Eastern Washington University

EWU Digital Commons

Spring 2021

Can gratitude interpretation bias modification training reduce the effects of narcissism?

Kahle J. Elliott

CAN GRATITUDE INTERPRETATION BIAS MODIFICATION TRAINING

REDUCE THE EFFECTS OF NARCISSISM?

A Thesis

Presented to

Eastern Washington University

Cheney, Washington

In Partial Fulfillment of the Requirements

for the Degree

Master of Science in Psychology

By

Kahle J. Elliott

Spring 2021

THESIS OF KAHLE ELLIOTT APPROVED BY

DATE 6/11/21

PHILIP WATKINS, GRADUATE STUDY COMMITTEE

DATE 6/11/21

KAYLEEN ISLAM-ZWART, GRADUATE STUDY COMMITTEE

DATE   6/11/21

CAMILLE MCNEELY, GRADUATE STUDY COMMITTEE

ABSTRACT

CAN GRATITUDE INTERPRETATION BIAS MODIFICATION TRAINING

REDUCE THE EFFECTS OF NARCISSISM?

by

Kahle J. Elliott

Spring 2021

The purpose of this study was to examine the effectiveness of gratitude interpretation bias training in decreasing narcissism. This is important because of gratitude's consistent ability to increase subjective well-being and improve relationships. Because narcissism has been shown to inhibit gratitude, decreasing narcissism by establishing gratitude interpretation biases may have a number of benefits. The effectiveness of these trainings in increasing positive emotions should be researched in terms of decreasing negative emotions, like those associated with narcissism. I found that the trainings significantly influenced participants' interpretations of ambiguous benefit-related scenarios. However, the intervention did not significantly impact the other outcome measures. I conclude that interpretations of a benefit can indeed be modified through CBM-I training.

TABLE OF CONTENTS

LIST OF TABLES AND FIGURES

Table/Figure **Page**

Can Gratitude Interpretation Bias Modification Training Reduce the Effects of Narcissism?

If you could feel happier and have more meaningful relationships with others, would you? Is it even possible for people to improve their well-being? Gratitude is one of the strongest predictors of subjective well-being (SWB; Watkins & Bell, 2017). Not only does gratitude predict well-being, experimental treatment outcome studies have consistently shown that gratitude interventions enhance happiness (Watkins, 2014).

This strong foundation for the utility of gratitude interventions begs the question: If these interventions can increase positive emotions and traits, can they also decrease negative traits such as narcissism? Cognitive Bias Modification (CBM) Training to establish grateful interpretation biases may have this potential. This growing field of research has utilized CBM to modify attention and interpretation biases known to be associated with emotional disorders (Hertel & Mathews, 2011). For example, Interpretation Bias Modification training (CBM-I), derived from the CBM paradigm, has been used to treat negative interpretations associated with social phobia (e.g., Bowler, Mackintosh, Dunn, Mathews, Dalgleish & Hoppitt, 2012). They have also improved sleep quality, reduced emotional distress and increased levels of optimism and positive affect (e.g., Jackowska, Brown, Ronaldson, & Steptoe, 2016). The purpose of this study was to investigate whether CBM-I can be used to enhance benefit-related interpretation biases, and thus decrease narcissism.

Narcissism has been found to be a significant inhibitor of gratitude (Solom, Watkins, McCurrach and Scheibe, 2016). However, Bell (2016) found that those highest in grandiose narcissism benefitted the most from his gratitude induction. Contrary to

predictions, those high in grandiose narcissism actually showed greater increases in gratitude from a gratitude emotion induction than did those less narcissistic. This finding is in line with that of Watkins, Uhder and Pichinevskiy (2014) which found that men, who have been consistently found to have a lower disposition for gratitude, benefitted more than women from a grateful recounting intervention. Watkins et al. (2014) also found that grateful recounting was most effective with those least grateful. Their conclusion was that those who needed gratitude most, benefitted most from gratitude interventions. Thus, it follows that gratitude interventions, which allow for participants to be reminded of the goodness in others, will be an effective treatment for individuals with narcissistic tendencies because of their ability to re-orient their focus to others. Modifying gratitude interpretation biases should increase individuals with narcissistic tendencies' gratitude toward others and reinforce prosocial tendencies. I believe this will be in line with Watkins' et al. (2015) theory that gratitude benefits those who need it the most.

Given the growing field of gratitude research, it is important to understand its potential utility in treating those with narcissistic tendencies. This is a significant construct to study as recent research from Twenge (2013) has shown increases in narcissism in college students over the years, possibly putting the future of gratitude at risk. However, with CBM-I trainings there is a potential for re-orienting those high in narcissism to recognize benefits from others, increasing their gratitude and decreasing their self-focus. This could address Solom et al.'s (2016) concerns for our future generations in that if narcissism is increasing, gratitude is most likely decreasing, which could lead to lower SWB in the population.

To better understand these issues, it is important to consider past research done on gratitude and its widespread benefits, CBM-I trainings and the unique challenges associated with studying narcissism.

Gratitude

Studies have found that gratitude is an important component of the good life (for a review, see Watkins, 2014), so it is important to know what causes grateful emotion and the benefits it can have on one's happiness and relationships. Many gratitude researchers subscribe to the idea that grateful emotion is caused when someone receives a benefit from an outside source. However, there is some debate on what exactly the nature of that emotion is. A notable review, perhaps the one that began the recent influx of gratitude research, was done by McCullough, Kilpatrick, Emmons and Larson (2001). They theorized gratitude to be a moral emotion because of its utility as a moral barometer, moral reinforcer and moral motivator. Gratitude is a moral barometer in that it indicates the perceived goodness of the giver, a moral reinforcer in that expressing gratitude reinforces kind acts and a moral motivator because it motivates pro-social behaviors (McCullough et al., 2001). Thus, gratitude is an important factor in building lasting relationships because it alerts the receiver to the kindness of the giver, reinforcing prosocial behavior and reciprocity. This re-orientation to an other-focused mindset is a key benefit of gratitude (Algoe, 2012) that could possibly help those high in narcissism, as will be discussed later.

Gratitude and Prosocial Behavior

Many gratitude researchers still look to McCullough and colleague's moral affect theory of gratitude in their research. For example, Bartlett and Desteno (2006) found that

when participants were more grateful, they were more likely to reciprocate kindness to a stranger, even when the helpful act was costly to them. Bartlett, Condon, Cruz, Baumann and Desteno's (2012) study sought to expand on the prosocial nature of gratitude by testing the theory, which had previously only used kind acts from strangers, with those from a female confederate who participants had been previously assigned to. Both of their studies provide evidence that gratitude not only facilitates prosocial reciprocity, but also cultivates behaviors that prompt the building of relationships, a new finding in this field. In Study 1, participants in the gratitude condition were much more likely to choose to see their benefactor again, while the control group preferred to be alone. Their second study built on Desteno's (2006) costly acts study mentioned previously: grateful individuals were found to behave in a socially inclusive way toward their benefactor, even when it cost them. This was done by asking the participant if they would forego money to make the benefactor feel more included. These behaviors seemed to build trust between the participant and confederate, which strengthened their relationship and created a desire to preferentially treat that person. These findings show that perhaps grateful emotion does more than just encouraging prosocial exchange or tit-for-tat reciprocity, but can actually build and strengthen a communally oriented relationship (Bartlett et al., 2012).

