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**THE MODERATION EFFECT OF SENSORY PROCESSING SENSITIVITY ON THE
RELATIONSHIP BETWEEN PRIORITIZING POSITIVITY AND WELL-BEING**

by

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**SUBMITTED TO SCRIPPS COLLEGE IN PARTIAL FULFILLMENT OF THE
DEGREE OF BACHELOR OF ARTS**

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Abstract

Although many studies have established a significant positive correlation between prioritizing positivity and well-being, very little research has examined potential moderators of this relationship. The purpose of this proposed study is to investigate whether sensory processing sensitivity (SPS) impacts the relationship between prioritizing positivity and well-being. Using a correlational research design, this online study will ask college students to complete a battery of self-report measures assessing participants' propensity to prioritize positivity, the corresponding level of SPS, and various facets of well-being. It is hypothesized that the impact of prioritizing positivity on well-being will be stronger for high-sensitive individuals than for low-sensitive individuals. This moderation is expected to vary depending on the subcategory of SPS. The current study also aims to explore whether this moderation applies to experiential well-being. Understanding how SPS moderates the impacts of prioritizing positivity may have important implications for future research and interventions catered toward high-sensitive individuals. Furthermore, the proposed study will illuminate if and why some individuals benefit from prioritizing positivity more than others.

Keywords: prioritizing positivity, sensory processing sensitivity, well-being, college students, online survey

The Moderation Effect of Sensory Processing Sensitivity on the Relationship Between Prioritizing Positivity and Well-being

Every morning I start my day with a ritual. I open my dorm room window and place raw almonds on the ledge of my balcony. I do so with the intention of feeding the squirrels that roam the Scripps College campus, two of whom have become regular visitors and I have since named Shirley and Sherman. Although the almond donation may seem to be a selfless act, watching Shirley and Sherman sit on my balcony munching on my offering never fails to brighten my day and uplift my mood. By feeding the squirrels, I am intentionally engaging in an activity that I know will likely increase my chances of experiencing positive emotions. The intentional tendency to incorporate pleasant experiences into one's daily routine is called *prioritizing positivity*. The aim of the proposed study is to examine prioritizing positivity, its well-being correlates, and potential moderating variables.

Prioritizing positivity is an individual personality trait referring to “the tendency to use pleasant states (e.g., contentment, joy) as a key criterion to structure daily life” (Catalino & Boulton, 2020). This trait is measured with a five-item scale. The prioritizing positivity scale has a single factor structure and includes items such as “A priority for me is experiencing happiness in everyday life” and “I structure my day to maximize my happiness” (Catalino & Boulton, 2020). The psychometrics of the scale are sound: reliability indices (e.g., omega total coefficient ranging from $\omega = 0.79$ to $\omega = 0.82$), construct validity via correlations with conscientiousness, mindfulness, self-control and others, and measurement invariance between males versus females have all been demonstrated.

People who prioritize positivity make the conscious, effortful decision to structure their daily lives around maximizing happiness. Someone who prioritizes positivity elects to

incorporate uplifting activities, such as meditation or squirrel feeding, into their daily routine knowing that these intentional endeavors targeting a momentary boost in positive emotions will likely increase one's well-being. The nature of the specific activity is driven by individualized tastes and preferences. One person may choose to go for a walk, whereas another may decide to watch a favorite television program. Regardless of the activity in which an individual chooses to engage, the common thread for all is an intention is to maximize wellness.

Research has already demonstrated that people who tend to prioritize positivity experience greater well-being than those who do not. In establishing their scale, Catalino et al. (2014) discovered that people who prioritize positivity tend to experience more positive emotions, fewer negative emotions, more life satisfaction, and fewer depressive symptoms. Subsequent researchers have also utilized this scale to further examine prioritizing positivity and various facets of well-being. In particular, researchers have studied how prioritizing positivity impacts hedonic well-being, a facet of well-being referring to the presence of positive affect and the absence of negative affect (Ryan et al., 2008). These studies have evidenced a significant correlation between prioritizing positivity and an increase in positive emotions, happiness, gratitude, and overall subjective well-being, and a decrease in negative emotions and depressive symptoms (Catalino & Boulton, 2020; Datu & King, 2016; Littman-Ovadia & Russo-Netzer, 2019; Passmore et al., 2018; Russo-Netzer, 2019; Russo-Netzer & Shoshani, 2020). In addition to hedonic well-being, prioritizing positivity has been positively associated with eudaimonic well-being, a facet of well-being referring to positive functioning without an affective component (Ryff et al., 2004). Eudaimonic well-being may be operationalized as meaning in life and self-actualization. Research has shown that prioritizing positivity is associated with greater meaning in life and a more authentic inner compass (Russo-Netzer, 2019; Russo-Netzer &

Shoshani, 2020). These findings have been replicated across samples in various countries such as Canada (Passmore et al., 2018), Israel (Littman-Ovadia & Russo-Netzer, 2019; Russo-Netzer, 2019; Russo-Netzer & Bergman, 2020), the Philippines (Datu & King, 2016), and the United States (Catalino et al., 2014; Catalino & Boulton, 2020). This evidence suggests that prioritizing positivity is not bound to a specific nationality, but rather is an individual difference that transcends geographic boundaries. Furthermore, although most research on prioritizing positivity has been cross-sectional in nature, there has also been longitudinal evidence that prioritizing positivity can affect one's well-being over an extended period of time (Datu & King, 2016). The first purpose of this thesis is to replicate the finding that individual differences in prioritizing positivity have a direct correlation with both positive aspects and negative aspects of well-being. In this study, well-being will be operationalized as consisting of life satisfaction, positive affect, negative affect, and depressive symptoms. High well-being will be indicated by high life satisfaction and positive affect, and low negative affect and depressive symptoms. Replicating this general finding is important because the more often this finding is reproduced, the more confidence researchers can have in concluding that prioritizing positivity is associated with greater well-being.

