

BREAKING DOWN STRESS: IDENTIFYING POSITIVE ASPECTS OF NEGATIVE
SITUATIONS

BY

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LIST OF ABBREVIATIONS

BC: Behavioral change

C: Contradiction

CC: Cognitive change

DB: Dichotomous beliefs

DES: Dialectical Emotions Scale

DSS: Dialectical Self Scale

DTI: Dichotomous Thinking Inventory

EFA: Exploratory factor analysis

NePS: Belief that negative emotions can occur in positive situations

Pe+Ne: Belief that positive and negative emotions can co-occur

PeNS: Belief that positive emotions can occur in negative situations

PLT: Profit and loss thinking

PFD: Preference for dichotomy

TMES: Trait mixed emotion scale

TMES, ME: Mixed emotions frequency

TMES, N: Negative emotions frequency

ABSTRACT

The primary aim of the current study is to better understand people's tendency to generate positive appraisals – subjective evaluations – of negative stressors. Specifically, whether the belief that positive and negative emotions can co-occur significantly predicts the number of positive aspects people can identify of a COVID related situation. In study 1, I tested the validity of the Dialectical Emotions Scale, which measures three separate beliefs: positive and negative emotions can co-occur (Pe+Ne), positive emotions can be found in negative/stressful situations (PeNS), and negative emotions can be found in positive situations (NePS). In study 2, I tested whether scores on each of these subscales in addition to general positivity, dispositional optimism, and extraversion, were significant predictors of the tendency to identify positive aspects of a COVID situation that participants were currently experiencing. Positivity and a low frequency of experiencing negative emotions were the strongest predictors of the tendency to identify positive aspects of negative stressors. Furthermore, the number of positive aspects people identified predicted how positive they felt after listing aspects of their situation controlling for how they felt at the start of the study and after describing their situation. The findings from this study present the possibility of an appraisal focused approach to dealing with stress.

Keywords: positive appraisal, stress, COVID-19, positive emotions

INTRODUCTION

There are two primary aims of this paper. First, to present an appraisal-based approach in explaining the experience of positive affect during a negative stressful event. Second, to describe two studies that seek to better understand people's tendency to identify positive aspects of negative situations, and whether the belief that positive and negative emotions can co-occur is a predictor of this tendency. The aim of study 1 was to create a scale assessing three separate beliefs about the co-occurrence of positive and negative emotions during stress. The aim of study 2 was to see whether these beliefs along with other personality and dispositional characteristics could predict the number of positive aspects that people identified of a COVID related situation.

In the introduction I will first discuss stress and the different types of stressors that people experience, with an emphasis on negative stressful events. Next, I will cover the possibility and benefit of experiencing positive emotions during negative stress as well as several ways people can generate positive emotions to effectively regulate their emotional response to negative stress. One way people can generate positive emotions to better cope with their stress is by focusing on positive appraisals of the negative stressor. This method of generating positive emotions will be expanded upon through a discussion of an unpublished investigation into this strategy. I will then discuss possible individual differences that explain people's tendency to identify positive aspects of negative stressors, including the central focus of this paper, which is the belief about the co-occurrence of positive and negative emotions. Lastly, I will discuss the specific goals and primary hypotheses of study 1 and study 2.

How Do People View Stress?

Stress is a pervasive and constant companion for many in everyday life. There are various types of stressors, each with differing effects on our health and wellbeing.

Stressful events differ in intensity, duration (acute, chronic) and whether people find the stressor to be overall positive (eustress) or negative (distress) (Kupriyanov & Zhdanov, 2014). Although some degree of stress is necessary and even adaptive for healthy living, irregular and heightened levels of negative stress can pose serious health risks (Salleh, 2008; Schneiderman et al., 2005; Thoits, 2010). The mal effects of poorly responding to negative stress range from increased risk for developing cardiovascular disease, weight gain, diabetes, as well as increasing the likelihood of psychopathology (DeLongis et al., 1988; Chrousos & Gold, 1998; Lupien et al., 2009; Thoits, 2010).

The type of stress (whether it's positive or negative) a person experiences is due in part to how they perceive the stressful situation. Negative stressors, as opposed to positive stressors, arise when a person perceives a situation as threatening their physical or psychological wellbeing. The perception of a negative stressor elicits a coping response, whereby people attempt to manage their emotional response to the situation (emotion focused coping) or deal directly with the situation itself (problem-focused coping) (Baker & Berenbaum, 2007; Lazarus & Folkman, 1984). Negative stressors are accompanied by a range of negative emotions, each with their own associated bodily responses, conscious feeling states, facial expressions, and action tendencies (Fredrickson, 2001; Schneiderman et al., 2005).

Although negative stress is characterized by unwanted negative emotions, they are not unidimensional phenomena. People experience both positive and negative

emotions during stressful situations. During the COVID-19 pandemic, researchers investigated the psychological experiences of frontline healthcare workers and found that they experienced positive and negative emotions simultaneously during their work (Sun et al., 2020). This pattern was also found in caregivers of people with chronic illnesses who exhibited a high degree of emotion flexibility - the ability to respond flexibly to emotional stimuli - between positive and negative emotions (Folkman et al., 1994; Kramer, 1997; Robertson et al., 2007; Waugh et al., 2011). Furthermore, in the wake of 9/11, people reported experiencing both positive and negative emotions like gratitude, love, anger, and sadness (Fredrickson et al., 2003). The presence of positive emotions acted as a buffer against depressive symptoms in the aftermath of September 11th.

Not only is it possible to experience positive emotions during negative stressors, but people can derive substantial benefit from it. A significant body of literature has connected higher levels of resilience - the ability to bounce back from adversity - to the use of positive emotions (Collins, 2008; Gloria & Steinhardt, 2016; Tugade & Fredrickson, 2004). Furthermore, there is consistent evidence linking positive emotions to an enhanced ability to cope with difficult and/or stressful situations (Folkman & Moskowitz, 2000). During the COVID-19 pandemic, people who experienced more positive emotions had higher levels of resilience and were shown to cope better with stressors related to the pandemic (Israelashvili, 2021). The deliberate promotion of positive emotions yields a substantial benefit for counteracting the deleterious effects of depression (Waugh & Koster, 2015) and provides a protective role in physical health (Stephoe et al., 2007; Xu & Roberts, 2010). In summary, positive emotions are useful and effective ways to deal with stress, improve health, and they even lead to greater

subjective wellbeing and overall life satisfaction by building people's resilience to negative events (Cohn et al., 2009).

Given that it is possible to experience positive emotions during negative stress and there are benefits to doing so, how can people use positive emotions to deal with stress? People can use positive emotions to regulate their emotional responses to negative stressors, a process termed emotion regulation. Emotion regulation refers to strategies that people use to modulate their emotional responses, which can involve attempts to increase, decrease, or maintain certain emotional states (Gross, 1998). As outlined in Waugh (2020), people can use positive emotions in three ways to regulate their emotional response to negative stressors: as mediators, moderators, and targets of emotion regulation.

People can use positive emotions as mediators of emotion regulation strategies (Waugh, 2020). When positive emotions are recruited as mediators in emotion regulation, the goal is to decrease negative emotions tied to the negative stressor. Examples of these types of strategies include positive distraction, recalling positive memories, and self-affirmation. When people use positive distraction to cope with negative stressors, they intentionally shift their focus from the stressor to positive alternatives, which allows them to temporarily counteract negative emotions elicited by the stressor (Waugh et al., 2020). Importantly, this is different from avoidance, because people who use positive distraction have every intention to deal with the stressor, but deliberately take a temporary alleviation from the negative emotions that the stressor elicits (Waugh et al., 2020). Similar to positive distraction, recalling positive memories is another way people can use positive emotions to decrease negative emotions. When people think about a happy time

in their life, they are recruiting the positive emotions tied to that event to counteract present negative emotions (Speer & Delgado, 2017). Notably, recalling positive memories can be thought of as a form of positive distraction that is internally oriented. Self-affirmation or positive self-talk, another internally oriented strategy, involves recalling self-relevant information that either bolsters or restores a person's sense of self-integrity (Steele, 1988). People can use this strategy to counteract negative views of the self that may arise from a stressor. Ultimately, what these strategies share is the use of positive emotions to decrease negative emotions that arise from negative stress.

In addition to functioning as mediators, people can use positive emotions as moderators. When people use positive emotions as moderators, they are using incidental positive emotions to help cope with a negative stressor. Incidental positive emotions are positive emotions that are generated irrespective of the stressor or any attempts to manage it (Waugh, 2020). Examples of incidental positive emotions include a surprise visit from an old friend or a sincere compliment from a coworker. These events in turn produce positive emotions that allow for more effective coping of the negative stressor (Fredrickson et al., 2001; Waugh, 2020). Positive anticipation is an example of a source of incidental positive emotions. Anticipating something positive has nothing to do with the negative stressor that you may be currently experiencing, but it helps people deal with it nonetheless, because of the positive emotions that the anticipation generates (Montfort et al. 2005).

The third way that people can use positive emotions in regulating their emotional response to negative events are as targets of emotion regulation (Waugh, 2020). When using positive emotions as the target of emotion regulation, the goal is to either maintain

or increase positive emotions and to feel better about the negative situation. This is different from using positive emotions as mediators because the goal is to increase positive emotions instead of decreasing negative emotions. One specific emotion regulation strategy that people can use to target positive emotions is positive reappraisal (Gross, 2015). People use positive reappraisal to reframe negative appraisals- which are negatively valenced subjective evaluations- to be more positive (Ellsworth, 2013; Gross, 2015; Smith & Ellsworth, 1985; Tamir, 2016). Negative stressors consist of several different types of appraisals, which collectively inform how people perceive the stressor and precipitate the emotions that they feel. People can use positive reappraisal to reframe a negative appraisal of their stressor and make it more positive, which has the benefit of both decreasing negative emotions and increasing positive emotions either during a stressful situation or even retroactively when thinking about a past stressor that is still causing distress (McRae et al., 2012; Nowlan et al., 2016).

In addition to positive reappraisal as a target strategy of positive emotions, people can generate positive emotions during stress by focusing on positive appraisals of the negative stressor. Just as people appraise aspects of their stressor as negative, so too can they appraise aspects as positive. Appraisals are evaluations of environmental stimuli with respect to the motivational relevance of the stimulus to a person's wellbeing (Folkman et al., 1986; Moors et al., 2013). The significance and valence of appraisals are context dependent and person dependent because making appraisals is a self-relevant process (Kalisch et al., 2015). It is a self-relevant process, because people's appraisals of the same negative stressors are bound to be different as people bring forth different experiences and biases when making appraisals (Ellsworth, 2013). The appraisal process

involves multiple stages including orientation to, evaluation of, and emotional response to an environmental stimulus (Gross, 1998). Stressors consist of many different stimuli or aspects, which people appraise as either positive or negative. The aggregation of positive and negative aspects of a situation allows people to form a holistic opinion of something as either positive or negative and informs the types of emotions that people experience (Smith & Ellsworth, 1985). As such, appraisals represent an important component of the emotion generation process, whereby an appraisal(s) precedes an emotional response (Scherer, 1984).

The appraisal process explains why people respond differently and experience different emotions to similar situations (Folkman et al., 1986; Kalisch et al., 2015; Moors et al., 2013). Just as people appraise aspects of their stressor as negative, so too can they appraise aspects as positive. Using COVID-19 as an example again, one person might generate an appraisal of quarantine as an extremely limiting and isolating time, whereas another person may generate an appraisal of quarantine as an opportunity for peace and solitude. Identifying and focusing on positive appraisals not only differentiates people, but also suggests that it may operate as a strategy to boost people's mood in response to negative stress (Kalisch et al., 2014; Schmidt et al., 2010).

To better understand the idea that people can generate both positive and negative appraisals to negative stressors, consider again the COVID-19 pandemic. The effects of coronavirus, beyond the far-reaching global scale, have seriously harmed people's everyday lives (Bu et al., 2020; Wood et al., 2021). Clearly COVID-19 has precipitated many distressing situations and has created an enormous amount of suffering, however, even though COVID is firmly considered a negative stressor, people have had different

experiences during the pandemic (Sun et al., 2020; Wang et al., 2020). Although people have certainly experienced a greater number of negative stressful events, there were aspects of the pandemic that some people appraised as positive (Israelashvili, 2021). While the virus brought on a persistent fear of contracting the illness for many, for some people the pandemic offered them an opportunity to bridge interpersonal divides within their families. Ultimately, the idea that negative stressors, like COVID, consist of both positive and negative aspects supports and explains why people can experience positive and negative emotions simultaneously during negative stress.

Identifying Positive Appraisals of Negative Stressors

My previous work has supported this positive appraisal focused approach to dealing with negative stressors. I first established that people can in fact identify both positive and negative appraisals of a chosen negative stressor (Schieber & Waugh, unpublished manuscript). In this previous study we had assigned participants to list either four, five, or six aspects of their chosen stressful situation. We found that having to list more aspects forced participants to search for additional elements of their stressor, which tended to be positive.

More recently we conducted a study examining people's preference between positive reappraisal and having to focus on positive aspects of their stressor. In this study we refrained from prompting participants with positive and negative terminology and simply asked them to list aspects of their stressor and choose to either reframe or focus on one of their aspects. We found that for people who focused on the positive appraisals of their stressor, their increase in positive emotion was explained by the identification of positive aspects rather than any additional enhancement or elaboration. This suggests that

people can benefit from deliberately thinking about the appraisals that make up their negative stressor. Not only will they better understand how they feel about the negative situation, but they will probably realize that there are some positive aspects to it as well.