Another well-established benefit of gratitude is increased SWB, as shown by numerous experimental studies utilizing gratitude interventions (for reviews see Davis, Choe, et al., Watkins, 2014). The question remains for how exactly gratitude exercises are able to do this. Unless research is able to show this link, it is difficult to improve gratitude interventions or ensure their utility. Three major theories have attempted to

address this concern. The first of these Fredrickson's Broaden and Build theory (Fredrickson, 2001; 2004) which argues that positive emotions can broaden one's thought-action tendencies by building physical, cognitive and social resources, enhancing human flourishing. So, gratitude, a positive emotion, promotes this kind of cognition that results in many possible prosocial responses (Watkins & Bell, 2017). Elaborating on this idea of gratitude having many social benefits is Algoe's (2012) find, remind and bind theory of gratitude. In short, gratitude helps people to find new relationships, reminds them of current important relationships and binds developing relationships, all important to one's happiness (Watkins & Bell, 2017). The third theory that effectively illustrates gratitude's important role to play in one's happiness is Watkins' (2014) Amplification Theory of Gratitude. He proposed that gratitude enhances happiness by psychologically amplifying, or "turning up the volume" of the good in a person's life. This can help one to effectively pursue happiness by simply increasing one's "awareness, importance and meaning of the people and things that actually contribute to one's SWB" (Watkins & Bell, 2017, p. 11). He cited Baumeister, Bratslavsky, Finkenauer and Vohs' (2001) argument that people spend more time and energy thinking about bad experiences rather than good, even though most people have more good experiences than bad. They theorized this to be because bad interactions, memories and experiences are psychologically stronger than good ones, so it is easier to attend to negative experiences. Thus, gratitude, which enhances our perception of the goodness of others and inspires prosocial tendencies, could be the psychological process necessary to amplifying the good and decreasing attention to the bad, thus increasing one's happiness and SWB (Watkins & Bell, 2017).

Gratitude Interventions

Perhaps gratitude really is important to the good life, but how can one enhance their gratitude? To date very few studies have addressed this issue. Indeed, because narcissism has been shown to inhibit gratitude over time (Solom et al., 2017), it may be particularly difficult for narcissistic individuals to increase their gratitude. Current research has turned to gratitude interventions to increase participants' level of gratitude to, in turn, increase their prosociality and enhance their well-being. There are several gratitude interventions that have helped increase aspects of well-being through enhancing one's gratitude (e.g., Munger, 2020). These interventions have included activities, such as weekly journaling about what one is grateful for (Emmons & McCullough, 2003), creating gratitude lists, writing letters of gratitude (Seligman et al., 2005) and even directly expressing gratitude to loved ones (for reviews, see Watkins, 2014; Wood et al., 2010). These interventions have consistently been shown to increase the frequency that someone feels gratitude, and some studies have gone as far as enhancing one's inclination toward gratitude (Emmons & McCullough, 2003). Very few studies, however, have sought to increase one's disposition for gratitude. Although gratitude interventions have been shown to enhance SWB, occasionally experiencing gratitude is unlikely to be important to one's happiness. Rather, it is the disposition or trait of gratitude—a life orientation of gratitude—that is likely to be important to well-being (Watkins, 2014). Thus, it is important to investigate interventions that can enhance dispositional gratitude. One encouraging technique is to use CBM-I to enhance benefit interpretation biases that are important to trait gratitude.

Cognitive Bias Modification

The present research examined the effects of CBM training to better understand its utility in reducing negative effects of narcissism. CBM is a new technique that was created as a less-invasive form of Cognitive Behavioral Therapy (CBT) that does not require participants to explicitly state their inner most thoughts and feelings. Instead, CBM implicitly re-trains individuals' threat-related cognitive biases through repeated computer practice. There are two ways this can be done, cognitive bias modification for attention and for interpretation (Bowler et al., 2012). For the purpose of this study, I will be focusing on cognitive bias modification for interpretation (CBM-I) because my aim is to train individuals with narcissistic tendencies to interpret emotionally ambiguous benefit situations in a grateful manner.

CBM-I

This approach has been successful in treating social phobia and depression by reducing negative interpretation biases to ambiguous stimuli (Bowler, et al., 2012). Ambiguity in social situations is ubiquitous. Imagine you are in public and see a friend of yours, but they ignore you. One could either interpret this as their friend being upset with them or simply not seeing them. How one interprets this ambiguity can affect how they feel and even how they will interpret similar situations in the future. CBM-I training consists of each participant reading and trying to image themselves in emotionally ambiguous scenarios. Each scenario is disambiguated with the final word or words, which are incomplete and only have one meaningful solution. Completing the final word determines the direction of interpretation for each scenario. In the case of social phobia in Bowler et al.'s (2012) study, participants resolved the scenarios by completing the final word with a positive direction. Doing so "encourages the participant to form positive

images of the emotionally ambiguous scenarios, thus training them to disambiguate emotional ambiguity in a positive way in order to do well on the task" (Holmes, Mathews, Dagleish, & Mackintosh, 2006, p. 237). Making positive interpretations of ambiguous social situations is an important skill for individuals to develop for decreasing social phobia, which is marked by interpreting emotionally ambiguous situations in aversive ways and preferentially attending to negative social cues, like angry faces (Bar-Haim, 2010). This could also be useful in re-orienting individuals with narcissistic tendencies to an other-focused mentality by training them to view emotionally ambiguous scenarios in a grateful way, causing them to see the goodness in others and reinforcing prosocial tendencies.