This thesis will also expand the existing literature examining what might strengthen or weaken the links between prioritizing positivity and well-being. To date, researchers have only established two moderating variables. Using a sample of Israeli Jewish adults, Littman-Ovadia and Russo-Netzer (2019) explored whether age moderates the association between prioritizing positivity and affect, a form of hedonic well-being. The researchers hypothesized that among older adults, the relationship between prioritizing positivity and positive emotions will be stronger, and the relationship with negative emotions will be inversely stronger in comparison to

younger adults. These predictions were made because older adults are thought to “use the prioritizing positivity mechanism more effectively” based on evidence of increased positive emotions across age (Littman-Ovadia & Russo-Netzer, 2019). The researchers discovered that prioritizing positivity is a mechanism to increase positive emotions for older adults (but surprisingly, not for younger adults), whereas prioritizing positivity decreases negative emotions in younger adults much more than in older adults. The results can be explained by older adults’ motivation to avoid unfulfilling situations and activities, and younger adults’ motivation to experience short-term pleasure situations. In addition to age, a sense of community has been proposed as another potential moderating variable of the interaction between prioritizing positivity and well-being. Using a sample of Ultra-Orthodox Jewish individuals, Russo-Netzer and Bergman (2020) hypothesized that a sense of community will moderate the association between prioritizing positivity and life satisfaction. This prediction was based on the reasoning that when people feel more secure in their sense of community, they do not have to expend as much energy in maintaining social connections. Thus, they have more freedom and time to invest in themselves through individualized activities like prioritizing positivity. The results confirmed the researchers’ hypothesis that among individuals with a greater sense of community, prioritizing positivity is associated with increased life satisfaction. For individuals with less sense of community, however, prioritizing positivity was associated with decreased life satisfaction. Although the current literature has established two moderating variables of the interaction between prioritizing positivity and well-being, research pertaining to prioritizing positivity would benefit from the identification of additional moderating variables. Potential moderating variables could include environmental factors, genetic predispositions, personality characteristics, economic circumstances, and more. Thus, the second purpose of this thesis is to

examine whether sensory processing sensitivity (SPS), a temperamental personality trait referring to the ease and depth with which an individual processes internal and external stimulus, moderates the relationship between prioritizing positivity and well-being. This purpose is important because it will expand researchers' understanding of prioritizing positivity by providing a novel, potential moderating variable. Broadening knowledge of this potential interaction is valuable because it will allow researchers to understand why a certain personality trait, prioritizing positivity, may be more strongly or weakly connected to well-being. In return, clarification on the moderation effect of SPS may open the door to interventions and treatment plans catered toward people with certain personality characteristics.

SPS refers to an individual's reactivity to internal and external stimuli (Aron & Aron, 1997). Individuals who score high in SPS experience a disproportionately low stimulus threshold for environmental influences, and they tend to cognitively process these environmental factors at a deeper level than their low-sensitive counterparts (Greven et al., 2019). For example, an fMRI study demonstrated that highly sensitive adults cognitively process happy and sad faces more thoroughly than low-sensitive adults due to greater activation in brain regions associated with awareness, empathy and self-other processing (Acevedo et al., 2014). Furthermore, Jagiellowicz et al. (2011) discovered that SPS is associated with increased brain activation in cerebral regions associated with higher order visual processing. In the study, highly sensitive individuals were more likely to detect subtle changes in visual stimuli than their low-sensitive counterparts. Because highly sensitive individuals thoroughly examine and process external information, they tend to display greater emotional and physiological reactivity and arousal (Aron & Aron, 1997; Aron et al., 2012). Researchers have proposed that highly sensitive individuals are disproportionately more responsive to the environment than most because they have more

sensitive central nervous systems (Aron & Aron, 1997; Aron et al., 2012), dopaminergic and serotonergic systems (Chen et al., 2011), and reward sensitivity (Pluess & Belsky, 2013) compared to low-sensitive individuals. Furthermore, research has discovered that highly sensitive individuals represent a minority of approximately 20% of the population (Aron & Aron, 1997; Aron et al., 2012; Pluess et al., 2018). Although the balance of the population was initially thought to be low-sensitive individuals, SPS is no longer considered a binary trait. Lionetti et al. (2018) suggest that SPS is a normally distributed trait on a continuum that consists of low, medium, and high sensitivity groups. These researchers found that 30% of the population experience low sensitivity, 40% experience medium sensitivity, and 30% experience high sensitivity. However, sensitivity will be examined as a continuous variable in the current study.

Importantly, there is also variation within the construct of SPS itself. Following their development of the Highly Sensitive Person (HSP) scale, the primary scale for measurement of adult sensitivity, Aron and Aron (1997) initially asserted that SPS is a unidimensional construct representing a general sensitivity score. Yet subsequent factor analyses of the HSP scale reveal that SPS consists of multiple subfactors (Smolewska et al., 2006). These factors include low sensory threshold (LST), ease of excitation (EOE), and aesthetic sensitivity (AES). LST refers to one's unpleasant sensory arousal due to external stimuli (Smolewska et al., 2006). Items measuring LST include questions such as "Are you bothered by intense stimuli, like loud noises or chaotic scenes?" and "Are you easily overwhelmed by things like bright lights, strong smells, coarse fabrics, or sirens close by?". EOE represents being mentally overwhelmed by internal and external demands (Smolewska et al., 2006). Items measuring EOE include questions such as "Does being very hungry create a strong reaction in you, disrupting your concentration or mood?" and "Do you tend to be more sensitive to pain?". Lastly, AES refers to one's aesthetic