Predicting People's Tendency to Identify Positive Appraisals of Negative Stress

This leads us to the main question of the present paper, which is why are some people better at identifying positive aspects of negative stressors than others? To better understand the difference that exists in how people think about aspects of their stressor, consider the following scenario. It's summer of 2020 and the onset of COVID-19 has caused mass shutdowns and quarantines. Two individuals, both working the same type of job, accustomed to commuting every morning, are now working virtually from home. Both people are experiencing similar emotions and are largely dealing with the same stressor. In this example, let's say both people are now able to spend more time with their family and they enjoy this time, which was a result of the COVID quarantine. Even though both people enjoy spending time with their family, one person made an association between their negative stressor (COVID) and their positive aspect (family time), as opposed to the other person, who did not make an association between their negative stressor and their positive aspect. Later, when thinking about the pandemic, the person who made the association is then able to connect their stressor with something positive, whereas the other individual remembers them as unrelated. As such, when asked to describe components of the negative stressor, the person who made the association would likely list negative aspects of it, but also positive ones as well. In comparison, the individual who did not make an association would have a harder time listing positive aspects of their stressor. In this example, the tendency to identify positive aspects of

COVID was tied to the association that was made between the stressor and a positive event that resulted from the stressor. I propose that this association was facilitated by beliefs held by the individual about the co-occurrence of positive and negative emotions.

The idea that beliefs reinforce the degree to which that people make associations between things is supported by research in fields investigating confirmation bias, illusory correlations, and superstition. In the realm of decision making, the cognitive beliefs of individuals who have made decisions influences their future automatic associations so that those associations fall in line with their original decision (Galdi et al., 2008). This tendency represents a strong desire that people have to hang onto cherished beliefs. People continually seek opportunities to reinforce their beliefs through hypothesis preservation, commonly referred to as confirmation bias (Klayman, 1995; Nickerson, 1998).

The phenomenon of illusory correlations is another example of cognitive beliefs influencing the relationship between two variables (Hamilton & Sherman, 1989). Illusory correlations are cognitive biases that are characterized by a misperception of the degree to which two variables are related (Chapman & Chapman, 1967; Hamilton & Sherman, 1989). This misperception can result in the support of an inverse or direct relationship between variables and an overestimation or an underestimation of an association between them (Hamilton & Sherman, 1989; Sanbonmatsu et al., 1987). The precipitation of illusory correlations, among other sources, is linked to expectancies based on pre-existing beliefs (Hamilton & Rose, 1980). The power of these pre-existing beliefs is evident in superstitions, which represent a well-known type of illusory correlation. For the most part people recognize the idea of superstitions as illogical and based on unfounded beliefs,

and yet it is common for people to maintain behaviors and patterns that have superstitious qualities (Risen, 2016; Torgler, 2007).

In the context of the present study, I predict that people who believe that you can experience positive emotions in negative situations would associate positive aspects with the situation, because of their pre-existing belief about positive emotions existing in negative situations. This will in turn lead them to identify a greater number of positive aspects of their stressor when they are asked to identify them. I therefore propose that if people believe that you can experience positive emotions during negative situations, then they will be more likely to associate positive aspects of that negative situation with the situation itself. This will result in a greater number of positive aspects of the negative situation that they will be able to identify.

Furthermore, I am interested in whether the belief that negative emotions can occur in positive situations and the belief that positive emotions can co-occur with negative emotions are also related to people's tendency to identify positive aspects of negative situations. Although, I am not as confident about the relationship between these latter two beliefs as they are less directly related to the task of identifying positive aspects of negative situations, which is similar to the idea of positive emotions occurring in negative situations. Positive appraisals precipitate positive emotions, therefore it would reason that if you believe positive emotions can occur in negative situations, then you would be able to identify positive aspects about negative situations.

Related to the belief that positive and negative emotions can co-occur is the idea of dialectical thinking. Dialectical thinking is characterized by a tolerance for holding contradictory ideas in mind (Hamamura et al., 2008). People differ in the degree to which

they believe in dialectical thinking and there exists cultural differences with regards to the prevalence of dialectical thinking, which is more common in eastern as opposed to western cultures (Hamamura et al., 2008). Dichotomous thinking represents the antithesis to dialectical thinking, whereby an individual sees reality in terms of categorical polarities (Byrne et al., 2008). This studies' dialectical beliefs scales are based on the underlying idea of dialectical thinking in the context of emotional experience (positive and negative emotions). As such, a person high in dialectical thinking would probably agree that positive and negative emotions can co-occur. This contrasts with a person high in dichotomous thinking, who would not agree that positive and negative emotions can co-occur.

Understanding the relationship between positive and negative emotions

The belief that positive and negative emotions can co-occur is similar to the idea of mixed emotions. Recall from earlier in this paper that people can simultaneously experience positive and negative emotions during stress. Mixed emotion refers to people experiencing oppositely valenced emotions simultaneously. Importantly, the term mixed emotion does not imply that positive and negative emotions combine to form 'hybrid' versions of themselves. Emotions are distinct categories (joy, sadness, anger) of multicomponent response tendencies (Fredrickson, 2001; Scherer & Moors, 2019).

As such, in the present study I am interested in the degree that people believe that mixed emotions can co-occur as predicting their tendency to identify positive aspects of negative stressors. Where mixed emotions fall short is its inability to assess whether people have asymmetrical views about positive and negative emotions. An asymmetrical

belief about when and in what situations one can experience positive and negative emotions is different than the belief that emotions can co-occur.

Asymmetries exist with emotional experience both in terms of experiencing emotions and the frequency of positive emotions during stress. Even though people can maintain positive and negative emotions simultaneously, people are generally better at maintaining positive emotional states than negative ones (Waugh et al., 2019).

Furthermore, in times of stress an inverse relationship exists with emotional experience, whereby as people experience more negative emotions, they feel fewer positive emotions (Diener et al., 1984; Zautra et al., 2007). For this reason, it is important that separate beliefs about positive emotions occurring in negative situations and negative emotions occurring in positive situations be included in this study.

Alternative Predictors of People's Tendency to Identify Positive Appraisals of Negative Stress

In addition to people's beliefs about positive and negative emotions co-occurring, there are other likely predictors of people's tendency to identify positive aspects of negative stressors. These possible predictors that will be included in this study include people's level of positivity, dispositional optimism, and extraversion.

If a person generally experiences more positive emotions that entails that they are likely making more positive appraisals than someone who experiences fewer positive emotions (Schmidt et al., 2010). This difference in positive appraisal frequency, while existing in normal everyday situations, may extend to stressful and or negative situations. Furthermore, people who prioritize feeling positive emotions and general positivity are

likely self-promoting a greater frequency of positive appraisals to situations and or/aspects of situations (Catalino et al. 2014; Watson & Naragon, 2009).

Dispositional optimism is the degree that a person holds positive expectancies for the future (Carver et al., 2010). People with higher levels of dispositional optimism tend to maintain higher levels of subjective well-being during stress and or adversity and tend to engage in more adaptive forms of emotion regulation (Carver et al., 2010; Carver & Scheier, 2014). Importantly, general positivity and optimism are certainly highly related, however, it's possible that people differ in terms of their outlook on future outcomes. Tending to be positive in the moment may not necessarily predispose someone to expect future positive outcomes and emotions. As such, optimism is a predictor of positive aspects of stress, because of its relationship with general positivity and because optimistic people may find more positive aspects of stress that are temporally anchored in the future (Vlasenko, 2021). In identifying positive aspects of stress, optimistic people may list aspects that have to do with future outcomes of the stressful event, which may include unforeseen benefits or opportunities for growth.

Similar to general positivity and optimism, people's level of extraversion is another possible predictor of their tendency to identify positive aspects of negative stressors. There's considerable converging evidence linking trait extraversion to the experience of positive emotions and positive affect (McCrae & Costa, 1986; Ng & Diener, 2009; Verduyn & Brans, 2014; Watson & Clark, 1997). Extraversion is characterized by high levels of positive emotion, ambition, energy, assertiveness, and excitement seeking (Herringer, 1998; Watson & Clark, 1997). It's likely that an individual high in extraversion will identify more positive aspects of negative stressors

because 1) they experience more positive emotions in general or 2) they are buffered against the negative effects of stressors and are subsequently more likely to appraise aspects as positive (Kobylińska et al., 2020). In the first case, the frequency of experiencing positive emotions is tied to a greater number of positive appraisals (like in general positivity). Therefore, I expect that people who generate a high number of positive appraisals in normal situations also generate a high number of positive appraisals in negative situations, ultimately leading to a greater number of positive aspects to identify.

Present studies

There were two aims of the overall study. First, to develop and validate a scale assessing people's beliefs about positive and negative emotions co-occurring. Second, to use this scale and other measures of different personality characteristics and dispositions to test possible predictors of people's tendency to identify positive aspects of a COVID related situation.

Study 1 served to establish and validate the Dialectical Emotions Scale (DES), which assesses people's beliefs that positive and negative emotions can co-occur. The scale specifically measures three separate beliefs: the belief that positive and negative emotions can co-occur (Pe+NE), the belief that positive emotions can occur in negative/stressful situations (PeNS) and the belief that negative emotions can occur in positive situations (NePS).

Study 2 tested the factor structure created in study 1 and tested several predictors of people's tendency to identify positive aspects of negative situations. The primary hypothesis for study 2 was: the belief that positive emotions can occur in negative

situations will significantly predict the number of positive aspects that people identify. In addition to the primary research hypothesis of this paper, I had the following confirmatory hypothesis based on findings from a previous unpublished study (Schieber & Waugh, unpublished manuscript). Previously, it was determined that people benefited from identifying positive aspects of their negative stressor, irrespective of any additional enhancement or elaboration. As such, I hoped to replicate this finding in the current study. I hypothesized that the number of positive aspects people list, controlling for how positive they feel prior to describing their COVID related situation and how positive they feel after describing their COVID related situation, predicts how they feel after listing aspects of their COVID situation.

Lastly, as discussed earlier in the introduction, there are other likely explanations for why people can identify positive aspects of stress, beyond people's beliefs about the co-occurrence of positive and negative emotions. These additional candidates include positivity, optimism, and extraversion. I hypothesized that positivity, optimism, and extraversion would each predict the number of positive aspects that people identified of their COVID related situation.

STUDY 1: VALIDATING THE DIALECTICAL EMOTIONS SCALE

The aim of study 1 was to construct and validate the Dialectical Emotions Scale to measure three beliefs about positive and negative emotions: 1) positive and negative emotions can co-occur (Pe+Ne) 2) positive emotions can occur in negative situations (PeNS) 3) negative emotions occur in positive situations (NePS). In order to test the validity of the DES, scores of each DES subscale were compared to the contradiction subscale of the Dialectical Self Scale and the dichotomous beliefs subscale of the Dichotomous Thinking Inventory. Positive correlations between the DES subscales and contradiction (DSS) and negative correlations between the DES subscales and dichotomous beliefs (DES) would support the validity of the DES as a scale measuring peoples' beliefs about positive and negative emotions co-occurring.

Method

Participants

Two-hundred participants were recruited from the Prolific.com subject pool to participate in a study about mixed emotions. To be eligible, participants had to be between the ages of 18 and 55 years ($M = 31.05$, $SD = 9.58$), speak fluent English, and reside in the United States. In order to achieve adequate statistical power, enough participants were recruited to ensure a participant to item ratio above 10:1 (Nunnally, 1978) and fell in the fair range (Comfey & Lee, 1992). Five participants were excluded from analyses for completing the survey less than 1/3 the median completion time. Another eight participants were excluded for failing to adjust responses to reverse scored items. The final sample size used in analyses was 187 participants. After scale refinement and exploratory factor analysis, the scale consisted of 11 items leading to an item ratio of

17:1. Participants were compensated \$2.50 to their Prolific.com accounts for completing the survey.

Dialectical Emotions Scale Creation

Items were created in collaboration with members of the Emotion Lab at Wake Forest University. Lab members were asked to think of items for a scale measuring people's belief that positive emotions and negative emotions are not opposite but can co-occur. They were told to create items using simple, generic language, to avoid double barreled questions and to frame items to fit three separate belief criteria (co-occurring positive and negative emotions, positive emotions in negative situations, and negative emotions in positive situations).

A round of brainstorming with an emphasis on simplicity and brevity yielded an initial set of items. From there the scale was refined to eliminate redundancy and focus on different facets of each sub-scales' measurement goal: the belief that positive and negative emotions can co-occur, the belief that positive emotions can occur in negative/stressful situations and the belief that negative emotions can occur in positive situations. Items were written in a statement format, whereby participants rated their level of agreement on a scale of 1 (*strongly disagree*) to 7 (*strongly agree*).

In its pre-EFA form, the scale consisted of 18 items broken into three subscales. These subscales include co-occurrence of positive and negative emotions (Pe+Ne), experiencing positive emotions in negative/stressful situations (PeNS), and experiencing negative emotions in positive situations (NePS).

Feelings About COVID

The purpose of this measure was to yield an effect size for a power analysis to determine an appropriate sample size for study 2. Participants were asked to describe a COVID related situation that they were currently experiencing: “Think of one recent COVID related situation that you are currently experiencing. Please provide one sentence describing your COVID related situation in some level of detail.” They were then asked to rate this situation in terms how positive and negative they found it on a scale of 0 (*not at all*) to 10 (*very*).