   Necessary to understanding this study is the Cognitive Appraisal Theory of Emotions, which claims that "emotions are elicited by evaluations (appraisals) of events and situations" (Scherer, Shorr & Johnstone, 2001). One of the main assumptions of this theory is that emotions are differentiated by appraisals. Each person will have a different evaluation of an event and based on their appraisal pattern, a specific emotion will be elicited. So, because appraisals are at the center of situations and emotions, "different individuals who appraise the same situation in significantly different ways will feel different emotions" (Scherer, Shorr & Johnstone, 2001, p. 4). The current study aims to use this understanding of the cognitive appraisal of emotions to try to elicit either a grateful or prideful response to ambiguous scenarios. In attempting to elicit gratitude, it is important to understand how exactly a grateful person perceives ambiguous events. Wood, Maltby, Stewart, Linley and Joseph (2008) suggested that more grateful people have specific appraisal patterns that cause them to "appraise the benefits of help-giving

situations more positively than less grateful people" (p. 282). What causes this feeling of gratitude is different benefit appraisals made at the time of receiving a benefit. This is when a person, after being helped in some way, will assign specific attributions about the aid itself, and these attributions will come together to create a benefit appraisal. So, it would seem that grateful people make more benefit appraisals, specifically they will perceive their benefit as more costly to the benefactor, more genuinely intended to help them and more valuable (Wood et al., 2008). Wood and colleagues utilized the three central appraisals that have been found to enhance gratitude: value (the more an individual values an event, the more gratitude they tend to experience), altruism (the more an individual thinks a giver was motivated to enhance the receiver's well-being, the more gratitude the receiver will experience), and cost (the more a receiver believes it cost the giver to provide the benefit, the more gratitude they will experience). Although recent research has questioned the importance of the cost appraisal (Watkins, Munger, Hutton, Elliott & Mathews, 2021; Watkins, Wood, & Shields, 2016), if individuals can be trained to habitually interpret benefit situations with increased value and altruism, this should result in an enhanced disposition for gratitude. Gratitude has consistently been shown to correlate with increased happiness and well-being, so it could be beneficial to create interventions to possibly increase one's state gratitude (Watkins, Woodward, Stone, & Kolts, 2003). It seems that this could be done through training appraisals characteristic to grateful responses.

Wood et al. (2008) tested their social-cognitive model of gratitude, as described above, by assigning participants to one of six vignettes, all differing in level of cost, value and altruism. They found that following being helped, people's appraisals of the three

variables combined to produce a benefit appraisal, which was related to high levels of state and trait gratitude. This is strong evidence for benefit appraisals being necessary to elicit gratitude, even more so for state gratitude. However, from this study we do not know whether the benefit appraisals were causing gratitude, or were the result of experiencing gratitude. The majority of variance in state gratitude was dependent on the situation, which could mean that appraisals are central to state gratitude because they capture the objective situation and also the individual's perception of the situation (Wood et al., 2008). For example, someone high in trait gratitude would perceive an acceptance letter to a university as more valuable, more costly to the giver and would view the giver as more altruistic than someone low in trait gratitude. This could explain why individuals with narcissistic tendencies do not experience gratitude as commonly as those higher in trait gratitude, they do not perceive others as having the same amount of goodness as them and believe they are entitled to benefits, lowering their threshold for seeing a benefit as valuable and costly.

Scheibe, Watkins, McCurrach and Mathews (2015) utilized the CBM-I paradigm to investigate the cognitive characteristics of gratitude and found positive cognitive biases in grateful people. They did so by using existing interpretation bias training scenarios from the CBM-I literature in conjunction with their own scenarios designed to assess interpretations related to gratitude. They found trait gratitude to be positively related to positive memory bias and positive emotional impact of recalling the memories. Scheibe et al. theorized this memory bias to be more related to an encoding bias, rather than a retrieval bias, because recent positive memories are more accessible for grateful people. Grateful people also experience these positive memories more positively than less

grateful people. More important for the purposes of this study, Scheibe et al. found that trait gratitude was correlated with interpretation biases of ambiguous scenarios. Indeed, they found that trait gratitude predicted non-self-report real time interpretations of social benefits using a measure from the CBM-I literature. The pattern of results supported the theory that interpretation biases were foundational to the grateful disposition, rather than trait gratitude producing these biases. In short, these results provide support for the theory that people high in trait gratitude have positive cognitive biases, and that benefit interpretation biases are central to responding gratefully. Thus, training cognitive interpretation biases might be proficient at increasing gratitude.

Watkins et al. (2021) theorized that for a person to increase their disposition for grateful emotions, they would need to alter their typical interpretation biases to those characteristic of benefit situations. They attempted to modify these habitual benefit interpretation biases by randomly assigning participants to either a negative or positive interpretation bias training and having them complete scales on their current emotional states and appraisal tendencies before and after the training. Also, a recognition test was administered to assess one's real time interpretations of benefit situations, which has been positively associated with trait gratitude (Watkins et al., 2021). Finally, they also asked participants to appraise recent benefits before and after the training. They found that compared to the negative training, positive interpretation bias training resulted in a much more positive interpretation bias, greater state gratitude and joy, and increased value and altruism appraisals on their recalled benefits. Taken together, these findings gave credence to the interpretation that one's disposition towards state gratitude could be increased through CBM-I. Thus, re-training negative interpretations to ambiguous

scenarios to help participants recognize the value, cost and goodness of the giver should increase one's gratitude. For the purpose of this study, I will be including both pride and gratitude conditions of the trainings to make a distinction between other-focused (gratitude) and self-focused (pride), a component of narcissism. By asking people to interpret a benefit appraisal as either due to their own efforts or those of others, there should be a difference in the narcissism levels of the individuals in each condition.

Narcissism

"There are at least two facts upon which everyone agrees: first, that the concept of narcissism is one of the most important contributions of psychoanalysis; second, that it is one of the most confusing" (Pulver, 1970, p.319). I will now examine the history of narcissism as both a personality disorder and trait to understand its unique manifestations and potential treatment through cognitive interpretation bias modification. This can be a difficult construct to study as it has been studied both at the clinical and subclinical level and has a mixture of negative and positive consequences (Bell, 2017). I am interested in investigating narcissism more as a personality dimension, so I will be defining it as a form of maladaptive pride.

Researchers' and clinicians' understanding of narcissism has evolved over the past century. Our modern understanding of narcissism is largely attributed to Kernbert, Kohut and Millon who characterized the construct as "unrealistically positive self-concept, grandiose fantasies, exhibitionism and entitlement, as well as inferiority, proneness to shame, empathy deficits and rage" (Ackerman, Hands. Donnellan, Hopwood, & Whitt, 2017, p. 346). This construct has both normal and pathological manifestations, as well as grandiose and vulnerable expressions. The literature on

narcissism has recently received increased attention from both clinical and social/personality psychologists, causing issues in defining the construct and producing inconsistent results. This is mostly due to differing views on what features are essential to narcissism, leading to different measurements of the construct.

Another difficulty in defining narcissism comes from the heterogeneity of its cognitive, behavioral and motivational processes, which include a grandiose view of self, inflated sense of entitlement and importance, lack of empathy and need for social admiration (Miller, Hoffman, Gaughan, Gentile, Maples, & Campbell, 2011). In addition to these traits, narcissistic individuals also have some conflicting traits, such as extraversion, self-esteem and dominance, but also disagreeableness, aggressiveness, low need for intimacy and hostility (Brown & Ziegler-Hill, 2004). In terms of interpersonal relationships, the same complex relationship is at play. On one hand, individuals with narcissistic tendencies can be charming, self-assured and humorous. They can also be perceived as selfish, hostile and arrogant partners and friends. Giacomin and Jordan (2016) argue that because narcissism may function as a personality state, everyone can be more or less narcissistic at times. They also argue that daily fluctuations in narcissism relate to one's SWB. To understand the possible relationship between state narcissism and SWB, one must recognize the complexities in differentiating narcissism as a personality trait and a personality disorder.

