Self-Concept Integration and its Relationship with Resilience and Well-Being

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Abstract

The overall purpose of the study was to evaluate if three forms of self-concept integration (i.e., authenticity, consistency, and valence/evaluative integration) relate to resilience and well-being. Additionally, the study investigated if self-concept integration moderates the relationship between stress and both resilience and well-being. Authenticity is the degree to which an individual believes the roles within one's self-concept are fully self-endorsed, willfully enacted, and reflecting who one actually is; consistency (i.e., low self-concept differentiation) is the measure of the tendency to see oneself as similar across different roles; valence integration (i.e., evaluative integration) is the amount an individual's positive and negative self-attributes are intermingled among roles. This study was completed online via SurveyMonkey, where participants rated five social roles and completed measures of stress, resilience, life satisfaction, and depression. Correlational analyses revealed significant positive associations between all three forms of integration and more resilience, more life satisfaction, and less depression. Regressions with simultaneous entry of the three forms of integration showed that authenticity and valence integration were both predictive of resilience and well-being when participants had perceived importance of their negative roles, whereas authenticity and consistency were both predictive of resilience and well-being when participants had perceived importance of their positive roles. There were no significant findings for self-concept integration moderating the relationship between stress and resilience/well-being. Together, with previous findings on integrative self-structure, these results suggest the importance of unifying the roles to which one ascribes, in order to have a sense of unity and render increased resilience and well-being.

Keywords: Self-concept integration, authenticity, self-determination theory, consistency, self-concept differentiation, valence/evaluative integration, stress, resilience, well-being

Table of Contents

List of Tables

List of Appendices

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Self-Concept Integration and its Relationship with Resilience and Well-Being

How do human beings hold information about themselves and how does this relate to their resilience? Prescott Lecky theorized that all human beings strive for self-consistency, as they need to understand themselves as stable and predictable (Lecky, 1945). Famous humanist psychologist Carl Rogers believed that for an individual to achieve self-actualization, one needs congruence between one's ideal self and one's actual behavior (Rogers, 1959). These theories support the idea that more integration within one's self-concept may be associated with positive well-being. Indeed, it is possible that more consistency and congruence also benefit an individual during times of stress, by allowing them resources to garner from. Through this study, we attempt to understand how the organization of the self-concept, as seen through varying forms of integration, relate to psychological resilience and well-being.

How people organize information about themselves affects other aspects of the self and their experiences of well-being. This paper tackles varying organizations of the self-concept based on integration or lack of integration and how they directly relate to psychological resilience and well-being. This topic is important since the literature around organization of the self-concept and how it relates to well-being is ambiguous with some inconsistencies, and it does not specifically address how the self-concept relates to psychological resilience as its own construct. For instance, literature on self-organization focuses on how the self-concept relates to psychological adjustment and well-being through various processes, yet it does not address possible links with the construct of resilience, defined as "the process of adapting well in the face of adversity, trauma, tragedy, threats or significant sources of stress" (American Psychological Association, 2016). This paper begins by introducing the self-concept and explaining organization of the self-concept through the varying theories of self-concept structure, as well as

discussing psychological resilience as an important process underlying significant recovery and sustainability in the face of adversity (Reich, Zautra, & Hall, 2010).

This study has potential to advance new ways of understanding various forms of self-structure and how it relates to the process of overcoming adversity or stress. Although many variables come into play that affect organization of the self-concept and psychological resilience, including content of the self-concept, this study will focus only on the factors that are based on integration of the self-concept in order to best understand how these relate to constructs of resilience and well-being. These factors include authenticity-based integration (authenticity stemming from self-determination theory; Sheldon, Ryan, Rawsthorne, & Ilardi, 1997), consistency-based integration (i.e., low self-concept differentiation; Donahue, Robins, Robert, & John, 1993), and valence integration (i.e., evaluative integration; Showers, 1992).

The Self and the Self-Concept

The self is defined as a psychological apparatus that renders human beings able to reflect knowingly about themselves (Leary and Tangney, 2011). To a child, the self is one's body (Baumeister, 1999). Later, the self expands to include complex and abstract constructions upon which one can self-reflect (Baumeister, 1997). In the 1890s, William James shared thoughts on the self, distinguishing between "I" self as a subject and "Me" self as an object (Harter, 1996). Moreover, the self has been understood in terms of the cognitive self (e.g. self-knowledge), the affective self (e.g. looking at emotions relevant to the self), and the executive self (e. g. controlling thoughts and actions) (Sedikides & Spencer, 1996). Many perspectives on the self open the literature to a variety of studies on how one perceives oneself and how there is undoubtedly many differences and ensuing implications both between and within persons.

When considering the topic of self, it can include many subtopics including self-awareness, self-monitoring, self-presentation, self-concept, self-esteem, self-actualization, self-verification, self-schema, self-enhancement, and self-regulation (Baumeister, 1999). For this paper, we will focus on the self-concept, which is defined as the totality of inferences that an individual makes about himself or herself (Baumeister, 1997). Often the term "self" is used interchangeably with the term "self-concept," referring to a person's view of oneself (e.g. Rogers, 1959). Also, the self can be viewed as an entity to which the self-concept refers (Baumeister, 1997). The self-concept is not a single unified concept, as it can include many ideas, loosely connected inferences, personality traits, schemas, social roles, and relationships. Baumeister (1997) claims that humans need to develop the self-concept, which often occurs through social feedback, as they gain self-knowledge. Essentially, the self-concept is dynamic and multifaceted (Swann & Bosson, 2010), and contains information about oneself upon which one can reflect.

Given the amount of information contained within the self-concept, it is important to consider how this information is organized. Several researchers have proposed approaches or models for understanding self-concept organization. For instance, Stein & Markus (1994) share that the self-concept includes organization at different levels within the person, which collects information about oneself. Bowers & Gilligan (1979) explain that the organization of the self-concept is a self-referencing process in memory that allows for new information to be assimilated into conceptual networks. Another way of understanding the self-concept is by cognitive structures of the self, such as self-schemata, which can facilitate the processing of information about the self, making cognitive generalizations from past experiences and organizing self-information (Markus, 1977). Similarly, the self has been regarded as a cognitive

prototype, where personal information is processed in a labeled category to allow for the assimilation of new information (Rogers, Rogers, & Kuiper, 1979). Additionally, the self has been charted in multidimensional trait space (Breckler & Greenwald, 1982). This theory posits that trait dimensions are derived from cognitive representations of trait variabilities, including favourable and unfavourable variabilities, which can predict high or low self-esteem. In short, organization of the self or self-concept has been noted from varying theories that reflect multifaceted structures containing distinguishable components.

The structure of the self-concept can relate to how humans are actively processing this multifaceted information about their self-concepts. For instance, as children develop, they gain a greater ability to integrate information about themselves (Hattie, 2014). For this study, we will be defining the self-concept according to five social roles used by Donahue and colleagues (1993) as well as by Sheldon and colleagues (1997): those of a student, worker, child(son/daughter), friend, and romantic partner. Donahue et al. (1993) cited an unpublished work by Goolsby (1988) that revealed that students consider these roles to be personally relevant and important parts of their identities, so these roles will likely be relevant for the undergraduate participants in this study as well. The present investigation addresses the organization of the self-concept from an integrative perspective, especially how the five social roles are integrated into one's self-concept.

One integrative perspective is that personality integration comes from coherence of the elements making up the personality system as well as the congruence of the element with inherent needs (Sheldon & Kasser, 1995). In other words, having consistency, similarity, and genuineness among the elements or components of who the person is defines integration. Integration can be seen as synonymous with unity, providing continuity across changing

circumstances and different social roles (Campbell, Assanand, & Di Paula, 2003). Integration can also be viewed as inter-connectedness, which has been theorized as a crucial aspect to meaning making in daily life and meaning itself, as integration brings a sense of coherence, order and connection, often leading to well-being (Delle Fave & Soosai-Nathan, 2014; Sheldon & Kasser, 1995). Reflecting on these theories of integration, we expect that the integration of the five distinguishable social roles of the self-concept will have a significant relationship with well-being (Sheldon & Kasser, 1995).

Authenticity-Based Integration

The first form of integration that our study will address is authenticity, as based in self-determination theory (SDT; Deci & Ryan, 1985). Authenticity has been viewed as an indicator of an underlying state of integration or organization (Sheldon et al., 1997). Authenticity captures the degree to which an individual believes the parts of their self-concept reflect who she or he actually is (Ryan, 1993). Social roles or self-aspects are defined as authentic if they are fully self-endorsed, willfully enacted, and personally meaningful (Ryan, 1993). For this study, the construct of authenticity is based in SDT, addressing how volition, autonomy and choice organize cognitive, affective, and behavioural variables (Deci & Ryan, 1985). Ryan and Deci (2011) theorize that SDT includes a model where greater internalization and integration of goals and identities leads to greater positive affect, self-actualization, and well-being. In fact, authenticity can reflect self-understanding and knowledge (Kernis & Goldman, 2006) due to living life in truth with one's spirit (Schlegel, Hicks, Arndt, & King, 2009). In other words, authenticity based in SDT is a measure of integration of the self, and we expect for this study to show authenticity related to an increase in both resilience and well-being.

In past research, authenticity has been measured using five statements that address whether or not the individuals believe certain roles or self-aspects are authentic, freely chosen, and meaningful to them, i.e. "I experience this aspect of myself as an authentic part of who I am." (Sheldon et al., 1997). Showers et al. (2015) adapted this measure by choosing three of these statements. The authenticity measure has been used to measure both social roles as well as self-identified aspects, for which the participant rates each on a Likert-type scale. Mean authenticity scores were calculated by averaging the ratings to these items across the role/self-aspect categories for each participant (Sheldon et al., 1997; Showers et al., 2015). Sheldon et al.'s (1997) study found that mean authenticity was a predictor of less depression, anxiety, perceived stress, and symptomatology, indicating that psychological authenticity is vital for healthy functioning. They also found that at a role level of analysis, the authenticity of each role predicted greater role satisfaction and preference and less role strain and stress. Additionally, Showers et al. (2015) found that authenticity was associated with lower levels of contingencies of self-worth.

Schlegel et al. (2009) propose that the authenticity is important because extensions of the true self-concept (being one's innate self, compared to the public self) imbue experiences with feelings of meaningfulness. Indeed, they found that greater accessibility to the true self-concept predicted a greater sense of meaning in life. Additionally, authenticity is related to higher self-esteem, clarity, and identity integration (Kernis & Goldman, 2006). On the other hand, a downside to authenticity would be that it can be painful to admit the truth and to go against the grain, and authenticity precludes an individual from hiding negative attributes from others (Schlegel et al., 2009). Overall, thinking back to the Roger's (1959) ideas on congruence,

authenticity would allow for the acceptance of who one is, for that person is in touch with the here and now and more open to being satisfied with his or her life.

Consistency-Based Integration

Lecky's (1945) theory of self-consistency would support the idea that more consistency among social roles would lead to greater intrapersonal stability, predictability, and overall greater well-being. In fact, the literature reveals that self-concept differentiation (SCD; i.e., low consistency) relates to more fragmentation and poorer psychological well-being (e.g., Donahue et al., 1993; Sheldon et al., 1997). This is fitting with authenticity-based integration, as authenticity negatively correlates with SCD (Kernis & Goldman, 2006). The construct of self-concept differentiation (SCD) was created by Donahue et al. (1993), defined as the amount an individual sees oneself as having different attributes of personality characteristics in different life domains. The opposite of this could be the amount an individual sees oneself as having similar attributes of personality characteristics in different life domains. Therefore, for this study, we will be using the inverse of SCD as a measure of integration, which we will call consistency.

Previously, SCD was measured by giving participants the definition of one role at a time and having them rate 60 or 40 adjectives (describing characteristics) for the role on a Likert scale as to how much each attribute was characteristic of each role (Donahue et al., 1993; Sheldon et al., 1997). Participants rated "myself in general," as well as the five social roles of student, friend, romantic partner, son/daughter, and worker. The computation of SCD was based on Block's (1961) procedure, by computing SCD as the proportion of unshared variance among the roles, by factor-analyzing the correlation matrix of the intercorrelation of trait and roles and subtracting the percent of variance accounted for by the first principal component from 100% (Donahue et al., 1993). Similarly, SCD has been computed as the correlations between each

participant's five roles (10 correlations in all) on the basis of the adjective ratings in each role (Sheldon et al., 1997; Campbell et al., 2003).

Donahue et al. (1993) found that individuals with high differentiation of self-concept showed patterns of frequent changes in jobs and relationships as well as having poorer mental health and general adjustment. Differentiation can represent a fragmented self, as greater differentiation does not represent an adaptive specialization to meet the varying demands of different roles (Donahue et al., 1993). Other findings included a positive correlation of SCD with depression and anxiety, as well as a negative correlation of SCD with self-esteem (Donahue et al., 1993; Sheldon et al., 1997). SCD appears to tap the negative experience of a divided self (Pilarska, 2016). Furthermore, the construct of SCD was found to be moderately inversely related to self-concept clarity, a construct sometimes used to measure unity (Pilarska, 2016), which perhaps is due to lacking an integrated core self (Donahue et al., 1993). These findings support the reasoning that integration rather than differentiation relates positively to health and well-being (Sheldon & Kasser, 1995).

Furthermore, SCD has been measured from a within-role approach (Roberts & Donahue, 1994; Sheldon et al., 1997). For this approach, participants also rated "myself in general" as a role for each of the adjectives. Next, consistency at the role level was computed with correlations between the set of adjective ratings made for the general self and the set of adjective ratings for each of the roles. For the subsequent analyses, additional role-related measures were added to the study including asking how satisfied and stressed/irritated the participant is in each role (Sheldon et al., 1997). Role level analyses revealed that more similarity between each role and the general self led to more satisfaction within each role (Roberts & Donahue, 1994; Sheldon et al., 1997). These studies suggested that the more people varied from their general self in a

specific role, the more psychological difficulties and stress they would feel in each role. In this present study, we planned to also look at some of these role-related variables and explore associations with them and both resilience and well-being.

Despite strong findings for the positive impact of consistency on well-being (e.g., Donahue et al., Sheldon et al., 1997), there is also strong support for distinction among self-aspects actually leading to greater well-being (i.e., self-complexity, Linville, 1985). Self-complexity is one of the most popular theoretical perspectives on organization of the self-concept (Rafaeli & Hiller, 2010), which is defined as having many self-aspects and high levels of distinction among the self-aspects (Linville, 1985, 1987). Studies showed that the interaction of high self-complexity and stressful events rendered participants less prone to depression and stress-related illnesses (e.g., Linville, 1987; Dixon & Baumeister, 1991; Koch & Shepperd, 2004), which support Linville's (1987) stress-buffering hypothesis that self-complexity acts a buffer during times of stress. Stress was measured by Linville (1987) as both the number of recent stressful events one has experienced as well as the amount of perceived stress, as measured with the Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983). The overall support for distinction among self-aspects appears to invalidate the positive relationships between similarity (rather than differentiation) and well-being.

On the other hand, some studies with self-complexity have found that the overlap (i.e., consistency) rather than distinction among self-aspects has positive associations with well-being (Rafaeli-Mor, Gotlib, & Revelle, 1999; Rafaeli-Mor & Steinber, 2002). In other words, sometimes self-complexity (having many differentiated aspects) is related positively to well-being, while other times it is not. Inconsistency in these findings may be due to validity issues with the measurement of the construct (Constantino, Wilson, Horowitze, & Pinel, 2006; Rafaeli-

Mor & Steinberg, 2002; Koch & Shepperd, 2004). Due to the uncertainty as to what self-complexity is measuring (Solomon & Haaga, 2003), other factors besides overlap and distinction among aspects may actual produce stress buffering effects. Indeed, this logic leads us to some of our hypotheses, which are an adaptation of Linville's (1987) stress-buffering hypothesis, that integration will moderate the impact of stress on well-being.

Valence Integration

The third form of integration investigated in this study is valence integration. This construct is derived from evaluative compartmentalization/integration (Showers, 1992). Evaluative compartmentalization occurs when positive and negative beliefs about the self are categorized into distinct self-aspects, either primarily positive or primarily negative, while the inverse, evaluative integration, occurs when there is a mixture of positive and negative beliefs in a category of the self (Showers 2000, 2002). Showers (2015) also addresses that there can be a continuum of evaluative organization that ranges from compartmentalized to integrated.

