands to include others,
but it is not limited to the often culturally-determined degree of independence versus interdependence of the self. The inclusive identity described by the quiet ego includes a more abstract sense of connection with humanity as a whole, opposing the excess self-focus characteristic of the noisy ego.

Perspective-taking, described simply as *compassion* in some discussions of the quiet ego, represents the emotional and affective component of balanced concern for self and other. It refers to empathy and a desire to promote the well-being of others, as well as the quality of self-compassion (Bauer & Wayment, 2008). Self-compassion is distinct from self-esteem. While self-esteem is based on the degree to which the self meets personal standards or compares with others, self-compassion involves kindness to the self when encountering shortcomings as well as strengths, and a detached-enough perspective to allow this kindness. In this way, self-compassion emphasizes the universality of the self’s experience, rather than its specialness and isolation (Neff, 2008). In addition to inspiring compassion, the quality of perspective-taking shifts attention away from the self and enables critical thinking about the conditions and experience of others. In this way, it is also connected to the second major dimension of the quiet ego—personal growth.

As the second dimension of the quiet ego, personal growth places value on self-awareness and development. Detached awareness and growth represent short- and long-term components of this dimension, respectively. Detached awareness describes a non-defensive attention closely related to mindfulness. Specifically, it describes a state in which the person is capable of understanding reflecting on a situation independent of the reactions of the ego (Bauer & Wayment, 2008). This is the self’s ability to see itself self
as a construct, at least enough to evaluate a situation more objectively than the defensive, noisy ego (Bauer & Wayment, 2008).

The growth orientation of the quiet ego is an overarching, long-term interest in humanistic goals and personal growth, as well as an ability to place the current situation in a long-term context and act with concern for the future. Part of the problem of the noisy ego is its tendency toward impulsivity—enhancing the self and self-interest without regard to long-term consequences (Bauer & Wayment, 2008). The more mindful and self-aware perspective of the quiet ego orients the individual toward personal growth. A person with a noisy ego might gravitate toward self-improvement in many areas, however, the growth orientation described by the quiet ego is oriented toward meaning-making and reflection, and is humanistic and eudaimonic in its focus (Wayment & Bauer, 2017). In contrast with hedonic well-being goals, which focus on immediate pleasure, positive experience, and positive mood, eudaimonic well-being goals represent the psychological states associated with meaning and "the good life," such as a sense of purpose, positive relatedness, personal growth, authenticity, and self-acceptance (Ryan & Deci, 2001). The components of the quiet ego overlap and support one another—perspective-taking may open opportunities for growth, and detached awareness creates the reduced ego reactivity necessary for perspective-taking, as well as growth orientation.

While a concern for personal growth is a quality of the quiet ego, the quieting ego itself can also be viewed from a developmental perspective. Bauer (2008) proposes that the process of ego development can be seen as a process of ego quieting, applying Loevinger’s (1976) model of ego development to the “noisy” versus quiet ego. In Loevinger’s model, which draws on Erickson’s psychosocial stages, the ego is the frame
of reference used to interpret and relate to the social world. A child progresses from an entirely impulsive and present-needs-focused ego state to one that is self-protective, but unconcerned with the needs of others, to one in which there is simplistic respect for rules, norms, and cooperation. Adults progress to higher levels of ego development by developing self-awareness, the ability to self-criticize, and increasing levels of moral complexity, flexibility, tolerance, and interdependence, as well as an understanding of one’s own psychological growth. This progression can be seen as a process of ego quieting, in which a balanced concern for self and other and detached awareness of self, and growth orientation gradually emerge. Support for the ego development model thus provides additional evidence for the process of ego quieting (Bauer, 2008). As Bauer (2008) goes on to review, research into narrative identity has shown several associations between narratives about the self and levels of ego development. Growth stories that emphasize psychosocial meaning-making, accommodation, and learning tend to be associated with higher levels of ego development. Bauer argues that the combination of these themes represents a pattern of eudaimonic personality development, which is closely related to the quieting ego.

**Measuring the quiet ego.** The Quiet Ego Scale (Wayment, Bauer, et al., 2015) measures the four components of the quiet ego: *inclusive identity, perspective taking, detached awareness,* and *growth.* This scale was developed by administering items from 12 existing scales that, drawing on earlier research (e.g. Wayment et al., 2011) represent qualities theoretically proposed to be closely related to the quiet ego—such as mindfulness, allo-inclusive identity, wisdom, humility, self-compassion, and well-being. Exploratory and confirmatory factor analyses were used to narrow down items to be used
for the final QES, providing evidence for the validity of the quiet ego as a four-factor construct independent of the existing scales (Wayment, Bauer, et al., 2015). The final QES is a 14-item scale with a five-point Likert response format that incorporates items from the Mindful Attention and Awareness Scale (Brown & Ryan, 2003) the Allo-Inclusive Identity Scale (Leary, Tipsord, & Tate, 2008), the Perspective Taking subscale of the Davis Interpersonal Reactivity Scale (Davis, 1983), and the Personal Growth subscale of Ryff’s Well-Being Scales (Ryff, 1989). Although the quiet ego construct includes four factors that were used to create the scale, for the specific purposes of the current study, only the single overall QES score will be used.

The validity of the QES is supported by its derivation from other established scales and, as will be discussed next, its positive correlation with theoretically consistent prosocial behaviors and perspectives and negative correlation with behaviors associated with the noisy ego. Interestingly, a study of a Turkish translation of the QES appeared to replicate the four-factor structure, suggesting that the Quiet Ego Scale measures a construct that also has cross-cultural validity (Akca & Sumer, 2016).

**Identifying correlates of the quiet ego.** Prior to the publication of the current QES, studies have demonstrated the potential of the quiet ego construct, particularly as a pathway between mindfulness and overall well-being. Wayment et al. (2011) examined mindfulness and quiet ego characteristics among Buddhist practitioners. In this study, in the absence of the QES, a factor analysis approach was used to identify a set of factors associated with the quiet ego. The quiet ego model included positive correlations of wisdom, altruism, and sense of interdependence; and negative correlations of negative affectivity, anger and verbal aggression, and need for structure. Thus, the model
incorporated both the presence of factors associated with the quiet ego and the absence of
factors associated with the defensive, insecure ego. As expected, years of practice and
frequency of meditative practice were associated with increased mindfulness. The
resulting mindfulness was also correlated with the set of quiet ego characteristics. Quiet
ego characteristics also appeared to be part of a pathway connecting mindfulness with
self-reported physical health, suggesting the quiet ego construct as a possible mediator of
the relationship between mindfulness and some of its frequently observed positive
psychological outcomes. Other findings demonstrate the same, showing that quiet ego is
a mediator between mindfulness and measures of human flourishing (Huey, 2013).

In the series of studies documented in the initial publication of the Quiet Ego
Scale, Wayment et al. (2015) examined the scale’s correlations to a number of measures
of psychological functioning, personality, and well-being. Study 1 sought to establish the
factor structure of the QES itself. Study 2 examined correlations of the scale to further
establish its validity. Results of Study 2 indicated that QES was positive correlated with
the personality trait of honesty-humility, holistic and cooperative thinking, self-
determination, and measures from the Youth Assets scale focused on community
involvement and responsible choices. These associations are in the expected direction,
indicating that the QES reflects a less self-centered and more growth-oriented identity.
QES was negatively correlated with aggression, anger and hostility, psychological risk-
taking, and psychological entitlement. These characteristics reflect the reactive, noisy ego
that struggles with perspective-taking. QES was also positively correlated with a measure
of self-esteem. However, all findings remained significant after controlling for self-
esteeem, suggesting that the quiet ego is a state of balance distinct from self-esteem.
A third study in this group (Wayment, Bauer, et al., 2015) further established the QES as measuring a construct closely related to, but independent of, the related qualities of self-transcendence and self-compassion. Self-transcendence is a quality closely related to wisdom and spiritual integration of the self, and self-compassion represents a compassionate attitude toward the self distinct from self-esteem and associated with improved psychological health. As expected, QES was positively correlated with self-compassion and self-transcendence, and all three contributed to measures of well-being. However, the overlap was only partial, and results indicated that the QES captures a construct that has explanatory power beyond these other measures (Wayment, Bauer, et al., 2015). Results of these studies support the QES as an effective tool for measuring the quiet ego construct, and the quiet ego as a meaningful predictor of human functioning and well-being.

Since the development, validation, and publication of QES, the validity of this scale and the theoretical construct of the quiet ego have been further supported by findings showing that the QES is strongly correlated with improved well-being, decreased noisy ego characteristics, and with an orientation toward personal growth. Higher scores on QES in first year college students were associated with more compassionate interpersonal goals and greater self-compassion. In turn, students with greater quiet ego characteristics experienced less stress and greater life satisfaction, with quiet ego accounting for 29-36% of variance in life satisfaction (Wayment, West, & Craddock, 2016). QES was negatively correlated with having more self-image goals relative to the number of compassionate goals, however, it did not show a significant relationship with self-image goals alone (Wayment et al., 2016). The presence of many
self-image goals focused on enhancing and benefitting the self and few compassionate goals suggests the noisy ego—the esteem-seeking self taking over. The importance of goal ratio in this study suggests that the QES distinguishes the quiet ego, with its balance of concern for self and other, from the noisy ego.

In a study examining the relationship between quiet ego, goals, values, and well-being, QES was shown to be positively correlated with compassionate goal motives and with emotional and cognitive aspects of growth motivation. At the same time, QES negatively (though weakly) correlated with self-image focused goals (Wayment & Bauer, 2017). These findings support that the QES measures the theorized dimensions of balanced concern for self and other and personal growth. The finding related to self-image focused goals is fairly consistent with the findings of Wayment et al. (2016), and further supports the ability of the QES to distinguish the quiet ego from the noisy ego. QES also correlated with values of universalism, benevolence, and self-direction. These different motives and values among high-quiet-ego participants were significant mediators of the relationship between quiet ego and well-being (Wayment & Bauer, 2017).

**Understanding quiet ego outcomes.** In addition to reflecting values and goals related to the well-being of others, the grouping of characteristics measured by the Quiet Ego Scale has been shown to be correlated with a number of positive psychological outcomes for the individual. These positive outcomes were already supported by research into many of the constructs related to the quiet ego. For example, allo-inclusive identity, mindfulness, and humility have been shown to be correlated with well-being and reduced defensiveness. An allo-inclusive identity or transindividual identity refers to the self's
connection with humanity, nature, the universe, God, or another transcendent entity.

Research suggests that these expanded views of self are associated with greater concern for others and greater emotional well-being (Leary, Tipsord, & Tate, 2008).

Mindfulness, closely related to the quiet ego component of detached awareness, has been widely researched. For example, Lakey, Kernis, Heppner, & Lance (2008) found that participants with greater mindfulness and authenticity had lowered defensive verbal behavior in an interview designed to elicit such defensiveness, and that mindfulness appeared to mediate the relationship between authenticity and reduced defensiveness. Mindfulness is also correlated with reduced hostile attribution bias and aggressiveness, both per self-report and in response to a social rejection feedback experiment (Heppner et al., 2008). The benefits of mindfulness practice for reducing psychological distress have been demonstrated across a wide range of symptoms and disorders, and mindfulness is now an accepted component of many evidence-supported psychological treatments.

In a series of studies, Kesebir (2014) found that humility, a state of lowered self-focus and non-defensive acceptance closely related to the quiet ego, was associated with reduced death anxiety and reduced the self-defensive behaviors observed in response to mortality salience prompts (e.g. exposing participants to words associated with death prior to exposure to a question or scenario). Past studies have established that reminding people of their own mortality tends to induce potentially antisocial responses in defense of the self, such as increasing the tendency to compromise moral principles in a self-serving way and increasing defensiveness of one’s cultural world view and prejudice against out groups. Although self-esteem has been proposed as a buffer to this existential
anxiety (Pyszczynski et al., 2004), high levels of self-esteem have also been associated
with more reactive and potentially destructive reactions to mortality reminders (Kesebir,
2014). This finding illustrates the counterproductive nature of the noisy ego. In contrast,
humility was found to reduce death anxiety and reduce many of the defensive reactions to
mortality reminders shown in earlier research (Kesebir, 2014).

Scoring on the Quiet Ego Scale itself has been predictive of a number of positive
psychological outcomes. Wayment et al. (2015) found that scores on the QES were
correlated with increased subjective well-being, had moderate to large positive
correlations with authenticity, life satisfaction, and coping efficacy, and had moderate
positive correlations with measures of psychological resiliency. The QES explained
additional variance beyond that shared with self-compassion, mindfulness, and
authenticity (Wayment, Bauer, et al., 2015). Other investigators looking at a wide range
of measures of self-construal as they related to Dambrun’s (2011) measures of authenti­
curable happiness versus fluctuating happiness, found that QES was correlated with
authentic-durable happiness, closely related to eudaimonic well-being (Bernas,
Geiselman, & Williams, 2016).

Although the present study examined quiet ego characteristics at one point in
time, several studies suggest that the quiet ego state can be induced, raising interesting
possibilities for ego quieting as a goal of clinical or public health interventions. A study
by Wayment, Collier, Birkett, Traustadóttir, & Till (2015) examined a brief intervention
designed to develop quiet ego characteristics. In this study, participants were educated on
quiet ego characteristics and prompted to spend time reflecting on these in the lab in three
sessions over a 4-5 week period. Those in the quiet ego contemplation group showed
increased quiet ego and pluralistic thinking, reduced physiological markers of oxidative stress as shown by a urine test, and reduced mind-wandering on an experimental task.

Given the brevity and simplicity of the intervention, these results are impressive, and suggest a strong relationship between quiet ego traits and well-being, as well as the encouraging idea that the quiet ego can be developed through self-reflection. Kao, Su, Crocker, & Chang (2017) used an experimental intervention to prime study participants for either a self-interest or self-transcendence orientation, then exposed participants to feedback designed to invoke anger or defensiveness and instructed participants to either express or suppress those feelings in an interaction with a partner. Those who received the self-transcendence focused intervention demonstrated different responses to the suppression condition, actually experiencing better intra- and inter-personal well-being when emotions were suppressed. This pattern was reversed for those primed for a self-interest orientation. Self-transcendence could be evoked in the lab setting and may enable more flexible and less reactive interpersonal interactions. Kesebir (2014) studied experimental interventions aimed at priming a humble mindset and inducing feelings of humility. These interventions appeared to reduce death anxiety and loss of self-control in response to mortality reminders, further suggesting that the benefits of a quiet ego state can be induced and may be a useful direction for intervention to promote mental health and prosocial behaviors.

**Connecting the Quiet Ego and Language**

Although the study of the psychology of language has often focused on the complex cognitive processes that enable language acquisition and use, language can also be seen as a window to the mind. Language is fundamental to psychology because it is
the means by which we access the thoughts, emotions, and personality of another individual. Words both shape the mind by creating constructs with which to organize our experience, and reflect it to the outside world. Language is the primary medium for both researchers and clinicians seeking to understand the human mind. It is also the medium of psychotherapy, and psychotherapists often practically apply the principle that how something is said is important along with its content, for example, by encouraging someone in a family session to use I-statements or address another directly (Pennebaker, 2011).