An additional issue in studying narcissism is the difficulties associated with determining between pathological narcissism and narcissism as a personality trait. It is important to note that the present study will not be focused on Narcissistic Personality Disorder, which is defined in the DSM-V as "a pervasive pattern of grandiosity (in

fantasy and behavior), need for admiration, and lack of empathy" (DSM-5, American Psychiatric Association, 2013, p. 645). Even though this is not the focus, those qualities give insight into narcissism as a personality trait, as they are very similar. Researchers have come to distinguish normal and pathological narcissism mainly on the differences in their manifestations. This is done by considering the outcomes associated with the manifestation: adaptive versus maladaptive. This is seen in differences of self-esteem, mood disturbances and psychological adjustment. The types of maladaptive narcissistic behaviors can be separated into two categories: grandiose and vulnerable (Giacomin & Jordan, 2016). It is important to understand these differing "types" of narcissism and the unique characteristics associated with each.

Vulnerable and Grandiose Narcissism

To clarify these differences in the manifestations of narcissism, researchers have begun to consider two separate types of narcissism: vulnerable and grandiose. Vulnerable narcissists are characterized as being insecure and neurotic, and commonly have feelings of inadequacy and incompetency. On the other hand, grandiose narcissists embody the more mainstream understanding of this construct: dominant, grandiose and aggressive. The distinction between these becomes muddled when referring to the DSM-5, most researchers agree that grandiose narcissism is more in line with the definition of Narcissistic Personality Disorder. However, there are some clear characteristics of the vulnerable subtype in the diagnostic criteria for NPD found in the descriptions of self and interpersonal ratings (eg., "exaggerated self-appraisal may be inflated or deflated, or vacillate between extremes") (Miller, Gentile, Wilson, & Campbell, 2013). Miller et al., argued that the reason for the diagnostic criteria of NPD being so similar to that of

grandiose narcissism is the two key traits selected: grandiosity and attention seeking. These traits clearly emphasize the grandiose subtype. This definition neglects the self and interpersonal difficulties associated with narcissism, which could be why there has been difficulty building a coherent understanding of NPD. Miller et al. went on to argue the difference in the manifestations of narcissism is due to external factors related to childhood experience, namely abuse.

For the purpose of this study, I will be focusing on measuring grandiose narcissism. Recent models of grandiose narcissism have theorized this type to have a personality state component (Giacomin & Jordan, 2016). Foster and Brennan's (2010) model conceptualizes this construct as a self-regulatory system where narcissism is "a set of mutually reinforcing characteristics, abilities and strategies (approach orientation, desire for self-esteem) that orient individuals toward positive self-views and greater self-enhancement" (Giacomin & Jordan, 2016, p. 13). This implies that narcissism levels may fluctuate based on the situation. An environment that focuses on competence might increase one's desire for self-esteem, which would increase one's narcissistic tendencies. This finding has prompted research into state narcissism by Giacomin and Jordan (2016). They cited the theory for their research as the density distribution approach of personality, proposed by Fleeson (2001). This model states that one's personality traits reflect one's general tendency of behavior, but personality states can differ across situations. Giacomin and Jordan (2016) measured state narcissism using the Narcissistic Personality Inventory (NPI-16) for 10-days and found that participants reported lower state narcissism on days when they were more stressed. This was done by having participants complete the NPI-16, a shortened version of the NPI, reconfigured to ask

participants how they feel "right now". They also had participants respond to a list of adjectives and rate on a scale from 1 to 7 how they have felt in the last 24 hours. Additionally, participants responded to the Single Item Narcissism Scale. Higher state narcissism was reported on days with more reported positive outcomes, such as having dominance over someone or when someone acted positively toward them. This is strong evidence that one's appraisals of situations throughout the day can cause their levels of narcissism to fluctuate. Additional evidence that supports the importance of situation appraisals in one's levels of narcissism was done using induction experiments, similar to the interpretation bias training that will be used in my study. In these experiments, Giacomin and Jordan (2014) found less state narcissism was reported after being induced to feel empathy for someone else's suffering. More state narcissism was reported when participants were primed with positive traits and after thinking about a time when they had impressed someone. These findings were replicated using three narcissism measures and a daily diary methodology to observe within-person variability in state narcissism. Higher narcissism was reported when participants felt more self-assured and positive affect, but also on days when they experienced more negative affect than usual (Giacomin and Jordan, 2014). This could be due to individuals with narcissistic tendencies tendency to become hostile and aggressive when their positive views about themselves are challenged. This is in line with Li, Sun, Ho, You, Shaver and Wong's (2015) finding that after being provoked, those induced to feel narcissism were more hostile compared to those not induced to feel narcissism. These findings set a strong foundation for the existence of state grandiose narcissism and its dependence on situational appraisals in its manifestations. Taken together, these findings suggest that the

interpretation of situations can indeed change narcissism. Thus, it seems reasonable to propose that inducing a grateful interpretation bias could reduce levels of state narcissism by increasing one's awareness of the goodness of others and their contribution to their well-being.

Gratitude and Narcissism

Research has been done to test the relationship between gratitude and narcissism. Watkins, Uhder and Pichinevsky (2014) found that over one week, participants' levels of gratitude were increased by utilizing a gratitude 3-blessings exercise. This was contrasted with a pride treatment, which is another positive emotion associated with SWB that should elicit the same amount of positive memories as gratitude. However, the gratitude treatment outperformed that for pride which illustrates the importance of grateful processing in increasing well-being. This result contradicted the criticism that counting blessings exercises enhanced SWB by simply eliciting any positive memories. Thus, it is clear that grateful processing is a necessary component in grateful recounting for enhancing SWB. One of the interesting findings from this study was the gender difference in effectiveness of the exercise. It has been argued that gratitude treatments would be less effective for men because trait gratitude is lower in men (Watkins et al., 2003) and men report less benefits from feeling grateful (Kashdan, Misha, Breen, & Froh, 2009). However, men gained significantly more from the gratitude treatment than women did Furthermore, Watkins et al. (2015) also found that trait gratitude moderated the outcome: those who were less grateful benefitted more from grateful recounting than did those higher in trait gratitude. They concluded that the people who gained most from the gratitude intervention, were those who most needed gratitude. Because narcissism is

negatively associated with trait gratitude, it is reasonable to propose that gratitude interventions might be particularly beneficial for narcissistic individuals.   This could be because counting one's blessings causes an increased awareness of the good brought into one's life from others. Encoding these benefit memories in a grateful way could cause deeper encoding, therefore easier retrieval of these blessings in the future. This could explain why participants in this study continued to have increased SWB in the weeks following the treatment, perhaps they were trained to look for positive events and to appreciate their value. Doing so could provide more meaning to the benefit and they might also see the benefactor in a more positive way, which could help narcissistic individuals become more other-focused. Watkins and McCurrach (2016) theorized that perhaps attending to grateful memories could train cognitive biases necessary to SWB and encouraged future studies to make use of the CBM paradigm, as discussed earlier. In short, it is plausible to theorize that individuals with narcissistic tendencies could benefit from these gratitude interventions if those lowest in trait gratitude really do benefit from them the most.