Evaluative compartmentalization has been computed following a card-sorting task in which participants have 20 positive and 20 negative attributes to choose from and reuse if needed, and they create and title their own groups of self-aspects/roles (e.g., Showers, 1992; Showers, Abramson, & Hogan, 1998; Showers, Zeigler-Hill, Limke, 2006; Zeigler-Hill & Showers, 2007, Showers, Ditzfeld, Zeigler-Hill, 2015). This card-sorting task was previously used by Linville (1985) to measure self-complexity and was patterned after a task developed by Scott (1969). Mean compartmentalization was computed using the phi coefficient (Cramer, 1945), which is based on a chi-square statistic calculated for each participant's sort, ranging from 0 as a perfectly random to 1 as perfectly compartmentalized. Phi is independent of the number of self-groups or roles and the proportion of positives and negatives in the sort due to comparison

of the frequencies of positive and negative attributes in the card sort as a whole (Showers, 1992). One example of a card-sort with perfect compartmentalization had self-aspects entitled as follows: amusement-play, responsible-conscientious, relaxed, bad mood, and sports-aggressive (Showers, 1992). On the other hand, a card-sort with more evaluative integration had self-aspects entitled as follows: me with my family, me at school, me with my sorority, and me with my friends (Showers et al., 2015). With the self-created aspects, participants had the freedom to use narrow and specific definitions or otherwise broader aspects/roles.

In the measuring of evaluative compartmentalization (e.g., Showers, 1992; Showers, Zeigler-Hill, & Limke, 2006; Zeigler-Hill & Showers, 2007, Showers, Ditzfeld, Zeigler-Hill, 2015), once the card-sorts are created, participants rated the positivity, negativity, and importance of each self-aspect. This allows for the computation of differential importance (DI), which is a construct created by Pelham and Swann (1989). DI is computed as the within-subject correlation between respondents' overall evaluations of their self-aspects and the importance ratings assigned to those self-aspects, with higher scores indicating more positive self-aspects as important. Besides DI, other aspects of negative content have been controlled for including the average positivity of the self-aspects and the proportion of negative attributes in the card-sort overall (e.g., Showers, 1992). Showers (1992) first found that compartmentalization had the most benefits when positive self-aspects were more important than negative self-aspects to the individual. However, the study also found that individuals who had high compartmentalization but believed that the negative categories were important had more depression and lower self-esteem. Later, Showers and colleagues (2015) found that both compartmentalized and integrated individuals with important negative self-aspects had some contingencies of self-worth.

Showers and colleagues undertook several studies on organization of the self over the past couple of decades, sharing a more comprehensive perspective on the self (e.g. Showers, 1992; Showers & Kling, 1996; Showers & Kevelyn, 1999; McMahon, Showers, Rieder, Abramson, & Hogean, 2003; Showers & Zeigler-Hill, 2003; Showers, Limke, & Zeigler-Hill, 2004; Zeigler-Hill, Limke, 2006; Zeigler-Hill & Showers, 2007; Showers et al., 2015). Self-esteem may be positively associated with compartmentalization when one has positive DI (Showers, 1992), yet this self-esteem is often unstable due to the variability and inconsistency between self-aspects (Zeigler-Hill & Showers, 2007). In fact, compartmentalization has also been associated with eating disorders (McMahon et al., 2003), greater sensitivity to experiences of social rejection (Zeigler-Hill & Showers, 2007), as well as less accessibility to positive self-evaluations (Showers et al., 2015). It is speculated that compartmentalization could be due to defensive avoidance and denial of negative self-aspects (Thomas, Ditzfeld, & Showers, 2013). Moreover, positive evaluative integration is associated with authenticity as well as the ability to recover quickly from a sad mood induction (Showers et al., 2015; Showers & Kling, 1996). With these findings in mind, we expect for valence integration to positively associate with greater resilience and well-being.

For this study, we will be referring to evaluative integration as valence integration, as we will be computing the same variable yet through a different methodology of data acquisition. We will use the data acquisition methodology patterned from Donohue et al., (1993) and Sheldon et al., (1997) in order get a measurement of all three forms of integration (i.e. authenticity, consistency, and valence integration) from one study. Instead of participants creating their own self-aspects, we will give them five social roles (i.e., student, worker, child, friend, and romantic partner) to rate, and we will measure their phi coefficient from that data. This will also allow for

a less cumbersome online format that will also allow us to more easily compare participants. Due to this methodology adaptation, the valence integration of the roles in the measure will not be perfectly comparable to evaluative integration with its freely formed self-aspects from the card-sort. For instance, due to the broad social roles that will be given to rate, participants will be less likely to have narrowly defined aspects/roles, so this study may render more participants with relatively more valence integration rather than compartmentalization.

Psychological Resilience and Well-Being

The literature on resilience reveals a plethora of definitions for the construct. The American Psychological Association (APA) defines resilience as "the process of adapting well in the face of adversity, trauma, tragedy, threats or significant sources of stress" (APA, 2016). Resilience may also include the capacity to rebound from adversity strengthened (Maluccio, 2002), positive adaptation (Fletcher & Sarker, 2013; Snyder, Lopez, & Pedrotti, 2011), managing significant stressors or trauma (Windle, 2011) and sustaining one's essence through times of adversity (Zautra, Hall, & Murray, 2010). The construct of resilience has been used interchangeably as both a trait (e.g., hardiness, positive emotions, self-efficacy, and positive affect) and a dynamic process of adapting to stress (Luthar, Cicchetti, & Becker, 2000). For the purpose of this study, resilience is defined as the process of adapting well in the face of adversity.

Resilience is often measured through self-report scales (Pangallo, Zibarras, Lewis, & Flaxman, 2015). The current study will measure resilience with the Connor-Davidson Resilience Scale (CD-RISC; Connor & Davidson, 2003) and one item adapted from the Brief Resilience Scale (BRS; Smith et al., 2008), both of which are psychometrically sound instruments with strong internal and external validity (Pangallo et al., 2015; Windle, Bennett, & Noyes, 2011).

The CD-RISC is a 25-item scale that describes resilience as a multidimensional process, uniquely detecting both internal and external factors to the individual (Smith et al., 2008). The BRS scale is a six-item scale found to address variables of personality, context, and situations (Smith et al., 2008) and correspond with the ability to recover and cope with difficulties (Windle et al., 2011).

Finding which forms of self-structure are most conducive to resilience could have significant implications for the connection between self-concept structure and psychological well-being, as the resilience literature has shown noteworthy outcomes for individuals high in resilience. Resilience is often coupled with a positive view of self and one's strengths, a capacity for realistic plans, and a capacity to manage strong feelings (APA, 2016). Moreover, studies have found that greater resilience is associated with the ability to use positive emotions to moderate stress reactivity (Ong, Bergeman, Bisonti, & Wallace, 2006) as well as the ability to use positive emotions to bounce back cognitively and physiologically after experiencing negative emotional arousal (Tugade & Fredrickson, 2004). Finally, resilience has been found to be a protector from depression (Edward, 2005) as well as stress and anxiety (Mujeeb & Zubair, 2012), which ties in with many of the previous findings of authenticity and consistency-based integration and positive psychological adjustment (e.g., Sheldon et al., 1997).

Some research in the field of resilience found that individuals with a history of adversity compared to none reported better mental health and well-being, as it was seen that exposure to adversity in moderation can engage supportive networks and help create a successful ability to overcome adversity in the future (Fletcher & Sarkar, 2013; Seery, Holman, & Silver, 2010). One explanation given for why an individual will fare better after experiencing crises is that using a high amount of energy to cope can help increase toughness, both physiologically and

psychologically (Dienstbier, 1992). If one does not have the chance to cope with adversity, the individual may not in turn be able to develop resilience. These theories seem to support the importance of valence (i.e., evaluative) integration and the blending of negative attributes into categories with positive attributes, as the integration may lead to resilience or inoculation against stressful events (Showers & Zeigler-Hill, 2007).

The Current Study

The current investigation attempts to look at the organization of the self-concept and further understand the impact it has on resilience and well-being. Rafaeli and Hiller (2010) conclude in their chapter that after about 25 years of research in the field, there are still no firm conclusions about integration, differentiation or self-complexity affecting well-being. Indeed, there is some inconsistency in the literature, especially due to validity issues and varying methodologies (e.g., Rafaeli-Mor & Steinberg, 2002; Pilarska & Suchanska, 2015). The current research measures three different forms of self-structure with the same method of data acquisition. This study has potential to bring clarification to the topic of self-structure as well as develop the connection between integrative self-structure and resilience, a new construct in this area of literature.

This study addresses varying measures or indices of self-structure: authenticity-based integration (stemming from self-determination theory), consistency-based integration (i.e., low SCD), and valence integration (i.e., evaluative integration). As for authenticity, it has been recognized as a sign of integrative organization with a positive relationship with well-being (Sheldon et al., 1997; Showers et al., 2015). SCD has been found to be strongly negatively correlated with well-being (e.g. Donahue et al., 1993; Sheldon et al., 1997), and might have implications for consistency-based integration relating to both psychological resilience and well-

being. Also, as evaluative integrative thinking has been associated with less negative mood during the occurrence of negative characteristics of the self (McMahon et al., 2003), this study adapts a new measure called valence integration which may have a positive impact on individuals.

In order to grasp the varying domains and complexities of the self-concept and its integrative structure in a single study, this current research involved creating a feasible online research platform. For this investigation, organization of the self-concept was measured with an adapted hybrid measure, taking ideas from several studies referred to in the literature review, in order to bring a comprehensive understanding to the construct of integrative self-structure. Overall resilience was measured with a psychometrically sound instrument, the CD-RISC (Connor & Davidson, 2003), while role resilience was measured with an adaptation of one item from the BRS (Smith et al., 2008). Two basic measures of well-being, depression and life satisfaction, were also added to make this study more comparable to others.

There are three basic research questions that this study investigates, which are noted in the next session. The first question asks if self-concept integration relates resilience and well-being. The second question has to do with testing variations of Linville's (1987) stress-buffering hypothesis with the three forms of self-concept integration as moderators. The third question allows for exploratory analyses of comparing the present study to past studies with similar variables. For the first and third research questions, the independent variables are the integrative self-structure indices: authenticity, consistency, and valence integration. For all three questions, the dependent variables are the measures of psychological resilience, life satisfaction, and depression. For the second research question, the integrative self-structure indices were moderating variables with stress as the independent variable. Also, differential importance,

average positivity, and proportion of negatives attributes were at times control variables, specifically for analyses with valence integration. (Refer to Appendix A for operational definitions of the variables).

Research Question 1: Does self-concept integration relate to resilience and well-being?

Person level of analysis. All three hypotheses from research question 1 will be analyzed using a person level of analysis, as consistent with the literature (e.g., Donahue et al., 1993, Sheldon et al., 1997; Showers 1992). Research question 1 from a person level of analysis asks if the indices of self-structure (i.e., authenticity, consistency, valence integration) are related to one's overall resilience and well-being. Relationships with authenticity, SCD, and evaluative compartmentalization have been looked at in terms of depression (e.g. Sheldon et al., 1997; Donahue et al., 1993, Showers 1992, McMahon et al., 2003), and as depression has a negative association with resilience (e.g. Edward, 2005), we expect similar relationships among the indices of integrative self-structure and resilience to be comparable to integrative self-structure and depression. Also, as life satisfaction is another scale of well-being, we expect this scale to have relationships with the self-structure variables in the opposite direction that depression would have with the self-structure variables. In the following hypotheses, along with resilience as a dependent variable, the two measures of well-being are depression and life satisfaction. These relationships are displayed in Figure 1.

Role level of analysis. Hypotheses 1 and 2 will also be analyzed from a role level approach, following procedures set forth by Roberts and Donahue (1994) and Sheldon and colleagues (1997). Research question 1 from a role level approach asks if self-concept integration relates to resilience and well-being, as measured by role level of analyses. This

question explores the role variabilities of consistency of each role with the general self, role-specific authenticity, role-specific resilience, role satisfaction, and role irritation/stress.

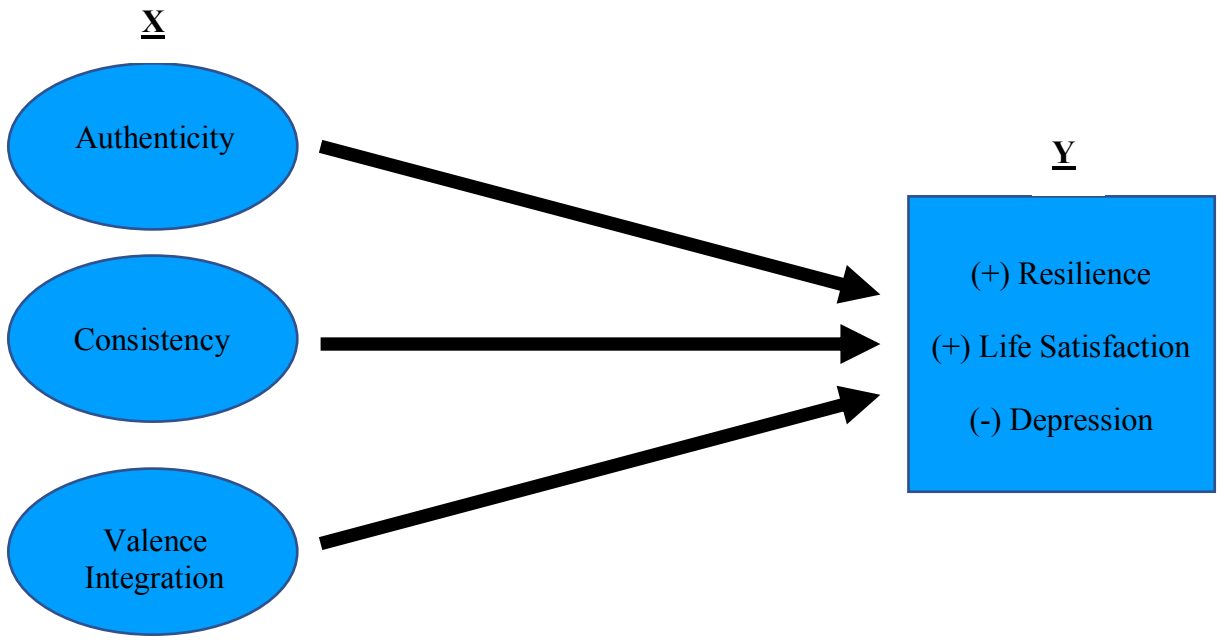

Figure 1. The figure represents the independent variables (i.e., authenticity, consistency, and valence integration) and dependent variables (i.e., resilience, life satisfaction, and depression) from research question 1.

Hypothesis1: Authenticity-based integration will positively correlate with resilience and well-being. At a person level of analysis, when there is greater average authenticity of the social roles, the greater resilience and life satisfaction, and less depression there will be. At a role level of analysis, the more authentic each role is rated, the greater role resilience, role satisfaction, and less role irritation there will be.

Hypothesis2: Consistency-based integration will positively correlate with resilience and well-being. At a person level of analysis, the more similarities there are between all five social roles, the greater resilience and life satisfaction, and less depression there will be. At a role level of analysis, the more consistent a role is with the general self, the greater role resilience, role satisfaction, and less role irritation there will be.

Hypothesis3: When roles have negative salience, valence integration will positively correlate with resilience and well-being. Negative salience is defined as having relatively negative differential importance. In other words, when there is more importance to negative characteristics, having a mixture of both positive and negative attributes in each role will positively correlation with greater resilience and life satisfaction and less depression. This hypothesis will only be analyzed from a person level approach.

Research Question 2: Does self-concept integration moderate the relationship between stress and well-being? This question will be testing Linville's (1987) stress-buffering hypothesis with constructs other than the original self-complexity variable. The adapted stress buffering hypothesis states that those experiencing stress will experience less unfavorable impacts on well-being if they have greater self-concept integration. The proposed moderation is displayed in Figure 2.