The idea that the language used by an individual reveals the mind has deep roots in psychology, beginning as far back as Freud’s assertion that language encodes personality and that, in turn, produced language will reflect the most available constructs of the mind (Fast & Funder, 2008). The study of how language reflects the mind and the self has taken numerous forms. Often the object of study has been themes assessed by trained human coders; this method began with the use of projective tests such as the Rorschach and later included techniques such as the Gottschalk method for analyzing Freudian themes in text samples (Tausczik & Pennebaker, 2009). The study of thematic content is also the approach used to study narrative identity, which examines themes such as agency, communion, and redemption in individuals’ life stories. Other research on language and the mind has used the concept of speech acts, examining how often people in different roles or social situations do things like ask a question or make an assertion (Berry, Pennebaker, Mueller, & Hiller, 1997). More recently, researchers have explored more transparent methods that simply count individual words in speech or writing, and sort those words by category. This type of analysis of word use has revealed distinct
patterns associated with social processes and psychological states. The present study used a computerized word count program, the LIWC, to examine how the quiet ego presents itself in a person’s use of language.

**Background of the Linguistic Inquiry and Word Count (LIWC).**

Computerized linguistic analysis tools have opened new opportunities for analyzing and understanding the connections between psychology and language. These programs are much faster to use than manual coding techniques and allow for insight into subtle patterns of word use that are not always apparent, even to trained coders. The LIWC (Pennebaker, Booth, et al., 2015) is one of the most widely researched of these tools. This tool has allowed insights into subtle features of language use, such as pronouns, verb tense, and cognition words, that are of particular value in examining interpersonal relationships, one’s social focus of attention, complexity of thought and reflection, and focus on the present versus the past or future. For these reasons, the LIWC is a particularly interesting tool to utilize in a study of the quiet ego.

The LIWC’s development began with research on the psychological effects of interventions in which participants are asked to write repeatedly about traumatic experiences. This type of intervention has been shown to have psychological benefits, but these benefits vary among individuals. The question of whether the ways in which people wrote would influence the benefit they received from such an intervention led James Pennebaker, beginning in the early 1990s, to create the Linguistic Inquiry and Word Count software (Tausczik & Pennebaker, 2009). The LIWC uses a combination of objective categories, such as first- or second-person pronouns, and more subjective categories, such as positive and negative emotion words or words associated with social
processes, to create word type counts for any type of text. To create the subjective
categories, several independent judges evaluated each word to place it in a category, with
the process repeated until judges reached a high degree of agreement (Tausczik &
Pennebaker, 2009).

**Role of function words.** While the LIWC counts words in both content
categories and grammatical categories, one of the insights that has come from LIWC
research is the significance of what its creators refer to as *function words*. Content words
are typically those that directly label an object or action, including nouns, action verbs,
and most adjectives and adverbs—they are necessary to convey the specific content of a
sentence. Function words are the words that connect and organize content words. They
include pronouns, prepositions, articles, auxiliary verbs, conjunctions, and others
(Pennebaker, 2011). Although function words make up about 55% of written and spoken
language (Tausczik & Pennebaker, 2009), they are rarely attended to consciously.
However, research using the LIWC shows that they are a large part of how people
communicate their social status, attentional focus, personality, and emotional state.
Function words form the style of speech and writing—they represent *how* something is
said, more than *what* is said, and it is in this *how* that a great deal of social
communication takes place and a great deal of information about the individual is
revealed (Pennebaker, 2011; Tausczik & Pennebaker, 2009). Although factors such as
relative social status and honesty change function word use, function word use in many
contexts is shown to be a fairly stable individual difference (Pennebaker & King, 1999),
making it a useful way to examine a person's personality and approach to others.
LIWC research suggests that function words can subtly reveal a person's focus of interest. In terms of the social self, this focus reveals itself in pronouns. The use of first-person singular pronouns is theorized to indicate degree of self-focus. This plays out in many contexts. Experimentally, people tend to use more first-person pronouns when completing a questionnaire in front of a mirror (Pennebaker, 2011). Both physical and emotional pain tend to increase self-focus, and therefore increase the use of the first person singular (Tausczik & Pennebaker, 2009). First-person pronoun use is reduced when people are lying, indicating a distancing of the self from what is said, and there is greater use of first-person pronouns in positive political ads, as candidates direct attention toward themselves (Pennebaker, 2011; Tausczik & Pennebaker, 2009). First-person pronoun use also reveals social relationships through its variation by status and gender. In English speakers, first-person pronoun use is higher among the person of relatively lower status in a relationship, while higher-status people tend to use more second-person pronouns. Women also tend to use first-person pronouns at higher rates than men (Chung & Pennebaker, 2007). Conversely, third-person pronouns use indicates other-focus, which may be positive, as when discussing concern for or connection with others, or negative, as when discussing a group that is perceived as a threat (Pennebaker, 2011). However, the general indication seems to be that third-person pronoun use indicates a more prosocial and community-oriented focus, and this is reflected in its association with better psychological outcomes (Chung & Pennebaker, 2007).

While singular first-person pronouns indicate self-reference, plural first-person pronouns can present in multiple ways. At times, these represent a distancing "royal we" used more frequently by males and those in positions of power (Chung & Pennebaker,
At other times, however, plural first-person pronouns represent a prosocial sense of shared identity. Notably, in analyses of online communications and blogs after public tragedies such as the 9/11 attacks, use of plural first-person pronouns jumps significantly immediately after such events, with a corresponding decrease in singular first-person pronouns (Chung & Pennebaker, 2007).

In terms of time, examining verb tense also reveals a person’s focus of attention. This is partly an obvious difference—people use the tense appropriate to the time period they are talking about—past, present, or future. Therefore, looking at verb tense overall can indicate how much a person is focused on the past, present, or future. However, verb tense use is not always consistent. For example, when recalling past events, there is variation in the degree to which people use past-tense verbs and present-tense verbs. For example, when describing a previously undisclosed event, people are more likely to use present-tense verbs, and when describing an event they had already told someone about, they are more likely to use past-tense verbs (Tausczik & Pennebaker, 2009). The use of present tense when describing past experience is also sometimes seen in unresolved trauma, and can be seen as an indicator that the trauma remains an ongoing experience, as in PTSD (Pennebaker, 2011).

In addition to attentional focus, function words can indicate a person’s style of thinking and degree of cognitive complexity. Prepositions and words that differentiate categories or exclude something from a category tend to indicate more complex thinking patterns—they indicate that someone is working to construct a coherent narrative. These types of words also correlate with telling the truth (Tausczik & Pennebaker, 2009). A related LIWC category counts words associated with cognitive processes. These include
words describing mental processes (e.g. know, ought), causation (e.g. because, effect), insight words (e.g. think, know), and differentiation words (e.g. but, else) (Pennebaker, Boyd, Jordan, & Blackburn, 2015). The use of causal and insight words when describing past events suggests reappraisal and synthesis of meaning (Tausczik & Pennebaker, 2009). Thinking style is also indicated by the use of articles (i.e. a, the), which tend to indicate higher use of specific nouns therefore more categorical and concrete, as opposed to dynamic and abstract, thinking (Pennebaker, 2011).

The LIWC also counts words in a number of content categories, which can reveal emotional state as well as focus and priorities. Among these are positive and negative emotion words. Research shows that the LIWC can accurately identify the emotional valence of language, and number of emotional words may indicate the degree of emotional immersion in an event (Tausczik & Pennebaker, 2009). The use of emotion words may be associated with more personal disclosure and vulnerability (Pennebaker, 2011). These content categories also include categories such as social process words, which may indicate greater focus on interpersonal relations and are used in greater numbers by women and by those high in extroversion (Tausczik & Pennebaker, 2009). Other content categories can be used to identify topics of concern and focus, such as work, money, religion, the body, sex, and drives such as affiliation, achievement, and power.

**Correlating function words and well-being.** The findings on the correlations between pronouns and well-being support the idea that reduced self-focus generally reflects improved well-being. In writing intervention studies where people write repeatedly about trauma, those who move from using many first-person pronouns to
using more third-person pronouns, indicating perspective-taking and a balance of self-
other focus, gain the greatest increases in well-being (Pennebaker, 2011). Another of the
more consistent findings of LIWC research, across both studies and demographic groups,
is that depression increases a person's use of first-person pronouns (I, you) (Edwards &
Holzman, 2017). This pattern is interpreted as indicating that psychological distress
increases self-focus, a pattern also shown with physical pain (Tausczik & Pennebaker,
2009). Higher use of the first-person singular has also been connected with biological
markers of stress (Chung & Pennebaker, 2007). A pattern of decreased use of first-person
pronouns has been seen over the course of treatment for personality disorders, further
supporting the association between well-being and decreased self-focus (Arntz, Hawke,
Bamelis, Spinhoven, & Molendijk, 2012).

Conversely, other-references, represented by third-person pronoun use, have been
associated with improved adaptive coping and health outcomes in multiple studies,
particularly in expressive writing studies in which participants wrote about emotional
upheavals (Chung & Pennebaker, 2007). Generally, these are interpreted as indicating
increased attention to others. In many contexts, the use of the first-person plural pronoun
indicates connection with others and is associated with improved well-being. In a study
of the compromising interpersonal style Lin, Lin, Huang, & Chen (2016) found that the
use of “we” moderated the effect of a compromising style on well-being, with increased
use of “we” leading to better outcomes.

Researchers have theorized that coherent use of verb tense, and use of past tense
when describing past events, is related to the processing and integration of traumatic
events. Tani, Peterson, & Smorti (2016) found that women who had experienced violent
relationships used significantly more present tense when discussing past events, and Pennebaker, Mayne, & Francis (1997) found less use of past tense when describing a loss was associated with greater distress one year later. Looking at linguistic changes over the course of treatment for personality disorders, Arntz et al. (2012) found increases in present-tense verbs and decreases in both past- and future-tense, suggesting some correlation between present focus and improved psychological well-being.

The use of causal and insight words when describing past trauma has been associated with making sense of events, and, in expressive writing interventions, with better outcomes and increased well-being (Pennebaker, 2011; Tausczik & Pennebaker, 2009). Prepositions and conjunctions also indicate relationships among things or ideas, and their use is associated with more complex thinking and coherent narratives (Tausczik & Pennebaker, 2009).

It is worth noting that, although patterns of function word use appear to reflect mental states and interpersonal focus, attempts to influence psychological outcomes by manipulating word use in personal writing have not been successful (Pennebaker, 2011). Thus, function word use is best understood as evidence of mental state, rather than a target of intervention.

The positive outcomes associated with these patterns of function word use present a pattern that is consistent with the observed relationships between the quiet ego construct and well-being. Well-being appears to be correlated with word use patterns that indicate decreased self-focus, increased other-focus, and a growth orientation that prompts a detailed reflection on and processing of life events. The next section will
review LIWC research that more specifically relates to components of the quiet ego, and their relationship with well-being.

**Using LIWC to study the quiet ego.** Although no research to date has looked specifically for LIWC correlates of the quiet ego, several LIWC studies have touched on issues of ego development, eudaimonic growth, mindfulness, and self-focus.

Distinct changes in LIWC profiles have also been associated with increasing age. Given that ego development through the life span can be viewed as a process of ego quieting (Bauer, 2008), these findings are relevant to consider in the context of the quiet ego. Pennebaker & Stone (2003) found that older participants used fewer first-person singular pronouns, interpreted as a decreasing self-focus, and that the oldest participants increased use of plural first-person pronouns (we, our). Older participants used fewer past-tense verbs and more present- and future-tense verbs, as well as a fewer references to time in general, and used more insight words (e.g. think, know).

Abe (2016) sought to examine the associations between language use, happiness, and meaning-making by examining the journal entries of students who participated in a practicum in a mental health setting. Meaning-making is closely related to growth orientation, a dimension of the quiet ego construct. The researchers followed up with the students 2½ years after the practicum to examine relationships between their language use in journals and later psychological well-being, optimism, grit, and gratitude. The LIWC outputs analyzed were positive/negative emotion words—used as an index of emotionality, cognitive processing words—used as an index of meaning-making, and first- and third-person pronouns—used as an index of self- versus other-focus. The study found that more cognitive processing words, fewer first-person pronouns, and more third-
person pronouns were associated with higher adaptive functioning at the 2.5-year follow-up. Somewhat counterintuitively, positive emotion words were not associated with greater functioning at follow-up, but were associated with lower optimism and higher emotion suppression. These results suggest the importance of eudaimonic growth goals (represented by meaning-making), and also the detached awareness characteristic of the quiet ego. It appears that a balanced view of experience and a willingness to engage in a deep way with both positive and negative emotions contributed to meaning-making and to long-term well-being. In addition, the pattern of pronoun use in this study suggests that the reduced self-focus characteristic of the quiet ego is associated with enhanced growth and well-being and can be measured in a person’s use of language.

Moore & Brody (2009) examined the relationship between language use and mindfulness increases over a multi-session writing intervention. In this study, half of the participants wrote about past trauma and half wrote about their current daily lives. Results showed that increased use of present-tense words was correlated with increased nonjudgmental acceptance after the intervention, though, at the same time, increases in past- and future-tense words were correlated with increased observing and describing of present stimuli—another component of mindfulness. Increased use of cognitive processing words was also associated with increases in components of mindfulness among participants writing about traumatic events and among women in both conditions. Weak, negative correlations were also seen between positive emotion words and nonjudgmental acceptance, as well as between self-references and observation of stimuli. These correlations suggest support for connections between mindfulness, a component of
the quiet ego construct, and the LIWC categories of pronouns, cognitive processing words, and verb tense.

A small-scale study of Buddhist monastics (Kramer & Herwitz, 2013) provides additional hints at possible links between word use as measured by the LIWC and a state of increased mindfulness and decreased self-focus comparable to the quiet ego. In this study, six participants were interviewed on “the definition, relation to well-being, process of realization, and manifestation of not-self” (Kramer & Herwitz, 2013). The results were compared to norms for general speech. As the authors note, the LIWC’s analysis of function words can examine psychological content independent of semantic content, therefore, the content of the interview should not be the primary factor shaping the participants’ use of function words. Results showed that the monks used fewer first-person pronouns, more cognitive processing words, lower levels of assent words, and higher levels of social process words than would appear in average speech. They also showed increased numbers of large words and religious words—these content words were likely related to the content of the interview. Although a small sample, the findings here have parallels to those in Abe (2016) and Moore & Brody (2009), and a pattern of possible linguistic indicators of quiet ego processes begins to emerge.

The relationship between language and the quiet ego may also manifest in response to interventions intended to induce a quiet ego state. Kao et al. (2017) found that an intervention to prime a self-transcendence orientation led study participants to use more social process words and fewer words related to achievement in brief essays written in the lab when compared to participants primed for a self-interest orientation.
Choosing narratives for analysis. In order to examine the relationship between the quiet ego and language use, the present study needed a language sample likely to reveal information about the self, balance of concern for self and other, compassionate goals, and growth motives. To learn how people view themselves, it is often most useful to ask them to tell a story about themselves. A number of LIWC studies have examined the link between use of language in some form of life story narrative and psychological outcomes. Frequently, these studies have explicitly prompted participants to provide narratives of traumatic events (Moore & Brody, 2009; Pennebaker et al., 1997; Weston, Cox, Condon, & Jackson, 2016). Others have examined disclosures of other emotional events or experiences (Pasupathi, 2007; Pennebaker & Stone, 2003; Tani et al., 2016) or extensive autobiographical narratives (Hirsh & Peterson, 2009; Pressman & Cohen, 2007).