Does Narcissism Inhibit Gratitude?

Recent research has found narcissism to be one of the greatest inhibitors of gratitude (Solom, Watkins, McCurrach & Scheibe, 2016). Watkins (2014) argued that grateful emotions are more likely to occur when the receiver recognizes the value of the gift, the altruistic nature of the giver and if the gift exceeds the receiver's expectations. These gratitude benchmarks can be difficult for individuals with narcissistic tendencies to reach, as they may not even realize when they are receiving a gift. This could be due to their inflated sense of importance and entitlement to benefits, taking away from the

perceived value of the gift, and acknowledgement of the gift and giver entirely. Also, their feelings of superiority over others and expectation to receive gifts puts high expectations on those around them, causing gifts to rarely exceed their expectations, which could inhibit feelings of gratitude. McWilliams and Lependorf (1990) argued for another plausible explanation of narcissism inhibiting gratitude. They theorized that narcissistic individuals perceive themselves to be needless and self-sufficient, reducing the likelihood of being grateful to others because they believe that they do not need others to feel fulfilled. So, if individuals with narcissistic tendencies do not rely on others to increase their well-being, their chances of recognizing gifts from others, in their value and altruism, are significantly decreased, along with their likelihood of being grateful (Solom et al., 2016).

Recent research sought to expand on this claim of narcissism as an inhibitor of gratitude. Bell (2016) found that indeed cynicism did indeed inhibit gratitude, as did vulnerable narcissism. However, individuals with grandiose narcissistic tendencies were found to be *more grateful* after a gratitude induction than those low in narcissism. Bell hypothesized this to be due to individuals with narcissistic tendencies' stubbornness in recognizing the value in others, but when directed to a communal, or other-focused mentality, those high in narcissism can experience gratitude. His study required participants to think of a time when they received something valuable from someone else, a memory individuals with narcissistic tendencies would not usually attend to without prompting, as disregard of others is a central characteristic of narcissists. Other researchers have also been successful in reducing one's narcissistic tendencies by altering their attention from self-focused, to an other-focused mindset. Konrath, Bushman and

Campbell (2006) found that when participants felt a sense of personal connection to an interaction partner (by being told they shared the same birthday) their levels of narcissistic aggression were reduced. Similarly, Finkel, Campbell, Buffardi, Kumashiro and Rusbult (2009) found that priming participants to communal thoughts or motives, which they called "communal activation", caused individuals with narcissistic tendencies to become more committed to romantic partners. These findings are in line Giacomin and Jordan's (2014) study that found participants reported lower state narcissism when induced to feel empathy for another person. Thus, some of the negative consequences of narcissism can be reduced by increased communal focus. Gratitude might actually inhibit narcissistic tendencies by re-training those high in narcissism to interpret situations in a way that helps them to see the goodness of others and the benefits they receive, or an other-focused mindset. These findings prompt the question: does narcissism really inhibit gratitude? Or could gratitude actually inhibit narcissism?

In sum, modifying individuals' interpretation biases to increase the frequency at which they feel grateful emotion has some possible benefits, especially for individuals with narcissistic tendencies. If those low in trait gratitude can be induced to gratitude-related interpretation biases, there is a potential for enhancing these individuals' dispositional gratitude, therefore increasing their SWB. The purpose of this study is to examine whether gratitude CBM-I trainings can reduce the effects of narcissism by inducing a grateful interpretation bias, which would encourage individuals with narcissistic tendencies to recognize the goodness of others and thus might promote prosocial behaviors. Thus, decreasing their self-centeredness and increasing their gratitude. In this study, participants will be randomly assigned to either a pride or

gratitude interpretation bias training. They will then complete questionnaires consisting of scales measuring current emotional state, prosocial tendencies and gratitude. Participants will also complete a real-time measure of interpretation bias. I predict that those in the gratitude training will show greater decreases in state narcissism than those in the pride training. Furthermore, I hypothesize that those high in narcissism before the intervention will show the greatest increase in levels of gratitude post-test. In other words, gratitude will inhibit narcissistic tendencies.

Method

Design and Overview

This study utilized a 2 (training condition: gratitude, pride) x 2 (interpretation valence: gratitude, pride) x 2 (interpretation type: targets, foils) factorial experiment for the dependent variable of recognition judgment. For appraisals of participant achievements, I used a one-way experimental design (gratitude vs. pride training) using pre-training appraisals as covariates. Additionally, for the assessment of interpretation training on emotion (pride and gratitude), I used a one-way experimental design with pre-training emotional state as covariates.

Participants

Participants included 80 undergraduate psychology students from Eastern Washington University, who received extra credit via SONA for their voluntary participation in the study. Data were collected through online participation on SONA. Of the 80 participants, 63 were included in the study. Participants (17) were excluded for not completing the interpretation bias training or the recognition test. Mean age of participants was 21.67, mean annual reported income was 40,000 to 49,999. Of the

participants, 49 were female, 12 were male and 2 chose not to disclose. Participants were predominantly White (32.6%), followed by Hispanic/Latino (11.5%), Biracial (3.9%), African American (2.6%), and Asian (1.3%). However, only 48.8% of participants chose to identify their race or ethnicity. This study was conducted in accord with the ethical principles of the American Psychological Association and the Internal Review Board of Eastern Washington University (HS-5984).

Materials

Training Scenarios

I created 83 scenarios for the interpretation bias training. Each of the scenarios contained ambiguity that was resolved by the last word, or words, in the scenario. This forced the participant to disambiguate the scenario by creating the word from the word fragment. Here is an example of one of these scenarios:

> You have to take an important examination and study hard in preparation every day. Just before the exam you meet with your advisor to discuss what topics are likely to come up. When you get the exam results you find you have done really well and feel sure you owe this to your *study -fforts/advisor's h-lp*.

The option "your study efforts" disambiguates the situation in a proud manner, whereas "your advisor's help" provides for a grateful interpretation of the scenario. Participants were asked to imagine themselves vividly in each scenario (see task instructions in the procedure below), and use the meaning of the scenario to complete the associated word-fragments. One word-fragment was generated for each scenario, dictated by their assigned training condition, changing their interpretation style into either grateful or pride. All training scenarios are included in the appendix.

Pre-Training Measures

I utilized a modified version of the short Positive and Negative Affect Schedule (PANAS; Watson, Clark & Tellegen, 1988) to measure the effect of the training on emotional states. The PANAS was adapted in that it contained items from the Gratitude Adjectives Scale (GAS; McCullough, Emmons & Tsang, 2002) and exploratory pride adjectives, which were randomly scattered amongst the original items from the PANAS. This modified PANAS was given before training with these instructions, "Indicate to what extent ***you feel that way right now, that is, at the present moment***" This was used as a covariate for evaluating post-training emotional state.