awareness and openness to aesthetic experiences, positive stimuli, and the ensuing pleasure (Greven et al., 2019). Items measuring AES include questions such as “Do you have a rich, complex inner life?” and “Are you deeply moved by the arts or music?”. At face value, the subcategories of SPS may seem suspiciously similar. However, despite high correlations between EOE and LST, researchers have used factor analyses to continually support the three separate subcategories (Ahadi & Basharpour, 2010; Bridges & Schendan, 2019; Evans & Rothbart, 2008; Gerstenberg, 2012; Lionetti et al., 2018; Liss et al., 2008; Grimen & Diseth, 2016; Pluess et al., 2017; Smolewska et al., 2006; Sobocko & Zelenski, 2015). Furthermore, it has been established that a bifactor model, in which there is a general factor in addition to the three separate, uncorrelated factors, is the best fitting solution for the HSP scale (Lionetti et al., 2018; Pluess et al., 2017). In the current study, I will examine both overall sensitivity (composed of all three subcategories) as well as each facet separately.

Although there have been occasional inconsistencies, the bulk of research has shown that SPS moderates supportive contexts. Specifically, highly sensitive individuals have been shown to benefit more from supportive contexts than low-sensitive individuals. This evidence is grounded in the logic that the more sensitive a person is, the more reactive they are to their environment, thus the more significantly impacted they are by the effects of their environment. Given that the second purpose of this thesis is to examine whether SPS moderates the relationship between prioritizing positivity and well-being, it is worthwhile to mention why prioritizing positivity is considered a supportive context in the current study. Despite its role as an internal characteristic, I argue that prioritizing positivity can be viewed as an external, supportive context because it encompasses how people design the structure of their everyday lives. Therefore, although prioritizing positivity is not itself an external factor, individuals who

prioritize positivity are actively creating, shaping, and managing the external events that surround them rather than passively waiting for the events to happen on their own. Hence, recent evidence suggesting that highly sensitive people benefit more from supportive contexts is applicable to prioritizing positivity. As evidence, Pluess and Boniwell (2015) examined the supportive context of a depression prevention intervention among adolescent students. The researchers hypothesized that highly sensitive students will show a greater positive response (i.e., fewer depression symptoms) as a result of a preventative intervention compared to low-sensitive students. This hypothesis utilized reasoning derived from the Vantage Sensitivity Model (Pluess & Belsky, 2013), which refers to an individual's capacity to respond to and benefit from supportive experiences and enriched environments (Manuck, 2011 as cited in Pluess & Belsky, 2013; Sweitzer et al., 2013). According to Pluess and Belsky (2013), someone who is vantage sensitive is more likely to reap the benefits from positive experiences due to their heightened sensitivity to positive aspects of the environment. People who do not experience benefits from the same supportive environment are referred to as "vantage resistant" (Pluess & Belsky, 2013). Consistent with the Vantage Sensitivity Model, Pluess and Boniwell (2015) discovered that highly sensitive participants had significantly less depression symptoms six and 12 months following the intervention compared to low-sensitive participants who were vantage resistant to the intervention. Similarly, Nocentini et al. (2018) tested whether SPS moderates the effects of an anti-bullying program. With vantage sensitivity as the proposed underlying mechanism, these researchers hypothesized that highly sensitive students will benefit more from an anti-bullying program compared to their low-sensitive counterparts. Confirming the researchers' hypothesis, the results indicated that children with medium and high SPS experienced reduced victimization and internalizing behaviors following the antibullying program. Low-sensitive children,

however, were vantage resistant to the program's positive effects of reduced victimization and internalizing behavior. This research suggests that high sensitivity can serve as a propagator of positive outcomes when in the presence of beneficial environmental influences.

Additional research has shown that SPS amplifies the effects of positive contexts while simultaneously examining how SPS amplifies the effects of negative contexts. For example, Aron et al. (2005) examined whether SPS moderates the effects of adverse childhood environments on shyness and negative affect in adulthood. The researchers hypothesized that highly sensitive individuals will demonstrate significantly high negative affect and shyness as a result of troubled childhoods but score significantly low levels of negative affect and shyness as a result of happy childhoods. The results of this study supported the hypothesis thereby suggesting that highly sensitive individuals are disproportionately responsive to both positive and negative environmental factors. This finding embodies the Differential Susceptibility Framework (Belsky, 1997) which suggests that the same characteristic can have the ability to make an individual disproportionately susceptible to negative impacts in adverse exposures as well as more responsive to advantageous experiences (Belsky, 1997; Belsky & Pluess, 2009). Like Aron et al. (2005), research has continued to gather evidence of SPS as a differentially susceptible trait. For instance, Slagt et al. (2018) studied whether a child's SPS moderates the effects of parenting quality on child externalizing behavior. The researchers hypothesized that the moderation of SPS will reflect a differential susceptibility pattern. This pattern was confirmed when the results showed that highly sensitive children decreased the most in externalizing behavior when negative parenting decreased, but the same highly sensitive children increased the most in externalizing behavior when negative parenting increased. The opposite results were found to be true for positive parenting. Lastly, in a laboratory setting, Lionetti et al.

(2018) discovered that highly sensitive adults were more emotionally responsive to both positive and negative mood-inducing video clips than their low-sensitive counterparts. These studies provide evidence that SPS can be an advantageous or disadvantageous endogenous factor depending on the environment, thereby supporting the Differential Susceptibility Framework.