Other indication that life story narratives are a useful target for LIWC research comes from research on personality traits. LIWC research using life narratives has found greater correlation between LIWC outputs and personality variables than in other studies looking for correlations between LIWC outputs and personality. Fast & Funder (2008) found numerous correlations between word use in a life history interview and self- and acquaintance ratings of personality. Hirsh & Peterson (2009) examined life narratives that included past memories and future plans and found similar results correlating word use categories and Big Five personality traits and stronger effect sizes than previous studies, leading the authors to note that “current results suggest that personality-specific patterns of language use may be seen most clearly during the production of self-narratives (as opposed to stream-of-consciousness or essay-writing exercises)” (p. 526). To examine the
quiet ego at a given point in time, as a personality characteristic, as the present study did, self-narratives are an appropriate target for analysis.

Life story narratives have been also extensively studied in the context of narrative identity, the integrative story about the self that provides past and future with a sense of unity and meaning (McAdams & McLean, 2013). Although most of this research has been done through manual coding of themes, several recent studies suggest that automated word count programs such as the LIWC are also useful ways to examine life story narratives. Weston et al. (2016) directly compared analysis using traditional narrative identity study techniques to an analysis using the LIWC. This study focused on themes of redemption in low-point experiences, in which a negative experience leads to an outcome that has at least some positive components. The researchers found that, although word use patterns as measured by the LIWC were not correlated with redemption scores assigned through coding, word use patterns and redemption sequences were independently correlated with measures of well-being three years later. A component of LIWC outputs that included future-tense words and discrepancy words (those that contrast desired and undesired states—e.g. should, besides) added as much predictive validity to the model explaining well-being as redemption coding did. It appears that there are language use patterns in life story narratives that are revealed by the LIWC that contribute to future well-being. The present study considered whether these patterns might be related to quiet ego, given the research showing that LIWC outputs show patterns for mindfulness, meaning-making, and self-other focus.
Present Study

The quiet ego is a well-validated construct with affective, cognitive, and behavioral components that is associated with many measures of improved psychological functioning and well-being (Wayment, Bauer, et al., 2015; Wayment & Bauer, 2017). No study as yet has looked for linguistic correlates of the quiet ego, but studies using the LIWC have examined related constructs, such as meaning-making (Abe, 2016), mindfulness (Moore & Brody, 2009), and the language use patterns of Buddhist monastics (Kramer & Herwitz, 2013). To add to understanding of the quiet ego and expand the body of LIWC-based research examining life narratives, the present study looked for associations between language use and quiet ego, as measured by the LIWC and overall scores on the Quiet Ego Scale (Wayment, Bauer, et al., 2015).

The present study used the LIWC to analyze participants’ responses to two prompts adapted from McAdams’ Life Story Interview (McAdams, 2008) that elicit lifetime low-point and high-point experiences. These were modified, drawing from writing prompts given in earlier LIWC studies (Pennebaker, 2017), with the aim of promoting open disclosure and an adequate writing sample for analysis. Based on research in narrative identity (Adler et al., 2016; McAdams & McLean, 2013), these were expected to be narratives important to participants’ sense of self and level of growth orientation. Based on LIWC research on writing about life events, the high- and low-point narratives were expected to reveal degree of social relatedness, transformational and complex processing of past experiences, emotional valence, and patterns associated with meaning-making.
Participants' responses were analyzed using the LIWC. Specifically, this study examined the LIWC outputs of first-person pronouns (singular and plural); third-person pronouns; social process words; prepositions and conjunctions; cognitive processing words; and indicators of time orientation (e.g. verb tense). Table 1 lists the LIWC categories examined in this study, with example words.

Table 1

*LIWC 2015 Categories and their Internal Consistency Estimates*

<table>
<thead>
<tr>
<th>Category</th>
<th>Examples</th>
<th>Internal consistency (Corrected α)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pronouns</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1st person singular</td>
<td>I, me, mine</td>
<td>.81</td>
</tr>
<tr>
<td>1st person plural</td>
<td>we, us, our</td>
<td>.82</td>
</tr>
<tr>
<td>3rd person singular</td>
<td>she, her, him</td>
<td>.85</td>
</tr>
<tr>
<td>3rd person plural</td>
<td>they, their, they'd</td>
<td>.78</td>
</tr>
<tr>
<td><strong>Other function words</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prepositions</td>
<td>to, with, above</td>
<td>.18</td>
</tr>
<tr>
<td>Conjunctions</td>
<td>and, but, whereas</td>
<td>.50</td>
</tr>
<tr>
<td><strong>Social processes</strong></td>
<td>talk, they, daughter, dad, buddy, neighbor, his, her</td>
<td>.86</td>
</tr>
<tr>
<td><strong>Cognitive processes</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>cause, know, ought, think, because, should, perhaps</td>
<td>.92</td>
</tr>
<tr>
<td><strong>Time orientations</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Past focus</td>
<td>ago, did, talked</td>
<td>.64</td>
</tr>
<tr>
<td>Present focus</td>
<td>today, is, now</td>
<td>.66</td>
</tr>
<tr>
<td>Future focus</td>
<td>may, will, soon</td>
<td>.68</td>
</tr>
</tbody>
</table>

The research questions and hypotheses for the present study were as follows.

**Question 1.** Is there a correlation between overall quiet ego scores and the frequency of using first-person pronouns (singular and plural), third-person pronouns, social process words, prepositions and conjunctions, and cognitive processing words? Is there a correlation between quiet ego scores and use of words showing past, present, or
future focus? Further, which of these linguistic elements are the best predictors of quiet ego scores?

It was hypothesized that, for both types of narratives (high- and low-point experiences), a significant positive relationship would be found between quiet ego scores and the frequency of using third-person pronouns, first-person plural pronouns, social process words, prepositions and conjunctions, and cognitive processing words. On the other hand, a negative relationship was expected between quiet ego scores and the use of first-person singular pronouns. These patterns of pronoun use and increased social process words reflect increased other-focus and social identification, showing ego balance (balance of concern for self and other), and increases in prepositions, conjunctions, and cognitive processing words showing complexity of reflection and processing experience reflect increased reflection and integrative processing of experience, showing growth orientation. Predictions for these categories were consistent with the observations from many studies that singular first-person pronoun use indicates increased self-focus, and with the findings showing that meaning-making and complexity of thought are associated with increased use of prepositions, conjunctions, and cognitive process words (Pennebaker, 2011; Tausczik & Pennebaker, 2009). Findings by Abe (2016), Moore & Brody (2009), and Kramer & Herwitz (2013) further supported the prediction that a quiet ego state characterized by mindfulness, balance of self-other focus, and growth orientation will show these patterns.

Studies examining language samples oriented around the present or based on longer interviews (Kramer & Herwitz, 2013; Moore & Brody, 2009) support that increased use of present tense may indicate greater present-focus, associated with
mindfulness and mindfulness-related outcomes. Because mindfulness is closely related to detached awareness, a component of the quiet ego, this present focus could be seen as a quality of the quiet ego. However, the present study prompted participants to tell stories about their past, creating an obvious tendency to use the past tense. Research using the LIWC indicates that coherent use of past tense when describing past events is associated with memories that have been processed and resolved (Pennebaker, 2011). Therefore, given the link between this type of integrative processing and the growth orientation integral to the quiet ego, it was hypothesized that greater use of past tense and focus and reduced use of present tense and focus in these narratives would be positively correlated with quiet ego scores. Future tense occurred infrequently in these narratives, but was examined to provide a complete picture of time period orientation.

Based on LIWC research of these linguistic variables, it was hypothesized that lower use of first-person pronouns would be most predictive of overall quiet ego scores. Greater use of third-person pronouns (singular and plural) was hypothesized to be the next-greatest predictor, followed by greater use of social process words, cognitive processing words, and prepositions and conjunctions, and that lower use of present-tense verbs when describing past events would be the weakest predictor of quiet ego scores.

**Question 2.** Research has demonstrated that a quiet ego is predictive of psychological well-being, and research using the LIWC indicates that word use when describing life experiences is also a predictor of psychological well-being. The second research question sought to replicate existing LIWC research by examining the relationship between this set of linguistic variables and well-being. Is the frequency of using first-person pronouns (singular and plural), third-person pronouns, social process
words, prepositions and conjunctions, and cognitive processing words correlated with psychological well-being? Is there a correlation between well-being and use of words showing past, present, or future focus? Further, which of these linguistic elements are the best predictors of psychological well-being?

The present study used three measures of well-being and psychological health, the Positive and Negative Affect Schedule (PANAS), an affective measure of well-being, the Satisfaction With Life Scale (SWLS), a cognitive measure of well-being, and the 21-item Depression, Anxiety, and Stress Scale (DASS-21), a measure of negative emotional states and mental health symptoms. An additional exploratory element of this research question was to evaluate which of these types of well-being measures is more associated with language use patterns.

It was hypothesized that, for both types of narratives, a significant positive relationship would be found between psychological well-being and the frequency of using third-person pronouns, first-person plural pronouns, social process words, prepositions and conjunctions, and cognitive processing words. On the other hand, a negative relationship was expected between psychological well-being and the use of first-person singular pronouns.

When examining the relative strength of the linguistic predictors of well-being, lower use of first-person pronouns was hypothesized to be most predictive of well-being. Greater use of third-person pronouns (singular and plural) was hypothesized to be the next-greatest predictor, followed by social process words, then by lower use of present-tense verbs when describing past events, and finally by cognitive processing words and prepositions and conjunctions.
These predictions were very similar to those proposed for quiet ego scores, and in keeping with research supporting a link between pronoun use and well-being, and between increased cognitive processing of past events and well-being (Pennebaker, 2011; Tausczik & Pennebaker, 2009). However, given that LIWC studies frequently highlight poorer well-being outcomes associated with using present tense to describe past events (Pennebaker, 2011), this variable was hypothesized to play a greater role in predicting well-being than in predicting quiet ego scores.

**Method**

**Participants**

Participants were recruited using Amazon’s Mechanical Turk (MTurk) service, an online crowdsourcing service that allows individuals to complete tasks for payment. As MTurk offers quick access to a large sample of potential participants, it has become a frequently-used service by researchers in the social sciences. Paolacci & Chandler (2014) review research on the characteristics of the MTurk participant pool. Although the MTurk pool cannot be seen as a demographically representative sample, MTurk is comparable to other convenience samples, such as university undergraduates, in terms of the quality of data collected (DeSoto, 2016; Paolacci & Chandler, 2014). Results of studies involving self-reports of individual differences, various cognitive tasks, linguistic judgments, and behavior in economic game scenarios show that the MTurk pool is comparable to university undergraduate samples (Mason & Suri, 2012; Paolacci & Chandler, 2014), and MTurk samples also compare well with traditional undergraduate samples in studies using the LIWC (Hawkins II & Boyd, 2017). The MTurk pool of workers is international, so to prevent confounding related to regional language variation
or English as a second language, participation in the present study was limited to native English speakers currently residing in the U.S.

After data screening, there were 161 participants whose responses were used for analyses. 97% of respondents reported that they grew up speaking only English, while 3% reported that they grew up speaking English and another language. The sample consisted of 46.6% women and 53.4% men; no respondents selected the “Other” category for gender. Ages of respondents ranged from 23 to 72, with a mean age of 38.5 years. The sample was 75% White, 11% Black or African-American, 6% Asian, and 3% Hispanic, and 0.6% American Indian. An additional 4% of respondents selected more than one racial or ethnic group.

Within the U.S. the largest geographic representation was from the South, with 38% of participants from this region, 21% of respondents from the Northeast, 21% from the West, and 20% from the Midwest. The sample had high average levels of education: 43% of participants reported a bachelor’s degree, 10% reported a graduate degree, and 33% reported either an associate’s degree or some college. The majority of participants identified as either working class (45%) or middle class (50%). These characteristics are in keeping with published analyses of the MTurk participant pool, which indicate that MTurk participants are more educated than average and more likely to be underemployed (Paolacci & Chandler, 2014).

Most participants were frequent users of social media sites. 26% reported that they visit or use social media sites “many times throughout the day,” and 37% reported use “several times per day.” Overall, 82% of respondents reported visiting or using social media sites at least once per day, and only 2% were non-users.
Materials

The Quiet Ego Scale (QES). The Quiet Ego Scale (Wayment, Bauer, et al., 2015) measures the quiet ego construct, conceptualized as having four components: inclusive identity, perspective taking, detached awareness, and growth. Although the construct has four components, in the current study, only the overall score was used. The scale consists of fourteen items, rated on a 5-point scale (1 = strongly disagree; 5 = strongly agree), with select items reverse-scored. The items were derived from several established scales measuring constructs closely related to the quiet ego. Direct-scored items include statements such as “I think it is important to have new experiences that challenge how you think about yourself and the world” and “I feel a connection with strangers.” Reverse-scored items include “I rush through activities without being really attentive to them” and “I sometimes find it difficult to see things from another person’s point of view.” After scale reversal for the relevant items (e.g. 1 becomes 5), total values are added, and higher scores indicate greater quiet ego characteristics. See Appendix A for the complete scale. Cronbach’s α for the 14-item scale is .78, and the four subscales measured show adequate internal reliability, with α levels as follows: detached awareness — .76, inclusive identity — .66, perspective taking — .68, growth — .78. (Wayment, Bauer, et al., 2015). The validity of the QES is supported by initial studies showing positive correlations with honesty-humility, holistic and cooperative thinking, self-determination, community involvement, self-compassion, and self-transcendence, and negative correlations with aggression, hostility, and psychological entitlement (Wayment, Bauer, et al., 2015).
Positive and Negative Affect Schedule (PANAS). The Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988) prompts participants to rate 10 items for positive affect (e.g. interested, excited, strong, inspired) and 10 items for negative affect (e.g. distressed, guilty, irritable, ashamed) based on how frequently they have felt that way over a recent time period. For this study, the time period specified was “the past few weeks.” This instrument measures the affective component of subjective well-being. The PANAS has strong internal consistency, with Cronbach’s α of .87 for both the positive and negative scales in the “past few weeks” condition, and shows strong convergent and discriminant validity when compared with longer measures of affect, distress and depression (Watson et al., 1988). For this study, an overall subjective well-being score was also calculated by creating a ratio of total positive affect score to total negative affect score, with higher ratio indicating greater positive affect.

Satisfaction With Life Scale (SWLS). The Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985) is a brief, 5-item instrument that measures the cognitive component of well-being by asking participants to note their level of agreement with several global statements about their lives, for example, “In most ways my life is close to my ideal,” and “So far I have gotten the important things I want in life.” Each item is rated on a 7-point Likert scale, and values are added so that total scores on the instrument may range from 5 to 35, with higher scores indicating greater life satisfaction. The scale correlates well with personality indicators of well-being and with interviewer assessments of life satisfaction, and has good internal consistency, with Cronbach’s α of .87 (Diener et al., 1985).
Depression, Anxiety, and Stress Scales-21 (DASS-21). The Depression, Anxiety, and Stress Scale (Lovibond & Lovibond, 1995) measures symptoms of these three states, including dysphoric mood, physical arousal and panic, tension, irritability, and reactivity. The scale is effective at distinguishing among the three sets of symptoms (Antony, Bieling, Cox, Enns, & Swinson, 1998). The scale asks participants to rate their agreement with descriptions of symptoms experienced over the past week on a 4-point scale ranging from “Does not apply to me at all” to “Applied to me very much, or most of the time.” The depression subscale includes items such as “I couldn’t seem to experience any positive feeling at all” and “I felt that I wasn’t worth much as a person.” The anxiety subscale includes items such as “I felt I was close to panic” and “I was aware of dryness of my mouth.” The stress subscale includes items such as “I found it difficult to relax” and “I tended to over-react to situations.” Responses are scored from 0 to 3, and so a total score of 0 is possible if a participant reports that none of the statements applied to him or her. Scores are computed for each of the three subscales. The subscales have strong internal consistency, with reported Cronbach’s $\alpha$ of .94, .87, and .91 by Antony et al. (1998) and .91, .80, and .84 by Sinclair et al. (2012). The DASS-21 is a shortened version of the original 42-item scale, which has been shown to have similar factor structure and concurrent validity to the longer version (Antony et al., 1998).