Post-Test Measures

After training, participants were provided with the modified PANAS with the following instructions, "Indicate to what extent ***you feel that way right now, that is, at the present moment***, *not* necessarily how you feel generally or how you feel on average" to assess current emotional state. Participants then completed a prosocial measure derived from previous research by Bartlett et. al. (2012) that asks the following:

> "In the coming weeks, we will be conducting another study that we would like you to participate in. In this study, you will have the choice of working alone or working with another student, and in either case, the study will take about 15 to 20 minutes. Would you prefer to alone, or with another student in this study?"

To expand on the sensitivity of the first item, I developed a second item that asks participants to rate the following statement on a 7-point Likert scale, "If we asked you to work with another person, how much would you like/dislike working with them?" Participants then completed the appraisal of their second accomplishment. This was

followed by a second prosocial measure from Algoe and Haidt (2009) that asked

participants to rate their agreement with statements like, "Right now, I feel more or less

like being a good person" and "Right now, I feel more or less like taking care of others"

on an 9-point Likert scale. These scores will be used to assess the effectiveness of the

intervention. I expect participants in the gratitude treatment condition to score higher on

both prosocial measures than those in the pride because gratitude interventions have been

shown to promotes an other-focused mindset and reinforce prosocial behaviors.

Appraisals of Episodic Memories

To evaluate the impact of interpretation bias training on appraisals of actual

personal accomplishments, participants were asked to recall two personal achievements

from the last two weeks. They were then randomly assigned to evaluate appraisals for

one achievement before, and one after the training. The appraisals were rated on a 7-point

Likert scale and are listed in Table 1 below. I predicted that participants in the pride

training would have higher appraisals for responsibility than those in the gratitude. I also

predicted those in the gratitude training would rate the benefactor of their benefit as more

altruistic post-training than those in the pride. The remainder of the appraisals are

exploratory in nature.

Table 1

Benefit-Related Appraisal Prompts by Appraisal Type

Appraisal Type	Appraisal Prompt
Pride	How proud are you of this accomplishment/benefit?
Contribution	How much did you/others contribute to this accomplishment/benefit?

Satisfaction	How satisfied are you of this accomplishment/benefit?
Superiority	How much does this accomplishment/benefit indicate that you are better than others?
Entitlement	Did this accomplishment/benefit meet your expectations for what you think you deserve?
Responsibility	How much of this accomplishment/benefit was due to your own effort?
Skill	How much of this accomplishment/benefit was due to your own skill?
Natural Talent	How much of this accomplishment/benefit was due to your own natural talent?
Intelligence	How much of this accomplishment/benefit was due to your own intelligence?
Gratitude	How grateful are you for this accomplishment/benefit?
Cost	If others contributed to this accomplishment, how costly was it for them to provide it to you? In other words, how much did it cost this person in terms of time, effort, money, etc.?
Altruism	If others contributed to this accomplishment, to what extent do you think their contribution was altruistic—intended for your benefit versus given with ulterior motives?
Value	How valuable was this benefit for you?

Recognition Test

To measure participants' real-time interpretation bias, I utilized previous interpretation bias research (Eysenck et al. 1991; Mathews & Mackintosh, 2000). Participants were administered a list of 20 ambiguous achievement scenarios. These scenarios were ambiguous in terms of who or what the benefit was caused by. Participants were asked to do the following: "You are about to read a number of stories.

Try to imagine yourself in each situation as it is described. Try not to memorize the sentences, but try to understand their meaning because you will be asked questions about them later." After reading each scenario, participants were asked to answer a yes/no question about the scenario. Here is an example of one of the scenarios used:

House with a View

You have moved into a new house with a beautiful view. There is an empty lot across the street and someone begins to build on that spot. You are concerned that the new house will be several stories high and may block your view. The new owners come to visit and you tactfully discuss your concern with them. They respond by saying, "We'll think about it." When they are finished building, their house is just one story and does not impede your view.

Were there two houses built across the street? Yes   No

After reviewing each of the 20 scenarios, participants continued with the virtual "Recognition Test." The title to each scenario was included with the following instructions: "Please look at these sentences and rate how similar in meaning they are to one of the descriptions you saw earlier. None of these sentences is worded identically to any that you have seen but any number of them (1, 2, 3, or 4) could be related to the description you saw earlier. Please rate each sentence, independently from all the others, for its similarity in meaning to the original you have already seen." For each scenario, two of the statements were reasonable interpretations from the vignette (one grateful and one proud— referred to as a target) and two were unreasonable interpretations (one grateful, one proud). These statements served as foils to investigate the general response

bias that the training might produce. For example, the recognition statements for the above example vignette were as follows:

    a) Your neighbor built their house with one story because this was the ideal design for them. (proud target)

    b) Your neighbor built their house with one story because they wanted to preserve your view. (grateful target)

    c) Your neighbor has considered your situation carefully and they want to give you $5,000 for building on their lot. (grateful foil)

    d) Your neighbor has carefully considered their property and they want to build a multifamily apartment building. (proud foil)

Participants rated each statement on a 4-point Likert scale with 1 indicating "very different in meaning" and 4 indicting "very similar in meaning." In each scenario, the order of these four choices were randomized. However, scenarios were presented in the same order on the recognition test and study task.

Procedure

    The study took place online and participants signed up using the online research participation SONA. Participants agreed to an informed consent and then completed the first modified PANAS measure. Participants were then asked to recall two recent personal accomplishments with the following instructions: "Please try to recall two personal accomplishments from the past two weeks. We would like you to write down two personal achievements. They can be anything that you have recently accomplished, but try to recall accomplishments that were significant to you in some way." After typing these achievements, they were randomly assigned to report appraisals for one of these

memories. This served as the pre-training appraisal measure. Participants were then randomly assigned to the gratitude or pride interpretation bias training. Each scenario was presented one sentence at a time, participants were required to spend a minimum of two seconds reading each sentence before the remainder of the scenario was revealed. After reading the scenario, participants were told to "think of a word or phrase that would best complete the meaning of the sentence". After a brief pause, a new screen appeared with the incomplete sentence and a word fragment, as dictated by training condition, disambiguating the meaning of the sentence. After completing the 83 training trials, participants completed the second modified PANAS and first prosocial measure. Participants then completed appraisals for their remaining episodic memory accomplishment and were administered the second prosocial measure. Next, the "Recognition Test" was administered, followed by several questionnaires not directly relevant to the purpose of this thesis. Finally, we asked an open-ended question designed to assess participants' awareness of the purpose of the interpretation bias training with the following question: "What do you think we were trying to investigate with the computer task? What did you think we were trying to find out with this task?" Following the study, participants filled out the demographics form, were debriefed, and thanked for participating.