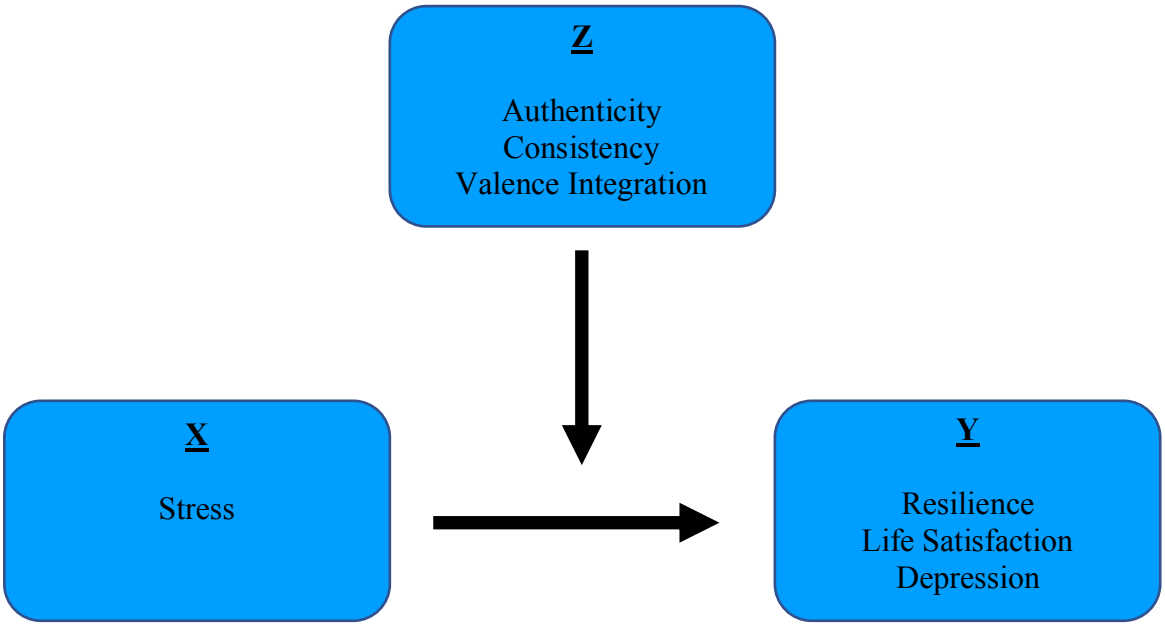

Figure 2. The figure represents the proposed moderating relationship with stress as the independent variable, the three forms of integration as the moderators (i.e., authenticity, consistency, and valence integration), and the dependent variables (i.e., resilience, life satisfaction, and depression) from research question 2.

Hypothesis$_4$: Authenticity-based integration will moderate the impact of stress on resilience and well-being. In other words, when authenticity is high, the relationship between stress and both resilience and well-being will be weak, and vice versa for when authenticity is relatively low.

Hypothesis$_5$: Consistency-based integration will moderate the impact of stress on resilience and well-being. In other words, when consistency is high, the relationship between stress and both resilience and well-being will be weak, and vice versa for when consistency is relatively low.

Hypothesis$_6$: Valence integration will moderate the impact of stress on resilience and well-being. In other words, when valence integration is high, the relationship between stress and both resilience and well-being will be weak, and vice versa for when valence-base integration is low.

Research Question 3: Comparison to other studies and exploratory analyses.

Simultaneous regressions replicating Sheldon et al. (1997). Does the online approach to authenticity and consistency generate results comparable to Sheldon and colleague's (1997) simultaneous regression measures? Sheldon et al., (1997) found that at a role level of analysis, regressions with authenticity and consistency as simultaneous predictors revealed that only authenticity made significant positive contributions to predict well-being within roles. The researchers also found that at a person level of analysis, regressions with authenticity and consistency as simultaneous predictors revealed that both measures accounted for significant unique variance in overall well-being. For the research question, we will use measures of well-being, as well as resilience, as dependent variables. The question we want to answer is: Do our

results replicate those of Sheldon et al. (1997) or show different findings, perhaps revealing more consistency between the role and person levels of analysis?

Simultaneous regressions with authenticity, consistency, and valence integration as predictors. We will do further exploratory analyses with testing if forms of self-concept integration have significant unique variance in predicting resilience and well-being. We are exploring the effects of authenticity, consistency, and valence integration as simultaneous predictors from a person level of analysis. This exploration could reveal some connections between authenticity and consistency as forms of self-concept integration (as supported by Sheldon et al., 1997) and valence integrations as a form of self-concept integration (i.e. the inverse of Showers' (1992) evaluative compartmentalization).

Comparison of valence integration to Showers' (1992) evaluative integration/compartmentalization. Does the online approach to valence integration generate results comparable to Showers' (1992) evaluative integration/compartmentalization? We expect that the online approach to the measure of valence integration may differ from Showers' (1992) evaluative integration as methodology will be varied, with participants being given roles rather than being able to create any title of a group of meaningful aspects themselves.

Methods

Participants

This thesis project received approval from the Lakehead University Research Ethics Board (Appendix B). A total of 236 participants signed up for the "Self-Concept Organization Inventory and Well-Being" study. Participants consisted of undergraduate students from Lakehead University who had access to the SONA™ portal. Of the 236 original participants, 45 participants were removed from the dataset, leaving 191 for analyses. Participants were removed if they were missing a large portion of their data or if they incorrectly answered one or

both of the instructed response items. Additionally, attention and effort questions were asked at the end of the survey, and participants were removed if they selected that their attention and/or effort levels were below a 3 out of 5, and if they responded "no" to the last question asking if their data should be used or not (5.4% answered "no"). Noted, four participants were missing information on the partner role, however they were kept in for the analysis.

The mean age of the sample was 20.71 (*SD* = 4.28), with a range of 17-50. Twelve percent (*n* = 23) of the participants identified as male and 88% (*n* = 168) identified as female. In relation to marital status, 48.2% (*n* = 92) identified as single, 46.6% (*n* = 89) identified as dating, and 5.2% identified as other (*n* = 10). For ethnicity, participants were allowed to check multiple ethnicities if they applied and they were also given the opportunity to write in other ethnicities not specified. Overall, 9.8% (*n* = 19) participants felt as if they identified as more than one ethnicity. Some of the main ethnicities identified are as follows: 83.1% (*n* = 167) identified as at least partly European/Caucasian, 8.4% (*n* = 16) identified as indigenous, 3% (*n* = 6) identified as East Asian, and 2.6% identified as African (*n* = 5). An additional 2.6% (*n* = 5) of individuals did not share their ethnicity.

The majority of the participants, 46.1% (*n* = 88), were in their first year of study, 27.7% (*n* = 53) were in year two, 13.6% (*n* = 26) were in year three, 11.0% (*n* = 21) were in year 4, and 1.6% (*n* = 3) did not respond to this demographic prompt. As for the participants' undergraduate major, 35.1% (*n* = 64) were psychology, 16.2% (*n* = 31) were nursing, 11.0% (*n* = 21) social work, 9.4% (n = 18) criminology, 5.2% (*n* = 10) education, 4.7% (*n* = 9) kinesiology, 3.7% (*n* = 7) biology, undeclared (*n* = 6), with other majors comprising 11.6% of the participants (*n* = 25). In relation to employment, 56.5% (*n* =108) of the participants identified as part-time workers, 5.2% (*n* =10) as full-time workers, and 31.4% (*n* =60) as unemployed. The other 6.9% (*n* =13)

of participants identified as full-time students, seasonal/summer workers, self-employed, or on disability.

Materials

SurveyMonkey. All questionnaires for this current study were given in one survey through SurveyMonkey. SurveyMonkey is a free online survey tool hosted by a server in the USA (Appendix C).

Cover Letter and Informed Consent. Participants were presented with a cover letter delineating the nature of the study, which is to assess the self-structure in relation to well-being (Appendix C). They were then presented with a page on informed consent (Appendix D).

Demographic questionnaire. A demographic questionnaire was created and used in this study. Participants were asked to report their gender, age, employment status, marital status, ethnicity, major and year of undergraduate studies (Appendix E).

Self-Structure Online Inventory. This inventory is a hybrid measure adapted from Linville's (1985, 1987) self-complexity measures and Showers' (1992) evaluative organization measure as well as Donahue et al.'s. (1993) self-concept differentiation measures and Sheldon et al.'s (1997) measures on stress, strain, and satisfaction, and authenticity in roles. We chose to mainly follow Donahue et al. (1993) and Sheldon et al.'s (1997) methodology with given roles to in order to allow for more comparability across participants. Rather than using the term "self-aspects," such as found in card-sort methods, this inventory refers to the given social identities to rate as "roles." The entire Self-Structure Online Inventory with all four parts described below can be found in Appendix F.

Part 1 (Self-concept structure measure). This measure mainly stems from Donahue et al.'s (1993) method of measuring SCD, as adjectives were rated separately for the self in general

and then in various roles. However, this measure was adapted to be in an online format through SurveyMonkey, rather than with a paper format, as used previously (e.g., Donahue et al., 1993; Sheldon et al., 1997). The adjectives come from Showers (1992) card-sorting task, with a listing of self-attributes of 19 positive adjectives and 19 negative adjectives. These adjectives were chosen to replace the adjectives from previous studies measuring SCD, as the list of adjectives were tailored to the Big-Five traits (e.g., Donahue et al., 1993; Sheldon et al., 1997). Showers (1992) list of adjectives from Study 3 was a good substitute, as it was adapted from an adjective list pretested by undergraduate college students.

For this measure, the participant was first asked to rate "myself in general" with each of the 38 adjective markers from 1 (very uncharacteristic of me) to 5 (very characteristic of me). Next, the various roles were rated with the same adjectives, with the roles being student, worker, child, friend, and romantic partner. For each of the 5 separate roles, the list of adjectives was given five more times in a counterbalanced order. Once again, the participants rated how characteristic the trait is by rating each of the 38 adjective markers from 1 (very uncharacteristic of me) to 5 (very characteristic of me).

Part 2 (Authenticity measure). This scale of authenticity is based off a scale with five items, which were selected in Sheldon et al.'s (1997) research through factor analysis of a set of 10 pilot items to represent the authenticity as defined by aspects that truly reflect who the person is. More recently this measure was shortened from five to three items (Showers et al., 2015). The three-item version was used for this current study in order to cut down on the length of the survey overall, as there were many measures the participants had to do in one sitting. The items are 1) "I experience this aspect of myself as an authentic part of who I am," 2) "I feel tense and pressured in this part of my life" (R), and 3) "I have freely chosen this way of being." The scale

was given five times, once for each of the roles. Participants were primed for this part by being told to "Envision each role and reflect on the thoughts, emotions, and behaviors that you most commonly experience in this role."

Part 3 (Role-related measures). Taken from Sheldon et al. (1997), a few questions were asked about the five roles to allow in order to test the first research question from the role level approach. First, participants were asked "How much does X role contribute to your overall irritation and stress level?" This was rated from 1 (not at all) to 7 (extremely). Second, they were asked "How satisfied are you in X role?" rated on the same scale. Third, participants answered a question adapted from an item from the Brief Resiliency Scale (BRS; Smith et al., 2008): "How much of a tendency do you have to bounce back quickly after hard times that arise in your role as a X."

Part 4 (Differential Importance measure).

Differential importance rating questions were asked based on Showers (1992) study. For each of the five roles, the participants answered three questions on how important the role is to their overall concept of themselves, and how positive and how negative the role is on 7-point Likert scales.

Other roles. A qualitative question was added to the study in order to garner information as to whether or not the five social roles used encapsulated who each participant is as a person.

College Student's Stressful Events Checklist. This checklist for college students helps determine undue stress in life, at a low, moderate, or high level of stress that has occurred recently or is expected to occur soon. There are listed 32 potential stress producers, with a value assigned to the stressors, ranging from 20 for a minor traffic violation to 100 for death of a close family member. This checklist comes from Arizona State University's Live Well website (ASU

Wellness, 2018), which derived the stressor values from Holmes & Rahe' (1967) social readjustment scale. This checklist can be found in Appendix G.

Perceived Stress Scale (PSS). This 14-item scale was designed to measure the degree to which individuals appraise the events in their lives as stressful (Cohen et al., 1983). Participants were told to rate their thoughts and feelings during the past month. Items are rated from 0 (never) to 4 (very often). The measure was created to provide a direct measure of the level of stress experienced by the respondent. An item example is "In the last month, how often have you been upset because of something that happened unexpectedly?" This scale can be found in Appendix H.

Connor-Davidson Resilience Scale (CD-RISC). The CD-RISC is a 25-item scale measuring resilience as a process (Connor & Davidson, 2003). Participants were told to rate the items according to how the items apply to them over the last month. Items are rated on a 5-point scale from 0 (not true at all) to 4 (true nearly all the time). It describes resilience as a multidimensional process, identifying both internal and external factors to the individual, and containing strong psychometric properties (Pangallo et al., 2015). We obtained permission to use this copyrighted scale. This content of the scale, as shown by Connor & Davidson (2003), can be found in Appendix I.

Satisfaction with Life Scale (SWLS). The SWLS measures global life satisfaction with five items (Diener, Emmons, Larsen, & Griffin, 1985). Participants may agree or disagree with the statements, and they are told to answer honestly and openly on a 7-point scale, from strongly disagree to strongly agree. The SWLS has strong psychometric properties including high internal consistency and high temporal reliability (Diener et al., 1985). The measure correlates

with other measures of subjective well-being (Diener et al, 1985). An example item is "In most ways my life is close to ideal." This scale can be found in Appendix J.

Center for Epidemiologic Studies Depression Scale (CES-D). The CES-D includes 20 items that make up six scales, reflecting various dimensions of depression: depressed mood, feelings of guilt and worthlessness, feelings of helplessness and hopelessness, psychomotor retardation, loss of appetite, and sleep disturbance (Radloff, 1977). Participants were told to rate their responses according to the past week. The responses cover how often the participant has felt that item to be true during the past week, with a range of 0 (rarely or none of the time; less than 1 day) to 3 (all of the time; 5-7 days). Psychometrics include high internal consistency and adequate test-retest ability across a wide demographic population (Radloff, 1977). An example item is "I felt sad." This scale can be found in Appendix K.

Systems Thinking. This measure of a cognitive paradigm was included for exploratory analyses that are not part of the current thesis. This 15-item scale addresses being able to understand the relations between things, especially in the sense of an individual's interconnectedness to the world as a complex system (Randle & Stroink, 2012). An example statement is, "When I have to make a decision in my life I tend to see all kinds of possible consequences to each choice."

Dynamic Psychological Resilience/Complexity Resilience Scale. This measure of resilience was included for exploratory analyses that are not part of the current thesis. This 11-item scale ground in complex adaptive systems theory was developed by the Culture, Complexity and Resilience Lab at Lakehead University in 2014 (Trovarello, 2014; Baraskewich, 2014). An item example is "I am able to let go of parts of myself when I have to."

Self-Efficacy in Meaning Making Scale (SEMMS). This measure of meaning-making has 12 items under the subcategories of coherence, purpose, and significance on 7-point Likert scales. It was developed by colleagues of our research lab and pilot tested here.

Attention questions. In order to monitor for quality, attention questions were used, as suggested by Meade and Craig (2012). Two attention items were interspersed throughout the surveys (e.g., "In order to monitor quality, please select disagree for this item.), with one item in the "worker role" section of self-structure online inventory (Appendix F) and one item in the SWLS (Appendix J). Additionally, three items at the end of the survey addressed how much effort and attention the participant gave to the study as well as if they thought we should use their data in the analyses (yes or no). These three questions can be found in Appendix L.

Closing/Debriefing. Participants were presented with a closing screen thanking them and giving them the researcher's email to be contacted if they would like a summary of the results. Additionally, participants were given the contact information for the university's Student Health and Counseling Centre as well as the Research Ethics Board for any reason including the experience distress as a result of the study. This closing page can be found in Appendix M.

Procedure

Participants were recruited from undergraduate psychology courses at a university in northwestern Ontario via the online portal SONA™. On SONA™ there was a brief description and a link to a 45-minute online study if the student would like to participate for 1 bonus point (i.e., 1% added onto the final grade) in eligible undergraduate psychology courses. The link brought the participants to an anonymous SurveyMonkey which includes all the questionnaires for this study. Based on the other studies with similar research studies we decided a sample size

from ranging from 150-250 participants would be acceptable, and the study was closed once we had 236 participants before the filtering process.

The online study began with the consent form, which was read and then the participants clicked for agreement in lieu of signing. Following the consent form, the participants completed the SurveyMonkey tasks beginning with the Self-Structure Online Inventory (Appendix F) and ending with a debriefing (Appendix M). According to SurveyMonkey, the typical amount of time spent on this study was 34 minutes. The measures of authenticity, consistency, and valence integration, proportion of negative attributes, and differential importance came from the Self-Structure Online Inventory with measures of well-being and resilience coming from their respective questionnaires. IBM SPSS Statistics, Version 25 was used to compute indices and analyze the following data. Index computation is described in the next section.

Index Computation

Authenticity measures. Role-level authenticity was computed by averaging the items "I experience this aspect of myself as an authentic part of who I am," "I feel tense and pressured in this part of my life" (reverse scored), and "I have freely chosen this way of being." For person level of analysis, overall authenticity of roles for each participant was computed by averaging the five roles scores (following Sheldon et al., 1997).

Consistency-based integration (i.e., low self-concept differentiation).