Item Correlates

Several correlates were included, because of their relevance to the belief that positive and negative emotions can co-occur. Correlates included to test the validity of the scale were the Dialectical Self Scale (DSS) and the Dichotomous Thinking Inventory (DTI). It was expected that the contradiction subscale will be positively correlated with the subscales of the DES. Additionally, it was expected that the dichotomous beliefs scale of the DTI would be negatively correlated with the DES scales.

Dialectical Self Scale

Participants completed the Dialectical Self Scale (DSS). The DSS is a three-factor measure of dialectical thinking in the domain of self-perception. The three subscales of the DSS are contradiction $\alpha = .738$ (“When I hear two sides of an argument, I often agree with both.”), cognitive change $\alpha = .742$ (“I often find that beliefs and attitudes will change under different contexts.”), and behavioral change $\alpha = .630$, (I often change the way I am, depending on who I am with.”). Participants rated how much they agree with each item on a scale of 1 (*Strongly disagree*) to 7 (*Strongly agree*) (Spencer-Rodgers et al., 2015).

Dichotomous Thinking Inventory

The Dichotomous Thinking Inventory is a 15-item scale assessing the degree to which people view events in a dichotomous or binary fashion. The scale consists of three subscales: preference for dichotomy ($\alpha = .727$), dichotomous belief ($\alpha = .865$), and profit-and-loss thinking ($\alpha = .713$). Each subscale consists of five items. Example items in order of the presented subscales include: “All things work out better when likes and dislikes are clear.”; “There are only ‘winners’ and ‘losers’ in this world.”; “I want to clearly distinguish what is safe and what is dangerous.” Participants rate their agreement to each item on a scale of 1 (*strongly disagree*) to 6 (*strongly agree*) (Oshio, 2009).

Procedure

Participants completed the study through their Prolific accounts, which linked them to a Qualtrics survey. After participants electronically signed the consent form, they completed a short demographic measure about their age, race, ethnicity, gender, education level, and family income level. They then responded to the Dialectical Emotions Scale along with the Dialectical Self Scale and the Dichotomous Thinking Inventory. After responding to these scales, participants responded to how they feel about COVID. After completing the measure, participants were debriefed and thanked for participation. They were then redirected from the Qualtrics survey to the Prolific website and compensated for completing the study. Participants were compensated \$2.50 for the 15 minutes it was estimated to complete the survey.

Results

Exploratory Factor Analysis

Three criteria were used to determine the number of factors – parallel analysis, very simple structure analysis (VSS; Revelle & Rocklin, 1979), and Velicer’s minimum average partial (MAP; Velicer, 1976). First, a factor analysis was conducted on the 18 belief items in order to establish the factor structure of the scale and to determine items that loaded best onto this factor structure (Table 1). Parallel analysis suggested a 3 factor and VSS analysis suggested a 2-factor structure. Furthermore, the Velicer MAP achieved a minimum of .03 with 2 factors. BIC achieved a minimum of -325.59 with 3 factors (χ^2 (102) = 208, resid^2 = 44, fit = .51, RMSEA = .074). Although there was equal support for two and three factors, it was decided to maintain the three-factor structure for the second pass. Three factors were chosen because the scale conceptually consisted of three different beliefs.

Three factors were extracted using maximum likelihood and promax rotation. Items with loading values > .6 on one factor were selected. The remaining 11 items were submitted to another factor analysis (promax, maximum likelihood) to ensure that those items reflected the established 3 factor structure.

The parallel analysis and VSS analysis on the new 11 item scale both suggested 3 factors. The Velicer MAP achieved a minimum of .06 with 3 factors, and the BIC achieved a minimum of -51.52 with 3 factors (χ^2 (25) = 79, resid^2 = 20.4, fit = .60, RMSEA = .11), again suggesting a 3-factor solution. Each of the 11 items selected from the initial pass loaded onto the same subscale from the initial factor analysis and their original intended belief subscale (See Table 1). The subscales had the following interfactor correlations and reliabilities: NePS (α = .936) to PeNS (α = .867) r = .61; NePS to Pe+Ne (α = .935) r = .78; Pe+Ne and PeNS r = .55 (See Table 2).

Table 1 Factor Loadings from Exploratory Factor Analysis

Item	<i>M</i>	<i>Skew</i>	Initial Factor Loadings			Final Factor Loadings		
			Pe + Ne	PeNS	NePS	Pe + Ne	PeNS	NePS
Co-occurrence of Positive+Negative Emotion Subscale (Pe+Ne)								
People can have positive and negative feelings at the same time.	5.96	-1.57	1.08	-0.17	-0.06	1.01	-0.06	-0.07
One situation can cause a person to have both positive and negative emotions.	5.96	-1.67	0.72	0.00	0.12	0.68	0.06	0.12
A person can have both positive and negative emotions in a situation.	6.04	-1.85	0.85	-0.01	0.11	0.81	0.07	0.10
People can feel both positive and negative emotions about a situation.	6.01	-1.63	0.92	-0.04	-0.01	0.86	0.04	0.00
Positive emotions in negative situations subscale (PeNS)								
People can feel positive even when a situation is not going well.	6.03	-1.27	-0.01	0.78	0.02	0.03	0.74	0.05
People can feel happy in difficult situations.	5.99	-1.45	-0.07	1.07	-0.18	-0.02	0.97	-0.09
Even in the most stressful situations, a person can feel some positive emotions.	5.89	-0.58	0.06	0.87	-0.15	0.09	0.82	-0.08
It is possible to have positive feelings in a stressful situation.	5.99	-1.81	-0.12	0.62	0.23	-0.07	0.59	0.24
Negative emotions in positive situations subscale (NePS)								
People can feel negatively in positive situations.	6.09	-1.84	-0.03	-0.02	1.02	0.00	0.04	0.95
Even when a situation is going well, a person can experience negative emotions.	6.12	-1.68	0.31	-0.18	0.73	0.30	-0.10	0.68
People can feel sad in pleasant situations.	6.07	-1.76	0.07	0.03	0.84	0.09	0.09	0.79
Excluded Items								
Situations have both positive and negative parts.	5.87	-1.21	0.42	0.16	0.06			
Situations can be both positive and negative.	5.9	-1.75	0.11	0.33	0.31			
It's hard to feel positive and negative emotions at the same time. (R)	5.05	-0.8	0.33	0.14	-0.06			
It is possible to find positive aspects of a negative situation while you're in the middle of it.	5.96	-1.87	0.05	0.48	0.27			
It is possible to have positive feelings in a stressful situation.	5.99	-1.81	-0.12	0.62	0.23			
It is rare to feel positive emotions during stressful situations. (R)	4.24	-0.18	0.18	0.02	0.09			
It is unlikely for people to have negative feelings in a positive situation. (R)	4.62	-0.48	0.05	0.12	0.09			
It is possible to find negative aspects of a positive situation while you're in the middle of it.	5.86	-1.6	0.14	0.22	0.43			

Measure Validity

Refer to Table 2 for a summary of correlations between subscales of the Dialectical Emotions Scale, the Dichotomous Thinking Inventory, and the Dialectical Self Scale. In confirmation of the validity of the Dialectical Emotions Scale, each subscale of the DES (NePS ($r = .36, p < .01$), PeNS ($r = .18, p < .05$), and Pe+Ne ($r = .37, p < .01$)) had significant positive correlations with the contradiction subscale of the

DSS (See Table 2). Furthermore, each subscale of the DES, NePS ($r = -.43, p < .01$), PeNS ($r = -.22, p < .01$), and Pe+Ne ($r = -.44, p < .01$), was negatively correlated with the dichotomous belief's subscale of the DTI (See Table 2).

Table 2 Correlations Between Study 1 Variables

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8
NePS (1)	6.09	0.81	-							
PeNS (2)	5.98	0.77	0.64**	-						
Pe+Ne (3)	5.99	0.86	0.78**	0.56**	-					
PFD (4)	4.20	0.72	-0.06	0.06	-0.09	-				
DB (5)	2.35	0.99	-0.43**	-0.22**	-0.44**	0.39**	-			
PLT (6)	4.08	0.81	-0.17*	-0.01	-0.13	0.71**	0.47**	-		
C (7)	4.00	0.70	0.36**	0.18*	0.37**	-0.11	-0.28**	-0.16*	-	
CC (8)	3.56	0.75	0.05	-0.05	0.09	-0.11	-0.08	-0.12	0.49**	-
BC (9)	3.45	0.76	0.02	-0.10	0.01	-0.09	0.04	0.02	0.4	0.62**

Note. * $p < .05$, ** $p < .01$. Table abbreviations: NePS (belief that negative emotions can occur in positive situations), PeNS (belief that positive emotions can occur in negative situations), Pe+Ne (belief that positive and negative emotions can co-occur), PFD (preference for dichotomy), DB (dialectical beliefs), PLT (profit and loss thinking), C (contradiction), CC (cognitive change) and BC (behavioral change).

Study 2 Effect Size Determination

A Pearson correlation ($r = .14, p = .06$) between participants' positive rating of their COVID related situation and the 'positive emotions in negative situations' subscale of the Dialectical Emotions was used to establish an effect size for study 2.

Discussion

The first pass of the exploratory factor analysis yielded results supporting the original 3 factor structure. Removing the 7 items that did not sufficiently load onto this 3-factor structure further improved item loading weights and the overall reliability of the scale. Furthermore, there was a positive correlation, albeit small, between the PeNS subscale and participant's positive rating of their COVID situation. It's possible that people who believe that positive emotions can occur in negative situations think more

favorably about negative situations. In terms of study 2, this could result in people listing more positive aspects of a COVID situation.

The positive correlation between the DES subscales and the contradiction subscale of the Dialectical Self Scale supported the validity of the DES, which seeks to assess the degree that participants believe that positive and negative emotions can co-occur. The contradiction subscale of the DSS measures an aspect of dialectical thinking, which is a tendency to accept and feel comfortable with opposite or contradictory ideas. The three separate beliefs about positive and negative emotions co-occurring are related to the idea of contradiction, because positive and negative emotions represent oppositely valenced emotions. It reasons that people who do not feel comfortable with contradiction may look at a statement that seeks to put positive and negative emotions together or say that they are occurring simultaneously and disagree. However, if another person feels more comfortable with contradiction, then they may be more inclined to agree that positive and negative emotions can occur simultaneously.

In a similar vein, the negative correlation between the DES subscales and the dichotomous belief's subscale of the DTI further supported the validity of the DES. The Dichotomous belief's subscale measures people's tendency to think in terms of binary oppositions (ex. good & bad, black & white). Therefore, a belief in dichotomy is the opposite of a belief in contradiction, which was supported by a negative correlation. This suggests that the DES scale succeeded in assessing a dialectical based belief (positive emotions/situations can co-occur with negative emotions/situations).

STUDY 2: PREDICTING POSITIVE ASPECTS OF NEGATIVE SITUATIONS

The primary aim of study 2 was to test several predictors of the number of positive aspects that participants identify of a COVID related situation. The following hypotheses were tested in study 2: H1) The belief that positive emotions can occur in negative situations will predict the number of positive aspects participants identify. H2) Positivity, optimism, and extraversion will predict the number of positive aspects people identify. H3) The number of positive aspects people list, controlling for how positive they feel prior to describing their COVID related situation and how positive they feel after describing their COVID related situation, predicts how positive people feel after listing aspects of their COVID situation.

In addition to the hypothesized predictors of positive aspects, several additional measures were included to test possible associations with the number of positive aspects that people identify. These additional measures were included to better understand the type of individual who can identify positive aspects of negative situations. A measure of resilience was included to see whether the number of positive aspects people identify was associated with their ability to cope with adversity. Although it seems likely that people who list more positive aspects of negative situations are better at dealing with stress, it would be useful to confirm this association.

Positive reappraisal ability was also included to see whether the propensity to reframe negative aspects of stressors to be more positive was associated with the number of positive aspects people identified. It's likely that some of the positive aspects that people listed were due to positive reappraisal. By including positive reappraisal, I was interested in confirming that an association between positive aspects and positive

reappraisal exists. Of note, positive reappraisal is not expected to be a strong predictor of positive aspects, because prior evidence has found that people list both positive and negative aspects. Certainly, positive reappraisal accounts for some of the positive aspects that people listed, but it can be reasonably assured that most positive aspects listed are bona fide positive aspects, rather than negative reframings.

A measure of how much people value happiness was included to see if the degree to which people value happiness was associated with the number of positive aspects that people listed. The reason for including this measure is closely related to the justification for positivity as a predictor but is more focused on people's prioritization of happiness rather than their dispositional qualities. If people value happiness more, then it's possible that in their strive to feel happy they would find more positive aspects of negative situations. However, it's not clear that this valuation would translate to a tendency to identify positive aspects or rather a general avoidance of negative situations. Furthermore, the degree that people value happiness is not as fundamental of a predictor as positivity, hence why it is not included as a primary predictor.

Lastly, measures of how often people experience negative and mixed emotions were included to see whether they are associated with number of positive aspects. Thus far, measures have generally oriented towards positivity, therefore I thought it was important to assess people's level of experiencing non-positive emotions. Additionally, the mixed emotions subscale is a comparable measure to the Pe+Ne subscale, therefore a similar association pattern should be seen between mixed emotion frequency and positive aspects as there is between Pe+Ne and positive aspects.