Linguistic Inquiry and Word Count (LIWC). The Linguistic Inquiry and Word Count software (Pennebaker, Booth, et al., 2015) analyzes text samples by checking each word against an internal dictionary of approximately 6,400 words that have been categorized using a panel of human judges. The words are included in counts that identify basic part of speech as well as by associated psychological constructs and categories of
The word "cried" would fall into five categories: sadness, negative emotion, overall affect, verbs, and past focus. See Appendix D for a sample LIWC output. For this study, analyses were limited to a group of LIWC categories expected to be linked to quiet ego characteristics theoretically and on the basis of existing research: first-person pronouns (singular and plural); third-person pronouns; social process words; prepositions and conjunctions; cognitive processing words; and past, present, and future orientation. Word counts from the LIWC are expressed as percentages of total words generated to control for length of writing sample. As Pennebaker, Boyd, et al. (2015) note, determining reliability coefficients for natural language samples is more difficult than for questionnaire instruments, because in natural language a person tends to express an idea once and move on, leaving less repetition to examine for consistency. Corrected \( \alpha \) using the Spearman-Brown prediction formula ranges from .50 to .92 for the word categories to be examined in this study, with the exception of prepositions, which are .18 (Pennebaker, Boyd, et al., 2015). See Table 1.

Procedure

Participants were Mechanical Turk workers who selected the study from a listing of available tasks on the MTurk site. To complete the study, they followed a link from the MTurk site that took them to Qualtrics to respond to the scales and write the narratives. Upon completion of the study in Qualtrics, participants received a randomly assigned number. In order to receive payment via MTurk, participants copied this number and entered it on the MTurk site. The researcher verified study completion and approved the
submitted numbers in order to trigger payment to the participants via MTurk. This is a
typical process for MTurk social science or market research tasks that use Qualtrics.

Participants responded to the above scales and wrote two brief narratives. Data
were collected through Qualtrics, which interfaces with the Mechanical Turk service.
Prior to beginning the study, participants were given a statement of informed consent and
completed a demographic questionnaire. The presentation of the writing prompts and the
QES and well-being scales was counterbalanced to control for order effects. After
completion of the writing prompts and scales, participants received a debriefing
statement, which included contact information for nationally available trauma and mental
health hotlines. The median time to complete the study was around 23 minutes.

The writing prompts for the narratives were as follows. These were adapted from
McAdams (2008), Weston et al. (2016), and Pennebaker (2017). See Appendix E for
examples of participant responses.

*High point:* Please describe a scene, episode, or moment in your life that stands
out as an especially positive experience. This might be the high point of your entire life,
or else an especially happy, joyous, exciting, or wonderful moment. Please describe this
scene in detail. What happened, when and where, who was involved, and what were you
thinking and feeling? How is this experience related to who you would like to become,
who you have been in the past, or who you are now? Once you begin writing, try to write
continuously for about 10 minutes. Write as much as you like, but aim for at least 200
words. Really let go and explore your feelings and thoughts. Don’t worry about grammar
or organization, but please do not use abbreviations.
Low point: Please identify a scene that stands out as a low point, if not the low point in your life. If you prefer, this does not have to be the lowest point in your life, but merely a negative experience of some kind. What happened in the event, where and when, who was involved, and what were you thinking and feeling? How is this experience related to who you would like to become, who you have been in the past, or who you are now? Once you begin writing, try to write continuously for about 10 minutes. Write as much as you like, but aim for at least 200 words. Really let go and explore your feelings and thoughts. Don’t worry about grammar or organization, but please do not use abbreviations.

Results

Data Screening

Of 243 people who began the study in Qualtrics, 61 (25%) did not complete the study tasks. One hundred eighty-three respondents completed all questionnaires and writing prompts. Of the 183 respondents who completed the study, 182 participants submitted the random number code provided by Qualtrics to MTurk in order to request payment. Of those 182 responses submitted for approval, nine were rejected by the researcher at the time of submission due to problems with written responses, such as narratives consisting of text plagiarized from websites or no narratives provided, leaving 173 approved responses. During data screening, MTurk reports were cross-referenced with the Qualtrics data and only study responses that had been approved in MTurk via the Qualtrics-generated random numbers were retained for further analysis.

Due to some problems with settings in Qualtrics and MTurk, there were some respondents who completed the study more than once. Using MTurk reports, pairs from
the same respondent were matched, study completion dates were used to identify the order in which the responses occurred, and the second response was removed from the results. This procedure required the use of MTurk worker IDs, but the worker IDs were deleted from downloaded reports after the procedure was completed to protect participant anonymity. The elimination of second responses led to the removal of six responses from the data set.

Narratives were then read in order to further screen responses and prepare the text for analysis by the LIWC. Narratives were minimally corrected for spelling and to remove punctuation that would affect LIWC results (e.g. slashes), following guidelines in the LIWC2015 user manual (Pennebaker, Booth, et al., 2015). During this process, six additional problematic responses were identified—two with incoherence or extremely limited English fluency, three that had been plagiarized from Internet sources, and one that was a duplicate story from another response. These six participants were removed from the data set, leaving 161 responses used in the analyses.

After the above screening processes, responses were checked for problematic patterns of questionnaire responses, such as giving the same response across all questions of a scale. There were no responses that showed problematic patterns, and no participants were removed based on this criterion. Results on the QES and well-being measures were then examined for outliers, using the box plot approach. There was only one extreme outlier on one scale, the anxiety subscale of DASS. After evaluation, no participants were removed as a result of the outlier check. The resulting sample size of 161 participants was greater than the 152 required to conduct the planned multiple regression analyses for 11
linguistic variables at an anticipated medium effect size, with a desired power of .90, and a significance level of .05.

**Internal Consistency of the Measures**

Cronbach’s alpha coefficients were calculated to assess the internal consistency of each scale and subscale for this sample. The scales and subscales all showed good to excellent internal consistency, with alpha values ranging from .85 to .95. See Table 2.

Table 2

*Internal Consistency of the Measures (N = 161)*

<table>
<thead>
<tr>
<th>Measure</th>
<th>Cronbach’s α</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quiet Ego Scale (QES)</td>
<td>.85</td>
</tr>
<tr>
<td>Positive and Negative Affect Schedule (PANAS)</td>
<td></td>
</tr>
<tr>
<td>Positive scale</td>
<td>.92</td>
</tr>
<tr>
<td>Negative scale</td>
<td>.93</td>
</tr>
<tr>
<td>Satisfaction with Life Scale (SWLS)</td>
<td>.94</td>
</tr>
<tr>
<td>Depression, Anxiety, and Stress Scale (DASS)</td>
<td></td>
</tr>
<tr>
<td>Depression subscale</td>
<td>.95</td>
</tr>
<tr>
<td>Anxiety subscale</td>
<td>.88</td>
</tr>
<tr>
<td>Stress subscale</td>
<td>.92</td>
</tr>
</tbody>
</table>

Internal consistency for all scales matched or exceeded that of published psychometric data, indicating a very consistent pattern of responding among participants. Cronbach’s α for the QES was .85, higher than the .78 reported by Wayment, Bauer, et al. (2015). Similarly, α for the PANAS positive (.92) and negative (.93) scales exceeded the .87 reported by Watson et al. (1988), and α for the SWLS exceeded the .87 reported by Diener et al. (1985). Cronbach’s α levels for the DASS were comparable to those reported by Antony et al. (1998).
Descriptive Statistics

Mean scores and standard deviations for all administered scales are presented in Table 3. The QES and SWL scales were scored as single measures. The PANAS was divided into positive and negative affect scores, and a ratio of positive score to negative score was also calculated. The DASS-21 was divided into its three subscales, and a total score also computed.

Table 3

Descriptive Statistics for the Measures (N = 161)

<table>
<thead>
<tr>
<th>Measure</th>
<th>Mean</th>
<th>SD</th>
<th>Sample range</th>
<th>Scale range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quiet Ego Scale (QES)</td>
<td>52.86</td>
<td>8.77</td>
<td>31.0-70.0</td>
<td>14.0-70.0</td>
</tr>
<tr>
<td>Positive and Negative Affect Schedule (PANAS)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive scale</td>
<td>31.91</td>
<td>9.20</td>
<td>11.0-50.0</td>
<td>10.0-50.0</td>
</tr>
<tr>
<td>Negative scale</td>
<td>17.52</td>
<td>8.14</td>
<td>10.0-42.0</td>
<td>10.0-50.0</td>
</tr>
<tr>
<td>Ratio positive:negative</td>
<td>2.25</td>
<td>1.20</td>
<td>.41-5.0</td>
<td>N/A</td>
</tr>
<tr>
<td>Satisfaction with Life Scale (SWLS)</td>
<td>21.05</td>
<td>8.99</td>
<td>5.0-35.0</td>
<td>5.0-35.0</td>
</tr>
<tr>
<td>Depression, Anxiety, and Stress Scale (DASS-21)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression subscale</td>
<td>4.80</td>
<td>5.83</td>
<td>0.0-21.0</td>
<td>0-24</td>
</tr>
<tr>
<td>Anxiety subscale</td>
<td>2.99</td>
<td>4.14</td>
<td>0.0-20.0</td>
<td>0-24</td>
</tr>
<tr>
<td>Stress subscale</td>
<td>5.18</td>
<td>5.08</td>
<td>0.0-21.0</td>
<td>0-24</td>
</tr>
<tr>
<td>Total score</td>
<td>12.97</td>
<td>13.93</td>
<td>0.0-58.0</td>
<td>0-63</td>
</tr>
</tbody>
</table>

Participants’ mean score on the QES totaled 52.86 (SD = 8.77), or an average response of 3.78 on the 5-point scale. This average is somewhat higher than that reported in several other studies using the QES. Wayment, Collier, et al. (2015) found baseline mean quiet ego response ranging from 3.31 to 3.58 in a sample of 32 female undergraduate students of average age 18.2; Wayment et al. (2016) found mean QES responses ranging from 3.51-3.58 in 611 undergraduate students with mean age between 18 and 19; and Collier & Wayment (2018) reported a mean QES response of 3.55 in a
sample of 465 undergraduates with mean age of 20. However, the sample in the present study had a significantly higher average age ($M = 38.5$ years) than these samples. Given that the quiet ego can be viewed as a form of ego development (Bauer, 2008), (Wayment & Bauer, 2017), it would be theoretically consistent for QES scores to increase with age. The higher average QES score for this sample may in part be explained by the age of the participants.

On the SWLS, a neutral response of 4 (neither agree nor disagree) to all five questions would result in a score of 20. The mean score of participants in this study (21.05) was only slightly above the mid-point of the scale. On average, participants were neither highly satisfied or highly dissatisfied with their lives, however, the range of scores (5-35) covered the entire possible range of the scale.

Participants had a mean PANAS positive scale score of 31.91 and mean negative score of 17.52, resulting in an average ratio of 2.25. Participants reported experiencing 2.25 times as much positive affect as negative affect over the past few weeks. These are comparable to the means reported in Watson et al. (1988) of 32.0 ($SD = 7.0$) for the positive scale and 19.5 ($SD = 7.0$) for the negative scale; these means were reported for a college student sample. The mean ratio of positive to negative affect is below the ideal ratio of 2.9 suggested as optimal for well-being (Diehl, Hay, & Berg, 2011), however, this ratio may be less predictive of well-being in middle-aged to older adults (Diehl et al., 2011).

As the developers of the DASS-21 note (Psychology Foundation of Australia, 2018) DASS scale scores are intended as dimensional, rather than categorical, dimensions. However, normative data for the 21-item DASS in a U.S. population allow
us to compare this sample’s results to norms. Sinclair et al. (2012) report mean DASS-21 scores (non-doubled) of 2.85 for depression, 2.0 for anxiety, 4.06 for stress, and 8.9 overall in a nonclinical sample of U.S. adults. These are comparable to norms found by Henry & Crawford (2005) in a UK sample. The sample for the present study is on average higher in symptoms reflecting depression ($M = 4.80$, $SD = 5.83$) and anxiety ($M = 2.99$, $SD = 4.14$) and lower in symptoms reflecting stress ($M = 5.18$, $SD = 5.08$) than the U.S. population norms. This is in keeping with characteristics of the MTurk participant pool, which appears to be slightly more socially anxious and less emotionally stable than broader community samples (Paolacci & Chandler, 2014). As research by Twenge et al. (2010) indicates, there may also be population-wide trends in levels of psychopathology that continue to reduce average levels of well-being and increase average frequency of psychological symptoms.

Participants’ rates of word use, as measured by the LIWC, for the 11 linguistic categories of interest were compared to base rates published with the LIWC 2015 (Pennebaker, Booth, et al., 2015). These base rates for LIWC measures have been calculated for several types of writing, including blog posts, novels, natural speech, and “expressive writing.” Expressive writing was the most comparable to the writing analyzed in the present study. Expressive writing base rates were calculated from 2500 writers in 29 samples from research studies in which participants were assigned to write about emotional topics (Pennebaker, Booth, et al., 2015). These rates are compared to those from the present study in Table 4. The percentages for nearly all word categories were similar, indicating that participants in the present study generated writing samples similar to those in previous LIWC research, at least in terms of these variables. The
writing in the present study was more heavily skewed toward past focus than the average; this discrepancy is in the expected direction given that participants were asked to write about past events.

Table 4

Comparison of Participants' Word Use with LIWC Base Rates

<table>
<thead>
<tr>
<th>Category</th>
<th>LIWC base rate for expressive writing</th>
<th>QE study mean (combined positive and negative narratives)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Word count</td>
<td>408.94</td>
<td>512.24</td>
</tr>
<tr>
<td>1st person singular</td>
<td>8.66</td>
<td>9.71</td>
</tr>
<tr>
<td>1st person plural</td>
<td>0.81</td>
<td>1.08</td>
</tr>
<tr>
<td>3rd person singular</td>
<td>2.01</td>
<td>2.11</td>
</tr>
<tr>
<td>3rd person plural</td>
<td>0.57</td>
<td>.59</td>
</tr>
<tr>
<td>Prepositions</td>
<td>14.27</td>
<td>13.71</td>
</tr>
<tr>
<td>Conjunctions</td>
<td>7.46</td>
<td>7.40</td>
</tr>
<tr>
<td>Positive emotion</td>
<td>2.57</td>
<td>3.34</td>
</tr>
<tr>
<td>Negative emotion</td>
<td>2.12</td>
<td>2.50</td>
</tr>
<tr>
<td>Social processes</td>
<td>8.69</td>
<td>9.17</td>
</tr>
<tr>
<td>Cognitive processes</td>
<td>12.52</td>
<td>12.04</td>
</tr>
<tr>
<td>Past focus</td>
<td>5.83</td>
<td>10.30</td>
</tr>
<tr>
<td>Present focus</td>
<td>10.45</td>
<td>6.49</td>
</tr>
<tr>
<td>Future focus</td>
<td>1.85</td>
<td>.90</td>
</tr>
</tbody>
</table>

Intercorrelations of the Quiet Ego and Well-Being Measures

Before examining the relationships between scores on the Quiet Ego Scale and the selected LIWC variables and between well-being and the selected LIWC variables, zero-order correlations among the scores on the various scales were examined (see table 5).