Person level of analysis. Consistency-based integration measures were computed in the manner described by Sheldon and colleagues (1997). First, the SPSS data file was restructured so that the 38 characteristics were units of analysis (i.e., rows) and the 5 individual roles were variables. With the data file split by participant identification code, correlations between each participant's 5 roles were computed. This resulted in 10 correlation coefficients for each

participant. Next, Fisher's r-to-Z transformation was applied to each of the 10 correlation coefficients for each participant; then the means of those ZR values was computed; and finally, the means of the ZR values were back-transformed to the original scale.[1] Higher mean correlations indicate greater consistency while lower mean correlations indicate greater fragmentation or differentiation.

Role level of analysis. At the role level, five separate consistency indices were measured according to the similarity between each of the five roles ratings and the general self ratings. This was computed as the correlations between each of the five social roles and the general self (following Sheldon et al., 1997 and Roberts & Donahue, 1994). The correlation between the set of 38 adjective ratings made for the general self and the set of adjective ratings made for each of the five roles, creating five correlations in all. For example, the correlations between one participant's ratings of general self and her student, worker, child, friend, and romantic partner ratings ranged from .81 to .87 while another participant's ratings of general self for each role ranged from .14 to .73.

Valence integration (i.e., evaluative compartmentalization of given rather than created roles). Valence integration was computed as the inverse of phi coefficient or Cramer's V (Cramer, 1945) for the participant's rated social roles. The phi coefficient is based on a chi-squared statistic and is a measure of association between two nominal variables, giving a value between 0 to 1 (Cramer, 1945). For this study, phi coefficient is the index of the tendency for positive and negative attributes to appear in separate roles (Showers, 1992), making this index the inverse of valence integration. The phi coefficient was adapted from Showers (1992) who

[1] Fisher's r-to-Z transformation is really the inverse hyperbolic tangent (atanh), and the back-transformation is the hyperbolic tangent (tanh). These functions are not directly available in SPSS. But as noted by Weaver and Koopman (2014), they can be computed as follows using the IDF.LOGISTIC and CDF.LOGISTIC functions: Z_r = atanh(r) = 0.5×IDF.LOGISTIC((1+r)/2,0,1); r = tanh(Z_r) = 2×CDF.LOGISTIC(2Z_r,0,1)-1.

found a phi score for each participant's card sort, indicating what self-categories are important to them and attributes that fit in the categories. With the task changed to individuals rating the adjectives for each of the five given roles, adjectives were counted as being a part of the role if they were rated as characteristic of themselves (i.e. rated a 4 or 5 on the 5-point Likert scale). Phi was only calculated for participants who ascribed to at least two negative adjectives (following Showers, 1992); due to this condition, twenty-five participants were excluded from this measure.

First, a chi-square statistic was calculated for each participant, which was computed using the expected frequencies (based on the number of negative adjectives included in all of the five roles) and the observed frequencies (based on the number of negative adjectives appearing within each role). For instance, if the observed average frequency among the roles is 30% negative total adjectives, then for one role it is expected that 3 out of 10 are negative and that 7 out of 10 adjectives are positive (Showers & Kevlyn, 1999). Phi was then calculated by dividing the number of adjectives all five roles combined (N):

$$\phi = \sqrt{\frac{\chi^2}{N}}$$

Phi can range from 0, as perfectly random roles, to 1, as perfectly compartmentalized roles (Showers, 1992). The measure of phi is said to be independent of the number of roles and the proportion of positives and negative adjectives in the roles (Showers, 1992). Next, valence integration was computed by subtracting phi from 1.

Proportion of negative adjectives (NA). NA is the percentage of negative adjectives that are chosen as characteristic of the roles (i.e., rated a 4 or 5 on the 5-point Likert scale). This was computed by dividing the number of negative adjectives by the total number of adjectives in

all the roles; the index was then arcsine transformed (following Showers, 1992). This index has been used as a control variable with measuring evaluative organization (e.g., Showers, 1992; Showers et al., 2015). NA had a mean of .20 (SD = .17), ranging from .00 to .81.

Average positivity of roles (PR). This index is computed as the positivity ratings of each role minus the negativity rating of each role. This index used in the computation of differential importance and has also been used as a control variable with measuring evaluative organization (e.g., Showers, 1992; Showers et al., 2015). PR had a mean of 2.37 (SD = 1.56), ranging from -2.00 to 6.00.

Differential Importance (DI). Differential importance (DI) is a moderating variable, a construct created as the correlation between the specific self-ratings of the positivity and negativity of roles and the self-rated importance of the roles (Pelham and Swann, 1989). DI can range from -1 to +1, with higher scores indicating more positive roles as important and lower scores indicating more negative roles as important.

Differential importance was computed with the program SPSS, where the data file was restructured so each participant had two variables: the average positivity of each role (i.e., positivity ratings minus negativity ratings) and the importance ratings ascribed to those roles. The file was then split by participant and correlations were computed between the average positivity ratings and importance ratings of each of the five roles. Notably, having the same ratings on all items would make it impossible to compute DI (Pelham & Swann, 1989), and for that reason, six participants were missing a measure of DI.

Results

Preliminary Analyses

The raw data from SurveyMonkey was inputted into SPSS. Variable labels were created, string items were recoded into numeric values, and reverse scored items were recoded as well.

Means and standard deviations were calculated for each scale; additionally, Cronbach's alpha reliability statistic was calculated for the scale measures of perceived stress, resilience, life satisfaction, and depression and generally found to be adequate (Table 1). Additionally, the reliability for role authenticity was computed following Sheldon et al., (1997) in order to assess the authenticity items. The reliability for each of the role's rated authenticity was checked by computing the alpha coefficients for each of the five roles. The reliability coefficients for the student, worker, child, friend, and romantic partner roles were respectively as follows .47, .50, .58, .66, and .77. The overall reliability with three items for each of the five roles (i.e., 15 items total) was $\alpha = .70$. Next, the data was checked for the range of variables, normal distributions, outliers, skewness, and kurtosis, of which no issues were noted.

Gender differences. As there was an unequal amount of female ($n = 168$) and male ($n = 23$) participants, gender differences were computed with Welch's *t*-test, as this test can be used to test the difference between two groups when the group variances and/or the sample sizes are unequal (Kohr & Games, 1974). For the dependent variable of life satisfaction, there was a significant effect for gender, $t(189) = -2.36$, $p = .025$, with men having higher scores than women. Similarly, for depression, there was a significant effect for gender, $t(189) = 2.178$, $p = .031$, with women having higher scores than men. Additionally, for perceived stress, there was a significant effect for gender, $t(189) = 3.28$, $p = .003$, with women having higher scores than men. No significant differences were found for the dependent measure of resilience, the three measures of self-concept integration, nor the total number of stressful events.

Table 1

Descriptive Statistics for Main Variables

	N	Min	Max	Mean	Standard Deviation	Cronbach's Alpha
Authenticity among roles	191	3.13	6.80	4.94	.69	--
Consistency among roles	191	-.20	.98	.62	.25	--
Valence integration	166	.20	.93	.67	.16	--
Differential Importance	185	-.90	1.00	.40	.46	--
PSS	191	.40	4.00	2.19	.73	.90
Stress Events	191	.00	790.00	300.62	176.21	--
CDRS	191	1.04	3.88	2.51	.54	.89
SWLS	191	1.00	7.00	4.26	1.31	.86
CESD	191	.00	2.55	1.03	.60	.93

Other roles. When asked if there were other roles that are important to the participants, they listed as a parent (n = 7), sibling (n = 7), athlete (n = 6), leader (n = 4), religious role (n = 2), community helper (n = 1), caregiver (n = 1), animal activist (n = 1), citizen (n = 1), acquaintance/stranger (n = 1), mentee (n = 1), grandchild (n = 1), artist/musician (n = 1), and as a specific ethnicity (n = 1).

Research Question 1: Does self-concept integration relate to resilience and well-being?

Hypothesis 1 and hypothesis 2: Authenticity and consistency-based integration will positively correlate with resilience and well-being.

Person level of analysis. Our first two hypotheses were tested, that authenticity and consistency-based integration will positively correlate with resilience and well-being. First, we did a person level of analysis, as we correlated role authenticity mean and consistency among the five roles with measures of resilience, life satisfaction, and depression (Table 2). Hypothesis 1 was supported, as results show that individuals who feel more authentic across their roles also experience more resilience and life satisfaction and less depression. Additionally, hypothesis 2 was supported, as individuals whose five social roles are more similar to one another also experience more resilience and life satisfaction and less depression.

Table 2

Correlations of Authenticity and Consistency-Based Integration with Resilience and Well-Being

	Resilience	Life Satisfaction	Depression
Authenticity	.50**	.54**	-.57**
Consistency	.53**	.55**	-.53**

Note. Pearson product-moment correlations significant at **p < .01, two-tailed.

Table 3

Correlations of Role Level Authenticity and Role's Consistency-with-the-General-Self Measures with Role Resilience, Role Satisfaction, and Role Irritation

Role	Role's authenticity	Role's consistency with the general self
Student		
Resilience	.40**	.25**
Satisfaction	.63**	.28**
Irritation	-.40**	-.18*
Worker		
Resilience	.39**	.15*
Satisfaction	.64**	.21**
Irritation	-.37**	-.18*
Child		
Resilience	.52**	.47**
Satisfaction	.71**	.46**
Irritation	-.58**	-.36**
Friend		
Resilience	.30**	.12
Satisfaction	.74**	.24**
Irritation	-.57**	-.14
Romantic partner		
Resilience	.37**	.24**
Satisfaction	.79**	.33**
Irritation	-.44**	-.12

Note. Pearson product-moment correlations significant at *$p < .05$ and **$p < .01$, two-tailed.

Role level of analysis. Hypotheses 1 and 2 were also tested at a role level of analysis, by analyzing whether the role authenticity and the similarity between each role and the general self (i.e., role consistency) correlated with greater resilience and satisfaction and less irritation and stress within each role. The five role-authenticity variables and the five consistency-with-the-general-self variables were correlated with role resilience and role satisfaction (Table 3). Results

showed that participants were more resilient and satisfied in roles in which they feel more authentic, supporting the role version of Hypothesis 1. Role authenticity positively correlated with all five role resilience variables and all five role satisfaction variables and negatively correlated with all five role irritation variables at a significant level. Additionally, participants were more resilient and satisfied and less irritated in roles when there was consistency between that role and the general self (with one exception of role resilience and two exceptions of role irritation), supporting the role version of Hypothesis 2. The role's consistency-with-the-general-self positively correlated with four of the five role resilience variables (i.e., student, worker, child, and romantic partner resilience) and with all five role satisfaction variables, and negatively correlated with three of the five role irritation variables (i.e., student, worker, child) at a significant level.

Hypothesis 3: When negative roles are salient, valence integration will positively correlate with resilience and well-being. Hypothesis 3 proposed that when negative roles are salient (i.e., differential importance is relatively negative), valence integration will positively correlate with resilience and well-being. This hypothesis was only analysed from a person level of analysis. Hypothesis 3 was supported, as results showed that when differential importance (DI) was below the mean, individuals who had a greater mixture of positive and negative attributes in each of the roles (as computed with the measure of valence integration), also experienced more resilience and life satisfaction, and less depression (Table 4). Table 4 also shows that when positive roles were salient (differential importance is above the mean), valence integration was associated with more resilience and life satisfaction.

Table 4

Correlations of Valence Integration with Resilience and Well-being (with Differential Importance Below and Above the Mean)

	Resilience	Life Satisfaction	Depression
Valence Integration (Low DI)	.62**	.53**	-.37**
Valence Integration (High DI)	.27**	.26*	-.08

Note. DI= Differential Importance. For valence integration with DI below the mean, $n = 67$. For valence integration with DI above the mean, $n = 95$. Pearson product-moment correlations significant at *$p < .05$ and **$p < .01$, two-tailed.

Research Question 2: Does self-concept integration moderate the relationship between stress and well-being?

Hypotheses 4, 5, & 6: **Authenticity, consistency and valence integration will moderate the impact of stress on resilience and well-being.** Research question 2, that self-structure will moderate the impact of stress on resilience and well-being, was tested first with regressions with self-concept integration (i.e., authenticity, consistency, and valence integration) and perceived stress as independent variables, self-structure X perceived stress as an interaction variable, and resilience, life satisfaction, and depression as dependent variables. Hypotheses 4, 5, and 6 were not supported, as none of the regressions revealed a significant interaction between self-concept integration and perceived stress. Additionally, with perceived stress in the equation, there was only one significant main effect of self-concept integration on resilience or well-being, that being consistency-based integration predicting greater resilience. Instead, all regressions (except for consistency predicting resilience and valence integration predicting life satisfaction) revealed main effects of stress significantly predicting less resilience and well-being. The results for these regressions are shown in table 5.

Table 5

Three Sets of Standardized Regressions of Resilience, Life Satisfaction, and Depression with the Interaction of Perceived Stress X 1) Authenticity, 2) Consistency, and 3) Valence Integration

Perceived Stress X Authenticity

	Perceived Stress (PS)	Authenticity	PS X Authenticity	R^2
Resilience	-1.16*	-.02	.70	.35**
Life Satisfaction	-1.03*	.07	.54	.42**
Depression	1.02**	-.08	-.31	.64**

Perceived Stress X Consistency

	Perceived Stress (PS)	Consistency	PS X Consistency	R^2
Resilience	-.17	.57**	-.17	.38**
Life Satisfaction	-.45*	.29	.05	.43**
Depression	.64**	-.23	.06	.62**

Perceived Stress X Valence Integration

	Perceived Stress (PS)	Valence Integration (VI)	PS X VI	R^2
Resilience	-.75*	.07	.36	.36**
Life Satisfaction	-.58	.19	.10	.37**
Depression	1.03**	.20	-.32	.57**

Note. Pearson product-moment correlations significant at *$p < .05$ and **$p < .01$, two-tailed.

The same regressions were also run with stressful events in place of perceived stress. Similar to having perceived stress as an independent variable, none of the regressions revealed a significant interaction between self-concept integration and stressful events, once again not supporting hypotheses 4, 5, and 6. With stressful events in the equation, main effects were found for all three forms of self-concept integration (i.e., authenticity, consistency, and valence integration) predicting more resilience and life satisfaction. There were also main effects of authenticity and consistency predicting less depression, although there was no significant effect

for valence integration predicting depression. However, with valence integration in the regression, neither valence integration nor stressful events predicted depression. In contrast to having perceived stress as an independent variable, with stressful events in the equation, there were only 2 regressions (out of 9) where there was a main effect of stressful events significantly predicting less resilience and well-being, that being the regression with both stressful events and authenticity predicting depression as well as the regression with both stressful events and consistency predicting depression. The results for these regressions are shown in table 6.

Table 6

Three Sets of Standardized Regressions of Resilience, Life Satisfaction, And Depression with the Interaction of Stressful Events X 1) Authenticity, 2) Consistency, and 3) Valence Integration

Stressful Events X Authenticity

	Stressful Events (SE)	Authenticity	PS X Authenticity	R^2
Resilience	.57	.63**	-.57	.35**
Life Satisfaction	.06	.56**	-.20	.31**
Depression	.91**	-.36*	-.56	.45**

Stressful Events X Consistency

	Stressful Events (SE)	Consistency	PS X Consistency	R^2
Resilience	.19	.68*	-.21	.31**
Life Satisfaction	-.02	.60**	-.13	.33**
Depression	.48**	-.34**	-.14	.39**

Stressful Events X Valence Integration

	Stressful Events (SE)	Valence Integration (VI)	PS X VI	R^2
Resilience	.25	.55**	-.34	.19**
Life Satisfaction	.17	.51**	-.38	.19**
Depression	.30	-.20	.15	.23**

Note. Pearson product-moment correlations significant at *$p < .05$ and **$p < .01$, two-tailed

Research Question 3: Comparison to other studies and exploratory analyses.

Simultaneous regressions replicating Sheldon et al. (1997). Research question 3 began with comparing our study to Sheldon et al.'s (1997) study. We tested if both authenticity and consistency-based integration accounted for unique variance when simultaneously predicting resilience, life satisfaction, and depression, as this was found in Sheldon et al.'s study (1997). We ran simultaneous regressions both at a person and role level of analysis.

Role level of analysis. At the role level of analysis, first, the dependent variable of each individual role's resilience was regressed on both the authenticity score for that role and the consistency-with-the-general-self for the role, with mean role authenticity and mean role satisfaction in the equation as control variables (see part 1 of Table 7 for five regressions). The same set of regressions was repeated with role satisfaction, and role irritation as dependent variables (see parts 2 and 3 of Table 7 for ten more regressions). Following suit with Sheldon et al. (1997), mean authenticity and mean role satisfaction were also in the equation in order to control for person level differences and to focus the analysis on the status of a role relative to other roles. Authenticity emerged as a significant predictor of role resilience and role well-being in all five roles. Also, consistency made a significant contribution, yet only in the child role with role resilience and role irritation as the dependent variables.