Despite the majority of research indicating evidence of SPS moderating positive contexts, it is worth mentioning that some research has found null results when examining this moderation. This research is in alignment with the Diathesis-Stress Model (Monroe & Simons, 1991; Zuckerman, 1999), a model referring to an individual's disproportionate vulnerability to adverse effects of negative environmental influences. Findings supporting the Diathesis-Stress Model include those of Aron and Aron's (1997) study in which they explored SPS as a susceptibility marker for social introversion and negative emotionality as a result of adverse childhood experiences. These researchers discovered that highly sensitive adults who experienced a negative childhood scored higher on social introversion and negative emotionality than low-sensitive adults who had comparable negative childhood experiences. However, congruent with the Diathesis-Stress Model, highly sensitive adults did not significantly differ from low-sensitive adults in these traits following positive childhood experiences. Similarly, Booth et al. (2015) tested whether SPS moderates the effect of positive and negative childhood experiences on life satisfaction in adulthood. Although there wasn't a significant difference in moderation between high and low-sensitive individuals who had positive childhood experiences, SPS was found to significantly moderate the relationship between negative childhood experiences and life satisfaction. Supporting the Diathesis-Stress Model, the researchers discovered that high-sensitive individuals reported lower life satisfaction than low-sensitive individuals when exposed to negative childhood experiences. Lastly, Liss et al. (2005)

demonstrated a significant moderation of SPS on the effect of parental care quality on adolescent depression symptoms. When the quality of parental care was low, highly sensitive adolescents reported the highest depression scores. However, no significant interaction was detected when the quality of parental care was high. The inconsistency in results surrounding the moderation of SPS on positive contexts is important to consider. Nevertheless, despite this discrepancy, it should be noted that the HSP scale disproportionately contains items measuring affectively negative reactions, such as being overwhelmed, which may bias the scale to be more sensitive when measuring susceptibility to negative experiences compared to positive experiences (Booth et al., 2015). Due to the low frequency of null findings in the literature and potential scale bias, it is reasonable to nevertheless consider SPS to be a moderator of positive environmental influences.

To expand upon the potential moderating effects of SPS on prioritizing positivity and well-being, it is worth exploring the underlying mechanism of this moderation by examining which subcategory of SPS is most responsible for the moderation effect. As previously indicated, SPS contains three subcategories: low sensory threshold (LST), ease of excitation (EOE), and aesthetic sensitivity (AES). To date, only one group of researchers has tested the moderating effects of each subcategory individually. As previously mentioned, Booth et al. (2015) found a significant moderation interaction of SPS on negative childhood experiences but found null results for the moderation of positive childhood experiences. When examining which subcategory was most responsible for the diathesis interaction, Booth et al. discovered that EOE and LST had significant moderation effects. However, no significant interaction was found between childhood experiences and AES. Despite these null results, it is plausible that AES will be more responsible for the moderation of the effects of positive contexts than LST or EOE due

to the face validity of each subscale which suggests that there are differences in the type of stimuli that each subcategory reflects.

When examining individual items for each subscale, it becomes clear that LST and EOE reflect environmental sensitivity to negative stimuli, and AES reflects environmental sensitivity to positive stimuli. For example, items measuring LST include questions such as “Are you easily overwhelmed by things like bright lights, strong smells, coarse fabrics, or sirens close by?” and “Do you become unpleasantly aroused when a lot is going on around you?”. Items measuring EOE include questions such as “Do you tend to be more sensitive to pain?” and “Does being very hungry create a strong reaction in you, disrupting your concentration or mood?”. These LST and EOE items refer to one’s sensitivity to negative stimuli, such as pain and hunger, as well as one’s negative reaction to these stimuli, such as becoming overwhelmed or unpleasantly aroused. AES, on the other hand, reflects sensitivity to positive stimuli as indicated in items such as “Are you deeply moved by the arts or music?” and “Do you notice and enjoy delicate or fine scents, tastes, sounds, works of art?”. Here, the items are referring to positive stimuli (i.e., arts and music) as well as one’s positive reactions these stimuli as suggested by words like “deeply moved” and “enjoy.” Based on the affective component of each subcategory’s items, researchers have drawn the conclusion that AES may reflect environmental sensitivity to positive experiences, whereas environmental sensitivity to negative experiences may be better reflected by EOE and LST (Pluess et al., 2018). Hence, the third purpose of the current study is to test if there is a subcategory of SPS most responsible for moderating the relationship between prioritizing positivity and well-being. This purpose is important because it will illuminate precisely which facet of sensitivity is most responsible for amplifying the associations between

prioritizing positivity and well-being, which in turn will allow researchers to better understand the underlying mechanism in which SPS moderates positive contexts.

Similarly, the current literature would benefit from examining whether SPS moderates other types of well-being beyond global well-being. To date, all known research studying prioritizing positivity has implemented global measures of well-being. Global well-being is one's top-down reflective evaluation of personal wellness (Killingsworth, 2021). In this study, well-being is operationalized as four forms of global well-being (life satisfaction, positive emotions, negative emotions, depressive symptoms). Thus, global well-being will be measured using the Satisfaction with Life Scale (Diener et al., 1985), the modified Differential Emotions Scale (mDES; Fredrickson et al., 2003), and the Center for Epidemiological Studies-Depression (CESD; Radloff, 1977). Despite evidence positively correlating prioritizing positivity with global well-being (Catalino & Boulton, 2020; Datu & King, 2016; Littman-Ovadia & Russo-Netzer, 2019; Passmore et al., 2018; Russo-Netzer, 2019; Russo-Netzer & Shoshani, 2020), the existing literature has yet to correlate prioritizing positivity with experiential well-being. Experiential well-being is an individual's moment-to-moment experience of positive and negative emotions (Hudson et al., 2016). Typically, experiential well-being is measured using scales such as the Experience Sampling Method (ESM; Larson & Csikszentmihalyi, 1983), and the Day Reconstruction Method (DRM; Kahneman et al., 2004), and shows small to moderate associations with global measures of well-being (Hudson et al., 2016). The ESM is a methodology that asks participants to report on their thoughts, feelings, behaviors, and environment in the moment on multiple occasions. To complete the ESM, it is common that participants use devices that randomly notify them to record their current state. The DRM, on the other hand, measures one's experiential well-being in one sitting by asking the participant to