Method

Participants

Sample size was determined using a power analysis to achieve .8 power with an effect size ($r = .14$) derived from study 1. On March 26th 2022, four hundred and sixty-five participants (236 Males) were recruited from the Prolific.com subject pool to participate in a study on identifying aspects of situations. To be eligible, participants had to be between the ages of 18 and 55 years old ($M = 33.09$, $SD = 9.43$), speak fluent English, and reside in the United States. Two participants were excluded for failing to give consent, seventeen participants were excluded from data analyses for failing to follow instructions (did not list aspects) and two were excluded for taking less than 1/3 the median amount of time it took to complete the survey. The final sample size used in analyses was 444 participants. Participants were compensated \$3.00 to their Prolific.com accounts for completing the survey.

Materials

Situation Description

Participants were asked to describe a recent COVID-related situation that they were currently experiencing: “Think of one recent COVID-related situation that you are currently experiencing. In the next section please describe this situation fully.”

Aspect Listing

Participants were asked to describe six aspects of their chosen COVID related situation. The choice to list six aspects was based on a previous unpublished study, which showed that participants listed a greater number of positive aspects when asked to list six aspects, compared to five or four (Schieber & Waugh, unpublished manuscript).

Dialectical Emotions Scale

Participants completed the Dialectical Emotions Scale derived from Study 1. The scale consists of three belief subscales. These subscales include the belief that positive and negative emotions can co-occur (Pe+Ne) ($\alpha = .943$), the belief that you can experience positive emotions in negative/stressful situations (PeNS) ($\alpha = .893$), and the belief that you can experience negative emotions in positive situations (NePS) ($\alpha = .925$). Participants rated how much they agree to each item on a scale of 1 (*strongly disagree*) to 7 (*strongly agree*). Example items of the subscales include: “People can feel both positive and negative emotions about a situation” (Pe+Ne), “People can feel positive even when a situation is not going well” (PeNS), “Even when a situation is going well, a person can experience negative emotions” (NePS) (Refer to Appendix B for the full scale).

Trait Mixed Emotions Scale

Participants completed the Trait Mixed Emotions Scale (TMES). The TMES is four-factor measure of trait mixed emotion, or the frequency that one experiences simultaneous positive and negative emotions. The four scales include mixed emotions ($\alpha = .902$) (“both happy and sad”), positivity ($\alpha = .825$) (“happy”), negativity ($\alpha = .805$) (“sad”), and neutrality ($\alpha = .057$) (“intense”). Positivity scores were not used, due to measurement redundancy with the positivity scale and neutrality scores were not used due to very low reliability. Participants rated how often they feel each of the 25 items on a scale of 1 (*never*) to 5 (*very frequently*). Scores were calculated by summing responses to items within each subscale (Barford and Smillie, 2016; Hui et al., 2009).

Positive Reappraisal

Participants responded to two items on the Coping Orientation to Problems Experience Inventory (COPE). Specifically, items 12 and 17 which consist of the positive reframing (positive reappraisal) facet of the Problem-Focused Coping subscale ($\alpha = .854$). Participants were asked to respond to items in response to a hardship in their life. The two positive reframing items include “I’ve been trying to see it in a different light, to make it seem more positive” and “I’ve been looking for something good in what is happening.” Participants rated how much they’ve been doing these things on a scale of 1 (*I haven’t been doing this at all*) to 4 (*I’ve been doing this a lot*) (Carver, 1997).

Optimism

Participants completed the revised version of the Life Orientation Scale (LOT-R) (Scheier & Carver, 1985; Scheier et al., 1994). The LOT-R scale measures dispositional optimism ($\alpha = .688$). The following is an example item from the scale: “In uncertain times, I usually expect the best.” Participants rated how much they agree with each item on a scale of 1 (*I disagree a lot*) to 4 (*I agree a lot*) (Scheier et al., 1994).

Extraversion

Participants completed the extraversion subscale of the Big Five Inventory-2 ($\alpha = .887$). The subscale includes 12 items to which participants rated their agreement using a 5- point scale ranging from 1 (*disagree strongly*) to 5 (*agree strongly*). An example item includes “Is outgoing, sociable” (Soto & John, 2017).

Positivity Scale¹

The positivity scale consists of eight items, which measure general positivity or the tendency to view life and experiences with a positive outlook ($\alpha = .917$). The scale

¹ Analyses using ‘positivity’ were used with this scale. The TMES positivity measure was not used due to measure redundancy. The same pattern of results was found with either measure. ($r = .716, p < .001$)

consists of eight items to which participants rate how much they agree with each item on a scale of 1 (*strongly disagree*) to 5 (*strongly agree*). Higher scores on the scale indicate a greater disposition to view life and experiences in a positive manner (Caprara et al., 2012).

Ego Resiliency Scale

Participants responded to the 14 item Ego Resiliency Scale (ER-89), which measures peoples' ability to bounce back or recover from stress ($\alpha = .829$). Participants rated their agreement to items on a scale of 1 (*does not apply at all*) to 4 (*applies very strong*). An example item includes "I quickly get over and recover from being startled." Higher scores indicate higher ego resiliency (Block and Kremen, 1996).

Valuing Happiness

The Valuing Happiness scale assessed participant's valuation of happiness ($\alpha = .742$). The scale consists of seven items. Participants rated how much they agree to each item on a scale of 1 (*strongly disagree*) to 7 (*strongly agree*). An example item includes, "How happy I am at any given moment says a lot about how worthwhile my life is" (Mauss et al., 2011).

Procedure

Participants completed the study through their Prolific.com accounts, which linked them to a Qualtrics survey. After participants electronically signed the consent form, they completed a short demographic measure about their age, race, ethnicity, gender, education level, and family income level. Participants first rated how positive and negative they felt on a scale of 0 (*not at all*) to 10 (*very*). They then described a COVID-19 related situation that they were currently experiencing. After describing their COVID-

19 related situation, participants again rated how positive and negative they felt on a scale of 0 (*not at all*) to 10 (*very*). After giving their post stressor emotion, participants listed six aspects of their situation. After listing their aspects, they rated each aspect in terms of how positive and negative they were.² After completing these ratings, participants rated their how positive and negative they felt for a third and final time on a scale of 0 (*not at all*) to 10 (*very*). After giving their post rating emotion, participants responded to the Dialectical Emotions Scale along with the Positive Reappraisal scale, Optimism, Trait Mixed Emotions Scale, Extraversion, Positivity Scale, Valuing Happiness scale, and the Ego Resiliency Scale. After responding to the scales participants were debriefed and thanked for participation. They were then redirected from the Qualtrics survey to the Prolific.com website and compensated for completing the study. Participants were compensated \$3.00 for the 20 minutes it was estimated to complete the survey.

Results

Confirmatory Factor Analysis

Parallel analysis suggested 3 factors and VSS analysis suggested 2 factors. The Velicer MAP achieved a minimum of .05 with 3 factors, and the BIC achieved a minimum of -73.74 with 3 factors ($\chi^2(25) = 79$, $\text{resid}^2 = 24$, $\text{fit} = 0.56$, $\text{RMSEA} = 0.069$), again suggesting a 3-factor solution. The interfactor correlation between the subscales were as follows: NePS and PeNS was $r = .630$ ($p < .01$), NePS and Pe+Ne was $r = .768$ ($p < .01$); Pe+Ne and PeNS $r = .697$ ($p < .01$). For a summary of item loadings from study 2 see Table 3.

² Aspects were categorized as positive if participants gave them a six or greater rating on the positive scale and a less than 6 rating on the negative scale. Aspects were categorized as negative if participants gave them a six or greater rating on the negative scale and a less than a six rating on the positive scale. Aspects with a rating of six or greater on both positive and negative scales were categorized as mixed.

Table 3 Factor Loadings from Exploratory Factor Analysis

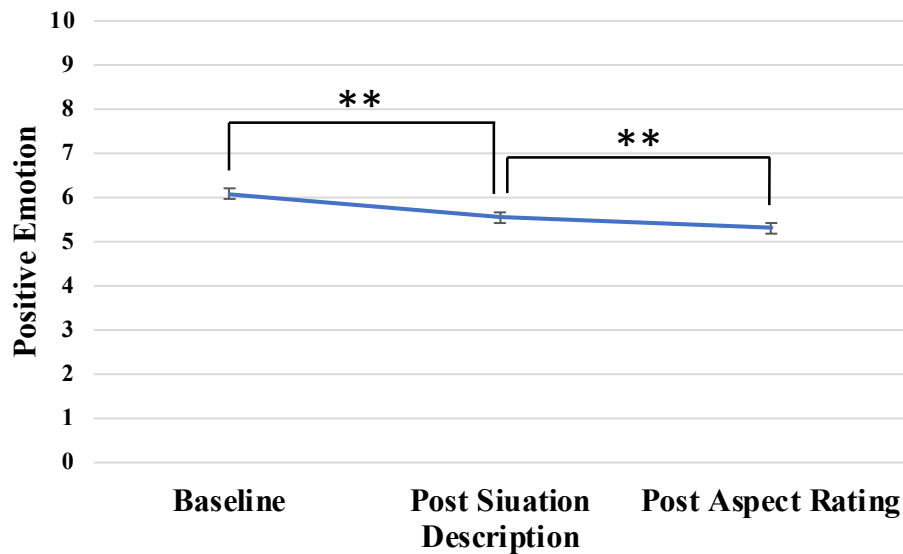
Item	<i>M</i>	Skew	Factor Loadings		
			Pe+Ne	PeNS	NePS
Co-occurrence of Positive+Negative Emotion Subscale (Pe+Ne)					
People can have positive and negative feelings at the same time.	6.09	-1.37	0.91	0.02	-0.02
One situation can cause a person to have both positive and negative emotions.	6.11	-1.29	0.75	0.15	0.04
A person can have both positive and negative emotions in a situation.	6.09	-1.3	0.98	-0.02	-0.02
People can feel both positive and negative emotions about a situation.	6.18	-1.5	0.68	-0.02	0.24
Positive emotions in negative situations subscale (PeNS)					
People can feel positive even when a situation is not going well.	5.87	-1.2	0.11	0.61	0.10
People can feel happy in difficult situations.	5.83	-1.03	-0.07	0.92	-0.05
Even in the most stressful situations, a person can feel some positive emotions.	5.84	-1.05	-0.01	0.86	0.01
It is possible to have positive feelings in a stressful situation.	5.84	-1.14	0.09	0.76	0.02
Negative emotions in positive situations subscale (NePS)					
People can feel negatively in positive situations.	5.92	-1.62	-0.04	-0.03	0.97
Even when a situation is going well, a person can experience negative emotions.	5.91	-1.63	0.11	0.04	0.74
People can feel sad in pleasant situations.	5.9	-1.55	0.04	0.04	0.87

Change In Positive and Negative Emotion

Participant's positive emotion was assessed at three different points during the study. A repeated measures ANOVA determined that mean positive emotion was significantly different between baseline ($M = 6.09$, $SD = 2.32$), post situation description ($M = 5.56$, $SD = 2.48$), and post aspect rating ($M = 5.31$, $SD = 2.59$) ($F(2, 886) = 71.52$, $p < .001$). Post hoc analysis with a Bonferroni adjustment revealed that positive emotion significantly decreased from baseline to post situation description (95%CI [-0.38 to -0.68], $p < .001$), and from post situation description to post aspect rating (95%CI [-0.11 to -0.40], $p < .001$). See Figure 1 for descriptives of positive mood change.

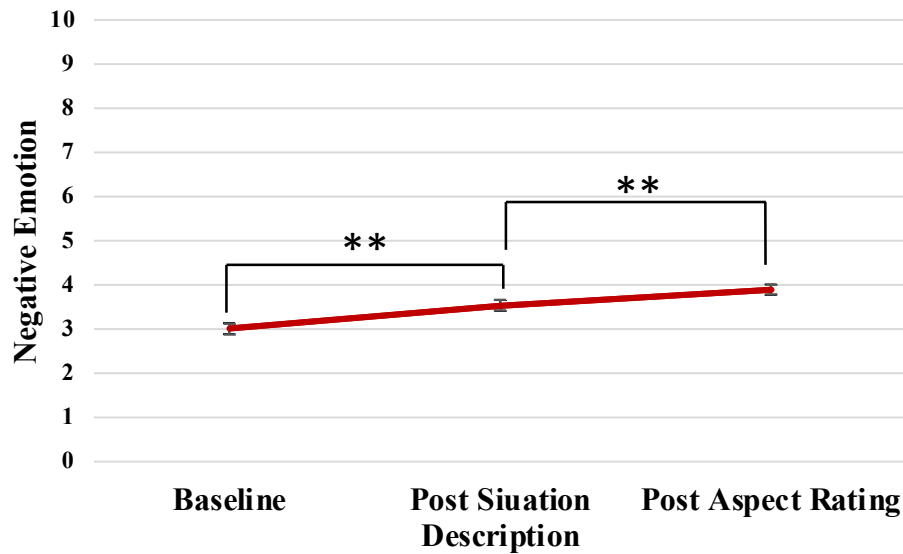
Participant's negative emotion was assessed at three different points during the study. A repeated measures ANOVA determined that mean negative emotion was significantly different between baseline ($M = 3.00$, $SD = 2.60$), post situation description ($M = 3.53$, $SD = 2.58$), and post aspect rating ($M = 3.89$, $SD = 2.76$) ($F(2, 886) = 60.26$, $p < .001$). Post hoc analysis with a Bonferroni adjustment revealed that negative emotion significantly increased from baseline to post situation description (95%CI [0.72 to 0.35], $p < .001$), and from post situation description to post aspect rating (95%CI [0.52 to 0.18], $p < .001$). The decrease in positive and increase in negative emotions suggests that having participants describe a COVID related situation elicited a stress response. See Figure 2 for descriptives of negative mood change.