Table 7

Three Sets of Regressions with Role Authenticity and Role Consistency as Simultaneous Predictors of 1) Role Resilience, 2) Role Satisfaction, and 3) Role Irritation

Role resilience			
	Authenticity β	Consistency β	SE β
Student resilience	.30**	.00	.87
Worker resilience	.29**	-.07	.96
Child (son or daughter) resilience	.34**	.11*	1.01
Friend resilience	.36**	-.06	.93
Romantic partner resilience	.36**	.01	1.14
Role satisfaction			
	Authenticity β	Consistency β	SE β
Student satisfaction	.63**	-.03	.82
Worker satisfaction	.58**	-.04	.98
Child (son or daughter) satisfaction	.62**	.09	.93
Friend satisfaction	.78**	.02	.77
Romantic partner satisfaction	.75**	.04	.94
Role irritation			
	Authenticity β	Consistency β	SE β
Student irritation	-.43**	-.05	.85
Worker irritation	-.41**	-.11	1.20
Child (son or daughter) irritation	-.42**	-.12*	1.24
Friend irritation	-.46**	.06	1.17
Romantic partner irritation	-.36**	.12	1.27

Note. Pearson product-moment correlations significant at *$p < .05$ and **$p < .01$, two-tailed.

Person level of analysis. For the person level of analysis, the mean authenticity and consistency were examined as simultaneous predictors of resilience and well-being. Table 8

shows that both measures accounted for significant unique variance in resilience, life satisfaction, and depression.

Table 8

Associations of Mean Role Authenticity and Consistency with Resilience and Well-Being Measures: Beta Coefficients Resulting from Simultaneous Entry

	Authenticity	Consistency	
Measure	β	B	R
Resilience	.24**	.40**	.58**
Life Satisfaction	.32**	.35**	.61**
Depression	-.41**	-.25**	.61**

Note. Pearson product-moment correlations significant at **$p < .01$, two-tailed.

Simultaneous regressions with authenticity, consistency, and valence integration as predictors. Exploratory analyses were conducted in order to find potential connections among valence integration with authenticity and consistency. The variable of differential importance (DI) was added to these analyses, as we found that DI can influence the results of valence integration. First, Pearson correlations were run between authenticity and valence integration when participants' DI was below the mean, $r(67) = .39$, $p < .01$, and above the mean, $r(95) = .30$, $p < .01$, as well as consistency and valence integration when participants' DI was below the mean, $r(67) = .64$, $p < .01$, and above the mean $r(95) = .45$, $p < .01$.

Then, regressions were run adding valence integration as a factor along with authenticity and consistency-based integration. Resilience, life satisfaction and depression were regressed onto these three forms of self-concept integration with participants whose DI was below the mean, for a total of three regressions in all (see part 1 of Table 9). With resilience and life satisfaction as the dependent variables, both authenticity and valence integration accounted for

significant variance, although consistency did not account for significant variance. However, with depression as the dependent variable, only authenticity accounted for significant variance. Next, these same three regressions were run with participants who DI was above the mean (see part 2 of Table 9). For these regressions, both authenticity and consistency accounted for significant variance for all three measures of resilience and well-being, while valence authenticity did not account for significant variance for any of the measures.

Table 9

Associations of Authenticity, Consistency, and Valence Integration with Resilience and Well-Being Measures: Beta Coefficients Resulting from Simultaneous Entry

Participants with differential importance below the mean (n = 67)

	Authenticity	Consistency	Valence Integration	
Measure	β	β	β	R
Resilience	.26*	.13	.43**	.68**
Life Satisfaction	.30*	.06	.37*	.60**
Depression	-.49**	-.11	-.10	.62**

Participants with differential importance above the mean (n = 95)

	Authenticity	Consistency	Valence Integration	
Measure	β	β	β	R
Resilience	.27*	.38**	.02	.59**
Life Satisfaction	.34**	.28*	.03	.57**
Depression	-.34**	-.35**	.18	.56**

Note. Pearson product-moment correlations significant at *p < .05 and **p < .01, two-tailed.

Comparison of valence integration to Showers' (1992) evaluative compartmentalization. In order to compare our study to Showers' (1992) study, we ran regressions imitating Showers' (1992) hierarchical regression analyses with evaluative

compartmentalization (phi) as well as measures of content as predictors. Self-esteem and depression scores were the dependent variables for Showers' (1992); however, for this study the dependent variables were resilience, life satisfaction, and depression. We ran three regressions (see table 10). Step 1 was entering the three measures of content to control for variance that would be due to amount of negative content. Step 2 was entering the interactions of DI with the two measures of negative content (proportion of negative items and average positivity of roles). Step 3 was entering phi (the inverse of valence integration). Step 4 was entering the interaction of phi with DI.

Table 10 reports the results of the regressions for the prediction of resilience, life satisfaction, and depression, respectively. The measures of negative content accounted for variance in all three regressions. In particular, this was due to the proportion of negatives and the average positivity of roles, rather than DI, which was nonsignificant. All of the interactions terms with DI in all three regressions were also nonsignificant. With resilience and life satisfaction as the dependent variables, there was a significant negative, linear relationship between compartmentalized organization (phi) and both resilience and life satisfaction. However, with depression as the dependent variable, there was no significant relationship with compartmentalized organization (phi) and depression.

Table 10

Regressions for Resilience, Life Satisfaction, and Depression onto Measures of Self-Concept Content and Self-Concept Structure

Resilience

Predictor	R^2	Change in R^2	β	*F* Change
Step 1:	.32	.32**		$F(3,158) = 24.57$ $p < .001$
Proportion of negative items (NI)			-.36**	
Average positivity of roles (PR)			.24**	
Differential importance (DI)			.05	
Step 2:	.32	.00		$F(2,156) = .33$, $p = .72$
NI X DI			.00	
PR X DI			.09	
Step 3: Phi (ø)	.38	.06**	-.26**	$F(1,155) = 13.69$, $p < .001$
Step 4: ø X DI	.39	.01	.28	$F(1,154) = 2.91$, $p = .09$

Life Satisfaction

Predictor	R^2	Change in R^2	β	*F* Change
Step 1:	.35	.34**		$F(3,158) = 24.28$, $p < .001$
Proportion of negative items (NI)			-.34**	
Average positivity of roles (PR)			.31**	
Differential importance (DI)			-.07	
Step 2:	.36	.01		$F(2,156) = 1.39$, $p = .25$
NI X DI			-.12	
PR X DI			.06	
Step 3: Phi (ø)	.39	.03**	-.20**	$F(1,155) = 8.40$, $p = .004$
Step 4: ø X DI	.41	.01	.29	$F(1,154) = 3.06$, $p = .08$

Depression

Predictor	R^2	Change in R^2	β	*F* Change
Step 1:	.33	.33**		$F(3,151) = 24.79$, $p < .001$
Proportion of negative items (NI)			.31**	
Average positivity of roles (PR)			-.32**	

Differential importance (DI)			.03	
Step 2:	.34	.01		$F(2,149) = 1.11$, $p = .33$
NI X DI			.06	
PR X DI			-.12	
Step 3: Phi (ø)	.34	.00	.03	$F(1,148) = .17$, $p = .68$
Step 4: ø X DI	.35	.01	-.19	$F(1,147) = 1.16$, $p = .28$

Note. Depression scores were square-root transformed. Pearson product-moment correlations significant at $^{**}p < .01$, two-tailed.

Discussion

The purpose of the current research was to examine the relationships of selected constructs of self-concept integration with psychological resilience, on its own, as well as amidst stress. We also aimed to look at exploratory analyses comparing our study with others in the literature. The study yielded a number of theoretically noteworthy findings.

Research Question 1: Does self-concept integration relate to resilience and well-being?

Hypothesis 1 and hypothesis 2: Authenticity and consistency-based integration will positively correlate with resilience and well-being.

The study provided support for our first two hypotheses, that authenticity and consistency-based integration are positively associated with resilience and well-being. These positive relationships between consistency and resilience/well-being were most significant at the person level of analysis compared to the within role level of analysis. At the person level of analysis, all correlations were significant between the two forms of integration (i.e., authenticity and consistency) and the measures of resilience, life satisfaction, and depression. However, at the within role level of analysis, the authenticity effects overall were somewhat stronger than consistency-with-the-general-self effects, as all 15 correlations were significant for authenticity relating to resilience and well-being, yet only 12 of the 15 correlations were significant for consistency-with-the-general-self relating to resilience and well-being.

Essentially, these results support the proposal that the integration of the five social roles is strongly related to resilience and well-being. The findings are consistent with Sheldon et al.'s (1997) study, and they add support for authenticity (based in self-determination theory) leading to greater positive affect, self-actualization and well-being (Ryan and Deci, 2011). The more chosen and meaningful one's roles are, the greater chance one has to be a fully functioning person. Moreover, the findings for consistency being positively associated with resilience and well-being is consistent with other literature showing that self-concept differentiation (SCD; i.e., low consistency) is associated with poor emotional adjustment such as depression (Donahue et al., 1993; Roberts & Donahue, 1994; Sheldon et al., 1997; Campbell et al., 2003). It is possible that authenticity and consistency were associated with resilience and well-being because having a lack of self-determination as well as a lack of unity among one's self-concept can make one's sense of self become fragile and weak. Even if there is some negativity in their self-concept, the more one can view their roles as chosen, meaningful, and consistent, the more internal strength they may have (i.e., resilience, life satisfaction, and less depression).

Of course, the proposition that levels of authenticity and consistency cause greater resilience and well-being cannot be directly supported by these correlational data. Alternatively, it may be the case that having a greater sense of well-being overall leads one to feel as if her or his roles are more authentic or more consistently positive (e.g., all roles are highly successful, comfortable, organized, intelligent). Future longitudinal and/or experimental research with these variables could clarify the direction of the relationship.

Hypothesis 3: When negative roles are salient, valence integration will positively correlate with resilience and well-being. Earlier studies looking at evaluative compartmentalization (i.e., low valence integration) found that it was associated with greater

well-being and less depression especially when positive content among the self-concept was most salient (Showers, 1992), while evaluative (valence) integration was associated with greater well-being when negative content among the self-concept was most salient (McMahon et al., 2003). For this hypothesis, we expected for valence integration to be associated with resilience, life satisfaction, and depression when one's roles have relative negative salience. Not only was this hypothesis supported, but similar results were also found for individuals whose roles have relative positive salience, except for a nonsignificant relationship with depression. These results contradicted Showers' (1992) results. Essentially, whether one has relatively more negative salient or relatively more positive salience in the content of their roles, greater valence integration is associated with more resilience and life satisfaction.

It is possible that we found a strong relationship between valence integration and both resilience and life satisfaction (and sometimes depression) because this form of self-structure allows for more of a balance among one's self-concept. Valence integration implies that negative aspects are spread out fairly evenly among one's various roles, which would prevent just one or two roles from becoming overwhelmed with negative content. This form of self-structure may be particularly helpful for individuals to increase their resilience, as having regular access to negative beliefs, rather than compartmentalizing the negatives, can help an individual be more stable in the face of stressful events (Showers & Zeigler-Hill, 2007). Similarly, it may be that valence integration combats defensive avoidance and denial, allowing for a less vulnerable and fragmented well-being (Thomas et al., 2013).

On the other hand, the proposition that levels of valence integration cause greater resilience and well-being cannot be directly supported by these correlational data. Alternatively, it may be the case that having a greater sense of resilience or well-being overall excludes one

from having any primarily negative roles, which would in turn mean that each role might have a few negative aspects and appear more integrated.

Research Question 2: Does self-concept integration moderate the relationship between stress and well-being?

Hypotheses 4, 5, & 6: **Authenticity, consistency and valence integration will moderate the impact of stress on resilience and well-being.** This study explored self-concept integration even further by seeing if it would moderate the impact of stress (i.e., both perceived stress and stressful events) on resilience, life satisfaction, and depression. In 18 regressions total, there were no significant interactions between stress and self-concept integration predicting resilience or well-being.

One possible reason that no interaction effects were found could be due to the study being in one sitting rather than longitudinal. For instance, Linville's (1987) study, from which came the theory of the stress-buffering hypothesis, was able to measures stress and outcomes variables at two separate times in order to see the moderating effect that a form of self-structure (i.e. self-complexity) had. It is conceivable that measuring perceived stress as well as resilience and well-being at several different points in time—rather than using ratings from one single point in time—could reveal a relationship at play. Future research could assess how changes in one's amount of perceived stress may interact with self-concept integration in order to affect resilience and well-being

It may also be the case that no significant interactions took place with stressful events in the equation because compared to perceived stress, stressful events were not very indicative of well-being. Results revealed that with perceived stress in the equation, perceived stress on its own was responsible for predicting less resilience and life satisfaction and more depression. On

the other hand, with stressful events in the equation in place of perceived stress, the three forms of self-concept integration were more likely to predict greater resilience and well-being. This difference between perceived stress and stressful events may indicate that perceived stress is a stronger indicator of resilience and well-being, while the count of one's recent stressful events may be more arbitrary, for it is possible some individuals may not perceive certain deemed "stressful events" to be stressful. That being said, the weakness of the stressful events variable may be one reason why interaction effects were not found for stress X self-concept integration relating to resilience and well-being.

Lastly, the purpose of this analysis was to see if integration rather than differentiation (or having many roles/self-aspects that are distinct) is a cognitive buffer against poor well-being, challenging Linville's (1987) self-complexity stress-buffering hypothesis. Although the methodology and index computations greatly differed among the current study and Linville's (1987), the nonsignificant findings here to some extent discredit Linville's conclusion that more distinction (and less integration) acts as a buffer against stress. However, due to the theoretical differences between self-complexity and self-concept differentiation (Pilarksa & Suchanska, 2015), this current investigation was unable to uncover more information on self-complexity and its effect as a buffer against stress.

Research Question 3: Comparison to other studies and exploratory analyses.

Simultaneous regressions replicating Sheldon et al. (1997). Beyond the first 6 hypotheses, we planned to compare our results to those of Sheldon and colleagues' (1997) study in order to see if our results were consistent or contradictory to the literature. Even though the list of rated traits in this current study were different from Sheldon et al.'s (1997) list of traits,

there were many similar findings among the two studies. We were able to replicate findings at both the role level and the person level of analysis.

Role level of analysis. This study's findings for the simultaneous regressions at the role level of analysis were fairly similar to Sheldon et al.'s (1997). Both studies revealed that authenticity was a significant predictor of well-being in all five roles, while this current study also found authenticity as a significant predictor of role resilience. Both studies also presented weaker relationships between consistency-with-the-general-self and role well-being compared to the person level analysis, although we did not find any significant negative contributions as Sheldon et al. (1997) found.

Moreover, this study was unique in identifying that beyond having authenticity in the child role, having consistency between the general self and the child role can significantly relate to both one's resilience and irritation/stress in that role. As aforementioned, the child role on average had the most negative characteristics to the other roles, which may be explained by the relational tension college-age individuals might feel in seeking independence from their parents Schiffrin et al., 2014). It is possible that with the child role, greater levels of integration are needed to combat higher levels of negativity. It may also be that similar patterns of consistency-with-the-general-self would have been found in other roles if those roles on average had more negativity as well. Another explanation for the lack of significance of consistency-with-the-general-self could be that it is simply more beneficial for individuals if they report each role as authentic, chosen, and not pressured, rather than feeling as if each role matches up to an abstract conception of their "general self."

Person level of analysis. For the preliminary analysis, similar correlations were found between the two independent variables in both studies. Sheldon et al., (1997) found that SCD

(low consistency) and authenticity were strongly correlated, $r(191) = -.61$, and this study revealed a significant correlation between consistency and authenticity, $r(189) = .64$, $p < .01$. However, despite this strong correlation, significant unique variance was found for both variables. This indicates that neither variable subsumed the variance of the other, so being authentic and being consistent among one's roles are two separate ideals to strive for when seeking greater resilience and well-being.

Comparing the within role to person level of analysis, the person level of analysis showed greater support for both authenticity and consistency simultaneously predicting resilience and well-being. It is possible that consistency-with-the-general-self was not as meaningful a variable as was the variable of consistency among all the roles. For instance, it is hard to gauge what participants were thinking when they were rating their general self. During the survey, each participant could have differently interpreted the prompt about rating his or her general self, and this in turn would render a variable less representative of consistency. Authenticity on the other hand was measured the same for both within role authenticity and authenticity as a whole (with the latter being the mean of each separate role authenticity rating), which might explain the congruence between authenticity in both the role level and the person level of analysis.