reflect on their emotions and activities during the previous day. In this study, the DRM will be used to assess participants' experiential well-being. Due to prior literature showing prioritizing positivity's positive correlation with global well-being, it is likely that prioritizing positivity will also be positively correlated with experiential well-being. Therefore, the fourth purpose of the current study is to test whether prioritizing positivity is associated with experiential well-being, and the fifth purpose is to assess whether SPS moderates this correlation. These aims are important because they will expand the current literature on the correlates of prioritizing positivity and provide insight as to whether the potential moderation effects of SPS on prioritizing positivity exist for experiential well-being.

In summary, this thesis will examine five hypotheses:

1. Trait levels of prioritizing positivity will predict global measures of well-being (more life satisfaction, more positive emotions, fewer negative emotions, fewer depressive symptoms).
2. SPS will moderate the relationship between prioritizing positivity and well-being. That is, the impact of prioritizing positivity on well-being will be stronger for highly sensitive individuals than low-sensitive individuals.
3. AES will descriptively have a greater impact on the relationship between prioritizing positivity and well-being than EOE and LST.
4. Prioritizing positivity will predict experiential well-being (more positive emotions, fewer negative emotions).
5. SPS will significantly moderate the relationship between prioritizing positivity and experiential well-being. That is, the impact of prioritizing positivity on experiential well-being will be stronger for highly sensitive individuals than for low-sensitive individuals.

Proposed Method

Participants

Based on the small effect size found upon examining the moderation of SPS on positive contexts (Aron et al., 2005), and assuming a desired power of 0.80 and an alpha level of 0.05, Stangor (2015) states that a small effect size for a multiple regression with two independent variables requires 481 participants. To account for a potential attrition rate of 15%, 553 participants will be needed to complete an online self-report survey for this study.

All participants will be undergraduate students of the age of 18 or older at a college consortium in Southern California. According to the fact sheets on each college's website (About Claremont McKenna College, 2021; About Harvey Mudd College, 2021; About Pitzer College, 2021; About Pomona College, 2021; About Scripps College, 2021), 59.9% will be female, 37.9% will be male and 2.2% will be other. Additionally, 41.7% will be White, 16.8% will be Hispanic, 16.7% will be Asian, 11.9% will be other, 6.6% will be Black/African American, 5.9% will be mixed race, 0.2% will be American Indian/Alaskan Native, and 0.2% will be Native Hawaiian/Other Pacific Islander.

Participants will be recruited by circulating the survey through school-wide, student list emails and college Facebook groups. All participants will be compensated \$10 whether or not their participation is complete.

Procedure

Following the discovery of the online survey through student list emails or college Facebook group posts, participants 18 years of age or older will provide informed consent if they decide to participate. Upon providing informed consent, participants will complete a battery of self-report measures in a randomized order. The first set of randomized measures will examine

the dependent variables and include the modified Differential Emotions Scale (mDES; Fredrickson et al., 2003), the Center for Epidemiological Studies-Depression scale (CESD; Radloff, 1977), the Day Reconstruction Method (DRM; Kahneman et al., 2004), and the Satisfaction with Life Scale (SWLS; Diener et al., 1985). By measuring the dependent variables first, responses to predictor variable measures won't be contaminated by order effects. Next, due to the long nature of the survey, participants will undergo an attention check. For the attention check, participants will be asked "What is your favorite way to relax? Please select option C." Out of the four possible response options, if the participant does not select option C, they will be considered as not paying attention, and their data will be removed from data analysis. After the attention check, participants will complete measures examining the predictor variables in a randomized order. These measures include the Highly Sensitive Person scale (HSP; Aron & Aron, 1997) and the Prioritizing Positivity Scale (PPS; Catalino & Boulton, 2020). Following the completion of the four dependent variable measures, the attention check, and the two predictor variable measures, participants will provide demographic information on their race, gender, and age. Participants that indicate an age below 18 will be removed from data analysis. To undo any negative effects that they may have experienced during the study, the participants will view a set of relaxing photographs. Lastly, participants will be thanked and debriefed with a digital feedback sheet at the end of the survey. Included in the debriefing form, a link will direct participants to a survey where they can opt to provide Venmo or Paypal information for compensation. The intentional decision to provide a separate survey for compensation eliminates the possibility for data to be tied to identifiable information. In its entirety, participation will take roughly 45 minutes to an hour long.

Materials

Demographic questions pertaining to the participant's gender, race and age will be included. Fixed format response options indicating gender will consist of "male," "female," and "other." Fixed format response options measuring race will include "White," "Black/African American," "American Indian/Alaskan Native," "Asian," "Native Hawaiian/other Pacific Islander," "Hispanic," "mixed race," and "other." An open-ended question will ask the participant's age.