Results

Interpretation Bias Analysis

To evaluate the effect of interpretation bias training from mean scores on the recognition test, I utilized a 2 (training condition: gratitude, pride) x 2 (interpretation valence: gratitude, pride) x 2 (interpretation type: targets, foils) mixed ANOVA using

GLM where training was the between subjects' factor, and interpretation valence and interpretation type were repeated measures. A large main effect was found for interpretation type, $F(1,61)=125.80$, $p<.001$, targets were endorsed much more strongly than foils, indicating that participants were able to differentiate between reasonable and unreasonable interpretations of the recognition test scenarios. There was also a main effect for interpretation valence, $F(1,61)=34.30$, $p<.001$, demonstrating that participants endorsed grateful much more than proud interpretations. However, there was no main effect for training condition, $F(1,61)=.01$, $p=.905$. There was a significant three-way interaction between training condition, interpretation valence, and interpretation type, $F(1,61)=3.97$, $p=.051$, indicating that the training condition influenced the way participants interpreted new ambiguous scenarios. Figure 1 illustrates this interaction.

Figure 1

Mean Similarity Ratings by Training, Valence and Type
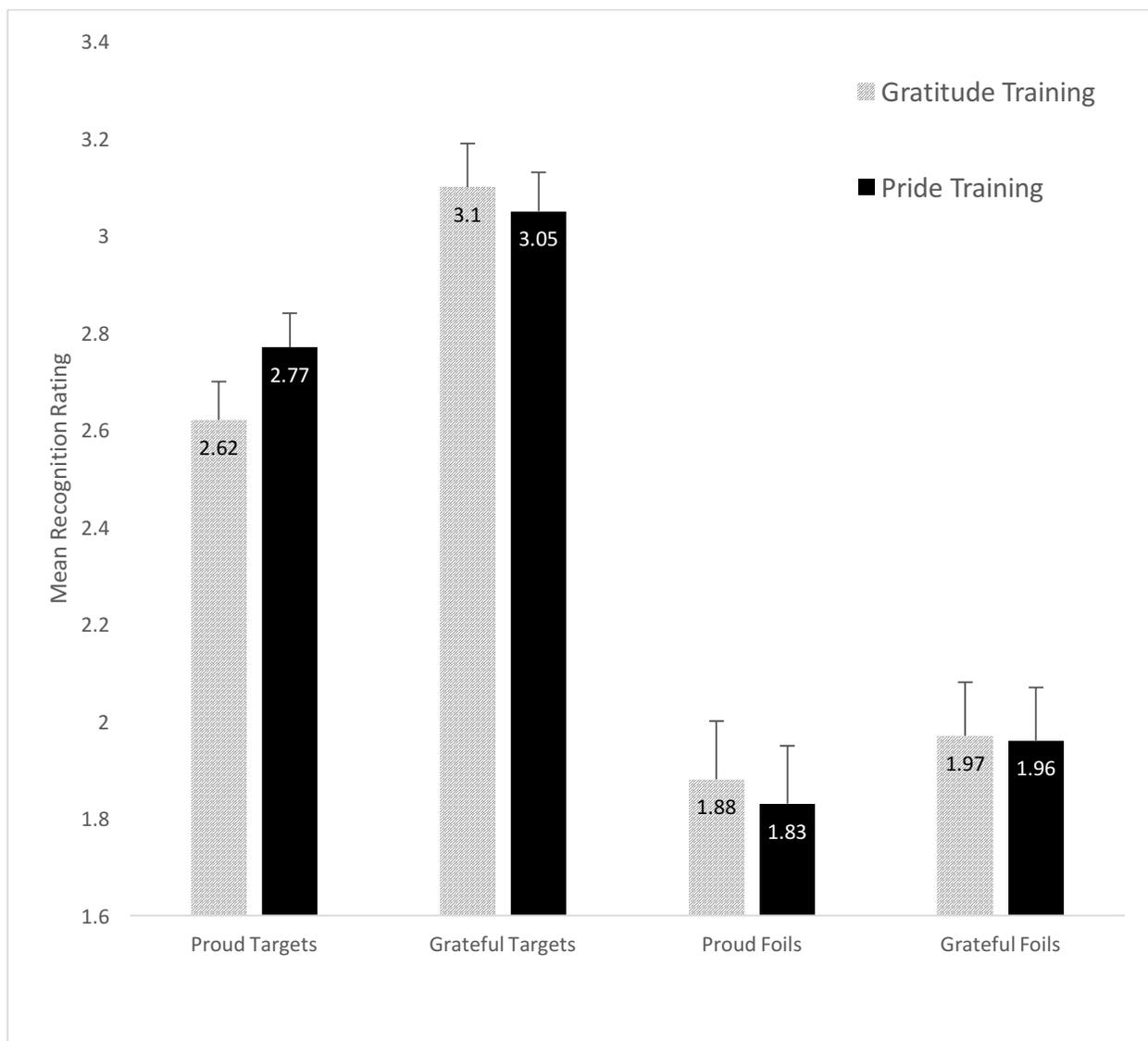
Note. Error bars represent standard error values.

Effect of Training on Ratings for Past Benefits

To evaluate the impact of interpretation training on appraisals of real-life achievements, I used a one-way experimental design (gratitude vs. pride training) on each of the two appraisals: responsibility and altruism. A significant effect of training was found for ratings of responsibility for the benefit ("How much of this accomplishment/benefit was due to your own effort?), $F(1,60)=6.41$, $p=.014$, $n^2_p = .10$, such that those in the pride training took more responsibility for the achievement than

those in the gratitude training. However, no significant effect of training was found for ratings of altruism, $F(1,34)=0.38$, $p=.542$, $n^2_p = .01$, although means were in the expected direction (See Table 2).

Effect of Training on Emotion

To evaluate the influence of interpretation training on emotion, I used a one-way ANCOVA with pre-training emotional state as covariates. Gratitude was assessed with the three adjectives from the GAS. In terms of pride related emotions, two factors emerged through exploratory factor analysis: self-confidence and narcissism. Thus, I created means using the adjectives for these scales. I found no significant differences in participants' levels of state narcissism $F(1,60)=0.30$, $p=.58$, $n^2_p = .01$, self-confidence $F(1,60)=0.81$, $p=.37$, $n^2_p = .013$, or gratitude $F(1,60)=0.99$, $p=.32$, $n^2_p = .016$. However, gratitude means were in the expected direction with those in the gratitude training ($M = 3.39$, SE = 0.15) reporting higher levels of gratitude than those in the pride training ($M = 2.92$, $SE = 0.15$) (See Table 2).