Simultaneous regressions with authenticity, consistency, and valence integration as predictors. After finding that when using the person level of analysis neither authenticity nor consistency subsumed the variance of the other, we explored what would occur when all three forms of integration were entered simultaneously in regressions. Interestingly, in regressions with differential importance both above and below the mean, authenticity accounted for significant variance, with a positive relationship for resilience and life satisfaction and a negative relationship with depression. This suggests that no matter the amount of positive or negative

salience in one's roles, authenticity is the most likely form of self-concept integration to have a positive association with resilience and well-being.

On the other hand, valence integration (and not consistency) was significant in the regressions with differential importance below the mean while consistency (and not valence integration) was significant when differential importance was above the mean. When individuals have more negative salience, having their negative aspects evenly spread throughout their roles rather than being compartmentalized might be greatly needed, moreso than the need for similarity between the roles. These findings are in line with McMahon et al.'s (2003) study which found that when negative characteristics were more salient, thinking in line with valence integration rather than compartmentalization was associated with less negative mood. A possible mechanism behind this could be that integrative thinking results in more flexible thinking, which may be connected to cognitive complexity (McMahon et al., 2003).

Despite differential importance, we found that both authenticity and consistency are still meaningful forms of integration, even with a third form of integration added into the equation. At the same time, there is less support for the relationship between valence integration and well-being compared to the other two forms of integration when positive characteristics are more salient. This may be the case because individuals in this category have fewer negatives to distribute, and thus the construct of valence integration may be rendered less meaningful. Alternatively, it may be the case that the strong correlations between consistency and valence integration are not allowing for both variables to simultaneously show effects, even though both constructs separately relate to resilience and well-being.

Comparison of valence integration to Showers' (1992) evaluative integration/compartmentalization. One caveat when comparing valence integration with

Showers' (1992) evaluative organization (integration/compartmentalization) is the differing methodology for acquiring the two variables. For our study, we gave each participant five roles to rate each with the same 38 adjectives, while for evaluative organization, participants are given a list of attributes to sort and create titles for their own roles/self-aspects. For the latter methodology, participants had the potential opportunity to define their self-aspects in especially narrow terms. For instance, in Showers' (1992) study, one participant labelled a self-aspect as "bad mood," which included the attributes of disagreeing, insecure, lazy, tense, irritable, and not the "real me." On the other hand, the social roles given in this current study were broad and are less likely to be rated in narrow terms. This may be one reason why the current study had relatively more valence integrated participants compared to previous studies. Showers' (1992) study 1 mean of phi (compartmentalization) was .71 (*SD* = .21) while in this study it was .33 (*SD* = .16).

Showers' (1992) study 2 and 3 both ran regressions with measures of content and compartmentalization (phi), and found that after accounting for negative content, phi accounted for a significant amount of variance in predicting depressed mood and self-esteem. The studies showed a significant positive, linear relationship between compartmentalization and low depression scores as well as higher self-esteem. As for the current study, we found that after negative content was accounted for, there was no significant relationship between compartmentalization and depression, yet there was a significant negative relationship between compartmentalization with both resilience and life satisfaction. This means that the more compartmentalization one has with his/her positive and negative aspects, the lower are one's resilience and life satisfaction levels. This contradicted Showers' (1992) findings.

It is possible that we did not find a significant relationship between phi and depression in the regression because the negative content accounted for most of the variance when predicting depression. This suggestion is in line with the findings that patients with major depression describe having more negative and fewer positive self-aspects (Gara et al., 1993). It is also probable that a more significant relationship would be found in a more clinically depressed sample of participants, as the participants in this study in general reported positive well-being.

This study adds to the literature by finding that having valence integration rather than compartmentalization of one's attributes is associated with a greater likelihood of having both more resilience and life satisfaction. Explanations for these results are similar to those surmised in research question 1. However, a novel rationalisation is that these effects are seen beyond those effects of role content, further elevating the importance of the self-structure of the self. Having the process of resilience in hard times might require integrating the parts of who one is rather than feeling as if one has to get rid of or ignore the negative parts that makes one's self-concept. This is noteworthy, as feelings about the self are relatively stable (Savin-Williams & Demo, 1984), and it might be less challenging to reorganize one's self-structure rather than omit parts of who one is.

Practical Implications

Various forms of well-being have previously been studied with forms of self-concept structure and integration (e.g. Donahue et al., 1993; Linville, 1987; Ryan et al., 2005), yet this study was novel in addressing the relationship between self-concept integration and resilience. We found that overall resilience was related significantly to three distinct forms of self-concept integration. The connection resonates with Aristotelian Eudaimonia, which suggests that self-realization, self-knowledge, and being true to one's self as an individual are qualities that can

help with life's challenges and make meaning in times of adversity (Ryff, 2014). It makes sense that the more one is integrated and fully understanding oneself in a connected sense, the more resources she or he has to take from and bounce back during stressful times.

This current study may also have implications in regard to clinical treatment including recognizing the self as a dynamic and active system in order to adopt the healthiest organization of the self-concept. For instance, mindfulness may encourage greater clarity about the self and in turn increase psychological well-being (Hanley & Garland, 2017). On a similar note, psychological treatment can help bring out an evaluatively integrative structure, as remaining aware of negative attributes can help with motivation to change (Showers et al., 2004). Moreover, striving for both authenticity and consistency can enhance one's mental health (e.g., Donahue et al., 1993; Sheldon et al., 1997), so working with individuals on self-concept integration in varying ways could have substantially beneficial effects.

On a similar note, compartmentalization could be temporarily helpful in keeping the "bad apples out of the bunch," yet this may sacrifice authenticity (Showers et al., 2015), which in turn is less beneficial for one's resilience and well-being. This implies that if one has some "bad apples," he should embrace those attributes in all parts of who he is in order to be self-aware and grow as a person. This once again supports valence (evaluative) integration of the self-concept as a beneficial organizational structure, especially as this if often a realistic view of the self (Showers et al., 2004). Implications from this study's findings of the importance of integrating one's positives and negatives may expand to the new wave of positive psychology which recognizes well-being as a balance of the light and dark aspects of life, rather than only being a focus on the positives (Lomas 2016).

Although at times, having distinct self-aspects or roles could allow for more specialization of distinct skills (e.g., the student self being very smart and successful with the romantic partner self being very friendly and loved), being able to feel some sense of the same attributes across all roles can bring a healthy sense of coherence, order, and connection (Delle Fave & Soosai-Nathan, 2014; Sheldon & Kasser, 1995). For instance, to some extent one can strive toward being and feeling loved in a student role as well as feeling smart and successful in her or his romantic relationships. Additionally, if there are particular vulnerabilities or negative attributes in one role, it may be helpful for the individual to be self-aware and acknowledge those same vulnerabilities across other roles. Future studies may shed light on understanding integration of collective identities, as having collective identity clarity has been theorized as being the end goal in maintaining a coherent and meaningful self (Gardner & Garr-Schultz, 2017). There is more to discover about how embracing and striving for integration across one's self-concept—and potentially one's identity—can open one up to more authenticity, self-determination, and interconnectedness.

Limitations

There are some limitations associated with the present study which need to be addressed. First off, there are constraints of generalizability in this study, as the participants were all undergraduate students in Northern Ontario. On top of this, the majority of participants were studying psychology, nursing, social work, or criminology, which did not render an even number of participants across all the areas of study that the university offers. This limitation exists due to the restricted access to research participants for this non-funded study, specifically with only having access only to students in undergraduate psychology classes. Further research is needed in testing the effects of self-concept integration in varying populations.

On a similar note, this study had significantly more female than male participants, which also makes the results less generalizable to the male gender. It is possible that females more than males were drawn to the title of the study through the online recruiting with SONA™, although it is also possible that there are a majority of female students in undergraduate psychology classes, thus leading to the uneven number of participants in each gender. Although there were no differences between gender for the three forms of self-concept integration nor resilience, males on average had greater life satisfaction, less depression, and less perceived stress than females. These significant differences between gender leave a question as to what effects gender may have had on the findings of this study. For instance, gender could be a moderator for the effects that self-concept integration had on well-being. With this in mind, it is important to interpret these findings as coming from a pool of predominantly female participants. Also, future research comparing self-concept integration between genders could illuminate more findings in this area of literature.

Another potential shortcoming of the current study relates to the online survey methodology, which could have risked the research quality. For instance, online studies limit the control researchers have over the data-collection setting (Kraut et al., 2004). This was true for the current study as some participants took a half hour or less to complete the survey while some participants took a few days or more before they submitted the survey. Moreover, participants were also students who were offered a bonus mark in an undergraduate psychology class, so it is possible that the incentive was greater than any intrinsic interest in research. This could have contributed to less valid data. We were able to overcome this shortcoming to some extent through the use of attention items and asking of the participants' effort (Meade & Craig, 2012). This allowed us to remove participants who were just skipping through the survey without

reading the questions. It was also advantageous to blatantly ask if we should use the participants' data, as several participants told us not to use their data (n = 13). Upon closer investigation, those participants appeared to be honest, as most of those who replied with "no" were missing an attention item or had clicked the same number rating for almost every question.

Furthermore, a limitation was the time constraint for this study, as it is possible that significant results would be found in research question 2 if this study was longitudinal. Being able to track changes in stress and well-being across time might allow for more opportunities in order to see potential long-term effects that various forms of self-concept integration may create. Future research could benefit from measuring the various forms of self-concept integration and their interaction with stress from a longitudinal perspective. Additionally, a longitudinal study could reveal the relationship between self-concept integration and resilience and well-being from a new perspective.

Another deficiency in the current research is the low reliability for each of the role authenticity scores. In Sheldon et al.'s (1997) article, they used five items of authenticity based in self-determination theory and found acceptable reliability scores for each of the roles. However, Showers et al. (2015) used three of these five items, stating only the reliability of the mean authenticity. For the current study, we used the three items, only to later find that the separate reliability for each of the role authenticity scores was fairly poor. However, we decided to keep all three items in in order to uphold the construct validity of authenticity as based in self-determination theory. In the future, we would suggest to use the original five items to measure authenticity (Sheldon et al., 1997).

An added limitation is that participants were supposed to rate 40 adjectives for each of the roles, 20 positive and 20 negative ones (e.g., Zeigler-Hill & Showers, 2007; Showers et al.,

2015). Yet, a couple errors were made in the set-up of the survey, which led to the adjectives of "hopeless" and "comfortable" to be taken out of the analysis. Luckily, this should not have impacted the overall findings significantly, as there were still the same 38 adjectives in total to rate for each role.

Lastly, there are some conceptual limitations with this study, both with understanding the construct of self-structure separately from self-content and in defining integrative self-structure. First off, there are inherent problems with the self-structure research conflating the constructs of self-concept content and self-concept structure (Pilarska & Suchanska, 2015). Most of the current investigation focused on structure rather than content, although some implications from the results may only apply if there is more positive or more negative content present. Secondly, it may be more descriptive to refer to consistency as a form of content similarity rather than a form of integration (Suchanska, 2013). For instance, a perfectly consistent, undifferentiated self-concept would be dysfunctional and rigid (Suchanska, 2013) and a self-concept might appear well-integrated but could lead to poorer well-being if the valence is purely negative (Lutz & Ross, 2003). In fact, there are other constructs which might better measure self-concept integration, such as self-concept clarity (Campbell et al., 1996) and collective coherence (Gardner & Garr-Schultz, 2017) which target how clear and/or unified the diverse parts of one's self are.

Conclusion

All in all, this study brought more clarification to the muddy topic of self-structure. In the present investigation, we showed how authenticity, consistency, and valence integration are significantly positively associated with resilience and life satisfaction and significantly negatively associated with depression. Some major limitations included the overrepresentation

of female participants, not being able to measure stress longitudinally for the moderation analyses of research question 2, and some conceptual limitations in defining integrative self-structure. Essential next steps are to study the current forms of self-concept integration in addition to other measures of self-concept structure in relation to stress, resilience, and well-being from a longitudinal and/or experimental approach.

This study reinforced how multifaceted the self-concept is (Swann & Bosson, 2010), as participants were able to rate five separate social roles and even identify more roles that are important to them. Overall, this study supports the importance of how humans organize information of themselves. Indeed, content of the self-concept is influential over one's well-being, yet there is also much to say of having genuineness, consistency, and similarity among one's self content, as this allows for one to have a sense of unity in one's definition of the self (Campbell et al., 2003). Also, this research supports the historical theories that human beings are striving for self-consistency (Lecky, 1945) and congruence between one's ideal self and one's actual behavior (Rogers, 1959). Indeed, it would be excellent to have an integrative self-concept while striving to achieve self-actualization. Moreover, resilience can be similar to sustaining the essence of who one truly is (Zautra et al., 2010), which once again supports the connection between self-concept integration and resilience. The more people can feel authentic and as if who they are is freely chosen, the more they can be connected with similarity among the various parts of who they are, and the more they become stable with their positive and negative aspects evenly balanced, the greater resources they have near to build up their resilience and well-being.

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APPENDIX A

Glossary

Authenticity-based integration: how authentic each of the social roles are based on self-determination theory

Average positivity of roles: the positivity ratings of each role minus the negativity rating of each role

Consistency-based integration: the amount an individual sees oneself as having the same attributes of personality characteristics across five social roles; the inverse of self-concept differentiation

Depression: the amount an individual has depressed mood, feelings of guilt and worthlessness, feelings of helplessness and hopelessness, psychomotor retardation, loss of appetite, and sleep disturbance in the past week

Differential importance: the correlation of an individual's importance rankings and positive-negativity differences scores for each of the five social roles

Life satisfaction: the amount an individual feels global life satisfaction

Perceived stress: the level of stress experienced in general for the individual

Proportion of negative attributes: the percentage of negative attributes that are chosen as characteristic of the five social roles

Resilience: the process of adapting well in times of stress or adversity. Additionally, resilience is identified as being supported by having various traits and protective factors.

Valence integration: the amount an individual's positive and negative self-attributes are intermingled among given social roles, rather than being categorized into separate given social roles; the inverse of compartmentalization

Appendix B

Institutional Research Ethics Board Approval

Lakehead UNIVERSITY

Research Ethics Board
t: (807) 343-8283
research@lakeheadu.ca

November 01, 2017

Principal Investigator: Dr. Mirella Stroink
Student: Christiana Fidler
Faculty of Health and Behavioural Sciences\Psychology
Lakehead University
955 Oliver Road
Thunder Bay, ON P7B 5E1

Dear Dr. Stroink and Mrs. Fidler:

Re: REB Project #: 078 17-18 / Romeo File No: 1466061
Granting Agency: N/A
Agency Reference #:N/A

On behalf of the Research Ethics Board, I am pleased to grant ethical approval to your research project titled, "The Effects of Self-Concept Integration on Resilience and Well-Being".

Ethics approval is valid until November 1, 2018. Please submit a Request for Renewal to the Office of Research Services via the Romeo Research Portal by October 1, 2018 if your research involving human participants will continue for longer than one year. A Final Report must be submitted promptly upon completion of the project. Access the Romeo Research Portal by logging into myInfo at:

https://erpwp2.lakeheadu.ca/

During the course of the study, any modifications to the protocol or forms must not be initiated without prior written approval from the REB. You must promptly notify the REB of any adverse events that may occur.

Best wishes for a successful research project.

Sincerely,

Dr. Lori Chambers
Chair, Research Ethics Board

/sm

Appendix C

Cover Letter [LU logo]

Dear potential participant,

Thank you for your interest in this study. We invite you to participate in this research study, in order to help us find out more about the connections between the self-concept and well-being. This study entitled "The Effects of Self-Concept Integration on Resilience and Well-Being" is being conducted by Masters student researcher Christiana Fidler under the supervision of Dr. Mirella Stroink.

In this study you will be asked to complete online questionnaires pertaining to characteristics of the self-concept in various social roles, stress, and well-being measures including life satisfaction, depression, and resilience, as well as a brief demographics questionnaire. Participation is voluntary and you may withdraw at any time up until you submit your responses with no consequence. Data collected from this study will be kept anonymous and confidential, and there will be no identifying information associated with the data. This study involves approximately 45-60 minutes of time and participants will receive one bonus mark towards a psychology course where permitted.