Sensory Processing Sensitivity

Sensory processing sensitivity (SPS) will be assessed using the Highly Sensitive Person (HSP) scale (Aron & Aron, 1997). The HSP scale is intended to measure an individual's reactivity to internal and external stimuli. This study will interpret the HSP scale as the bifactor model suggested by Lionetti et al. (2018) which consists of both a general sensitivity factor as well as three separate factors: ease of excitation (EOE), low sensory threshold (LST), and aesthetic sensitivity (AES). To begin, EOE measures feelings of becoming mentally overwhelmed by external and internal demands (i.e., "Do you find it unpleasant when you have a lot going on at once?"). LST assesses sensitivity to unpleasant sensory stimuli (i.e., "Are you easily overwhelmed by things like bright lights, strong smells, coarse fabrics, or sirens close by?"). Lastly, AES measures one's aesthetic awareness (i.e., "Are you deeply moved by arts or music?"). In total, participants will respond to 27 items using a 7-point continuous scale (1 = *strongly disagree*, 7 = *strongly agree*). Excluding two items that loaded onto two components, 12 items measure EOE, six items measure LST, and seven items measure AES. To calculate a general sensitivity score, the mean score across all items will be computed with higher scores reflecting higher sensitivity. Similarly, to calculate EOE, LST, and AES scores, the scores will

be averaged separately in each subcategory. Again, higher scores will indicate greater sensitivity specific to the subcategory being assessed. When analyzing the general sensitivity factor, the HSP scale has shown to have good reliability ranging from $\alpha = .64$ to $\alpha = 0.75$. Each of the subcategories have also indicated sufficient reliability (EOE: $\alpha = .81$, LST: $\alpha = .78$, AES: $\alpha = .72$) (Smolewska et al., 2006). The HSP scale has also demonstrated discriminant validity through its small correlation of $r = .14$ with the Myers-Briggs Type Indicator introversion-extraversion type measure (MBTI; Myers 1962).

Prioritizing Positivity

The revised 5-item Prioritizing Positivity Scale (PPS; Catalino & Boulton, 2020) is a self-report measure designed to measure the extent to which people structure their daily life around experiencing pleasant states (i.e., joy and contentment). Using a 9-point continuous scale, participants will rate how strongly they agree or disagree with each item (1= *disagree strongly*; 9 = *agree strongly*). Scale items include statements such as “A priority for me is experiencing happiness in everyday life,” “What I decide to do with my time outside of work is influenced by how much I might experience positive emotions,” and “I structure my day to maximize my happiness.” Due to the scale’s single-factor model, a mean prioritizing positivity score will be calculated. High scores will reflect high levels of prioritizing positivity. The scale has indicated satisfactory reliability (ranging from $\omega = .79$ to $\omega = .82$). When compared to constructs such as hedonic tone, savoring abilities, present-focused attention, and non-judgement, the scale demonstrated good convergent validity (ranging from $r = -.40$ to $r = .57$).

Affective Well-being

The modified Differential Emotions Scale (mDES; Fredrickson et al., 2003) will be used to measure how often participants experienced positive and negative emotions over the past two

weeks. Using a 5-point scale (0 = *not at all*, 4 = *most of the time*), participants will indicate the frequency at which they experience 10 positive emotions (i.e., amusement, gratitude, joy and pride) and 10 negative emotions (i.e., anger, guilt, sadness, and stress). Mean scores for both positive and negative emotions will be calculated with higher scores indicating higher levels of the respective emotion. The reliability of the positive and negative emotion items is high ($\alpha = 0.93$ and $\alpha = 0.90$ respectively). The positive and negative emotions subscales have demonstrated satisfactory criterion validity. For example, the negative emotions subscale was positively correlated with stress ($r = 0.51$) and depression ($r = 0.54$), and the positive emotions subscale was negatively correlated with stress ($r = -0.21$) and depression ($r = -0.37$).

Depressive Symptoms

The Center for Epidemiological Studies-Depression (CESD; Radloff, 1977) measures participants' depressive symptoms during the past seven days. Using a 4-point continuous scale (0 = *rarely or none of the time-less than 1 day*, 3 = *all of the time-5-7 days*), participants will respond to 20 items including statements such as "I couldn't get going," "I felt sad," and "I felt like everything I did was an effort." Scores will be averaged and range from zero to 60, with higher scores indicating greater depressive symptoms. Ranging from $\alpha = 0.83$ to $\alpha = 0.95$, the scale has demonstrated high internal consistency. When compared to scales such as the Positive and Negative Affect Schedule (PANAS; Watson et al., 1988) and the Beck Depression Inventory-II (BDI-II; Beck et al., 1996), the scale has also shown evidence of good criterion validity (ranging from $r = 0.54$ to 0.81).

Life Satisfaction

The Satisfaction with Life Scale (SWLS; Diener et al., 1985) measures the extent to which people rate their life as satisfactory. This construct is a form of global well-being. Using a

7-point continuous scale (1 = *strongly disagree*, 7 = *strongly agree*), participants will respond to five statements such as “In most ways my life is close to my ideal,” “The conditions of my life are excellent,” and “I am satisfied with my life.” For this unidimensional scale, scores will be averaged, and higher scores will indicate greater life satisfaction. A Cronbach’s alpha of 0.91 indicates strong reliability, and the scale has demonstrated sufficient concurrent validity through strong correlations with subjective well-being scales such as the Differential Personality Questionnaire (Tellegen, 1979), the Positive Affect Scale (Bradburn, 1969), and the Negative Affect Scale (Bradburn) ($r = .68$, $r = .50$, and $r = -.37$, respectively).