Figure 1 Change in Positive Emotion



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

Figure 2 *Change in Negative Emotion*



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

Situation Aspect Ratings

Participants rated each situation aspect in terms of how positive and negative they found them. Average positive rating of aspects was 3.43 ($SD = 2.52$), and average negative rating of aspects was 5.58 ($SD = 2.52$). Participants on average listed 1.72 positive aspects ($SD = 1.72$), 3.21 negative aspects ($SD = 2.01$), and 0.06 mixed aspects ($SD = .30$). Of a total of 2664 aspects, 29% were positive, 53% were negative, 1% were mixed, and the remaining 17% were uncategorized.

H1) The Belief That Positive Emotions Can Occur in Negative Situations Predicts the Number of Positive Aspects of People's COVID Related Situation.

A linear regression was conducted to predict the number of positive aspects of the COVID situation that people identified based on participant's scores on the PeNS subscale of the Dialectical Emotions Scale. Scores on the PeNS did not significantly predict the number of positive aspects, $\beta = 0.010$, $t(439) = .20$, $p = .841$.

H2) Positivity, Optimism, and Extraversion Predict the Number of Positive Aspects that People Identify of their COVID Situation.

Three separate simple linear regression models were conducted to predict the number of positive aspects that people identify of their COVID situation based on their positivity, optimism, and extraversion. Positivity significantly predicted the number of positive aspects that people identified, $\beta = 0.225$, $t(439) = 4.85$, $p < .001$. Optimism significantly predicted the number of positive aspects that people identified, $\beta = 0.185$, $t(439) = 3.95$, $p < .001$. Extraversion significantly predicted the number of positive aspects that people identified, $\beta = 0.125$, $t(438) = 2.64$, $p = .008$.

H3) How Positive People Feel After Listing Aspects of Their Negative Stressor is Predicted By the Number of Positive Aspects they List.

A multiple linear regression was conducted to predict people's positive emotion after listing aspects of their chosen COVID situation based on the number of positive aspects they identified controlling for their baseline positive emotion, and their positive emotion after describing their COVID situation. How positive people felt at the start of the survey significantly how positive they felt after listing aspects of their COVID situation, $\beta = .161$, $t(437) = 3.981$, $p < .001$. How positive people feel after describing their COVID situation significantly predicted how positive they felt after listing aspects of their COVID situation, $\beta = .676$, $t(437) = 16.06$, $p < .001$. When controlling for the two previously mentioned positive mood ratings, the number of positive aspects participants identified significantly predicted how positive participant's felt after listing aspects of their COVID situation, $\beta = .169$, $t(437) = 7.30$, $p < .001$.

Exploratory Analyses

In addition to analyses testing the hypotheses outlined in the introduction, several additional exploratory analyses were conducted.

Multiple Regression Models

Although PeNS was not a significant predictor of positive aspects, I was interested in whether it would predict positive aspects controlling for the other two DES subscales (NePS & Pe+Ne). I conducted a standard multiple regression model to test PeNS, NePS, and Pe+Ne as predictors of positive aspects. The overall model explained a significant amount of variance in number of positive aspects, $R^2 = .029$, $F(3, 437) = 4.40$, $p = .005$. Surprisingly, and of particular interest, the model yielded two significant predictors, PeNS ($\beta = .147$, $t(437) = 2.19$, $p = .029$) and NePS ($\beta = -.221$, $t(437) = -2.95$, $p = .003$). Pe+Ne was not a significant predictor of positive aspects. This suggested that PeNS was not a significant predictor of positive aspects until controlling for NePS.

What about the combination of PeNS and NePS allowed PeNS to become a significant predictor of positive aspects? A possible explanation is that NePS was acting as a suppressor of some component of PeNS. Therefore, PeNS and NePS share some unique aspect that when controlled for by NePS, allows another component of PeNS to be a significant predictor of positive aspects. A possibility is that both scales are assessing a dialectical belief specific to the relationship between oppositely valenced emotions and situations. The judgment of a situation as positive or negative is a holistic evaluation, composed of a summation of positive and negative aspects and thereby emotions. It's possible that people may recognize that this holistic evaluation contains pieces of the non-dominant emotion (i.e., positive emotions in a negative situation, or negative emotions in a positive situation). These same people, however, may not

necessarily agree that positive and negative emotions can co-occur. This explains why the Pe+Ne subscale was not of relevance.

Having established that NePS was likely suppressing PeNS, I was then interested in identifying what part of PeNS, NePS was suppressing. A possible part of PeNS that NePS was suppressing was positivity. Regression analysis was used to test whether positivity mediated the relationship between PeNS and number of positive aspects controlling for NePS. A mediation analysis was justified based on the following: PeNS was a significant predictor of positivity controlling for NePS, $B = .070$, $SE = .029$, $95\%CI[.014, .126]$, $\beta = .148$, $p = .015$. Positivity was a significant predictor of positive aspects controlling for NePS, $B = .034$, $SE = .008$, $95\%CI[.02, .05]$, $\beta = .210$, $p < .001$.

Approximately 6% of the variance in positive aspects was accounted for by the predictors ($R^2 = .064$). The indirect effect was tested using a percentile bootstrap estimation approach with 5000 samples, implemented with the PROCESS macro-Version 4 (Hayes, 2017). The results indicated the indirect coefficient was significant, $B = .026$, $SE = .0080$, $95\%CI [.012, .044]$. In terms of the direct effect, PeNS was no longer a significant predictor of positive aspects after including positivity as a mediator and controlling for NePS, $B = .043$, $SE = .029$, $95\%CI[-.013, .01]$, consistent with full mediation. This suggests that the relationship between PeNS and number of positive aspects when controlling for NePS was explained through positivity.

I was then interested in determining the strongest predictor of positive aspects among the variables measured in study 2. I conducted a stepwise multiple regression to predict number of positive aspects, with the following predictors: PeNS, NePS, Pe+Ne, positivity, optimism, extraversion, resilience, positive reappraisal ability, mixed emotions

frequency, negative emotions frequency, and valuing happiness. The correlations of the variables are shown in Table 4. The final model contained two of the predictors and was reached in two steps. Positivity ($\beta = .145$, $t(437) = 2.42$, $p = .016$) and frequency of experiencing negative emotions ($\beta = -.125$, $t(437) = -2.08$, $p = .038$) were the strongest predictors of number of positive aspects. This reinforces the strength of positivity as a predictor of positive aspects and suggests that the frequency of experiencing negative emotions accounts for a unique amount of variance of positive aspects, unexplained by positivity.

Do Positive Aspects Predict Positive Emotion Controlling for Positivity?

I was interested in again testing **H3** but including positivity as an additional predictor. After including positivity as predictor, number of positive aspects maintained as a significant predictor ($\beta = .169$, $t(436) = 7.29$, $p < .001$) of how positive people felt after rating their aspects controlling for how positive they felt at the start of the survey and after describing their COVID related situation.

Pearson R Correlations with Number of Positive Aspects

Several correlations were conducted between non hypothesized predictors of positive aspects and the number of positive aspects people identified. Refer to Table 4 for a summary of correlations between variables used in study 2. The number of positive aspects people identified was positively correlated with resilience ($r = .147$, $p < .01$), and positive reappraisal ($r = .160$, $p < .01$). Positive aspects was negatively correlated with NePS ($r = -.127$, $p < .01$) and the frequency of experiencing negative emotions ($r = -.217$, $p < .01$). (See Table 4).

Table 4 *Correlations Between Study 2 Variables*

Variable	n	M	SD	1	2	3	4	5	6	7	8	9	10	11
Total # Pos (1)	441	1.72	1.72	-										
PeNS (2)	444	23.39	3.64	0.1	-									
NePS (3)	444	17.73	2.88	-.127**	.630**	-								
Pe+Ne (4)	444	24.47	3.54	-.065	.697**	.768**	-							
Positivity (5)	444	35.77	10.56	.225**	.064	-.175**	-.121*	-						
Optimism (6)	444	14.51	4.79	.185**	.115*	-.094*	-.028	.585**	-					
Extraversion (7)	443	45.39	9.86	.125**	.047	-.156**	-.138**	.546**	.333**	-				
TMES, ME (8)	444	39.56	8.46	-.089	.284**	.385**	.418**	-.203**	-.217**	-.039	-			
TMES, N (9)	444	13.94	3.71	-.217**	.097*	.289**	.222**	-.630**	-.450**	-.389**	.573**	-		
Resilience (10)	444	38.98	7.09	.147**	.190**	-.052	.016	.516**	.442**	.628**	-.025	-.380**	-	
ValuingHappiness (11)	444	29.34	7.00	-.018	.002	-.027	-.023	-.167**	-.141**	-.050	.249**	.268**	-.053	-
PositiveReappraisal (12)	444	5.69	1.64	.160**	.099*	-.013	.019	.393**	.210**	.361**	.162**	-.183**	.406**	.011

Note. * $p < .05$, ** $p < .01$. Table abbreviations: PeNS ((belief that positive emotions can occur in negative situations), NePS (belief that negative emotions can occur in positive situations), Pe+Ne (belief that positive and negative emotions can co-occur), TMES, ME (Trait Mixed Emotions Scale, mixed emotion frequency) and TMES, N (Trait Mixed Emotions Scale, negative emotion frequency).

Discussion

Study 2 had two aims: first, to confirm the factor structure of the scale (DES) developed in study 1 and second, to use this scale and other scales to predict people's tendency to identify positive aspects of negative stressors. Ultimately, the goal of study 2 was to understand the type of person that is able to identify positive aspects of negative situations. The factor structure from study 1 was confirmed in study 2. In addition to confirming the factor structure of the Dialectical Emotions Scale, several hypotheses were tested.

The belief that positive emotions can occur in negative situations did not predict the number of positive aspects that people identified of a COVID situation. After controlling for the other two subscales of the DES, PeNS became a significant predictor of positive aspects. After testing whether positivity mediated the relationship between PeNS and positive aspects controlling for NePS, it became clear that any predictive

ability of the PeNS subscale was due to positivity. NePS acted as a suppressor of the PeNS subscale, allowing for the variance due to positivity to significantly predict positive aspects. This suggests that the PeNS subscale was a poor measure of an asymmetrical belief about positive emotion occurring in negative situations. Instead, it appears that the PeNS subscale was measuring people's level of positivity.

Positivity, optimism, and extraversion each predicted the number of positive aspects that people identified of a COVID situation. This was a robust finding and suggests that people high on each of these variables can make more positive appraisals about negative stressors. Positivity, optimism, and extraversion were all highly correlated with each other, suggesting that they have a high degree of shared variance predicting the number of positive aspects. The results of the stepwise regression indicated that people's level of positivity represented a more fundamental predictor of positive aspects. It's likely that people who are highly optimistic and extroverted are also high in positivity.

The number of positive aspects people identified predicted how positive they felt after rating their aspects, controlling for how positive they felt prior to describing their COVID related situation and how positive they felt after describing their COVID related situation. This replicates a previous finding that people can benefit from identifying positive aspects of their COVID situation (Schieber & Waugh, unpublished manuscript). Furthermore, this finding adds support for an appraisal-based approach to dealing with stress, whereby people can focus on positive aspects of negative situations to generate positive emotions to help themselves feel better.

GENERAL DISCUSSION

The purpose of the two studies presented in this paper was to identify predictors of people's tendency to identify positive aspects of negative stressors. The primary predictor of interest was the belief that positive emotions can occur in negative situations. Alternative predictors included positivity, optimism, and extraversion. Ultimately, these studies were conducted to better understand the type of person that is able to identify positive aspects of negative stressors.

The Dialectical Emotions Scale developed in study 1 and confirmed in study 2 appears to be a reliable measure of people's beliefs about the co-occurrence of positive and negative emotions. Based on the factor structure confirmed in study 2, each subscale was measuring an independent aspect of the overall belief that positive and negative emotions can co-occur. There were, however, large positive correlations between each of the subscales across both studies. This suggests that people who have a high belief in one subscale also have a high belief in the other two subscales. This is warranted given the dual nature of each subscale and the fact that each represents a facet of the same construct, which is the belief that people can experience a combination of positive emotions/situations and negative emotions/situations.

Overall, the DES requires further validity testing as the present findings based on the subscales reflect two possibilities. One possibility is that the belief that positive emotions can occur in negative situations is related to people's tendency to identify positive aspects of negative situations, albeit through positivity and after controlling for NePS. The other possibility is that the PeNS subscale inadequately assessed people's belief that positive emotions can occur in negative situation. As such, further usage of the

DES should prioritize enhancing the construct validity of the PeNS subscale in order to reduce the variance shared by positivity and highlight the unique variance that the scale is intended to measure. Additionally, the Pe+Ne and NePS subscales would certainly benefit from further scale enhancement. Specifically, by making scale items more extreme as to increase response variability and reduce the high means that were observed in studies 1 and 2. This would allow for greater discrimination amongst people's beliefs.

In both study 1 and study 2, scale items had high means and skews suggesting that these are commonly held beliefs. This did not present an issue, because the overall scale was ultimately created to measure a possible predictor of people's tendency to identify positive aspects of negative situations. Whether or not the subscales of the DES are assessing a commonly held belief is irrelevant to the scale's role in this study.

Mediation analysis uncovered that positivity explained the relationship between the PeNS subscale and positive aspects when controlling for NePS. This finding has a two-fold effect. First, it reinforces positivity as a predictor of positive aspects. Second, further use of the PeNS would need to control for positivity or include additional items to better measure an asymmetrical belief about positive emotions occurring in negative situations. Considering this limitation, the PeNS subscale of Dialectical Emotions Scale would be improved by further validity testing.