There is minimal risk for psychological harm associated with participation in this study. However, as there are questions involving personal characteristics of both a positive and negative connotation, as well as questions about personal stress, there is a chance that answering some of the questions in the study may cause you distress. If you are distressed during or after your participation in this study please contact the Student Health and Counselling Centre at Lakehead University at 1-807-343-8361. Potential benefits of participating in this study include learning about the research process, learning about organization of the self-concept and well-being, and receiving a bonus mark.

The online survey tool used in this study, SurveyMonkey, is hosted by a server located in the USA. The US Patriot Act permits U.S. law enforcement officials, for the purpose of anti-terrorism investigation, to seek a court order that allows access to the personal records of any person without the person's knowledge. In view of this we cannot absolutely guarantee the full confidentiality and anonymity of your data. With your consent to participate in this study, you acknowledge this.

It is our intention to present the findings from this research at professional academic conferences and to submit a manuscript to a peer-reviewed academic journal. No identifying information will be associated with the data for these purposes.

At the completion of this project you will have the opportunity to learn about the results of this study. We can arrange for you to receive a written summary of the results via email. If you are interested in learning more about the results of this study or have any questions please contact Christiana Fidler at cgoetz1@lakeheadu.ca or Dr. Stroink at mstroink@lakeheadu.ca. You may also contact the Research Ethics Board at 1-807-343-8283, or research@lakeheadu.ca if you have any questions.

Thank you for your consideration in participation.

Appendix D

Consent Form [LU Logo]

By providing your consent and clicking "next", you agree to participate in this study and you have read, understand and agree to the following:

1. All participation is voluntary.

2. I am free to withdraw from the study at any time up until I submit my responses at the end of the survey.

3. All data collected will remain confidential and anonymous.

4. Only the researchers will have access to the data. Data collected will be stored in the Department of Psychology at Lakehead University for 5 years.

5. I am not required to answer questions I do not want to.

6. I have read the cover letter and I understand its purpose and what we are studying.

7. There is minimal risk for psychological harm associated with participation in this study. Should I experience personal distress during or after participation, I know to contact the Student Health and Counselling Centre at Lakehead University to speak with a mental health professional.

8. The online survey tool used in this study, Survey Monkey, is hosted by a server located in the USA. In view of this, there is not the absolute guarantee of full confidentiality and anonymity of my data. With my consent to participate in this study, I acknowledge this.

9. I may receive a summary of this research upon completion if I request.

Appendix E

Demographics

1. Gender:

- ○ Female
- ○ Male
- ○ Other (please specify)

2. Age

3. Marital Status (Check all that apply)

- ☐ Single
- ☐ Dating
- ☐ Married
- ☐ Separated
- ☐ Widowed
- ☐ Other (please specify)

4. Employment

- ○ Part-time worker
- ○ Full-time worker
- ○ Unemployed
- ○ Other (please specify)

5. Major

- ○ Psychology
- ○ Biology
- ○ Education
- ○ Nursing
- ○ Social work
- ○ Kinesiology
- ○ ORPT
- ○ Undeclared
- ○ Other (please specify)

6. Year of Study

- ○ 1
- ○ 2
- ○ 3
- ○ 4
- ○ Other (please specify)

7. How would you describe your ethnicity? (Check all that apply)

- ☐ African (Sudanese, Kenyan, South African, etc.)
- ☐ Caribbean (Haitian, Trinidadian, etc.)
- ☐ East Asian (Chinese, Japanese, Filipino, etc.)
- ☐ European (French, Italian, German, etc.)
- ☐ Indigenous (First Nation, Métis, Inuit)
- ☐ Latino/Hispanic (Portuguese, Mexican, Spanish, Argentinean, etc.)
- ☐ Middle Eastern (Saudi Arabian, Lebanese, etc.)
- ☐ South Asian (Indian, Sri Lankan, etc.)
- ☐ Other (please specify)

Appendix F

Self-Structure Online Inventory

Self in General

8. Describe "How I see myself in general" by rating each of the 40 adjective markers. This may include both positive and negative characteristics.

	Very uncharacteristic of me	Somewhat uncharacteristic of me	Neutral	Somewhat characteristic of me	Very Characteristic of me
Successful	○	○	○	○	○
Disagreeing	○	○	○	○	○
Giving	○	○	○	○	○
Hopeless	○	○	○	○	○
Capable	○	○	○	○	○
Confident	○	○	○	○	○
Lazy	○	○	○	○	○
Self-centered	○	○	○	○	○
Unloved	○	○	○	○	○
Comfortable	○	○	○	○	○
Independent	○	○	○	○	○
Not the "real me"	○	○	○	○	○
Needed	○	○	○	○	○
Immature	○	○	○	○	○
Communicative	○	○	○	○	○
Weary	○	○	○	○	○
Mature	○	○	○	○	○
Uncomfortable	○	○	○	○	○
Sad & Blue	○	○	○	○	○
Incompetent	○	○	○	○	○
Organized	○	○	○	○	○
Insecure	○	○	○	○	○
Worthless	○	○	○	○	○
Inferior	○	○	○	○	○
Intelligent	○	○	○	○	○

	Very uncharacteristic of me	Somewhat uncharacteristic of me	Neutral	Somewhat characteristic of me	Very Characteristic of me
Lovable	○	○	○	○	○
Fun & Entertaining	○	○	○	○	○
Interested	○	○	○	○	○
Outgoing	○	○	○	○	○
Energetic	○	○	○	○	○
Irritable	○	○	○	○	○
Like a failure	○	○	○	○	○
Hardworking	○	○	○	○	○
Isolated	○	○	○	○	○
Happy	○	○	○	○	○
Indecisive	○	○	○	○	○
Friendly	○	○	○	○	○
Disorganized	○	○	○	○	○
Optimistic	○	○	○	○	○
Tense	○	○	○	○	○

Student Role Part 1

Student: the role of student can include being in school, engaging in classwork, engaging in homework, and being in academic situations. This role may include both positive and negative characteristics.

Now see yourself and your behaviour in the student role in terms of rating each of the 40 adjective markers from "very uncharacteristic of me" to "very characteristic of me."

9. **Rate "How I see myself as a student"**

	Very uncharacteristic of me	Somewhat uncharacteristic of me	Neutral	Somewhat characteristic of me	Very Characteristic of me
Successful	○	○	○	○	○
Disagreeing	○	○	○	○	○
Giving	○	○	○	○	○
Hopeless	○	○	○	○	○
Capable	○	○	○	○	○
Confident	○	○	○	○	○
Lazy	○	○	○	○	○
Self-centered	○	○	○	○	○
Unloved	○	○	○	○	○
Comfortable	○	○	○	○	○
Independent	○	○	○	○	○
Not the "real me"	○	○	○	○	○
Needed	○	○	○	○	○
Immature	○	○	○	○	○
Communicative	○	○	○	○	○
Weary	○	○	○	○	○
Mature	○	○	○	○	○
Uncomfortable	○	○	○	○	○
Sad & Blue	○	○	○	○	○
Incompetent	○	○	○	○	○
Organized	○	○	○	○	○
Insecure	○	○	○	○	○

	Very uncharacteristic of me	Somewhat uncharacteristic of me	Neutral	Somewhat characteristic of me	Very Characteristic of me
Worthless	○	○	○	○	○
Inferior	○	○	○	○	○
Intelligent	○	○	○	○	○
Lovable	○	○	○	○	○
Fun & Entertaining	○	○	○	○	○
Interested	○	○	○	○	○
Outgoing	○	○	○	○	○
Energetic	○	○	○	○	○
Irritable	○	○	○	○	○
Like a failure	○	○	○	○	○
Hardworking	○	○	○	○	○
Isolated	○	○	○	○	○
Happy	○	○	○	○	○
Indecisive	○	○	○	○	○
Friendly	○	○	○	○	○
Disorganized	○	○	○	○	○
Optimistic	○	○	○	○	○
Tense	○	○	○	○	○

Student Role Part 2

Envision the student role and reflect on the thoughts, emotions, and behaviours that you most commonly experience in this role.
Rate the statements and questions concerning the role of "myself as a student."

10. I experience "myself as a student" as an authentic part of who I am.

Strongly disagree	Moderately disagree	Slightly disagree	Neutral	Slightly agree	Moderately agree	Strongly agree
○	○	○	○	○	○	○

11. I feel tense and pressured in the student role.

Strongly disagree	Moderately disagree	Slightly disagree	Neutral	Slightly agree	Moderately agree	Strongly agree
○	○	○	○	○	○	○

12. I have freely chosen this way of being, as a student.

Strongly disagree	Moderately disagree	Slightly disagree	Neutral	Slightly agree	Moderately agree	Strongly agree
○	○	○	○	○	○	○

13. How much does the student role contribute to your overall irritation and stress level?

Not at all contributing	Low contribution	Slightly contributing	Neutral	Somewhat contributing	Moderately contributing	Extremely contributing
○	○	○	○	○	○	○

14. How satisfied are you in the student role?

Not at all satisfied	Dissatisfied	Somewhat dissatisfied	Neutral	Somewhat satisfied	Satisfied	Very satisfied
○	○	○	○	○	○	○

15. How much of a tendency do you have to bounce back quickly after hard times that arise in your role as a student?

Not at all	A low tendency	A slight tendency	Neutral	Somewhat of a tendency	A moderate tendency	A high tendency
○	○	○	○	○	○	○

16. How important is the student role for the way you think about yourself? In other words, how central is this role to your overall concept of yourself?

Not at all important	Low importance	Slightly important	Neutral	Somewhat important	Moderately important	Very Important
○	○	○	○	○	○	○

17. How positive is the student role?

Not at all positive	Low in positivity	Slightly positive	Neutral	Somewhat positive	Moderately positive	Very positive
○	○	○	○	○	○	○

18. How negative is the student role?

Not at all negative	Low in negativity	Slightly negative	Neutral	Somewhat negative	Moderately negative	Very negative
○	○	○	○	○	○	○

Worker/Employee Role Part 1

The role of employee/worker can include being in a paid job, a volunteer job, or being engaged in any other kind of work besides personal schoolwork. This role may include both positive and negative characteristics.

Now see yourself and your behaviour in the worker/employee role in terms of rating each of the 40 adjective markers from "very uncharacteristic of me" to "very characteristic of me."

19. Rate "How I see myself as a worker/employee"

	Very uncharacteristic of me	Somewhat uncharacteristic of me	Neutral	Somewhat characteristic of me	Very Characteristic of me
Successful	○	○	○	○	○
Disagreeing	○	○	○	○	○
Giving	○	○	○	○	○
Capable	○	○	○	○	○
Confident	○	○	○	○	○
Lazy	○	○	○	○	○
Self-centered	○	○	○	○	○
Unloved	○	○	○	○	○
Comfortable	○	○	○	○	○
Independent	○	○	○	○	○
Not the "real me"	○	○	○	○	○
Needed	○	○	○	○	○
Immature	○	○	○	○	○
Communicative	○	○	○	○	○
Weary	○	○	○	○	○
Mature	○	○	○	○	○
Uncomfortable	○	○	○	○	○
Sad & Blue	○	○	○	○	○
Incompetent	○	○	○	○	○
Organized	○	○	○	○	○
Insecure	○	○	○	○	○
Worthless	○	○	○	○	○

	Very uncharacteristic of me	Somewhat uncharacteristic of me	Neutral	Somewhat characteristic of me	Very Characteristic of me
Inferior	○	○	○	○	○
Intelligent	○	○	○	○	○
Lovable	○	○	○	○	○
Fun & Entertaining	○	○	○	○	○
Interested	○	○	○	○	○
Outgoing	○	○	○	○	○
Energetic	○	○	○	○	○
Irritable	○	○	○	○	○
Like a failure	○	○	○	○	○
Hardworking	○	○	○	○	○
Isolated	○	○	○	○	○
Happy	○	○	○	○	○
Indecisive	○	○	○	○	○
Friendly	○	○	○	○	○
Disorganized	○	○	○	○	○
Optimistic	○	○	○	○	○
Tense	○	○	○	○	○

Worker/Employee Role Part 2

Envision the worker role and reflect on the thoughts, emotions, and behaviours that you most commonly experience in this role.
Rate the statements and questions concerning the role of "myself as a worker."

20. I experience "myself as a worker" as an authentic part of who I am.

Strongly disagree	Moderately disagree	Slightly disagree	Neutral	Slightly agree	Moderately agree	Strongly agree
○	○	○	○	○	○	○

21. I feel tense and pressured in the worker role.

Strongly disagree	Moderately disagree	Slightly disagree	Neutral	Slightly agree	Moderately agree	Strongly agree
○	○	○	○	○	○	○

22. I have freely chosen this way of being, as a worker.

Strongly disagree	Moderately disagree	Slightly disagree	Neutral	Slightly agree	Moderately agree	Strongly agree
○	○	○	○	○	○	○

23. How much does the worker role contribute to your overall irritation and stress level?

Not at all contributing	Low contribution	Slightly contributing	Neutral	Somewhat contributing	Moderately contributing	Extremely contributing
○	○	○	○	○	○	○

24. How satisfied are you in the worker role?

Not at all satisfied	Dissatisfied	Somewhat dissatisfied	Neutral	Somewhat satisfied	Satisfied	Very satisfied
○	○	○	○	○	○	○

25. How much of a tendency do you have to bounce back quickly after hard times that arise in your role as a worker?

Not at all	A low tendency	A slight tendency	Neutral	Somewhat of a tendency	A moderate tendency	A high tendency
○	○	○	○	○	○	○

26. For this question, please select "moderately agree" to show that we still have your attention.

Strongly disagree	Moderately disagree	Slightly disagree	Neutral	Slightly agree	Moderately agree	Strongly agree
○	○	○	○	○	○	○

27. How important is the worker role for the way you think about yourself? In other words, how central is this role to your overall concept of yourself?

Not at all important	Low importance	Slightly important	Neutral	Somewhat important	Moderately important	Very important
○	○	○	○	○	○	○

28. How positive is the worker role?

Not at all positive	Low in positivity	Slightly positive	Neutral	Somewhat positive	Moderately positive	Very positive
○	○	○	○	○	○	○

29. How negative is the worker role?

Not at all negative	Low in negativity	Slightly negative	Neutral	Somewhat negative	Moderately negative	Very negative
○	○	○	○	○	○	○

Child Role Part 1

The role of child can include being a biological or adopted son or daughter, or being in a relationship with an adult whom you claim as a parent-figure. This role may include both positive and negative characteristics.

Now see yourself and your behaviour in the child role in terms of rating each of the 40 adjective markers from "very uncharacteristic of me" to "very characteristic of me."

30. **Rate "How I see myself as a child (son/daughter)"**

	Very uncharacteristic of me	Somewhat uncharacteristic of me	Neutral	Somewhat characteristic of me	Very Characteristic of me
Successful	○	○	○	○	○
Disagreeing	○	○	○	○	○
Giving	○	○	○	○	○
Hopeless	○	○	○	○	○
Capable	○	○	○	○	○
Confident	○	○	○	○	○
Lazy	○	○	○	○	○
Self-centered	○	○	○	○	○
Unloved	○	○	○	○	○
Independent	○	○	○	○	○
Not the "real me"	○	○	○	○	○
Needed	○	○	○	○	○
Immature	○	○	○	○	○
Communicative	○	○	○	○	○
Weary	○	○	○	○	○
Mature	○	○	○	○	○
Uncomfortable	○	○	○	○	○
Sad & Blue	○	○	○	○	○
Incompetent	○	○	○	○	○
Organized	○	○	○	○	○
Insecure	○	○	○	○	○
Worthless	○	○	○	○	○

	Very uncharacteristic of me	Somewhat uncharacteristic of me	Neutral	Somewhat characteristic of me	Very Characteristic of me
Inferior	○	○	○	○	○
Intelligent	○	○	○	○	○
Lovable	○	○	○	○	○
Fun & Entertaining	○	○	○	○	○
Interested	○	○	○	○	○
Outgoing	○	○	○	○	○
Energetic	○	○	○	○	○
Irritable	○	○	○	○	○
Like a failure	○	○	○	○	○
Hardworking	○	○	○	○	○
Isolated	○	○	○	○	○
Happy	○	○	○	○	○
Indecisive	○	○	○	○	○
Friendly	○	○	○	○	○
Disorganized	○	○	○	○	○
Optimistic	○	○	○	○	○
Tense	○	○	○	○	○

Child Role Part 2

Envision the child (son/daughter) role and reflect on the thoughts, emotions, and behaviours that you most commonly experience in this role.
Rate the statements and questions concerning the role of "myself as a child (son/daughter)."