Experiential Well-being

The Day Reconstruction Method (DRM; Kahneman et al., 2004) measures experiential well-being. The DRM requires that participants use recall to reflect on the preceding day. In the DRM, participants are asked to systematically reconstruct the preceding day by categorizing the day into a sequence of episodes describing their activities and experiences. On average, participants doing the DRM tend to create 14.1 episodes that have an average duration of 61 minutes each. Because the DRM asks participants to reflect on an entire day, the completion of this measure is lengthy. To address attrition concerns, the current study will modify the DRM so that participants only reflect on events occurring between 8:00am and 5:00pm of the previous day. This modification will dramatically reduce the average number of episodes, and thus the amount of time it will take for participants to complete the measure. To further reduce the completion time, the current study only includes a select few questions for each episode. These questions will ask participants to provide information about the start and end times of the episode, what they were doing during the episode (by checking one or more of 16 activities), where they were, with whom they were interacting, and how they felt (using 12 affective

descriptors, four of which are positive, and eight of which are negative). To measure the dependent variable of experiential well-being, only the scores measuring affect will be analyzed during data analysis. The purpose of the additional episode information is to assist accurate recall of the participant's emotions at that time. On the affect scales, participants will indicate the intensity in which they felt 12 emotions (i.e., happy, frustrated, depressed, friendly) by using a 7-point continuous scale (0 = *not at all*, 6 = *very much*). For each episode, the participant's positive and negative affect scores will be weighted by the number of minutes spent in the episode and averaged to calculate overall positive and negative affect scores. Higher scores will indicate greater levels of positive and negative affect, respectively. An overall positive affect score and an overall negative affect score for each episode will be calculated by averaging scores. Then, the composite positive and negative affect scores for each episode will be averaged to create one final score per participant for positive affect and negative affect. The scale has demonstrated sufficient reliability ($\alpha = 0.65$) and good concurrent validity when compared to the Experiential Sampling Method (ESM; Larson & Csikszentmihalyi, 1983) ($r = 0.85$ for positive affect, $r = 0.76$ for negative affect).

Ethical Considerations

The current study involves minimal risk. First, participation is completely voluntary. Participants will not be coerced by any means, and they will be reminded during the informed consent process that they may discontinue their participation at any point in the study without penalty. Second, study participants are not being sampled from a protected or vulnerable population, and their identities will remain anonymous throughout data collection and analysis, dissemination of results, and the compensation process. The participants will provide identifiable information when indicating their PayPal or Venmo information for compensation. However,

because this information will be collected in a separate survey, it will not be possible to connect data to participants. If there is a data breach, participants risk disclosure of their confidential PayPal or Venmo information. Although a data breach is possible, the risk should be minimal given the privacy protections inherent in a password protected computer. Importantly, this study does not involve deception. Finally, the participants are not being asked to provide particularly sensitive information, and no disturbing content will be incorporated into the study. Therefore, it is unlikely that participants will experience any greater risk than what would be experienced in everyday life.

With a lack of meaningful risk to participants, the benefits of this study outweigh the potential detrimental impact on participants. Other than the compensation received, participants will not directly benefit from the study. However, the study will provide significant benefit to the scholarly knowledge base and society at large. Research surrounding the moderating factors of the relationship between prioritizing positivity and well-being is limited. Thus, the current study will expand the existing literature by offering SPS as a potential moderating variable. Additionally, the current literature will benefit from understanding whether this potential moderation varies depending on the particular type of well-being and the subcategory of SPS being assessed. This additional information may provide insight for other potential relationships that may be moderated by SPS. Although negative environmental influences are not being examined in the current study, the scholarly knowledge base will benefit from further empirical evidence illuminating either supporting or disconfirming evidence of vantage sensitivity, an indicator of SPS as a beneficial moderator in positive contexts. If evidence of vantage sensitivity is supported, then future researchers will have more confidence that SPS is a moderator of positive contexts, and thus more opportunities to examine other positive contexts that may be

moderated by SPS. The results of the current study will also benefit society at large by providing insight as to why some people may benefit more than others from positive environmental influences such as prioritizing positivity. If the hypothesis that prioritizing positivity will have a greater impact on well-being for highly sensitive individuals than low-sensitive individuals is confirmed, society at large may benefit from catering interventions towards highly sensitive individuals by implement underlying mechanisms of prioritizing positivity.

Anticipated Results

Once the data have been properly cleaned and composite scores have been created for appropriate variables, an outlier analysis will be conducted to determine whether any participant data should be excluded from analysis. Then, three sets of multiple regressions will be conducted. Because well-being has been operationalized in the current study as four dependent variables (life satisfaction, positive affect, negative affect, and depressive symptoms), four separate multiple regressions will be run to test an effect on each dependent variable. For the first set of four multiple regressions, prioritizing positivity and the general factor of SPS will serve as predictor variables, and the four subcategories of well-being will serve as dependent variables. The interaction term and a fixed effect of prioritizing positivity and the general SPS factor will be included. The main effect of prioritizing positivity on each subcategory of well-being will be examined. Then, the interaction term will be used to explore whether SPS moderates the effect of prioritizing positivity on each subcategory of well-being. Then, a second set of four multiple regressions will be conducted. The general factor of SPS and its interaction term will not be included in this set of regressions. Instead, the three individual subcategories of SPS (AES, EOE, LST) and prioritizing positivity will serve as predictor variables, and the four indicators of well-being as dependent variables. The interaction term and fixed effect of prioritizing positivity and

each SPS subcategory will be included. This set of multiple regressions will determine if the way in which SPS impacts the relationship between prioritizing positivity and well-being varies depending on the subcategory of SPS being analyzed. To determine which subcategory of SPS has the most impact, the standardized parameter estimates of each of the three interaction terms will be examined. Lastly, a similar analysis that was used to explore the effects of prioritizing positivity and SPS on well-being will be used to examine the same effects for experiential well-being.