All correlations between scales were found to be statistically significant. As expected based on prior research on the quiet ego, scores on the QES were positively correlated with the cognitive measure of well-being, the SWLS ($r = .33, p < .001$), and positively correlated with the positive component of the affective measure of well-being, the PANAS ($r = .42, p < .001$), as well as with the ratio of positive to negative affect ($r = .48,$
Scores on the QES were negatively correlated with negative affect scores on the PANAS ($r = -0.42, p < 0.001$), and with the DASS total score ($r = -0.43, p < 0.001$), as well as the depression ($r = -0.43, p < 0.001$), anxiety, ($r = -0.36, p < 0.001$), and stress ($r = -0.40, p < 0.001$) subscales. Overall, participants with higher quiet ego scores had higher well-being and lower depression, anxiety, and stress.

Table 5

**Zero-Order Correlations between Measures ($N = 161$)**

<table>
<thead>
<tr>
<th>Variable</th>
<th>QES</th>
<th>SWLS</th>
<th>PANAS positive</th>
<th>PANAS negative</th>
<th>PANAS ratio</th>
<th>Depression</th>
<th>Anxiety</th>
<th>Stress</th>
<th>DASS total</th>
</tr>
</thead>
<tbody>
<tr>
<td>QES</td>
<td>.33**</td>
<td>.43**</td>
<td>.42**</td>
<td>.48**</td>
<td>.43**</td>
<td>.36**</td>
<td>-</td>
<td>-</td>
<td>- .43**</td>
</tr>
<tr>
<td>SWLS</td>
<td>.68**</td>
<td>.47**</td>
<td>.65**</td>
<td>.58**</td>
<td>.39**</td>
<td>.40**</td>
<td>-</td>
<td>-</td>
<td>- .50**</td>
</tr>
<tr>
<td>PANAS positive</td>
<td>--</td>
<td>.41**</td>
<td>.81**</td>
<td>.50**</td>
<td>.22**</td>
<td>.40**</td>
<td>-</td>
<td>-</td>
<td>- .40**</td>
</tr>
<tr>
<td>PANAS negative</td>
<td>--</td>
<td>-.78**</td>
<td>.73**</td>
<td>.72**</td>
<td>.70**</td>
<td>.77**</td>
<td>-</td>
<td>-</td>
<td>- .77**</td>
</tr>
<tr>
<td>PANAS ratio</td>
<td>--</td>
<td>-.65**</td>
<td>-.51**</td>
<td>-.65**</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>- .65**</td>
</tr>
<tr>
<td>Depression</td>
<td>--</td>
<td>.77**</td>
<td>.77**</td>
<td>.93**</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>- .93**</td>
</tr>
<tr>
<td>Anxiety</td>
<td>--</td>
<td>.82**</td>
<td>.92**</td>
<td>.93**</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>- .93**</td>
</tr>
<tr>
<td>Stress</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>-</td>
<td>--</td>
</tr>
<tr>
<td>DASS total</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

*p < .01. **p < .001

The various well-being measures were all significantly interrelated in the expected directions. For example, scores on the SWLS were positively correlated with PANAS positive affect scores ($r = .68, p < .001$) and positive to negative ratio ($r = .65, p < .001$), and negatively correlated with scores on the DASS ($r = -.50, p < .001$); PANAS positive scale scores were negatively correlated with PANAS negative scale scores ($r = -.41, p < .001$); PANAS negative scores were positively correlated with DASS scores ($r = .77, p < .001$); and all DASS subscales were strongly correlated with the total DASS score.
Intercorrelations of the Linguistic Variables

Correlations among the 11 selected LIWC outputs were examined prior to using these outputs to address the study questions. See Table 6. Several significant relationships were observed. Use of the first-person singular (I/me) was negatively correlated with use of the other observed pronouns—first-person plural (we, \( r = -.60, p < .01 \)), third-person singular (she/he \( r = -.27, p < .01 \)), and third-person plural (they, \( r = -.20, p < .01 \)). The more participants used the first-person singular in their narratives, the less they tended to use pronouns referring to other people. Use of third-person singular pronouns was positively correlated with use of first-person plural (\( r = .28, p < .01 \)), indicating that participants referred to a “he” or “she” more when their narratives included more use of “we.” Several weak relationships were also observed between pronoun use and degree of past focus (see Table 6).

Several relationships were observed between the Cognitive Processes word category and other LIWC variables. Cognitive process words were positively correlated with use of first-person singular pronouns (\( r = .22, p < .01 \)) and with level of focus on the present (\( r = .34, p < .01 \)). Participants who used more words reflecting cognitive processes also used more first-person singular pronouns and more present tense and present-focused words when discussing these past events. Cognitive process words were negatively correlated with use of first-person plural (\( r = -.20, p = .01 \)) and third-person singular (\( r = -.22, p < .01 \)) pronouns, negatively correlated with words related to social processes (\( r = -.33, p < .01 \)), and negatively correlated with past focus and use of past tense (\( r = -.22, p < .01 \)). Weak relationships were also observed between degree of present focus and prepositions and social process words. As would be logically expected,
there was a negative correlation between degree of past focus and degree of present focus
($r = -.54, p < .01$).

Several significant relationships were observed between the pronoun categories and the Social Processes words category. Relationships for three of the pronoun categories, first-person singular ($r = -.44, p < .01$), first-person plural ($r = .59, p < .01$), and third-person singular ($r = .75, p < .01$) were moderate to strong. Because the LIWC categories are not exclusive and an individual word may be counted in more than one category, these results are likely due to overlapping categorization of the pronouns. To prevent multicollinearity among the LIWC predictors used in the succeeding multiple regression analyses (Tables 10 and 12-16), the Social Processes variable was excluded from the multiple regression analyses.

Correlations between the linguistic variables were examined separately for both the positive and negative narratives. The patterns of intercorrelation were similar in both types of narratives, which supported the use of the combined narratives for the study analyses.
Table 6

Zero-Order Correlations between Linguistic Variables in Combined Positive and Negative Narratives (N = 161)

<table>
<thead>
<tr>
<th>Variable</th>
<th>1st person singular</th>
<th>1st person plural</th>
<th>3rd person singular</th>
<th>3rd person plural</th>
<th>Prepositions</th>
<th>Conjunctions</th>
<th>Social processes</th>
<th>Cognitive processes</th>
<th>Past focus</th>
<th>Present focus</th>
<th>Future focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st person singular</td>
<td>--</td>
<td>-0.60**</td>
<td>-0.27**</td>
<td>-0.20**</td>
<td>-0.07</td>
<td>-0.01</td>
<td>-0.44**</td>
<td>-0.20*</td>
<td>-0.16*</td>
<td>-0.05</td>
<td>-0.08</td>
</tr>
<tr>
<td>1st person plural</td>
<td>--</td>
<td>0.28**</td>
<td>0.11</td>
<td>-0.11</td>
<td>0.11</td>
<td>0.59**</td>
<td>-0.20*</td>
<td>-0.16*</td>
<td>0.07</td>
<td>0.03</td>
<td></td>
</tr>
<tr>
<td>3rd person singular</td>
<td>--</td>
<td>0.01</td>
<td>-0.12</td>
<td>0.02</td>
<td>0.75**</td>
<td>-0.22**</td>
<td>0.17*</td>
<td>0.07</td>
<td>-0.07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3rd person plural</td>
<td>--</td>
<td>-0.05</td>
<td>-0.05</td>
<td>0.29**</td>
<td>-0.08</td>
<td>-0.03</td>
<td>0.01</td>
<td>-0.07</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prepositions</td>
<td>--</td>
<td>0.25**</td>
<td>-0.15</td>
<td>0.11</td>
<td>-0.06</td>
<td>-0.16*</td>
<td>0.12</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conjunctions</td>
<td>0.03</td>
<td>0.08</td>
<td>0.04</td>
<td>0.09</td>
<td>0.09</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social processes</td>
<td>--</td>
<td>-0.33**</td>
<td>0.01</td>
<td>0.17*</td>
<td>-0.10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cognitive processes</td>
<td>0.22**</td>
<td>0.34**</td>
<td>0.10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Past focus</td>
<td>--</td>
<td>-0.54**</td>
<td>-0.12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Present focus</td>
<td>--</td>
<td>0.12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .05, **p < .01
Correlations with Age and Gender

Age and gender were examined as potential confounds within the data. Previous research using the LIWC has demonstrated that word use patterns vary with gender and age. Women tend to use more first-person pronouns, more verbs, more social process words, and fewer articles and nouns (Chung & Pennebaker, 2007; Tausczik & Pennebaker, 2009). Changes in LIWC profiles are also associated with age; older participants have been shown to use more plural first-person pronouns, fewer past-tense verbs, and more insight-related words (Pennebaker & Stone, 2003). Although QES studies have not shown a correlation between gender and quiet ego (Wayment, Bauer, et al., 2015), there is some theoretical suggestion that quiet ego may be correlated with age (Bauer, 2008). More broadly, a range of psychological research has observed increased well-being and decreased psychopathology in older people.

Gender was not a significant predictor of scores on the QES or on any of the well-being measures. Age, however showed a significant negative correlation with PANAS negative scale scores ($r = -.19, p = .02$); with the depression ($r = -.19, p = .02$), anxiety, ($r = -.34, p < .001$), and stress ($r = .29, p < .001$) subscales of the DASS; and with DASS total scores ($r = -2.87, p < .001$). There was also a significant positive relationship between age and PANAS ratio of positive to negative affect ($r = .19, p = .02$). Older participants tended to experience less negative affect (and greater positive to negative affect ratio) and less depression, anxiety, and stress.

Both age and gender showed significant correlations with several of the linguistic variables. See Tables 7 and 8. Older participants tended to use fewer first-person singular pronouns and fewer prepositions, to use more first-person plural pronouns, third-person singular pronouns, and words reflecting cognitive and social processes. This is consistent with the findings of Pennebaker & Stone (2003), who found decreased use of first-person singular, some
increases in use of first-person plural, and increased use of insight-related words in older participants. There were also significant gender differences in the linguistic variables. Women in the study tended to use more first-person plural and third-person singular pronouns, as well as more words related to social processes, than the men did. Men in the study tended to use more prepositions than the women did. This is in keeping with previous research showing that women use more pronouns in general and more other-references and social process words, and that men use more prepositions (Tausczik & Pennebaker, 2009). Interestingly, however, this data set showed no gender differences in first-person singular pronoun use, in contrast with earlier research showing higher rates of first-person singular pronoun use by women (Chung & Pennebaker, 2007; Tausczik & Pennebaker, 2009).

Because age and gender were correlated with a number of the linguistic variables, both age and gender were controlled for in the multiple regression analyses.

Table 7

Zero-Order Correlations between Age and Linguistic Variables (N = 161)

<table>
<thead>
<tr>
<th>Category</th>
<th>Correlation with Age</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pronouns</strong></td>
<td></td>
</tr>
<tr>
<td>1st person singular</td>
<td>-.26**</td>
</tr>
<tr>
<td>1st person plural</td>
<td>.16*</td>
</tr>
<tr>
<td>3rd person singular</td>
<td>.21**</td>
</tr>
<tr>
<td>3rd person plural</td>
<td>.07</td>
</tr>
<tr>
<td><strong>Other function words</strong></td>
<td></td>
</tr>
<tr>
<td>Prepositions</td>
<td>-.18*</td>
</tr>
<tr>
<td>Conjunctions</td>
<td>-.10</td>
</tr>
<tr>
<td><strong>Social processes</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.26**</td>
</tr>
<tr>
<td><strong>Cognitive processes</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-.26**</td>
</tr>
<tr>
<td><strong>Time orientations</strong></td>
<td></td>
</tr>
<tr>
<td>Past focus</td>
<td>.09</td>
</tr>
<tr>
<td>Present focus</td>
<td>-.07</td>
</tr>
<tr>
<td>Future focus</td>
<td>-.05</td>
</tr>
</tbody>
</table>

*p < .05, **p < .01
Table 8

Gender Differences in Linguistic Variables in Combined Narratives (N = 161)

<table>
<thead>
<tr>
<th>Category</th>
<th>M (Men)</th>
<th>M (Women)</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pronouns</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1st person singular</td>
<td>9.71</td>
<td>9.71</td>
<td>-.01</td>
</tr>
<tr>
<td>1st person plural</td>
<td>.90</td>
<td>1.30</td>
<td>-2.11*</td>
</tr>
<tr>
<td>3rd person singular</td>
<td>1.51</td>
<td>2.80</td>
<td>-4.08**</td>
</tr>
<tr>
<td>3rd person plural</td>
<td>.55</td>
<td>.64</td>
<td>-.98</td>
</tr>
<tr>
<td><strong>Other function words</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prepositions</td>
<td>14.07</td>
<td>13.29</td>
<td>.26*</td>
</tr>
<tr>
<td>Conjunctions</td>
<td>7.55</td>
<td>7.22</td>
<td>1.35</td>
</tr>
<tr>
<td><strong>Social processes</strong></td>
<td>7.81</td>
<td>10.73</td>
<td>-4.91**</td>
</tr>
<tr>
<td><strong>Cognitive processes</strong></td>
<td>12.29</td>
<td>11.75</td>
<td>1.25</td>
</tr>
<tr>
<td><strong>Time orientations</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Past focus</td>
<td>9.98</td>
<td>10.66</td>
<td>-1.84</td>
</tr>
<tr>
<td>Present focus</td>
<td>6.53</td>
<td>6.45</td>
<td>.20</td>
</tr>
<tr>
<td>Future focus</td>
<td>.89</td>
<td>.91</td>
<td>-.18</td>
</tr>
</tbody>
</table>

*p < .05, **p < .01

**Study Question 1: Correlation Between Quiet Ego and the Linguistic Variables**

The first study question asked whether there would be a correlation between overall quiet ego scores and the frequency of using first-person pronouns (singular and plural), third-person pronouns, social process words, prepositions and conjunctions, cognitive processing words, and words showing past, present, or future focus. Prior to the multiple regression analysis to determine which of these elements would be the best predictors of quiet ego scores, the zero-order correlations between QES and the linguistic elements were examined. See Table 9. The correlations were weak and none were found to be statistically significant.
Table 9

Zero-Order Correlations between Quiet Ego and Linguistic Variables (N = 161)

<table>
<thead>
<tr>
<th>Category</th>
<th>Correlation with QES*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pronouns</strong></td>
<td></td>
</tr>
<tr>
<td>1st person singular</td>
<td>.05</td>
</tr>
<tr>
<td>1st person plural</td>
<td>-.03</td>
</tr>
<tr>
<td>3rd person singular</td>
<td>-.04</td>
</tr>
<tr>
<td>3rd person plural</td>
<td>-.06</td>
</tr>
<tr>
<td><strong>Other function words</strong></td>
<td></td>
</tr>
<tr>
<td>Prepositions</td>
<td>.03</td>
</tr>
<tr>
<td>Conjunctions</td>
<td>-.09</td>
</tr>
<tr>
<td><strong>Social processes</strong></td>
<td>.02</td>
</tr>
<tr>
<td><strong>Cognitive processes</strong></td>
<td>-.00</td>
</tr>
<tr>
<td><strong>Time orientations</strong></td>
<td></td>
</tr>
<tr>
<td>Past focus</td>
<td>-.03</td>
</tr>
<tr>
<td>Present focus</td>
<td>-.02</td>
</tr>
<tr>
<td>Future focus</td>
<td>-.02</td>
</tr>
</tbody>
</table>

*No correlations were statistically significant at the .05 level.