The central finding of this study is that positivity is a unifying component of people's tendency to identify positive aspects of negative situations. In hindsight, there are several convincing points to be made for positivity as a predictor. Previous research has indicated that positivity is a common component of self-esteem, life satisfaction and optimism (Caprara et al., 2010). All three of these characteristics represent cognitive

constructs that influence the evaluations that people make of the world around them (Scheier et al., 1986), including a general tendency to evaluate everyday aspects of life as good (Diener et al., 2000). As such, people's level of dispositional positivity has a strong effect on how they feel, the way they think and the actions they take (Caprara et al., 2012).

The present study extends the positivity literature by suggesting that positivity represents a fundamental part of how people approach certain situations, specifically negative ones, because of the appraisals that they make (Caprara et al., 2017). This in turn suggests that positivity influences how people act and approach negative experiences. If people higher in positivity make more positive appraisals to negative situations, then they may be more likely to engage with those situations. Taking inspiration from the Broaden and Build Theory (Fredrickson, 2001), positivity in early childhood could lead to a cascade effect whereby individuals with higher positivity feel more capable of approaching negative situations due to a higher number of positive aspects. By engaging with more negative situations, these children may become more effective at coping with stress. There is existing evidence that positivity is malleable to change (Caprera et al., 2010), suggesting that successful early childhood experiences with negative situations can then reinforce an individual's positivity resulting in a positive feedback loop. Furthermore, there is an established link between child characteristics and successful early childhood experiences with stress (Power, 2004). Perhaps positivity represents a protective factor in children leading those with higher positivity to be more effective at coping with stress and ultimately higher levels of resilience in adulthood (Compas, 1987).

Further extrapolation of the present study's findings about positivity predicting number of positive aspects outlines a clear link to the stress coping literature. There are many studies, which have shown a link between positivity and effective coping with stressors (Becker et al., 2016; Fredrickson, 2013; Naseem & Khalid, 2010; Shrira, 2011) as well as the utility of using positive emotions in coping with stress (Folkman, 2008; Tugade & Fredrickson, 2004). What's interesting with what was found in this study, is the use of positive appraisals rather than positive emotions in dealing with stress. Although being more positive is tied to identifying more positive appraisals people, irrespective of their positivity, can 'seek out' positive appraisals of their stressors, and benefit from it. This positive appraisal-based approach to stress is not only useful, but it also provides a more fundamental approach to stress coping than has been discussed previously in the positive emotion-stress literature. Furthermore, I propose that focusing on positive appraisals of stressors provides a more direct route for people to deal with their negative stressors than through positive emotions. When thinking about a highly negative situation, a person may feel consumed by the intensity of the negative emotions tied to that situation. When trying to deal with this negative situation, the prospect of using or even attempting to use positive emotions may seem impossible in the face of the negative emotions derived from the stressor. In contrast, finding something positive about the stressor is not only directly relevant to the situation, and possibly more feasible, but it also provides an immediate and practical benefit to the person.

Thus far, a main thread of the discussion has been a description of a positive person. This individual can identify more positive aspects of their negative stressors, which gives them a practical boost to their mood. An alternative explanation for this

‘positive person’ profile is that these people are effective at editing memories (Phelps & Hoffman, 2019). This refers to either intentional or unintentional retroactive alterations to past emotional memories to eliminate negative aspects, ultimately to give the memory more positive meaning (Kensinger, 2009; Speer et al., 2021). This type of memory editing was observed in neuroimaging work, which identified an updating mechanism between the hippocampus and ventral striatum for altering maladaptive memories (Speer et al., 2021). Furthermore, there exists an age-related positivity effect, whereby older people tend to rate past experiences as more positive than younger people (Gallo et al., 2011). It’s possible that people higher in positivity are either more effective or more motivated to edit memories about past negative situations either by reframing negative aspects to be more positive via positive reappraisal or by highlighting positive aspects of the situation so that they are more obvious when recalling the situation.

If we think of the array of strategies that people have to deal with stress, memories of positive situations represent a ready source of positive emotions to deal with adversity. If positive people are more effective at creating and maintaining positive memories this grants them a huge opportunity for internally derived positive distraction and positive memory recollection (using positive emotions as mediators to decrease negative emotions) (Waugh, 2020). The positive emotions generated from these positive memories can then be used during negative situations and buffer against the negative effects of the stressor, thereby resulting in the identification of more positive aspects. This mood effect was found in the current study, where people who listed more positive aspects had a greater increase in positive emotion after listing aspects of their COVID

situation. This effect was significant after controlling for how they felt at the start of the study and how they felt after describing their COVID situation.

Alternatively, it could be that positive people are better at savoring positive situations by shielding their positive experiences from negative emotions. This shielding allows for a more enhanced savoring, due to the removal of competing negative emotions. Savoring is a process by which people attend to, appreciate, and enhance the positive experiences in their life (Bryant & Veroff, 2007). Using the positive emotions derived from savoring, they can then buffer against the mal-effects of negative situations and are then able to identify more positive aspects of those negative situations (Fredrickson et al., 2003; Smith & Hollinger-Smith, 2015; Paucsik et al., 2022). This ‘shielding hypothesis’ would explain why positivity and NePS scores were negatively correlated, because people who ‘shield’ their positive experiences do not believe that negative emotions can occur in positive situations. Unrelated to the shielding idea but still relevant to savoring, it’s possible that positive people are savoring during negative situations. Savoring during negative situations would function by focusing on positive aspects of the stressor in the moment. These positive aspects then become more ‘obvious’ or readily available to draw upon when thinking about aspects of the negative situation in general.

As a final note, there appears to be an apparent connection between this study’s findings and clinical research. In particular, the finding that people benefit from identifying positive aspects of their negative stressors suggests a possible therapeutic intervention. In fact, a tenet of Cognitive Behavioral Therapy involves introspection of one’s thoughts and feelings (Hofmann et al., 2012). Therefore, it seems that having

patients identify aspects of their life stressors could have a twofold effect. First, to help them get a better sense of their negative stressors, and second to provide them a boost of positive emotion through the realization that there are positive aspects of their stressors. A limitation to this practice and an indirect finding of this study, is that people vary in terms of their tendency to identify positive aspects of their stress. It seems likely that a clinical population, namely depressed patients, would have a particularly difficult time identifying positive aspects of their stressors, as they are more entrenched in a negatively framed view of the world and thereby their own life stressors (Teasdale, 1983). As such, they would most likely list a greater proportion of negative aspects of their stressors. With that said, I am not sure that this would mean a total inability to find something positive about their stressor, leaving room for an appraisal-based intervention to thinking about stress and adversity. Furthermore, despite the likely case where depressed patients would list more negative aspects, having them list aspects in a guided setting would still be beneficial as they would realize that there are positive aspects about their stressor. As we know from this study, and a previous unpublished study, people benefit from identifying positive aspects of their stressors (Schieber & Waugh unpublished manuscript).

In terms of the external validity of this study's findings, I could foresee demographic variables playing a minor role in people's tendency to identify positive aspects of stress. It's possible that people with lower subjective wellbeing would have a less positive outlook on life and generate a fewer number of positive appraisals. As such, demographic variables linked to people's subjective wellbeing would also be tied to the tendency of listing positive aspects of negative situations. A few broad examples of

wellbeing related sociodemographic variables include social relationships, income, and physical health (Diener and Ryan, 2009).

Limitations and Directions for Future Research

A major limitation of the study was the lack of an experimentally based research paradigm. As such, any conclusions are limited in terms of causal directionality.

Although, significant associations suggest that causal relationships between variables may exist. In order to correct this limitation, future studies should attempt to manipulate the significant predictors of positive aspects found in this study.

A particular experiment of interest would involve manipulating people's state levels of positivity (ex. control, low and high positivity). The results of this experiment could lend support to a causal claim between positivity and number of positive aspects of negative situations. It would be expected that the high positivity group would list more positive aspects than the control positivity group, which would in turn list more positive aspects than the low positivity group.

Another opportunity for further study pertains to the negative situation that participants focused on, COVID-19. At the time of writing this paper, COVID has been actively affecting people for close to two and a half years. Despite asking participants to think of a situation that they were currently experiencing, it's likely that they thought of a situation that has been affecting them for some time. It would be interesting to test people's tendency to identify positive aspects of an acute stressor. How effective would people be identifying positive aspects for a negative situation that they had just faced (i.e. public speaking, virtual reality based stressors)? This could bolster evidence supporting

identifying positive aspects of stressors as a practical method of coping with negative stressors in general.

An additional statistical limitation pertains to the Dialectical Belief Scale.

Participant responses to each of the three subscales resulted in very high means and negative skews, which as mentioned earlier suggests that they are commonly held beliefs.

A drawback of these high means is that they could result in a restriction of response variance, whereby any differentiation between people's level of agreement with the beliefs is not assessed. In order to address this issue, further use of the DES should consider introducing items that reflect stronger beliefs to expand response variability. For example, instead of "I believe that positive emotions can occur in negative situations" it would be "I believe that positive emotions often occur in negative situations."

CONCLUSION

The current study aimed to better understand people's tendency to identify positive aspects of negative stressors. The Dialectical Emotions Scale was developed to assess possible predictors of the tendency to identify positive aspects of negative situations. Although several independent predictors were identified, higher levels of positivity and lower frequency of experiencing negative emotions were found to be the strongest predictors of people's tendency to identify positive aspects of a COVID related situation. It was also found that people who listed more positive aspects experienced a greater increase in positive emotion after describing and listing aspects of a COVID situation that they were currently experiencing. In conclusion, positivity appears to be a powerful tool for coping with negative stress. It's unclear the exact nature of the relationship between the variables tested in this project, but the association between positivity and the tendency to identify positive aspects of negative stressors deserves further investigation to identify a causal pathway between the two. The present study introduces an appraisal-based approach to dealing with stress that offers both a practical and theoretical contribution to the coping with stress and emotion literature.

REFERENCES

- Baker, J. P., & Berenbaum, H. (2007). Emotional approach and problem-focused coping: A comparison of potentially adaptive strategies. *Cognition & Emotion*, 21(1), 95–118. <https://doi.org/10.1080/02699930600562276>
- Barford, K. A., & Smillie, L. D. (2016). Openness and other big five traits in relation to dispositional mixed emotions. *Personality and Individual Differences*, 102, 118–122. <https://doi.org/10.1016/j.paid.2016.07.002>
- Becker, E. S., Ferentzi, H., Ferrari, G., Möbius, M., Brugman, S., Custers, J., ... & Rinck, M. (2016). Always approach the bright side of life: A general positivity training reduces stress reactions in vulnerable individuals. *Cognitive Therapy and Research*, 40(1), 57-71.
- Block, J., & Kremen, A. M. (1996). IQ and ego-resiliency: conceptual and empirical connections and separateness. *Journal of personality and social psychology*, 70(2), 349–361. <https://doi.org/10.1037//0022-3514.70.2.349>
- Bryant, F. (2003). Savoring Beliefs Inventory (SBI): A scale for measuring beliefs about savouring. *Journal of Mental Health*, 12(2), 175–196. <https://doi.org/10.1080/0963823031000103489>
- Byrne, S. M., Allen, K. L., Dove, E. R., Watt, F. J., & Nathan, P. R. (2008). The reliability and validity of the dichotomous thinking in eating disorders scale. *Eating Behaviors*, 9(2), 154–162. <https://doi.org/10.1016/j.eatbeh.2007.07.002>
- Caprara, G. V., Alessandri, G., Eisenberg, N., Kupfer, A., Steca, P., Caprara, M. G., Yamaguchi, S., Fukuzawa, A., & Abela, J. (2012). The positivity scale. *Psychological assessment*, 24(3), 701–712. <https://doi.org/10.1037/a0026681>

- Caprara, G.V., Eisenberg, N. & Alessandri, G. Positivity: The Dispositional Basis of Happiness. *J Happiness Stud* **18**, 353–371 (2017). <https://doi.org/10.1007/s10902-016-9728-y>
- Caprara, G. V., Steca, P., Alessandri, G., Abela, J. R., & McWhinnie, C. M. (2010). Positive orientation: Explorations on what is common to life satisfaction, self-esteem, and optimism. *Epidemiology and Psychiatric Sciences*, *19*(1), 63-71.
- Carver C. S. (1997). You want to measure coping but your protocol's too long: consider the brief COPE. *International journal of behavioral medicine*, *4*(1), 92–100.
https://doi.org/10.1207/s15327558ijbm0401_6
- Carver, C. S., Scheier, M. F., & Segerstrom, S. C. (2010). Optimism. *Clinical psychology review*, *30*(7), 879–889. <https://doi.org/10.1016/j.cpr.2010.01.006>
- Carver, C. S., & Scheier, M. F. (2014). Dispositional optimism. *Trends in cognitive sciences*, *18*(6), 293–299. <https://doi.org/10.1016/j.tics.2014.02.003>
- Catalino, L. I., Algae, S. B., & Fredrickson, B. L. (2014). Prioritizing positivity: an effective approach to pursuing happiness?. *Emotion (Washington, D.C.)*, *14*(6), 1155–1161.
<https://doi.org/10.1037/a0038029>
- Chapman, L. J., & Chapman, J. P. (1967). Genesis of popular but erroneous psychodiagnostic observations. *Journal of Abnormal Psychology*, *72*(3), 193–204. <https://doi.org/10.1037/h0024670>
- Chrousos, G. P., & Gold, P. W. (1998). A Healthy Body in a Healthy Mind—And Vice Versa—The Damaging Power of “Uncontrollable” Stress. *The Journal of Clinical Endocrinology & Metabolism*, *83*(6), 1842–1845. <https://doi.org/10.1210/jcem.83.6.4908>