As a result of the first set of four multiple regressions, I predict that prioritizing positivity will be significantly correlated with well-being such that individuals who prioritize positivity will experience greater well-being outcomes than those who do not. This prediction is based in prior evidence that prioritizing positivity is positively correlated with positive functioning (i.e., positive affect, life satisfaction) and negatively correlated with negative functioning (i.e., negative affect, depressive symptoms) (Catalino & Boulton, 2020; Datu & King, 2016; Littman-Ovadia & Russo-Netzer, 2019; Passmore et al., 2018; Russo-Netzer, 2019; Russo-Netzer & Shoshani, 2020). I hypothesize that the correlation between prioritizing positivity and well-being will be significantly moderated by SPS such that the impact of prioritizing positivity on well-being will be stronger for highly sensitive individuals than low-sensitive individuals. Prior evidence establishing SPS as a significant moderator of positive environmental influences serves as the rationale behind this prediction (Aron et al., 2005; Lionetti et al., 2018; Nocentini et al., 2018; Pluess & Boniwell, 2015; Slagt et al., 2018). Due to its correlations with enhanced well-being through intentional arrangement of external stimuli, prioritizing positivity is considered a positive environmental influence. Thus, like any other positive environmental stimuli, it is reasonable to assume that SPS will also strengthen the beneficial effects of prioritizing positivity.

As a result of the second set of four multiple regressions, I predict that the moderation of SPS on the relationship between prioritizing positivity and well-being will vary depending on the subcategory of SPS that is being analyzed (AES, EOE, and LST). Specifically, I hypothesize that AES will have a greater impact on the relationship between prioritizing positivity and well-being than EOE and LST. The face validity of each subcategory's items indicates that AES represents sensitivity to positive experiences, whereas EOE and LST represent sensitivity to negative experiences. Therefore, if someone is high in AES, they will be more reactive to the effects of positive experiences like prioritizing positivity.

As a result of the third set of a single multiple regression, I predict that prioritizing positivity will have a significant positive correlation with experiential well-being. Given that prioritizing positivity is connected to global measures of well-being, it is reasonable to assume that prioritizing positivity will also be connected to experiential measures of well-being. In addition, I hypothesize that this relationship will be significantly moderated by SPS such that the impact of prioritizing positivity on experiential well-being will be greater for highly sensitive individuals than low-sensitive individuals. Considering that SPS is expected to moderate the impact of prioritizing positivity on global well-being, it is logical to predict that this moderation will hold true for experiential well-being as well.

The analytic plan of this thesis is not without limitations. Due to the large number of tests being run, there is an increased possibility of Type 1 error, a false positive conclusion in which a researcher incorrectly rejects a null hypothesis. To reduce the risk of Type 1 error, future researchers should consider other statistical methods to decrease the number of tests such as a multivariate multiple regression. In addition to Type 1 error, the high degree of correlations between the three subcategories of SPS (AES, EOE, LST) is another limitation of the current

study. Because the moderating effects of each subcategory on prioritizing positivity are being analyzed in the same multiple regression, there is increased risk for multicollinearity. Future researchers should consider testing each subcategory in separate statistical tests to account for the high degree of intercorrelations. Lastly, an additional limitation of the current study is the proposed sample size. Given the small population size of the consortium in which participants are being recruited, successfully recruiting 553 participants is ambitious, and may not be feasible. Thus, the participants that are successfully recruited may not be enough to detect significant effects. Although recruitment of 553 participants is necessary to ensure a high-powered statistical test, it may be worthwhile for researchers to consider larger populations to recruit from.

Scholarly Merit & Broader Impacts

The findings derived from this proposed study will benefit the existing scholarly knowledge base and society at large. Due to its relatively recent development, prioritizing positivity and its correlates have not been heavily explored by researchers. Thus far, researchers have established that prioritizing positivity is positively correlated with well-being, and the current study aims to replicate this finding to increase researchers' confidence in this relationship. When examining this correlation, researchers have used limited measurements of well-being. To date, researchers have only assessed well-being using global self-report measures, rather than experiential. The current study will fill this gap and expand the literature by exploring whether trait levels of prioritizing positivity predict levels of experiential well-being. Exploring various types of well-being in relationship to prioritizing positivity will reveal whether prioritizing positivity prompts a universal boost in wellness, or whether it is limited to specific well-being outcomes. In addition to exploring limited types of well-being, researchers have only

examined two moderating variables (age and a sense of community) on the relationship between prioritizing positivity and well-being. Investigating SPS as an additional moderating factor will facilitate future research on other individual characteristics that may interact with prioritizing positivity and its outcomes. Testing this moderation effect will provide additional evidence in the controversial topic of whether or not SPS moderates positive contexts. If the hypothesized interaction is supported, researchers will have more confidence that SPS does moderate positive contexts. Importantly, the current study is parsing SPS into its three established subcategories (AES, EOE, LST). This is notable because only one known study has examined the moderating effect of each individual subcategory (Booth et al., 2015). Thus, results from this proposed study will fill this gap by highlighting whether a specific subcategory of SPS is most responsible for moderating the impact of prioritizing positivity on well-being. Filling this gap in the literature will answer the question of whether or not the moderation of SPS on positive contexts can be attributed to a single aspect of the construct.

Beyond expanding the existing literature, this proposed study will have broader implications for society as a whole. Understanding the psychological underpinnings of traits such as prioritizing positivity and SPS will allow researchers to cater future interventions towards specific individual characteristics. For example, if the moderating effect of SPS is supported, it may be worthwhile for researchers to encourage highly sensitive individuals to adopt a lifestyle in alignment with prioritizing positivity. Although prioritizing positivity is a constant, individual personality trait that cannot be turned off or on, it may be beneficial for researchers to explore other aspects of this individual difference that could be taught. In the event that prioritizing positivity is translated into an intervention, researchers will be more knowledgeable about who the intervention will be most suited towards as a product of the current study's findings.

Furthermore, if supported, evidence of SPS as an advantageous characteristic in positive contexts may empower highly sensitive individuals who may feel disenfranchised by their environmental reactivity. Often, sensitivity is viewed as a character flaw and referred to in a condescending manner. Thus, support for SPS as a beneficial personality trait may uplift people who are highly sensitive. Overall, the proposed study has the real potential to significantly impact the well-being of society through intervention possibilities, empowerment, and a greater understanding of psychological functioning.

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