A hierarchical multiple regression analysis was conducted to examine whether any of the linguistic variables would be predictive of quiet ego scores when controlling for age and gender (table 10). VIF and tolerance indices indicated no multicollinearities among the predictors. In the first step, age and gender were used as the predictors. At an alpha level of .05, the relationship between this set of predictors and QES was not found to be statistically significant, $R^2 = .02$, $F(2, 158) = 1.48$, $p = .23$. In the second step, the linguistic variables were added to the analysis. None of the linguistic variables were found to have a statistically significant relationship to QES, and the linguistic variables did not add any predictive value, $R^2$ change $= .03$, $F(10, 148) = .41$, $p = .94$. 
Table 10

Summary of Multiple Regression between Quiet Ego and Linguistic Variables (N = 161)

<table>
<thead>
<tr>
<th>Predictor</th>
<th>B</th>
<th>SE B</th>
<th>β*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>0.05</td>
<td>0.07</td>
<td>0.06</td>
</tr>
<tr>
<td>Gender</td>
<td>1.87</td>
<td>1.42</td>
<td>0.11</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>0.07</td>
<td>0.07</td>
<td>0.10</td>
</tr>
<tr>
<td>Gender</td>
<td>2.40</td>
<td>1.58</td>
<td>0.14</td>
</tr>
<tr>
<td>1st person singular pronouns</td>
<td>0.21</td>
<td>0.39</td>
<td>0.07</td>
</tr>
<tr>
<td>1st person plural pronouns</td>
<td>0.20</td>
<td>0.83</td>
<td>0.03</td>
</tr>
<tr>
<td>3rd person singular pronouns</td>
<td>-0.27</td>
<td>0.39</td>
<td>-0.07</td>
</tr>
<tr>
<td>3rd person plural pronouns</td>
<td>-0.93</td>
<td>1.20</td>
<td>-0.07</td>
</tr>
<tr>
<td>Prepositions</td>
<td>0.21</td>
<td>0.40</td>
<td>0.05</td>
</tr>
<tr>
<td>Conjunctions</td>
<td>-0.36</td>
<td>0.49</td>
<td>-0.06</td>
</tr>
<tr>
<td>Cognitive processes</td>
<td>0.07</td>
<td>0.30</td>
<td>0.02</td>
</tr>
<tr>
<td>Past focus</td>
<td>-0.34</td>
<td>0.41</td>
<td>-0.09</td>
</tr>
<tr>
<td>Present focus</td>
<td>-0.20</td>
<td>0.37</td>
<td>-0.06</td>
</tr>
<tr>
<td>Future focus</td>
<td>-0.39</td>
<td>1.44</td>
<td>-0.02</td>
</tr>
</tbody>
</table>

*No correlations were found to be significant at the .05 level.

Note. $R^2 = .02$ for Step 1 ($p = .23$), $\Delta R^2 = .03$ for Step 2 ($p = .94$).

**Study Question 2: Correlation between Well-Being and the Linguistic Variables**

The second research question sought to replicate existing LIWC research by examining whether the frequency of using first-person pronouns (singular and plural), third-person pronouns, social process words, prepositions and conjunctions, cognitive processing words, and words showing past, present, or future focus would be correlated with psychological well-being. Prior to determining which of these elements would be the best predictors of each of the well-being measures using multiple regression, the zero-order correlations between the linguistic variables and well-being measures were observed. See Table 11. The majority of the correlations between the well-being measures and the linguistic variables were weak and not statistically significant. One significant negative relationship was observed between scores on the SWLS and use of cognitive processing words ($r = -0.24, p = .003$). Greater use of cognitive processing words
when describing high- and low-point experiences was correlated with lower life satisfaction as measured by the SWLS. This correlation is in the opposite direction of the hypothesis, which predicted that greater use of cognitive processing words would be correlated with greater scores on all well-being measures.

Table 11

Zero-Order Correlations between Well-Being Measures and Linguistic Variables (N = 161)

<table>
<thead>
<tr>
<th>Category</th>
<th>SWLS</th>
<th>PANAS positive</th>
<th>PANAS negative</th>
<th>PANAS ratio</th>
<th>Depression</th>
<th>Anxiety</th>
<th>Stress</th>
<th>DASS total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pronouns</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1st person</td>
<td>-0.04</td>
<td>0.07</td>
<td>0.11</td>
<td>0.01</td>
<td>0.10</td>
<td>0.10</td>
<td>0.07</td>
<td>0.10</td>
</tr>
<tr>
<td>singular</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1st person</td>
<td>0.12</td>
<td>-0.02</td>
<td>-0.12</td>
<td>0.03</td>
<td>-0.12</td>
<td>-0.12</td>
<td>-0.07</td>
<td>-0.11</td>
</tr>
<tr>
<td>plural</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3rd person</td>
<td>0.12</td>
<td>0.03</td>
<td>-0.07</td>
<td>0.10</td>
<td>-0.04</td>
<td>-0.10</td>
<td>-0.06</td>
<td>-0.08</td>
</tr>
<tr>
<td>singular</td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>3rd person</td>
<td>-0.11</td>
<td>-0.13</td>
<td>0.03</td>
<td>-0.07</td>
<td>0.06</td>
<td>-0.02</td>
<td>-0.02</td>
<td>0.01</td>
</tr>
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<td></td>
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<td></td>
</tr>
<tr>
<td><strong>Other function words</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prepositions</td>
<td>-0.03</td>
<td>-0.06</td>
<td>0.09</td>
<td>-0.08</td>
<td>0.05</td>
<td>0.09</td>
<td>0.03</td>
<td>0.06</td>
</tr>
<tr>
<td>Conjunctions</td>
<td>-0.01</td>
<td>-0.03</td>
<td>0.04</td>
<td>-0.08</td>
<td>0.07</td>
<td>0.11</td>
<td>0.13</td>
<td>0.11</td>
</tr>
<tr>
<td><strong>Social processes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cognitive processes</td>
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<td>-0.06</td>
<td>-0.02</td>
<td>-0.05</td>
<td>0.07</td>
<td>0.10</td>
<td>0.07</td>
<td>0.08</td>
</tr>
<tr>
<td><strong>Time orientations</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Past focus</td>
<td>0.12</td>
<td>-0.01</td>
<td>-0.10</td>
<td>0.05</td>
<td>-0.03</td>
<td>-0.06</td>
<td>-0.04</td>
<td>-0.05</td>
</tr>
<tr>
<td>Present focus</td>
<td>-0.05</td>
<td>0.05</td>
<td>0.14</td>
<td>-0.04</td>
<td>0.05</td>
<td>0.10</td>
<td>0.06</td>
<td>0.07</td>
</tr>
<tr>
<td>Future focus</td>
<td>0.01</td>
<td>0.001</td>
<td>0.04</td>
<td>-0.06</td>
<td>0.06</td>
<td>0.06</td>
<td>0.05</td>
<td>0.06</td>
</tr>
</tbody>
</table>

Hierarchical multiple regression analyses were conducted to examine whether any of the linguistic variables would be predictive of scores on the well-being measures when controlling for age and gender (Tables 12 to 16). VIF and tolerance indices indicated no multicollinearities among the predictors. Gender was not a significant predictor of any of the well-being measures. However, age was a significant predictor of PANAS negative scale, PANAS ratio, and all three DASS subscales as well as the total DASS score.
In the first step of the multiple regression analysis to examine whether any of the linguistic variables would be predictive of SWLS, age and gender were used as the predictors. At an alpha level of .05, the relationship between this set of predictors and SWLS was not found to be statistically significant $R^2 = .01, F(2, 158) = .64, p = .53$. In the second step, the linguistic variables were added to the analysis. The results indicated that the set of linguistic variables did not provide added predictive value, $R^2$ change = .09, $F(10, 148) = 1.40, p = .19$. However, use of words related to cognitive processes predicted the SLWS scores. It accounted for 4.4% of the variance in SWLS. The greater the use of cognitive process words, the lower the score on the SWLS. See Table 12.

Table 12

Summary of Multiple Regression for Linguistic Variables Predicting SWLS ($N = 161$)

<table>
<thead>
<tr>
<th>Predictor</th>
<th>$B$</th>
<th>$SE B$</th>
<th>$\beta$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>.04</td>
<td>.06</td>
<td>.05</td>
</tr>
<tr>
<td>Gender</td>
<td>1.12</td>
<td>1.46</td>
<td>.06</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>-.01</td>
<td>.07</td>
<td>-.01</td>
</tr>
<tr>
<td>Gender</td>
<td>.38</td>
<td>1.58</td>
<td>.02</td>
</tr>
<tr>
<td>1st person singular pronouns</td>
<td>.11</td>
<td>.39</td>
<td>.03</td>
</tr>
<tr>
<td>1st person plural pronouns</td>
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<td>.83</td>
<td>.08</td>
</tr>
<tr>
<td>3rd person singular pronouns</td>
<td>.12</td>
<td>.39</td>
<td>.03</td>
</tr>
<tr>
<td>3rd person plural pronouns</td>
<td>-1.93</td>
<td>1.19</td>
<td>-.13</td>
</tr>
<tr>
<td>Prepositions</td>
<td>-.19</td>
<td>.40</td>
<td>-.04</td>
</tr>
<tr>
<td>Conjunctions</td>
<td>-.06</td>
<td>.49</td>
<td>-.01</td>
</tr>
<tr>
<td>Cognitive processes</td>
<td>-.80</td>
<td>.30</td>
<td>-.24**</td>
</tr>
<tr>
<td>Past focus</td>
<td>.29</td>
<td>.41</td>
<td>.08</td>
</tr>
<tr>
<td>Present focus</td>
<td>.20</td>
<td>.37</td>
<td>.06</td>
</tr>
<tr>
<td>Future focus</td>
<td>.67</td>
<td>1.44</td>
<td>.04</td>
</tr>
</tbody>
</table>

*$p < .05$, **$p < .01$

Note. $R^2 = .01$ for Step 1 ($p = .53$), $\Delta R^2 = .09$ for Step 2 ($p = .19$).

In the first step of the multiple regression analysis to examine whether any of the linguistic variables would be predictive of PANAS ratio of positive to negative affect, age and gender were used as the predictors. At an alpha level of .05, the relationship between this set of
predictors and PANAS ratio was found to be statistically significant, $R^2 = .04$, $F(2, 158) = 3.28$, $p = .04$. Age was the only predictor significantly correlated with PANAS ratio scores; it accounted for 3% of the variance in PANAS ratio scores. Older participants tended to have a higher ratio of positive to negative affect. In the second step, the linguistic variables were added to the analysis. None of the linguistic variables were found to have a statistically significant correlation with PANAS ratio scores, and the linguistic variables did not add any predictive value, $R^2$ change = .02, $F(10, 148) = .33, p = .97$. See Table 13.

Table 13

<table>
<thead>
<tr>
<th>Predictor</th>
<th>$B$</th>
<th>$SE$</th>
<th>$\beta$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>.02</td>
<td>.01</td>
<td>.18*</td>
</tr>
<tr>
<td>Gender</td>
<td>.14</td>
<td>.19</td>
<td>.06</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>.02</td>
<td>.01</td>
<td>.17</td>
</tr>
<tr>
<td>Gender</td>
<td>.06</td>
<td>.21</td>
<td>.03</td>
</tr>
<tr>
<td>1st person singular pronouns</td>
<td>.03</td>
<td>.05</td>
<td>.08</td>
</tr>
<tr>
<td>1st person plural pronouns</td>
<td>.05</td>
<td>.11</td>
<td>.05</td>
</tr>
<tr>
<td>3rd person singular pronouns</td>
<td>.04</td>
<td>.05</td>
<td>.07</td>
</tr>
<tr>
<td>3rd person plural pronouns</td>
<td>-.15</td>
<td>.16</td>
<td>-.08</td>
</tr>
<tr>
<td>Prepositions</td>
<td>-.03</td>
<td>.06</td>
<td>-.05</td>
</tr>
<tr>
<td>Conjunctions</td>
<td>-.06</td>
<td>.07</td>
<td>-.08</td>
</tr>
<tr>
<td>Cognitive processes</td>
<td>.01</td>
<td>.04</td>
<td>.02</td>
</tr>
<tr>
<td>Past focus</td>
<td>-.02</td>
<td>.06</td>
<td>-.04</td>
</tr>
<tr>
<td>Present focus</td>
<td>-.03</td>
<td>.05</td>
<td>-.06</td>
</tr>
<tr>
<td>Future focus</td>
<td>-.07</td>
<td>.20</td>
<td>-.03</td>
</tr>
</tbody>
</table>

*p < .05, **p < .01

Note. $R^2 = .04$ for Step 1 ($p = .04$), $\Delta R^2 = .02$ for Step 2 ($p = .97$).

In the first step of the multiple regression analysis to examine whether any of the linguistic variables would be predictive of DASS depression scale scores, age and gender were used as the predictors. At an alpha level of .05, the relationship between this set of predictors and depression was found to be statistically significant, $R^2 = .04$, $F(2, 158) = 3.13$, $p = .05$. See Table 14. Age was the only variable significantly correlated with DASS depression scores; it accounted
for 3.8 percent of the variation in depression. Older participants had lower depression as measured by the DASS. In the second step, the linguistic variables were added to the analysis. None of the linguistic variables were found to have a statistically significant correlation with DASS depression scores, and the linguistic variables did not add any predictive value, \( R^2 \) change = .03, \( F(10, 148) = .45, p = .92 \).

Table 14

*Summary of Multiple Regression for Linguistic Variables Predicting Depression (N = 161)*

<table>
<thead>
<tr>
<th>Predictor</th>
<th>( B )</th>
<th>( SE )</th>
<th>( \beta )</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>-.10</td>
<td>.04</td>
<td>-.20*</td>
</tr>
<tr>
<td>Gender</td>
<td>.50</td>
<td>.93</td>
<td>.04</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>-.08</td>
<td>.04</td>
<td>-.17</td>
</tr>
<tr>
<td>Gender</td>
<td>.72</td>
<td>1.04</td>
<td>.06</td>
</tr>
<tr>
<td>1st person singular pronouns</td>
<td>.01</td>
<td>.26</td>
<td>.00</td>
</tr>
<tr>
<td>1st person plural pronouns</td>
<td>-.63</td>
<td>.55</td>
<td>-.13</td>
</tr>
<tr>
<td>3rd person singular pronouns</td>
<td>.01</td>
<td>.26</td>
<td>.00</td>
</tr>
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<td>3rd person plural pronouns</td>
<td>.85</td>
<td>.79</td>
<td>.09</td>
</tr>
<tr>
<td>Prepositions</td>
<td>.14</td>
<td>.27</td>
<td>.05</td>
</tr>
<tr>
<td>Conjunctions</td>
<td>.34</td>
<td>.32</td>
<td>.09</td>
</tr>
<tr>
<td>Cognitive processes</td>
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<td>.20</td>
<td>-.01</td>
</tr>
<tr>
<td>Past focus</td>
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<td>.27</td>
<td>.05</td>
</tr>
<tr>
<td>Present focus</td>
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<td>.24</td>
<td>.09</td>
</tr>
<tr>
<td>Future focus</td>
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<td>.94</td>
<td>.04</td>
</tr>
</tbody>
</table>

\*\( *p < .05 \), \**\( **p < .01 \)  

Note. \( R^2 = .04 \) for Step 1 (\( p = .05 \)), \( \Delta R^2 = .03 \) for Step 2 (\( p = .92 \)).