- Cohn, M. A., Fredrickson, B. L., Brown, S. L., Mikels, J. A., & Conway, A. M. (2009). Happiness unpacked: positive emotions increase life satisfaction by building resilience. *Emotion* (Washington, D.C.), 9(3), 361–368. <https://doi.org/10.1037/a0015952>
- Collins, S. (2007). Social workers, resilience, positive emotions and optimism. *Practice*, 19(4), 255–269. <https://doi.org/10.1080/09503150701728186>
- Comfrey, A. L., & Lee, H. B. (1992). *A first course in factor analysis*. Lawrence Erlbaum Associates
- Compas, B. E. (1987). Coping with stress during childhood and adolescence. *Psychological bulletin*, 101(3), 393.
- DeLongis, A., Folkman, S., & Lazarus, R. S. (1988). The impact of daily stress on health and mood: Psychological and social resources as mediators. *Journal of Personality and Social Psychology*, 54(3), 486–495. <https://doi.org/10.1037/0022-3514.54.3.486>
- Diener, E., & Emmons, R. A. (1984). The independence of positive and negative affect. *Journal of Personality and Social Psychology*, 47(5), 1105–1117. <https://doi.org/10.1037/0022-3514.47.5.1105>
- Diener, E., Napa Scollon, C. K., Oishi, S., Dzokoto, V., & Suh, E. M. (2000). Positivity and the construction of life satisfaction judgments: Global happiness is not the sum of its parts. *Journal of Happiness Studies: An Interdisciplinary Forum on Subjective Well-Being*, 1(2), 159–176. <https://doi.org/10.1023/A:1010031813405>
- Diener, E., & Ryan, K. (2009). Subjective well-being: A general overview. *South African journal of psychology*, 39(4), 391-406.
- Ellsworth, P. C. (2013). Appraisal Theory: Old and New Questions. *Emotion Review*, 5(2), 125–131. <https://doi.org/10.1177/1754073912463617>

- Folkman, S., Lazarus, R. S., Dunkel-Schetter, C., DeLongis, A., & Gruen, R. J. (1986). Dynamics of a stressful encounter: Cognitive appraisal, coping, and encounter outcomes. *Journal of Personality and Social Psychology*, 50(5), 992–1003. <https://doi.org/10.1037/0022-3514.50.5.992>
- Folkman, S., Chesney, M. A., & Christopher-Richards, A. (1994). Stress and coping in caregiving partners of men with AIDS. *The Psychiatric Clinics of North America*, 17(1), 35–53.
- Folkman, S., & Moskowitz, J. T. (2000). Positive affect and the other side of coping. *American Psychologist*, 55(6), 647–654. <https://doi.org/10.1037/0003-066X.55.6.647>
- Fredrickson, B. L. (2001). The Role of Positive Emotions in Positive Psychology. *The American Psychologist*, 56(3), 218–226.
- Fredrickson, B. L. (2003). The Value of Positive Emotions: The emerging science of positive psychology is coming to understand why it's good to feel good. *American Scientist*, 91(4), 330–335.
- Fredrickson, B. L. (2013). Updated thinking on positivity ratios.
- Galdi, S., Arcuri, L., & Gawronski, B. (2008). Automatic Mental Associations Predict Future Choices of Undecided Decision-Makers. *Science*, 321(5892), 1100–1102. <https://doi.org/10.1126/science.1160769>
- Gallo, D. A., Korthauer, L. E., McDonough, I. M., Teshale, S., & Johnson, E. L. (2011). Age-related positivity effects and autobiographical memory detail: Evidence from a past/future source memory task. *Memory*, 19(6), 641–652.

- Gloria, C. T., & Steinhardt, M. A. (2016). Relationships Among Positive Emotions, Coping, Resilience and Mental Health. *Stress and Health*, 32(2), 145–156. <https://doi.org/10.1002/smi.2589>
- Gross, J. J. (1998). Antecedent- and response-focused emotion regulation: Divergent consequences for experience, expression, and physiology. *Journal of Personality and Social Psychology*, 74(1), 224–237. <https://doi.org/10.1037/0022-3514.74.1.224>
- Gross, J. J. (2015). Emotion Regulation: Current Status and Future Prospects. *Psychological Inquiry*, 26(1), 1–26. <https://doi.org/10.1080/1047840X.2014.940781>
- Hamilton, D. L., & Rose, T. L. (1980). Illusory correlation and the maintenance of stereotypic beliefs. *Journal of Personality and Social Psychology*, 39(5), 832–845. <https://doi.org/10.1037/0022-3514.39.5.832>
- Hamilton, D.L., Sherman, S.J. (1989). Illusory Correlations: Implications for Stereotype Theory and Research. In: Bar-Tal, D., Graumann, C.F., Kruglanski, A.W., Stroebe, W. (eds) *Stereotyping and Prejudice*. Springer Series in Social Psychology. Springer, New York, NY. https://doi.org/10.1007/978-1-4612-3582-8_3
- Hamamura, T., Heine, S. J., & Paulhus, D. L. (2008). Cultural differences in response styles: The role of dialectical thinking. *Personality and Individual Differences*, 44(4), 932–942. <https://doi.org/10.1016/j.paid.2007.10.034>
- Hayes, A.F. (2017) *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach*. Guilford Press, New York.
- Herringer, L. G. (1998). Facets of extraversion related to life satisfaction. *Personality and Individual Differences*, 24(5), 731–733. [https://doi.org/10.1016/S0191-8869\(97\)00194-3](https://doi.org/10.1016/S0191-8869(97)00194-3)

- Hofmann, S. G., Asnaani, A., Vonk, I. J., Sawyer, A. T., & Fang, A. (2012). The efficacy of cognitive behavioral therapy: A review of meta-analyses. *Cognitive therapy and research*, 36(5), 427-440.
- Hui, C. M., Fok, H. K., & Bond, M. H. (2009). Who feels more ambivalence? Linking dialectical thinking to mixed emotions. *Personality and Individual Differences*, 46(4), 493–498.
<https://doi.org/10.1016/j.paid.2008.11.022>
- Israelashvili, J. (2021). More Positive Emotions During the COVID-19 Pandemic Are Associated With Better Resilience, Especially for Those Experiencing More Negative Emotions. *Frontiers in Psychology*, 12. <https://www.frontiersin.org/article/10.3389/fpsyg.2021.648112>
- Kalisch, R., Müller, M. B., & Tüscher, O. (2015). A conceptual framework for the neurobiological study of resilience. *Behavioral and Brain Sciences*, 38.
<https://doi.org/10.1017/S0140525X1400082X>
- Kensinger, E. A. (2009). Remembering the details: Effects of emotion. *Emotion review*, 1(2), 99-113.
- Klayman, J. (1995). Varieties of Confirmation Bias. In J. Busemeyer, R. Hastie, & D. L. Medin (Eds.), *Psychology of Learning and Motivation* (Vol. 32, pp. 385–418). Academic Press. [https://doi.org/10.1016/S0079-7421\(08\)60315-1](https://doi.org/10.1016/S0079-7421(08)60315-1)
- Kobylińska, D., Zajenkowski, M., Lewczuk, K., Jankowski, K. S., & Marchlewska, M. (2020). The mediational role of emotion regulation in the relationship between personality and subjective well-being. *Current Psychology*. <https://doi.org/10.1007/s12144-020-00861-7>
- Kramer, B. J. (1997). Gain in the Caregiving Experience: Where Are We? What Next?1. *The Gerontologist*, 37(2), 218–232. <https://doi.org/10.1093/geront/37.2.218>

- Kupriyanov, R., & Zhdanov, R. (2014). The Eustress Concept: Problems and Outlooks. 11, 179-185.
- Larsen, J. T., & McGraw, A. P. (2011). Further evidence for mixed emotions. *Journal of Personality and Social Psychology*, 100(6), 1095–1110.
<https://doi.org/10.1037/a0021846.supp>
- Lazarus, R. S., & Folkman, S. (1984). Stress, appraisal, and coping. New York: Springer.
- Lupien, S. J., McEwen, B. S., Gunnar, M. R., & Heim, C. (2009). Effects of stress throughout the lifespan on the brain, behaviour and cognition. *Nature Reviews Neuroscience*, 10(6), 434–445. <https://doi.org/10.1038/nrn2639>
- Mauss, I. B., Tamir, M., Anderson, C. L., & Savino, N. S. (2011). Can seeking happiness make people unhappy? [corrected] Paradoxical effects of valuing happiness. *Emotion* (Washington, D.C.), 11(4), 807–815. <https://doi.org/10.1037/a0022010>
- McCrae, R. R., & Costa, P. T. (1986). Personality, coping, and coping effectiveness in an adult sample. *Journal of Personality*, 54(2), 385–405. <https://doi.org/10.1111/j.1467-6494.1986.tb00401.x>
- McRae, K., Ciesielski, B., & Gross, J. J. (2012). Unpacking cognitive reappraisal: goals, tactics, and outcomes. *Emotion* (Washington, D.C.), 12(2), 250–255.
<https://doi.org/10.1037/a0026351>
- Monfort, S. S., Stroup, H. E., & Waugh, C. E. (2015). The impact of anticipating positive events on responses to stress. *Journal of Experimental Social Psychology*, 58, 11–22.
<https://doi.org/10.1016/j.jesp.2014.12.003>

- Moors, A., Ellsworth, P. C., Scherer, K. R., & Frijda, N. H. (2013). Appraisal Theories of Emotion: State of the Art and Future Development. *Emotion Review*, 5(2), 119–124.
<https://doi.org/10.1177/1754073912468165>
- Naseem, Z., & Khalid, R. (2010). Positive Thinking in Coping with Stress and Health outcomes: Literature Review. *Journal of Research & Reflections in Education (JRRE)*, 4(1).
- Ng, W., & Diener, E. (2009). Personality Differences in Emotions. *Journal of Individual Differences*, 30(2), 100–106. <https://doi.org/10.1027/1614-0001.30.2.100>
- Nickerson, R. S. (1998). Confirmation Bias: A Ubiquitous Phenomenon in Many Guises. *Review of General Psychology*, 2(2), 175–220. <https://doi.org/10.1037/1089-2680.2.2.175>
- Nowlan, J. S., Wuthrich, V. M., & Rapee, R. M. (2016). The impact of positive reappraisal on positive (and negative) emotion among older adults. *International Psychogeriatrics*, 28(4), 681–693. <https://doi.org/10.1017/S1041610215002057>
- Nunnally, J. C. (1978). *Psychometric Theory* (2nd ed.). McGraw-Hill.
- Oshio, A. (2009). Development and validation of the Dichotomous Thinking Inventory. *Social Behavior and Personality: An International Journal*, 37(6), 729–741.
<https://doi.org/10.2224/sbp.2009.37.6.729>
- Paucsik, M., Leys, C., Marais, G., Baeyens, C., & Shankland, R. (2022). Self-compassion and savoring buffer the impact of the first year of the COVID-19 on PhD students' mental health. *Stress and Health*.
- Phelps, E. A., & Hofmann, S. G. (2019). Memory editing from science fiction to clinical practice. *Nature*, 572(7767), 43-50.
- Power, T. G. (2004). Stress and coping in childhood: The parents' role. *Parenting: Science and practice*, 4(4), 271-317.