31. I experience "myself as a child (son/daughter)" as an authentic part of who I am.

Strongly disagree	Moderately disagree	Slightly disagree	Neutral	Slightly agree	Moderately agree	Strongly agree
○	○	○	○	○	○	○

32. I feel tense and pressured in the child (son/daughter) role.

Strongly disagree	Moderately disagree	Slightly disagree	Neutral	Slightly agree	Moderately agree	Strongly agree
○	○	○	○	○	○	○

33. I have freely chosen this way of being, as a child (son/daughter).

Strongly disagree	Moderately disagree	Slightly disagree	Neutral	Slightly agree	Moderately agree	Strongly agree
○	○	○	○	○	○	○

34. How much does the child (son/daughter) role contribute to your overall irritation and stress level?

Not at all contributing	Low contribution	Slightly contributing	Neutral	Somewhat contributing	Moderately contributing	Extremely contributing
○	○	○	○	○	○	○

35. How satisfied are you in the child (son/daughter) role?

Not at all satisfied	Dissatisfied	Somewhat dissatisfied	Neutral	Somewhat satisfied	Satisfied	Very satisfied
○	○	○	○	○	○	○

36. How much of a tendency do you have to bounce back quickly after hard times that arise in your role as a child (son/daughter) ?

Not at all	A low tendency	A slight tendency	Neutral	Somewhat of a tendency	A moderate tendency	A high tendency
○	○	○	○	○	○	○

37. How important is the child (son/daughter) role for the way you think about yourself? In other words, how central is this role to your overall concept of yourself?

Not at all important	Low importance	Slightly important	Neutral	Somewhat important	Moderately important	Very important
○	○	○	○	○	○	○

38. How positive is the child (son/daughter) role?

Not at all positive	Low in positivity	Slightly positive	Neutral	Somewhat positive	Moderately positive	Very positive
○	○	○	○	○	○	○

39. How negative is the child (son/daughter) role?

Not at all negative	Low in negativity	Slightly negative	Neutral	Somewhat negative	Moderately negative	Very negative
○	○	○	○	○	○	○

Friend Role Part 1

The role of friend can include companionship and close relationships outside of romantic and family relations. This role may include both positive and negative characteristics.

Now see yourself and your behaviour in the friend role in terms of rating each of the 40 adjective markers from "very uncharacteristic of me" to "very characteristic of me."

40. **Rate "How I see myself as a friend"**

	Very uncharacteristic of me	Somewhat uncharacteristic of me	Neutral	Somewhat characteristic of me	Very Characteristic of me
Successful	○	○	○	○	○
Disagreeing	○	○	○	○	○
Giving	○	○	○	○	○
Hopeless	○	○	○	○	○
Capable	○	○	○	○	○
Confident	○	○	○	○	○
Lazy	○	○	○	○	○
Self-centered	○	○	○	○	○
Unloved	○	○	○	○	○
Comfortable	○	○	○	○	○
Independent	○	○	○	○	○
Not the "real me"	○	○	○	○	○
Needed	○	○	○	○	○
Immature	○	○	○	○	○
Communicative	○	○	○	○	○
Weary	○	○	○	○	○
Mature	○	○	○	○	○
Uncomfortable	○	○	○	○	○
Sad & Blue	○	○	○	○	○
Incompetent	○	○	○	○	○
Organized	○	○	○	○	○
Insecure	○	○	○	○	○
Worthless	○	○	○	○	○

	Very uncharacteristic of me	Somewhat uncharacteristic of me	Neutral	Somewhat characteristic of me	Very Characteristic of me
Inferior	○	○	○	○	○
Intelligent	○	○	○	○	○
Lovable	○	○	○	○	○
Fun & Entertaining	○	○	○	○	○
Interested	○	○	○	○	○
Outgoing	○	○	○	○	○
Energetic	○	○	○	○	○
Irritable	○	○	○	○	○
Like a failure	○	○	○	○	○
Hardworking	○	○	○	○	○
Isolated	○	○	○	○	○
Happy	○	○	○	○	○
Indecisive	○	○	○	○	○
Friendly	○	○	○	○	○
Disorganized	○	○	○	○	○
Optimistic	○	○	○	○	○
Tense	○	○	○	○	○

Friend Role Part 2

Envision the friend role and reflect on the thoughts, emotions, and behaviours that you most commonly experience in this role.
Rate the statements and questions concerning the role of "myself as a friend."

41. I experience "myself as a friend" as an authentic part of who I am.

Strongly disagree	Moderately disagree	Slightly disagree	Neutral	Slightly agree	Moderately agree	Strongly agree
○	○	○	○	○	○	○

42. I feel tense and pressured in the friend role.

Strongly disagree	Moderately disagree	Slightly disagree	Neutral	Slightly agree	Moderately agree	Strongly agree
○	○	○	○	○	○	○

43. I have freely chosen this way of being, as a friend.

Strongly disagree	Moderately disagree	Slightly disagree	Neutral	Slightly agree	Moderately agree	Strongly agree
○	○	○	○	○	○	○

44. How much does the friend role contribute to your overall irritation and stress level?

Not at all contributing	Low contribution	Slightly contributing	Neutral	Somewhat contributing	Moderately contributing	Extremely contributing
○	○	○	○	○	○	○

45. How satisfied are you in the friend role?

Not at all satisfied	Dissatisfied	Somewhat dissatisfied	Neutral	Somewhat satisfied	Satisfied	Very satisfied
○	○	○	○	○	○	○

46. How much of a tendency do you have to bounce back quickly after hard times that arise in your role as a friend?

Not at all	A low tendency	A slight tendency	Neutral	Somewhat of a tendency	A moderate tendency	A high tendency
○	○	○	○	○	○	○

47. How important is the friend role for the way you think about yourself? In other words, how central is this role to your overall concept of yourself?

Not at all important	Low importance	Slightly important	Neutral	Somewhat important	Moderately important	Very important
○	○	○	○	○	○	○

48. How positive is the friend role?

Not at all positive	Low in positivity	Slightly positive	Neutral	Somewhat positive	Moderately positive	Very positive
○	○	○	○	○	○	○

49. How negative is the friend role?

Not at all negative	Low in negativity	Slightly negative	Neutral	Somewhat negative	Moderately negative	Very negative
○	○	○	○	○	○	○

Romantic Partner Role Part 1

The role of romantic partner can include casual and serious dating, engaged, and married relationships, or other forms of romantic relationships. This role may include both positive and negative characteristics.

Now see yourself and your behaviour in the romantic partner role in terms of rating each of the 40 adjective markers from "very uncharacteristic of me" to "very characteristic of me."

50. **Rate "How I see myself as a romantic partner"**

	Very uncharacteristic of me	Somewhat uncharacteristic of me	Neutral	Somewhat characteristic of me	Very Characteristic of me
Successful	○	○	○	○	○
Disagreeing	○	○	○	○	○
Giving	○	○	○	○	○
Hopeless	○	○	○	○	○
Capable	○	○	○	○	○
Confident	○	○	○	○	○
Lazy	○	○	○	○	○
Self-centered	○	○	○	○	○
Unloved	○	○	○	○	○
Comfortable	○	○	○	○	○
Independent	○	○	○	○	○
Not the "real me"	○	○	○	○	○
Needed	○	○	○	○	○
Immature	○	○	○	○	○
Communicative	○	○	○	○	○
Weary	○	○	○	○	○
Mature	○	○	○	○	○
Uncomfortable	○	○	○	○	○
Sad & Blue	○	○	○	○	○
Incompetent	○	○	○	○	○
Organized	○	○	○	○	○
Insecure	○	○	○	○	○

	Very uncharacteristic of me	Somewhat uncharacteristic of me	Neutral	Somewhat characteristic of me	Very Characteristic of me
Worthless	○	○	○	○	○
Inferior	○	○	○	○	○
Intelligent	○	○	○	○	○
Lovable	○	○	○	○	○
Fun & Entertaining	○	○	○	○	○
Interested	○	○	○	○	○
Outgoing	○	○	○	○	○
Energetic	○	○	○	○	○
Irritable	○	○	○	○	○
Like a failure	○	○	○	○	○
Hardworking	○	○	○	○	○
Isolated	○	○	○	○	○
Happy	○	○	○	○	○
Indecisive	○	○	○	○	○
Friendly	○	○	○	○	○
Disorganized	○	○	○	○	○
Optimistic	○	○	○	○	○
Tense	○	○	○	○	○

Romantic Partner Role Part 2

Envision the romantic partner role and reflect on the thoughts, emotions, and behaviours that you most commonly experience in this role.
Rate the statements and questions concerning the role of "myself as a romantic partner."

51. I experience "myself as a romantic partner" as an authentic part of who I am.

Strongly disagree	Moderately disagree	Slightly disagree	Neutral	Slightly agree	Moderately agree	Strongly agree
○	○	○	○	○	○	○

52. I feel tense and pressured in the romantic partner role.

Strongly disagree	Moderately disagree	Slightly disagree	Neutral	Slightly agree	Moderately agree	Strongly agree
○	○	○	○	○	○	○

53. I have freely chosen this way of being, as a romantic partner.

Strongly disagree	Moderately disagree	Slightly disagree	Neutral	Slightly agree	Moderately agree	Strongly agree
○	○	○	○	○	○	○

54. How much does the romantic partner role contribute to your overall irritation and stress level?

Not at all contributing	Low contribution	Slightly contributing	Neutral	Somewhat contributing	Moderately contributing	Extremely contributing
○	○	○	○	○	○	○

55. How satisfied are you in the romantic partner role?

Not at all satisfied	Dissatisfied	Somewhat dissatisfied	Neutral	Somewhat satisfied	Satisfied	Very satisfied
○	○	○	○	○	○	○

56. How much of a tendency do you have to bounce back quickly after hard times that arise in your role as a romantic partner?

Not at all	A low tendency	A slight tendency	Neutral	Somewhat of a tendency	A moderate tendency	A high tendency
○	○	○	○	○	○	○

57. How important is the romantic partner role for the way you think about yourself? In other words, how central is this role to your overall concept of yourself?

Not at all important	Low importance	Slightly important	Neutral	Somewhat important	Moderately important	Very important
○	○	○	○	○	○	○

58. How positive is the romantic partner role?

Not at all positive	Low in positivity	Slightly positive	Neutral	Somewhat positive	Moderately positive	Very positive
○	○	○	○	○	○	○

59. How negative is the romantic partner role?

Not at all negative	Low in negativity	Slightly negative	Neutral	Somewhat negative	Moderately negative	Very negative
○	○	○	○	○	○	○

Other Roles

60. Are there any other roles that are very important to who you are? If yes, explain.

Appendix G

College Student's Stressful Events Checklist

Check in the column those events that have occurred in your life recently or that you expect to occur soon.

- ○ Death of a close family member
- ○ Death of a close friend
- ○ Divorce between parents
- ○ Serious legal problems
- ○ Major personal injury or illness
- ○ Responsibilities for others, such as children/spouse
- ○ Threat to major source of income
- ○ Difficulty with roommate(s)
- ○ Change in health of a family member
- ○ Pregnancy
- ○ Sexual problems
- ○ Serious disagreements with parents
- ○ Change in lifestyle for financial reasons
- ○ Difficulty in identifying a major
- ○ Serious argument with close family member
- ○ Problems with a girlfriend or boyfriend
- ○ Having to repeat a course
- ○ Increased workload at school
- ○ Outstanding personal achievement
- ○ First semester in college
- ○ Change in living conditions
- ○ Serious disagreements with an instructor
- ○ Lower grades than expected
- ○ Change in sleeping habits
- ○ Change in social habits
- ○ Change in eating habits
- ○ Chronic car problems
- ○ Change in number of family get togethers
- ○ Too many missed classes
- ○ Change in plans for a major
- ○ Dropped more than one class
- ○ Minor traffic violations

Appendix H

Perceived Stress Scale (PSS)

The questions here ask you about your feelings and thoughts during the last month. In each case, you will be asked to indicate by rating how you felt or thought a certain way.

	Never	Almost Never	Sometimes	Fairly Often	Very Often
In the last month, how often have you been upset because of something that happened unexpectedly?	○	○	○	○	○
In the last month, how often have you felt that you were unable to control the important things in your life?	○	○	○	○	○
In the last month, how often have you felt nervous and "stressed"?	○	○	○	○	○
In the last month, how often have you felt confident about your ability to handle your personal problems?	○	○	○	○	○
In the last month, how often have you felt that things were going your way?	○	○	○	○	○
In the last month, how often have you found that you could not cope with all things that you had to do?	○	○	○	○	○
In the last month, how often have you been able to control irritations in your life?	○	○	○	○	○
In the last month, how often have you felt that you were on top of things?	○	○	○	○	○
In the last month, how often have you been angered because of things that were outside of your control?	○	○	○	○	○
In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	○	○	○	○	○

Appendix I

Content of the Connor-Davison Resilience Scale 25 (CD-RISC-25) ©

1. Able to adapt to change
2. Close and secure relationships
3. Sometimes fate or God can help
4. Can deal with whatever comes
5. Past success gives confidence for new challenge
6. See the humorous side of things
7. Coping with stress strengthens
8. Tend to bounce back after illness or hardship
9. Things happen for a reason
10. Best effort no matter what
11. You can achieve your goals
12. When things look hopeless, I don't give up
13. Know where to turn for help
14. Under pressures, focus and think clearly
15. Prefer to take the lead in problem solving
16. Not easily discouraged by failure
17. Think of self as strong person
18. Make unpopular or difficult decisions
19. Can handle unpleasant feelings
20. Have to act on a hunch
21. Strong sense of purpose
22. In control of your life
23. I like challenges
24. You work to attain your goals
25. Pride in your achievements

Appendix J

Satisfaction with Life Scale (SWLS)

Below are six statements that you may agree or disagree with. Using the 1 - 7 scale below, indicate your agreement with each item with a rating. Please be open and honest in your responding.

	Strongly disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	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.	○	○	○	○	○	○	○
To monitor quality, please respond with "disagree" for this statement.	○	○	○	○	○	○	○
So far I have gotten the important things I want in life.	○	○	○	○	○	○	○
If I could live my life over, I would change almost nothing.	○	○	○	○	○	○	○

Appendix K

Center for Epidemiologic Studies Depression Scale (CESD)

Below is a list of the ways you might have felt or behaved. Please tell me how often you have felt this way during the past **week**.

	Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4 days)	Most or all of the time (5-7 days)
I was bothered by things that usually don't bother me.	○	○	○	○
I did not feel like eating; my appetite was poor.	○	○	○	○
I felt that I could not shake off the blues even with help from my family or friends.	○	○	○	○
I felt I was just as good as other people.	○	○	○	○
I had trouble keeping my mind on what I was doing.	○	○	○	○
I felt depressed.	○	○	○	○
I felt that everything I did was an effort.	○	○	○	○
I felt hopeful about the future.	○	○	○	○
I thought my life had been a failure.	○	○	○	○
I felt fearful.	○	○	○	○
My sleep was restless.	○	○	○	○
I was happy.	○	○	○	○
I talked less than usual.	○	○	○	○
I felt lonely.	○	○	○	○
People were unfriendly.	○	○	○	○
I enjoyed life.	○	○	○	○
I had crying spells.	○	○	○	○
I felt sad.	○	○	○	○
I felt that people dislike me.	○	○	○	○
I could not get “going.”	○	○	○	○

Appendix L

Attention Questions

It is vital to our study that we only include responses from people that devoted their full attention to this study. Otherwise years of effort (the researchers' and the time of other participants) could be wasted. You will receive credit for this study no matter what, however, please tell us how much effort you put forth towards this study.

	almost no	very little	some	quite a bit	a lot of
I put forth ____ effort towards this study.	○	○	○	○	○

Also, often there are several distractions present during studies (other people, TV, music, etc.). Please indicate how much attention you paid to this study. Again, you will receive credit no matter what. We appreciate your honesty!

	almost no	very little of my	some of my	most of my	my full
I gave this study ____ attention.	○	○	○	○	○

In your honest opinion, should we use your data in our analyses in this study?

○ Yes

○ No

Appendix M

Closing/Debriefing Screen [LU Logo]

Dear Participant,

Thank you for your participation in this study.

If you would like a summary of the results of this study, feel free to send Christiana Fidler an email using the address below. If you are experiencing distress as a result of this study, or for any other reason, please contact the Student Health and Counseling Centre at 1-807-343-8361. You may also contact the Research Ethics Board at 1-807-343-8283, or research@lakeheadu.ca.

In order to obtain your bonus mark, please click "done" at the bottom of the screen. SONA™ will be updated with your bonus mark. If you do not receive your bonus mark please feel free to email Christiana Fidler at the address below. Please write this email down to ensure you will receive your bonus point.

Thank you again for your participation.

Regards,

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