In the first step of the multiple regression analysis to examine whether any of the linguistic variables would be predictive of DASS anxiety scale scores, age and gender were used as the predictors. At an alpha level of .05, the relationship between this set of predictors and anxiety was found to be statistically significant, \( R^2 = .12, F(2, 158) = 10.48, p < .001 \). See Table 15. Age was the only variable significantly correlated with DASS anxiety scores; it accounted for 11.7 percent of the variation in anxiety. Older participants had lower anxiety as measured by the DASS. In the second step, the linguistic variables were added to the analysis. None of the
linguistic variables were found to have a statistically significant correlation with DASS anxiety scores, and the linguistic variables did not add any predictive value, $R^2$ change = .04, $F(10, 148) = .66$, $p = .76$.

Table 15

Summary of Multiple Regression for Linguistic Variables Predicting Anxiety (N = 161)

<table>
<thead>
<tr>
<th>Predictor</th>
<th>$B$</th>
<th>SE $B$</th>
<th>$\beta$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>-.12</td>
<td>.03</td>
<td>-.35**</td>
</tr>
<tr>
<td>Gender</td>
<td>.58</td>
<td>.63</td>
<td>.07</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>-.11</td>
<td>.03</td>
<td>-.33**</td>
</tr>
<tr>
<td>Gender</td>
<td>1.08</td>
<td>.70</td>
<td>.13</td>
</tr>
<tr>
<td>1st person singular pronouns</td>
<td>-.15</td>
<td>.17</td>
<td>-.10</td>
</tr>
<tr>
<td>1st person plural pronouns</td>
<td>-.56</td>
<td>.37</td>
<td>-.17</td>
</tr>
<tr>
<td>3rd person singular pronouns</td>
<td>-.17</td>
<td>.18</td>
<td>-.09</td>
</tr>
<tr>
<td>3rd person plural pronouns</td>
<td>.03</td>
<td>.53</td>
<td>.01</td>
</tr>
<tr>
<td>Prepositions</td>
<td>.14</td>
<td>.18</td>
<td>.07</td>
</tr>
<tr>
<td>Conjunctions</td>
<td>.36</td>
<td>.22</td>
<td>.13</td>
</tr>
<tr>
<td>Cognitive processes</td>
<td>-.06</td>
<td>.13</td>
<td>-.04</td>
</tr>
<tr>
<td>Past focus</td>
<td>.17</td>
<td>.18</td>
<td>.10</td>
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<tr>
<td>Present focus</td>
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<td>.16</td>
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<tr>
<td>Future focus</td>
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<td>.01</td>
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</tbody>
</table>

*p < .05, **p < .01

Note: $R^2 = .12$ for Step 1 ($p < .001$), $\Delta R^2 = .04$ ($p = .76$).

In the first step of the multiple regression analysis to examine whether any of the linguistic variables would be predictive of DASS stress scale scores, age and gender were used as the predictors. At an alpha level of .05, the relationship between this set of predictors and stress was found to be statistically significant, $R^2 = .10$, $F(2, 158) = 8.29$, $p < .001$. See Table 16. Age was the only variable significantly correlated with stress; it accounted for 9.4 percent of the variation in DASS stress scores. Older participants had lower stress levels as measured by the DASS. In the second step, the linguistic variables were added to the analysis. None of the linguistic variables were found to have a statistically significant correlation with DASS stress.
scores, and the linguistic variables did not add any predictive value, $R^2$ change = 0.02, $F(10, 148) = 0.40, p = 0.94$.

Table 16

Summary of Multiple Regression for Linguistic Variables Predicting Stress ($N = 161$)

<table>
<thead>
<tr>
<th>Predictor</th>
<th>$B$</th>
<th>$SE$</th>
<th>$\beta$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>-0.13</td>
<td>0.03</td>
<td>-0.32**</td>
</tr>
<tr>
<td>Gender</td>
<td>0.94</td>
<td>0.79</td>
<td>0.09</td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>-0.13</td>
<td>0.04</td>
<td>-0.31**</td>
</tr>
<tr>
<td>Gender</td>
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<td>0.88</td>
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</tr>
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<td>0.23</td>
<td>0.00</td>
</tr>
<tr>
<td>Conjunctions</td>
<td>0.45</td>
<td>0.27</td>
<td>0.14</td>
</tr>
<tr>
<td>Cognitive processes</td>
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<td>0.18</td>
<td>-0.05</td>
</tr>
<tr>
<td>Past focus</td>
<td>0.10</td>
<td>0.23</td>
<td>0.05</td>
</tr>
<tr>
<td>Present focus</td>
<td>0.19</td>
<td>0.20</td>
<td>0.10</td>
</tr>
<tr>
<td>Future focus</td>
<td>0.14</td>
<td>0.80</td>
<td>0.01</td>
</tr>
</tbody>
</table>

*p < 0.05, **p < 0.01

Note. $R^2 = 0.10$ for Step 1 ($p < 0.001$), $\Delta R^2 = 0.02 (p = 0.94)$.

Discussion

The quiet ego describes a state of reduced ego involvement that counteracts many of the maladaptive tendencies of the human self, such as self-enhancing biases, narcissism, and excessive self-interest. The components of the quiet ego include inclusive identity, perspective taking, detached awareness, and growth orientation. The Quiet Ego Scale measures these four components and has been shown to have adequate validity and to correlate with positive outcomes including humility, cooperative thinking, self-compassion, and community involvement (Wayment, Bauer, et al., 2015), and with greater well-being and lower stress (Wayment, Bauer, et al., 2015; Wayment, Collier, et al., 2015; Wayment et al., 2016). A body of
research analyzing language use using the Linguistic Inquiry and Word Count (LIWC) software has documented correlations between word use and psychological and social states including degree of self-focus versus other-focus, resolution or processing of past events, meaning-making, and thinking style (Chung & Pennebaker, 2007; Pennebaker, 2011; Tausczik & Pennebaker, 2009). Many of these mental states examined in LIWC research parallel qualities measured by the Quiet Ego Scale.

This study sought to examine whether the quiet ego state would manifest in a person’s use of language in brief narratives of lifetime high- and low-point experiences. These narratives are, based on research into narrative identity, known to be important windows on sense of self and process of meaning-making (Adler et al., 2016; McAdams & McLean, 2013). A second research question sought to replicate existing LIWC-based research by examining the correlations between language use and several measures of well-being, including cognitive (SWLS) and affective (PANAS) measures, and a measurement of negative emotional states and symptoms of anxiety and depression (DASS).

**Quiet Ego and Linguistic Variables**

Research using the LIWC has shown a connection between a person’s degree of self-focus versus other-focus and the pronouns the person uses most frequently. This research has also shown that reduced self-focus and greater other-focus, measured through use of pronouns, is associated with greater well-being and adaptive coping (Chung & Pennebaker, 2007). This pattern is theoretically consistent with the quiet ego construct, which describes a state of balanced concern for self and other. Verb tense can reveal a person’s temporal focus of attention, but may also measure the degree of resolution and integration of past experience (Pennebaker, 2011; Tausczik & Pennebaker, 2009). LIWC-based research has also suggested that greater use
of prepositions, conjunctions, and cognitive processing words indicates greater reappraisal and meaning-making (Tausczik & Pennebaker, 2009). These processes can be seen as parallel to the detached awareness and growth orientation components of the quiet ego. The present study hypothesized that, for both high- and low-point narratives, a positive relationship would be found between quiet ego scores and the frequency of using third-person pronouns, first-person plural pronouns, social process words, prepositions and conjunctions, and cognitive processing words. On the other hand, a negative relationship was expected between quiet ego scores and the use of first-person singular pronouns.

This was a novel research question, as no previous study had examined correlations between quiet ego and language use. The results showed no statistically significant correlations between scores on the QES and any of the selected linguistic variables. Therefore, this study could not detect a clear linguistic profile for the quiet ego. An additional analysis of the study narratives was performed by observing zero-order correlations between quiet ego and linguistic variables using the complete set of 78 word-based LIWC outputs relevant to written samples. Strikingly, only one of the 78 outputs had a statistically significant correlation with quiet ego scores; this was a positive relationship with words related to religion ($r = .20$, $p = .01$). This correlation suggests that a focus on religious or spiritual concerns may help quiet the ego and offer a path to transcending the self via prayer, meditation, connection with a higher power, or simply belonging to a religious community. Or, conversely, those with quiet ego characteristics such as inclusive identity and growth orientation may be more inclined to take an interest in religious or spiritual matters and to emphasize life experiences with these themes.

This study therefore suggests that there may not be a distinct linguistic profile associated with the quiet ego. The cognitive and affective processes by which the quiet ego influences a
person do not appear to be reflected in that person’s use of language when describing high- and low-point experiences. Study results did show significant relationships in the theoretically expected direction between QES and all of the well-being measures used in the study. This result matches that of earlier research on the quiet ego and confirms that the quiet ego construct provides valuable insight on psychological states.

This study may shed additional light on the theoretical linkages that have emerged from LIWC-related research by indicating that some of those observations are independent of quiet ego characteristics. Although the patterns seen in correlations of pronoun use with mental health, well-being outcomes, and adaptive coping appear outwardly to be related to balance of self-other concern, these linguistic variables may reflect other factors. For example, the self-focus reflected by increased first-person pronoun use, which in past studies has included increased self-focus prompted by writing in front of a mirror (Pennebaker, 2011), physical pain (Tausczik & Pennebaker, 2009), or depression (Edwards & Holzman, 2017), may be a form of self-focus distinct from the noisy ego state. A potentially related result is the observation that first-person pronoun use does not correlate with measures of narcissism (Carey et al., 2015). There may be good and bad forms of self-focus, with the LIWC measuring both forms or the good form, but not the noisy ego state. Similarly, other-focus as measured by the LIWC may reflect social processes or attentional focus that do not necessarily correspond to inclusive identity and perspective-taking.

The growth orientation measured by the QES may be less related to cognitive processes of meaning-making and reappraisal and more related to other factors, such as mindfulness, humility, and self-compassion. Cognitive processing words measured by the LIWC have been used as an index of meaning-making, for example, in journals written during a practicum
experience (Abe, 2016), where they were correlated with improved well-being 2.5 years later. However, this process of meaning-making may operate somewhat separately from the growth orientation seen as part of the quiet ego construct. It is also possible that cognitive processing words, and also prepositions and conjunctions, which are theorized to show complexity of thought patterns (Tausczik & Pennebaker, 2009), functioned in these past high- and low-point narratives in a way that does not necessarily parallel personal growth as measured by the quiet ego. More cognitive investment and complex thought in recounting past events may reflect a more active, effortful mode of engagement than the detached awareness and growth orientation of the quiet ego.

Another factor that may have affected the results in this study is noise in the data due to a more variable sample. The sample size may have been too small to control for this variability. Many prior studies using the LIWC, and nearly all studies to date using the QES, used university-based student samples. This study involved participants of a wider range of ages, and who varied significantly in their educational level, geographic region, and likely in a number of unmeasured cultural factors. Although some efforts were made to control for variables known to affect language use (controlling statistically for age and gender, and excluding non-U.S. residents and those who learned English as a second language), these data still may have been variable enough to obscure correlations seen in earlier studies.

**Well-Being Measures and Linguistic Variables**

The second research question for this study sought to replicate existing research using the LIWC by examining the relationships between the selected linguistic variables and the various well-being measures. It was hypothesized that a positive relationship would be found between psychological well-being and the frequency of using third-person pronouns, first-person plural
pronouns, social process words, prepositions and conjunctions, and cognitive processing words. On the other hand, a negative relationship was expected between psychological well-being and the use of first-person singular pronouns.

Only one statistically significant relationship was observed between LIWC outputs and the well-being measures: use of cognitive process-related words was associated with lower scores on the SWLS. Use of cognitive process words predicted 4.4% of the variance in SWLS. This relationship was in the opposite direction of the hypothesis, which predicted that greater use of cognitive process words would be correlated with greater well-being. Use of cognitive processing words was correlated with greater well-being and adaptive coping in Abe (2016), and with greater increases in mindfulness by Moore & Brody (2009). These studies reviewed journals of practicum students and writings of participants in a mindfulness intervention, respectively—both sources of writing that documented experiences as they occurred. It is possible that the presence of more cognitive process words when describing past events, such as the lifetime high- and low-point experiences examined in this study, may play a different role, perhaps indicating that a participant has ongoing dissatisfaction with or struggles to process the past events, or a tendency toward rumination or even excessive self-focus. This alternate interpretation of the role of cognitive process words in the high- and low-point narratives elicited in this study is somewhat supported by some of the intercorrelations of the linguistic variables. Participants who used more cognitive process words also used more first-person singular pronouns and more present-focused words when related things past events, linguistic characteristics theorized to be related to self-focus, psychological pain, and lack of resolution of past events.
The general lack of correlation between the selected linguistic variables and scores on well-being measures is a surprising result, given that this research question sought to replicate earlier findings. This study has limitations which may, to some degree, explain this result. As noted above, this non-finding might be related to wider variability in language use due to the more diverse convenience sample as compared to earlier undergraduate student samples, and to a sample size too small to control for this variability.

The writing prompts in this study were adapted from McAdams' Life Story Interview (McAdams, 2008), an instrument used in narrative identity research that has typically relied on manual coding of narratives for themes. It is possible that the type of narratives generated by these prompts are less prone to show variation in the selected linguistic categories than prompts in earlier LIWC studies, or that the detailed writing prompts constrained writing outputs more than some used in earlier studies. It is also possible that the social context of participating in a study, particularly in the worker-like MTurk setting, and the affective experience of recalling high- and low-point memories influenced linguistic variables in the short term to a greater degree than the psychological states measured by the well-being scales did. However, it is worth noting that the rates of word use in the writing samples in this study were very close to the published base rates for similar expressive writing tasks in past LIWC studies (Pennebaker, Booth, et al., 2015). Overall, however, the failure to show correlations between these LIWC variables and the well-being measures used in this study suggests some limitations in the power of function words to fully capture psychological states in these types of narratives.

**Clinical Implications**

The self, defined as our mental construct of our own identity, is clearly central to clinical psychology and psychotherapy. It is natural, and in many cases adaptive, for human beings to
have a self and have some impulse to defend the construct of the self. However, finding a balanced role for the self is important to psychological health. Analyses have suggested that the ongoing pursuit of increased self-esteem does not lead to better psychological health, as had previously been assumed (Baumeister et al., 2003). At the same time, larger-level analyses have shown a broad correlation between increased psychopathology, increased narcissistic personality traits, and increasing levels of self-esteem (Twenge, 2013). The quiet ego construct seeks a balanced role for the self, one in which concern for self and other is balanced, and in which the self is aware enough of itself as a construct to take a mindful and growth-oriented perspective on events. Characteristics associated with the quiet ego, such as humility and self-compassion, have been correlated with greater well-being, and since the creation of a scale to measure the quiet ego, quiet ego itself been associated with many measures of well-being and adaptive coping (Wayment, Bauer, et al., 2015; Wayment, Collier, et al., 2015; Wayment et al., 2016).

The present study supports the value of the quiet ego construct as a measure consistently correlated with increased cognitive and affective well-being, decreased negative affect, and decreased depression, anxiety, and stress. Specifically, quiet ego was positively correlated with the cognitive measure of well-being (SWLS), with the positive component of the affective measure of well-being (PANAS), as well as with the ratio of positive to negative affect. Quiet ego was negatively correlated with negative affect scores (PANAS) and with depression, anxiety, and stress as measured by the DASS. Overall, participants with higher quiet ego scores had higher well-being and lower depression, anxiety, and stress. This correlation, alongside existing research that raises concerns about the excessively esteem-seeking self, should encourage clinicians to consider the role of quiet ego versus noisy ego characteristics in individual clients,
and to explore ways to encourage the growth of the quiet ego characteristics of ego balance and growth orientation.