- Revelle, W., & Rocklin, T. (1979). Very Simple Structure: An Alternative Procedure For Estimating The Optimal Number Of Interpretable Factors. *Multivariate Behavioral Research*, 14(4), 403–414. https://doi.org/10.1207/s15327906mbr1404_2
- Risen, J. L. (2016). Believing what we do not believe: Acquiescence to superstitious beliefs and other powerful intuitions. *Psychological Review*, 123(2), 182–207. <https://doi.org/10.1037/rev0000017>
- Robertson, S. M., Zarit, S. H., Duncan, L. G., Rovine, M. J., & Femia, E. E. (2007). Family Caregivers Patterns of Positive and Negative Affect. *Family Relations*, 56(1), 12–23.
- Salleh M. R. (2008). Life event, stress and illness. *The Malaysian journal of medical sciences : MJMS*, 15(4), 9–18.
- Sanbonmatsu, D. M., Sherman, S. J., & Hamilton, D. L. (1987). Illusory Correlation in the Perception of Individuals and Groups. *Social Cognition*, 5(1), 1–25. <https://doi.org/10.1521/soco.1987.5.1.1>
- Scheier, M. F., Carver, C. S., & Bridges, M. W. (1994). Distinguishing optimism from neuroticism (and trait anxiety, self-mastery, and self-esteem): A reevaluation of the Life Orientation Test. *Journal of Personality and Social Psychology*, 67(6), 1063–1078. <https://doi.org/10.1037/0022-3514.67.6.1063>
- Scheier, M. F., & Carver, C. S. (1985). Optimism, coping, and health: Assessment and implications of generalized outcome expectancies. *Health Psychology*, 4(3), 219–247. <https://doi.org/10.1037/0278-6133.4.3.219>
- Scheier, M. F., Weintraub, J. K., & Carver, C. S. (1986). Coping with stress: divergent strategies of optimists and pessimists. *Journal of personality and social psychology*, 51(6), 1257–1264. <https://doi.org/10.1037//0022-3514.51.6.1257>

- Scherer, K. R. (1984). Emotion as a multicomponent process: A model and some cross-cultural data. *Review of Personality & Social Psychology*, 5, 37–63.
- Scherer, K. R., & Moors, A. (2019). The emotion process: Event appraisal and component differentiation. *Annual Review of Psychology*, 70, 719–745. <https://doi.org/10.1146/annurev-psych-122216-011854>
- Schmidt, S., Tinti, C., Levine, L. J., & Testa, S. (2010). Appraisals, emotions and emotion regulation: An integrative approach. *Motivation and Emotion*, 34(1), 63–72. <https://doi.org/10.1007/s11031-010-9155-z>
- Schneiderman, N., Ironson, G., & Siegel, S. D. (2005). STRESS AND HEALTH: Psychological, Behavioral, and Biological Determinants. *Annual Review of Clinical Psychology*, 1, 607–628. <https://doi.org/10.1146/annurev.clinpsy.1.102803.144141>
- Shrira, A., Palgi, Y., Wolf, J. J., Haber, Y., Goldray, O., Shacham-Shmueli, E., & Ben-Ezra, M. (2011). The positivity ratio and functioning under stress. *Stress and Health*, 27(4), 265–271.
- Smith, C. A., & Ellsworth, P. C. (1985). Patterns of cognitive appraisal in emotion. *Journal of Personality and Social Psychology*, 48(4), 813–838. <https://doi.org/10.1037/0022-3514.48.4.813>
- Smith, J. L., & Hollinger-Smith, L. (2015). Savoring, resilience, and psychological well-being in older adults. *Aging & mental health*, 19(3), 192–200.
- Soto, C. J., & John, O. P. (2017). The next Big Five Inventory (BFI-2): Developing and assessing a hierarchical model with 15 facets to enhance bandwidth, fidelity, and predictive power. *Journal of Personality and Social Psychology*, 113(1), 117–143. <https://doi.org/10.1037/pspp0000096>

- Speer, M. E., & Delgado, M. R. (2017). Reminiscing about positive memories buffers acute stress responses. *Nature human behaviour*, 1(5), 0093. <https://doi.org/10.1038/s41562-017-0093>
- Speer, M. E., Ibrahim, S., Schiller, D., & Delgado, M. R. (2021). Finding positive meaning in memories of negative events adaptively updates memory. *Nature communications*, 12(1), 1-11.
- Spencer-Rodgers, J., Srivastava, S., Boucher, H. C., English, T., Paletz, S. B., & Peng, K. (2015). The dialectical self scale. Unpublished manuscript, California Polytechnic State University, San Luis Obispo.
- Stephens, A., Hamer, M., & Chida, Y. (2007). The effects of acute psychological stress on circulating inflammatory factors in humans: a review and meta-analysis. *Brain, behavior, and immunity*, 21(7), 901–912. <https://doi.org/10.1016/j.bbi.2007.03.011>
- Sun, N., Wei, L., Shi, S., Jiao, D., Song, R., Ma, L., Wang, H., Wang, C., Wang, Z., You, Y., Liu, S., & Wang, H. (2020). A qualitative study on the psychological experience of caregivers of COVID-19 patients. *American Journal of Infection Control*, 48(6), 592–598. <https://doi.org/10.1016/j.ajic.2020.03.018>
- Tamir, M. (2016). Why Do People Regulate Their Emotions? A Taxonomy of Motives in Emotion Regulation. *Personality and Social Psychology Review*, 20(3), 199–222. <https://doi.org/10.1177/1088868315586325>
- Teasdale, J. D. (1983). Negative thinking in depression: Cause, effect, or reciprocal relationship?. *Advances in Behaviour Research and Therapy*, 5(1), 3-25.

- Thoits, P. A. (2010). Stress and Health: Major Findings and Policy Implications. *Journal of Health and Social Behavior*, 51(1_suppl), S41–S53. <https://doi.org/10.1177/0022146510383499>
- Torgler, B. (2007). Determinants of superstition. *The Journal of Socio-Economics*, 36(5), 713–733. <https://doi.org/10.1016/j.socec.2007.01.007>
- Tugade, M. M., & Fredrickson, B. L. (2004). Resilient Individuals Use Positive Emotions to Bounce Back From Negative Emotional Experiences. *Journal of Personality and Social Psychology*, 86(2), 320–333. <https://doi.org/10.1037/0022-3514.86.2.320>
- Velicer, W. F. (1976). Determining the number of components from the matrix of partial correlations. *Psychometrika*, 41(3), 321–327. <https://doi.org/10.1007/BF02293557>
- Verduyn, P., & Brans, K. (2012). The relationship between extraversion, neuroticism and aspects of trait affect. *Personality and Individual Differences*, 52(6), 664–669. <https://doi.org/10.1016/j.paid.2011.12.017>
- Vlasenko, V. V. (2021). *Temporal anchoring of positive reappraisal* (Order No. 28652081). Available from Dissertations & Theses @ Wake Forest University; ProQuest Dissertations & Theses Global. (2572940989).
- Watson, D., & Clark, L. A. (1997). Extraversion and its positive emotional core. In *Handbook of personality psychology* (pp. 767–793). Academic Press. <https://doi.org/10.1016/B978-012134645-4/50030-5>
- Waugh, C. E., Running, K. E., Reynolds, O. C., & Gotlib, I. H. (2019). People are better at maintaining positive than negative emotional states. *Emotion*, 19(1), 132–145. <https://doi.org/10.1037/emo0000430>

- Watson, D., & Naragon, K. (2009). Positive affectivity: The disposition to experience positive emotional states. In S. J. Lopez & C. R. Snyder (Eds.), *Oxford handbook of positive psychology* (pp. 207–215). Oxford University Press.
- Waugh, C. E. (2020). The roles of positive emotion in the regulation of emotional responses to negative events. *Emotion*, 20(1), 54–58. <https://doi.org/10.1037/emo0000625>
- Waugh, C. E., & Koster, E. H. (2015). A resilience framework for promoting stable remission from depression. *Clinical psychology review*, 41, 49–60.
<https://doi.org/10.1016/j.cpr.2014.05.004>
- Waugh, C. E., Shing, E. Z., & Furr, R. M. (2020). Not all disengagement coping strategies are created equal: positive distraction, but not avoidance, can be an adaptive coping strategy for chronic life stressors. *Anxiety, stress, and coping*, 33(5), 511–529.
<https://doi.org/10.1080/10615806.2020.1755820>
- Waugh, C. E., Thompson, R. J., & Gotlib, I. H. (2011). Flexible Emotional Responsiveness in Trait Resilience. *Emotion* (Washington, D.C.), 11(5), 1059–1067.
<https://doi.org/10.1037/a0021786>
- Xu, J., & Roberts, R. E. (2010). The power of positive emotions: It's a matter of life or death—Subjective well-being and longevity over 28 years in a general population. *Health Psychology*, 29(1), 9–19. <https://doi.org/10.1037/a0016767>

APPENDIX A: STUDY 2 MEASURES

Dialectical Emotions Scale

Instructions. Please read each statement carefully and rate how much you agree with it on a scale of 1 (strongly disagree) to 7 (strongly agree).

Pe+Ne: Co-occurrence of positive and negative emotions

PeNS: Experiencing negative emotions in positive situations

NePS: Experiencing positive emotions in negative/stressful situations

1. Even when a situation is going well, a person can experience negative emotions.

(NePS)

2. People can feel negatively in positive situations. (NePS)

3. People can feel sad in pleasant situations. (NePS)

4. People can feel both positive and negative emotions about a situation. (Pe+Ne)

5. People can feel positive even when a situation is not going well. (PeNS)

6. People can have positive and negative feelings at the same time. (Pe+Ne)

7. A person can have both positive and negative emotions in a situation. (Pe+Ne)

8. It is possible to have positive feelings in a stressful situation. (PeNS)

9. People can feel happy in difficult situations. (PeNS)

10. One situation can cause a person to have both positive and negative emotions.

(Pe+Ne)

11. Even in the most stressful situations, a person can feel some positive emotions.

(PeNS)

CURRICULUM VITAE

EDUCATION

Wake Forest University, Winston-Salem, NC Expected December 2023
School of Business
Master of Science in Accountancy

Wake Forest University, Winston-Salem, NC Expected May 2022
Graduate School of Arts and Sciences
Master of Arts in Psychology

Sewanee: The University of the South, Sewanee, TN 2020
Bachelor of Science in Psychology, *summa cum laude*

- Graduated with departmental honors and distinction
- Minor: German

RESEARCH EXPERIENCE

Dr. Christian Waugh's Emotion Lab 2018 - 2020
Wake Forest University

- Research focusing on emotion regulation: cognitive appraisal and cognitive reappraisal
- Study design, IRB submission, data collection and data analysis

Dr. Colom Cruz's Latin & Cultural Psychology Lab 2019 - 2021
The University of the South

- Research focused on mental health of Puerto Ricans
- Study design, IRB submission, data collection and data analysis

Dr. Chris Shelley's Neuroscience Lab 2018 - 2020
The University of the South

- Applied a perfusion system to identify the specific ion channels present on protractor muscle
- Developed dissection and cell isolation protocols to conduct electrophysiology on protractor muscle
- Used cell attached, whole cell and single channel electrophysiology on cells isolated from the *S. Purpuratus* sea urchin protractor muscle

Yale Child Study Center Summer Research 2018
Yale University

- Worked in the research team of Dr. Jason Cromer at COGSTATE, a company that develops cognitive measures for clinical trials, clinical practice and academic research
- Assisted in the analytics of a normative research paper on their new pediatric battery

Summer Research with Dr. Alyssa Summers 2017
The University of the South

- Investigated the transcriptional role that Hdac3 plays in GIMAP expression
- Utilized cell culture, DNA isolation, polymerase chain reaction, primer design, gel electrophoresis and luciferase assay

TEACHING EXPERIENCE

Teaching Assistantship	Current
<i>Wake Forest University</i>	
• TA under Dr. Eric Stone for PSY312: Research Methods II.	
Teaching Assistantship	2019 - 2020
<i>The University of the South</i>	
• TA under Dr. Adriana Colom Cruz for PSYC 251: Research Methods and Data Analysis	
Student Tutor	2017 - 2018
<i>The University of the South</i>	
• Pre-health tutor for general chemistry and introductory molecular biology and genetics • Tutored German	

OTHER RELEVANT EXPERIENCE

Peer Health Educator	2018
<i>The University of the South</i>	
• Obtained certification as a Peer Educator through a nationally recognized training program (the BACCHUS Initiatives of NASPA) • Received training to serve as a student resource on a variety of health-related issues	
Leadership Fellow	2017 - 2018
<i>The University of the South</i>	
• Partnered with campus stakeholders to design and enact interventions to combat the abuse of alcohol and drugs among two cohorts of students	
IMPULSE Peer Reviewer	2017
<i>The University of the South</i>	
• Participated in the peer review process of neuroscience papers • Assessed the methodology and overall quality of papers written by fellow undergraduate students	

PUBLICATIONS

- Gamino, A., Schieber, M., & Colom Cruz, A. (2021). Exploring Colonial Mentality, Ethnic Identity, and Mental Health in Mainland and Island Puerto Ricans. *Journal of Sewanee Science*.
- Schieber, M. (2019). Can We Grow Organs. *Journal of Sewanee Science*, 4(1), 29-31.

POSTER PRESENTATIONS

- Schieber, M., & Waugh, C. E. (2021, April). *Comparing the Cognitive Effort of Appraisal and Reappraisal*. Presentation given at the Society for Affective Science conference, virtual.
- Gamino, A., Schieber, M., & Colom Cruz, A. (2021, February). *Exploring Colonial Mentality, Ethnic Identity, and Mental Health in Mainland and Island Puerto Ricans*. Poster session presented at the Society for Personality and Social Psychology meeting, virtual.

Shelley, C., Dyar, A., & Schieber, M. A. (2019, April). *Neurotransmitter Receptor Antagonism Inhibits the Sea Urchin Righting Response*. Poster session presented at the Experimental Biology meeting, Orlando, FL.

Schieber, M., Kim, A., Bornstein, J., Adams, R., Daniell, C., Mayes, L., & Cromer, J. A. (2018, August). *Cognitive development in childhood as assessed by the Cogstate Pediatric Battery*. Poster session presented at the Yale Child Study Center, New Haven, CT.

HONORS

Phi Beta Kappa , Beta chapter of TN	2020
Omicron Delta Kappa , National leadership honor society	2019
Psi Chi Society , International psychology honor society	2019
Alpha Epsilon Delta , National health preprofessional honor society	2019
Delta Phi Alpha , National German honor society	2018

RESEARCH AWARDS

Neurobiology Research Funding	2019
Applied for and received summer research funding	
Yale Child Study Center Research Funding	2018
Competitive research internship with funding	
Biology Research Funding	2017
Applied for and received summer research funding	

SERVICE

Costa Rica Outreach Spring Break Trip	2019
- Volunteered at the Cloud Forest School in Monteverde, Costa Rica - Assisted with the grounds team in painting classrooms and preparing wood for a new tree house	
Member of the Student Conduct Board	2019
Trained to educate peers about the University's expectations regarding student behavior	
Sewanee Environmental Institute	2019
Managed 28 high-school students while exploring the 13,000-acre University domain, explaining basic concepts of ecology, geology, and forest dynamics	
Sewanee Multicultural Health Society Student Educator	2017 - 2018
Presented on various health disorders and information on the national opioid crisis as part of a campus health week initiative	

SKILLS

Excel, SPSS, R, Qualtrics, Prolific