The results showing clear correlations between quiet ego and measures of well-being and psychological health also add support for the further development of psychological interventions aimed at developing the quiet ego. A brief 4-5 week intervention aimed at developing the quiet ego in a non-clinical sample (Wayment, Collier, et al., 2015) induced greater quiet ego characteristics, and also decreased physiological markers of stress and decreased mind-wandering on an experimental tasks. Positive results have also been shown from interventions designed to prime a self-transcendence orientation (Kao et al., 2017). The present study further supports the use of such interventions to increase well-being and improve mental health. Given broad increases in the prevalence of depression and anxiety in the U.S., and the potential parallels to an excessive pattern of esteem-seeking, quiet ego-based interventions have the potential to make a large impact as brief preventive mental health interventions, and may also be useful with some clinical populations.

Narratives about the self are clinically relevant as an intervention (Berry et al., 1997; Moore & Brody, 2009) and, to some degree, as a measure of clinical outcomes (Arntz et al., 2012; Liehr et al., 2010). LIWC measures have been useful in explaining disparate outcomes from such writing interventions and in identifying levels of depression from writing samples (Edwards & Holzman, 2017). A role for quiet ego in LIWC profiles might provide additional insight into the mechanisms behind positive clinical outcomes from writing interventions and behind indicators of psychological distress and improvement in writing samples. However, the present study was unable to establish any linguistic profile associated with the quiet ego. This study, may, therefore, suggest some caution for researchers or practitioners using the LIWC to
assess psychological well-being. It is possible, given the results of this study, that, processes like the quiet ego may operate and have significant impacts on a person’s well-being without providing a distinct linguistic signature in self-narratives.

This study found few correlations between the selected linguistic variables and the various well-being measures, and thus did not reproduce earlier findings that showed connection between these linguistic variables and use of language. Thus, this study suggests some limitations on the power of the LIWC to measure psychological states, which might be relevant for researchers or clinicians using the LIWC in this way. One observation showed a negative relationship between use of cognitive processing words and SWLS scores, a relationship in the reverse direction of the hypothesis. This suggests that use of cognitive processing words in one-time retelling of past events may actually be associated with well-being differently from the pattern observed in repeated writing interventions or journal analyses, in which use of cognitive process words has been associated with improved outcomes and adaptive coping.

**Limitations and Future Directions**

This study has several limitations. This is a correlational study, and the direction of causation for the findings cannot be assumed. For example, it is possible that greater well-being leads to greater quiet ego characteristics, rather than the other way around, perhaps through reduced distress and greater availability of psychological resources for altruistic thinking and other-focus.

Some potential limitations related to the study sample were discussed in previous sections. This sample had greater variability in age and likely had greater variability in other factors such as region and cultural background than some previously-studied university samples. The sample size of 161 participants may not have been adequate to detect smaller effect sizes amid this variability in the data.
Another limitation of this study stems from the MTurk environment, in which workers are free to choose the tasks that most appeal to them, making this to some degree a self-selected sample. Potential participants in this study knew that they would be asked to write narratives as well as respond to questionnaires, and, to avoid a coercive situation and make sure participants were comfortable disclosing life events, the writing prompts were shared in the informed consent document. Therefore, participants who completed the study were those who were willing to complete a writing task, and who were comfortable with the experience of recalling high- and low-point experiences. This process may have created some bias in the set of participants. Of 243 people who began the study in Qualtrics, 61 (25%) did not complete the study tasks, suggesting that some people with initial interest in the study chose not to complete it after viewing the informed consent document.

This study also relied on self-report measures, and therefore questionnaire results may have been vulnerable to socially desirable responding. One potential concern specific to the MTurk environment is that experienced MTurk workers may have been familiar with the practice of using attention checks in studies. Although this study did not use attention checks, it is possible that some participants interpreted QES items measuring mindfulness such as “I find myself doing things without paying much attention” as a form of attention check and altered their responses accordingly. However, overall QES scores did form a normal distribution pattern, indicating that desirable responding did not excessively skew the overall data set.

The present study looked at a limited number of LIWC variables and used a limited number of statistical techniques. Some earlier studies (e.g. Weston et al., 2016) used a principal components analysis approach to look for broad patterns within the full LIWC output. It is
possible that a future study using more advanced statistical techniques might reveal more clear connections between language use and quiet ego.

As discussed earlier, the specific writing prompts used for this study have been used in only one study using the LIWC (Weston et al., 2016), although general writing about traumatic past events has been a frequent target of LIWC research. Future studies to explore any relationship between language use and the quiet ego would benefit from examining other types of writing samples. For example, less structured writing prompts, writing about everyday events, or stream-of-consciousness writing samples might better evoke patterns of language use associated with the quiet ego state. Given the promising results of brief interventions aimed at increasing quiet ego characteristics (Wayment, Collier, et al., 2015), a study to examine writing samples before and after such an intervention could also help to increase understanding of any connection between quiet ego states and language use.

Cultural shifts in language use may also impact LIWC results and should be taken into consideration. One prominent example is use of “they” as a singular gender-neutral pronoun. Use of singular “they” is common in spoken and informal English when a gender-neutral pronoun is needed, and it is gaining increasing acceptance in formal written English to avoid constructions like “he/she” and to be inclusive of people who identify as transgender or nonbinary. Although this usage was not frequent in the narratives provided for this study, some participants did use singular “they.” For example: “My best friend was one of the best people I ever knew. They were very loyal. They would drive to your house at any hour of the night if you needed them for anything.” Because it cannot evaluate context, the LIWC counts this type of usage as third-person plural. Although it still falls within the same overall category of third-person pronouns, this shift in usage will be relevant to consider for future studies using the LIWC.
The present study analyzed participants' life narratives using only the LIWC tool. An alternate approach would be to examine correlations between quiet ego and life narrative using manual coding for themes such as redemption, communion, and agency, themes that have been found to be related to well-being and growth orientation in research on narrative identity (McAdams & McLean, 2013). These themes cannot be captured by LIWC analysis and may show correlations with the quiet ego. This type of analysis would be in keeping with Abe (2016) observation that LIWC results show a mechanism of prediction for well-being independent of that shown for redemption themes in low-point narratives.

Conclusion

This study contributes to the literature on the quiet ego construct, as measured by the Quiet Ego Scale. This study confirmed the quiet ego as a construct associated with improved cognitive and affective measures of well-being, and with lower levels of depression, anxiety, and stress symptoms. This study sought to connect research on the quiet ego with the body of research regarding psychological states and rates of function word use, as measured by the LIWC. The study did not detect any clear linguistic profile for the quiet ego in life narratives of high-and low-point events. The negative result may be due to limitations of this study, but may also indicate some distinctions between the social processes and attentional focus measured by the LIWC and the states of inclusive identity, perspective-taking, detached awareness, and growth associated with the quiet ego. Future studies may help to elucidate the theoretical connections of LIWC word use patterns, as well as explore connections between quiet ego and high- and low-point life narratives through other analytic approaches.
References


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Appendix A: Quiet Ego Scale (Wayment, Bauer, et al., 2015)

All items are assessed on a 5-point scale from 1 (strongly disagree) to 5 (strongly agree)

- I think it is important to have new experiences that challenge how you think about yourself and the world
- I find myself doing things without paying much attention*
- I feel a connection to all living things
- Before criticizing somebody, I try to imagine how I would feel if I were in their place
- For me, life has been a continuous process of learning, changing, and growth
- I do jobs or tasks automatically, without being aware of what I’m doing*
- I feel a connection with strangers
- When I’m upset at someone, I usually try to put myself in his or her shoes for a while
- I have the sense that I have developed a lot as a person over time
- I rush through activities without being really attentive to them*
- I sometimes find it difficult to see things from another person’s point of view*
- I feel a connection to people of other races
- I try to look at everybody’s side of a disagreement before I make a decision
- When I think about it, I haven’t really improved much as a person over the years*

*Reverse-coded item
Appendix B: Positive and Negative Affect Schedule (PANAS) (Watson et al., 1988)

This scale consists of a number of words that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you have felt this way during the past few weeks. Use the following scale to record your answers.

1 very slightly or not at all
2 a little
3 moderately
4 quite a bit
5 extremely

___ interested
___ distressed
___ excited
___ upset
___ strong
___ guilty
___ scared
___ hostile
___ enthusiastic
___ proud

___ irritable
___ alert
___ ashamed
___ inspired
___ nervous
___ determined
___ attentive
___ jittery
___ active
___ afraid
Appendix C: Satisfaction with Life Scale (Diener et al., 1985)

Below are five statements with which you may agree or disagree. Using the 1-7 scale below, indicate your agreement with each item by placing the appropriate number on the line preceding that item. Please be open and honest in your responding.

The 7-point scale is: 1 = strongly disagree, 2 = disagree, 3 = slightly disagree, 4 = neither agree nor disagree, 5 = slightly agree, 6 = agree, 7 = strongly agree

___ In most ways my life is close to my ideal.
___ The conditions of my life are excellent.
___ I am satisfied with my life.
___ So far I have gotten the important things I want in life.
___ If I could live my life over, I would change almost nothing.
Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement.

*The rating scale is as follows:*

0 Did not apply to me at all
1 Applied to me to some degree, or some of the time
2 Applied to me to a considerable degree, or a good part of time
3 Applied to me very much, or most of the time

1. I found it hard to wind down
2. I was aware of dryness of my mouth
3. I couldn't seem to experience any positive feeling at all
4. I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)
5. I found it difficult to work up the initiative to do things
6. I tended to over-react to situations
7. I experienced trembling (eg, in the hands)
8. I felt that I was using a lot of nervous energy
9. I was worried about situations in which I might panic and make a fool of myself
10. I felt that I had nothing to look forward to
11. I found myself getting agitated
12. I found it difficult to relax
13. I felt down-hearted and blue
14. I was intolerant of anything that kept me from getting on with what I was doing
15. I felt I was close to panic
16. I was unable to become enthusiastic about anything
17. I felt I wasn't worth much as a person
18. I felt that I was rather touchy
19. I was aware of the action of my heart in the absence of physical exertion (e.g., sense of heart rate increase, heart missing a beat)
20. I felt scared without any good reason
21. I felt that life was meaningless
Appendix E: Sample Participant Narratives

High Point:

- That would be when I had my first child. He was so tiny and cute and sweet and there was this delicate quality to every little thing about him that I just wanted to wrap up in his baby blanket and keep safe. I was tired from the labor, but it was a good tired, one where I could just sit and look at his little face and memorize it. I had sung to him when he was still in my womb, so I sang the same songs and was delighted when he looked back at me. His birth totally changed how I viewed the world, everything was for him rather than for myself now, and it made me so happy that that's the way it was. I wanted to give him everything I could, make his life better than mine had been. It was a happy time, making plans, sewing for him, making sure he got the right things to eat, teaching and praying and celebrating with him everything he discovered about the world. It still makes me glow when I think about it 21 years later, and now he's grown, but yes, when he was born that was the highest moment of my life.

- When I got a new job I felt on top of the world. I did well on the placement test and the interview. I didn't think I was smart enough to be placed at this company but somehow I got in. I was nervous about performing the tasks at the workplace but once I went through training I was really put at ease. I was able to carry out all work tasks in a proficient manner. I felt really proud of myself when I got a new job because I was able to save, to pay bills and to have some money left over for extras and entertaining my family and friends. I have kind of gotten into going through the motions now at the workplace but I still remember when I was first hired and how I felt when I got the call that I was getting
the job. I had never felt such excitement because I had gotten something that I really wanted. I hoped that I would get the job but I really had a lot of doubt in my mind as to whether or not I would really land it. It's definitely a proud moment in my life.

Low Point:

- There are a few low moments in my life that I could do without. For me the one that is most significant is the loss of my grandmother. For me, she was the closest person to me in my life as I was growing up. She helps raise me and instilled a lot of things that I find in me to this day. That woman meant the world to me. Losing her wasn’t what makes this so low since in life I know that we all have to die at some point or another. It was how it all went down that tears me up. I was not able to say my goodbye to her and let her know what I thought of her and how my life changed due to her. I was out of the country when she died and no one told me about. I didn’t find out that she died until months after. When I got home I was having a normal conversation with a family member and she mentioned it. She thought that I knew. I didn’t know and it was a shock and surprise to me. I was very angry and disappointed at how the situation was handled. It has damaged a lot of relationships with people whom I thought were family to me. There was a level of disrespect there that I am not going to be able to get over.

- The event that comes to mind took place about 5 years ago. My fiancé and I had both lost our jobs in the months prior, so we relocated 4 hours away for jobs and we were living in a hotel with 2 kids. A specific event that stands out in my mind was one night we were all preparing to eat dinner and all we had was frozen tv entrees. We only had enough for the
kids, and we were not going to eat. As my daughter got her dinner out of the microwave she dropped it on the floor. We were all so stressed that day because of what we were going through that we all just sat there and cried. It was not only because the only food we had was dropped, but also because of how tough our lives were for the past several months. I felt hopeless and disgusted during this event. I even felt like it would have been easier to end it all. Not just for the suffering of myself, but for my whole family. I eventually let go of those negative no good feeling and began to think about the positive. This experience highly relates to the person I am now. This is mainly because I learned majorly from my mistakes and know that I NEVER want to be in that dark hopeless place again. That event made me stronger and wiser. In the past, I was more irresponsible and reckless. Today I am more cautious about my finances and now I fight no matter what it put in front me. I have learned what doesn't completely break you will make you.
Appendix F: Demographic Questionnaire

Note: First two questions represented screening criteria. Questions 4-8 adapted from suggestions in Hughes, Camden, & Yangchen (2016).

1. What is your native language (the language you first learned as a child)?
   a. English only.
   b. English and another language. Please specify _____________.
   c. Another language. Please specify _____________.

2. Do you presently live in the United States?
   a. Yes
   b. No.

3. Age (years):

4. Gender:
   a. Man, male, or masculine
   b. Woman, female, or feminine
   c. Other

5. How do you describe your race/ethnicity? (select all that apply):
   a. American Indian or Alaska Native
   b. Asian
   c. Black or African-American
   d. Hispanic or Latino
   e. Middle Eastern or North African
   f. Native Hawaiian or Other Pacific Islander
   g. White
   h. Other

6. Where do you live?
   a. Midwest—Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, Ohio, North Dakota, South Dakota, Wisconsin

c. South—Arkansas, Alabama, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia


e. Puerto Rico or other U.S. territories

f. Other, please specify: ______________________

7. Which category describes your highest level of education?

a. Some high school
b. High school diploma or equivalent
c. Vocational training
d. Some college
e. Associate’s degree
f. Bachelor’s degree
g. Some post undergraduate work
h. Graduate degree (e.g. MA, MBA, MSW, PhD, MD, JD)
i. Other, please specify: ______________________

8. Which social class group do you identify with?

a. Poor
b. Working class
c. Middle class
d. Affluent

9. About how often do you visit or use social media sites (such as Facebook, Instagram, Pinterest, Snapchat, or Twitter)?

a. Many times throughout the day
b. Several times per day
c. About once a day
d. A few times a week

e. Every few weeks

f. Rarely

g. I do not visit or use social media sites