Table 2

Estimated Marginal Means and SEs of Appraisals and Emotion Levels by Training

Condition

Variable	Training Condition			
	Gratitude Training		Pride Training	
	Mean	*SE*	Mean	*SE*
Responsibility Appraisals	5.52	0.20	6.25	0.20
Altruism Appraisals	4.44	0.36	4.21	0.35
Gratitude for past event	5.65	0.22	6.25	0.21
Pride for past event	5.65	0.26	5.81	0.25
Grateful Emotion (GAS)	3.39	.15	2.92	.15
Self-Confidence	3.19	0.13	2.63	0.13
State Narcissism	1.77	.16	1.56	0.16

Note. All means are post-training.

Discussion

In this study, I found that gratitude interpretation bias modification training significantly influenced participants' interpretations of ambiguous benefit-related scenarios such that relative to pride interpretations, those in the gratitude training interpreted the scenarios in a more grateful manner than those in the pride training condition (see Figure 1). However, the intervention did not significantly impact the other outcome measures. As I discuss the implications of these results, the reader should be aware that the study was somewhat underpowered. Thus, results should be interpreted with caution, particularly those that did not reach statistical significance.

Impact of Training on Interpretation Style

The CBM-I training scenarios effectively altered participants' interpretations of achievement scenarios, thus their interpretation style was impacted by the assigned training condition: pride or gratitude. It appears that inducing participants to interpret ambiguous benefit-related scenarios in either a proud (self-focused) or grateful (other-focused) manner throughout the training impacted how they perceived ambiguous benefits on the recognition test, which has some practical implications for the utility of this training in altering people's interpretation styles. Additionally, this study had participants complete the primary outcome measure, the recognition test, after a longer amount of time post-training than did Watkins et al. (2021), thus offering some evidence for the strength of the interpretation bias intervention, even after a longer period post-test. Although the training did not significantly impact participants' emotional state, the means for gratitude were in the expected direction. That is, those in the gratitude training reported higher levels of gratitude post-test than did those in the pride. This lends partial credence to Watkins' et al. (2021) theory that interpretation style has causal consequences for gratitude.

Impact of Training on Appraisals of Personal Achievements

The CBM-I training did not significantly impact participants' emotional state or altruism appraisals of real-life achievement benefits. However, my prediction regarding the responsibility appraisal was supported. That is, those in the pride condition took significantly more responsibility for their personal achievement post-training than did those in the gratitude condition. This is consistent with Tong and Jia's (2017) finding that proud people tend to take credit for their achievements and suggests that the training did

in fact change participants' interpretation style for a real-life benefit, furthering the practical utility of CBM-I trainings. Although the altruism appraisals were not significant, which could be largely due to the small number of participants who listed benefits that were due to others, the means were in the expected direction. That is, participants in the gratitude training rated the benefactor of their benefit as more altruistic in nature than did those in the pride. Thus, the pride training caused participants to take more responsibility for their achievement and perhaps adopt a more self-focused interpretation style of ambiguous benefits. This finding lends partial credence to my prediction that the pride condition of the CBM-I training would increase participants' levels of pride, or state narcissism. Interpreting ambiguous benefit scenarios as due to one's own effort seemed to cause participants to take more responsibility for past benefits in their life. This is in line with Giacomin and Jordan's (2016) finding that grandiose narcissism has a personality state component and can be manipulated by inducing situations that focus on competence, thus increasing participants' desire for self-esteem. The pride trainings seemed to do just that: adopting a prideful interpretation style increased participants desire for self-esteem and responsibility over their achievement. This finding also supports the importance of situational appraisals in manifestations of narcissistic tendencies, consistent with research from Giacomin and Jordan (2014) that found participants reported higher levels of state narcissism after being induced to think about a time they had impressed someone. However, I should highlight that the intervention did not significantly impact pride related emotions.

Interestingly, participants in both conditions endorsed grateful interpretations of the recognition test scenarios much more than proud. This suggests that generally

speaking, people tend to interpret situations in a more grateful than proud fashion. Perhaps it could be that individuals with narcissistic tendencies chose the grateful interpretations because they were the more socially acceptable choice, as a need for social admiration and being perceived as charming are characteristic of these individuals (Brown & Ziegler-Hill, 2004; Giacomin & Jordan, 2016). Future studies analyzing the impact of situational appraisals on the manifestations of state narcissism should have a larger participant pool with more men. The present study only had 12 male participants, as narcissistic tendencies are much more common in men than women (Watkins et al., 2003). A limitation of this finding is that it is difficult to tell if I was measuring changes in participants' level of healthy pride or maladaptive pride, as associated with narcissistic tendencies. To alleviate this in future studies, new implicit measures for narcissism should be established. It seems that self-report is not the most reliable way of measuring these traits, as the scales are commonly very negativistic in nature (Ackerman & Donnellan, 2013). Perhaps the CBM-I methodology for increasing grateful interpretations could be expanded as a treatment tool for clinicians who suspect their client could have narcissistic tendencies, or even Narcissistic Personality Disorder. Using the same ambiguous scenarios, it could be interesting to let participants interpret the benefits in whatever way they do so without training. Then, one could identify those that seem to have maladaptive levels of pride, or a self-focused interpretation bias, and assign them to a gratitude training.

Limitations and Future Directions

There are some notable methodological limitations of this study, one being that the study was conducted online. The majority of previous studies utilizing CBM-I were

done in-lab (e.g., Bowler et al., 2012; Watkins et al., 2021), however, restrictions due to the COVID-19 Pandemic mandated the study be done via an online platform. Conducting this intervention in-lab may offer greater control over participants' completion of the study, as 16 participants in the present study did not complete the primary outcome measure for interpretation bias, the recognition test. However, I found the intervention significantly impacted participants' interpretations of future ambiguous benefit scenarios, which offers support for the effectiveness of CBM-I interventions, even in underpowered studies. This is related to another major limitation of the study: number of participants. I had originally hoped to have at least 88 participants and predicted a medium effect size. However, it is not surprising that I found a small effect size. Whereas Watkins et al. (2021) found a large effect size when differentiating between grateful and non-grateful interpretations, the present study sought to differentiate between two positive emotions: gratitude and pride. Appraisals of positive emotions are more likely to overlap, thus the smaller effect size observed here is to be expected (Tong & Jia, 2017). For example, appraisals related to personal value are considered central to experiencing grateful emotion (Wood et al., 2008). However, the emotion of pride should also be enhanced if one values the benefit (Tong & Jia, 2017). Thus, it would not be surprising if participants in each training condition rated their achievements as having similar levels of personal value, which appeared to be the case in this study. I would argue the same could be true for appraisals of satisfaction with the benefit. If someone is very grateful or proud of an achievement, I would expect for them to be highly satisfied with it as well. However, the effectiveness of the training offers support to the theory that gratitude and pride are two distinct positive emotions with unique appraisal structures.

Future studies utilizing this methodology could benefit from asking participants to report general good things that have happened them for the appraisal measures instead of personal achievements. Asking for *personal* achievements could have produced a ceiling effect for pride appraisals, as people are generally very proud of their personal accomplishments. The same rationale could explain why I did not see a change in participants' levels of gratitude for their benefit post-training. Watkins et al. (2021) found a ceiling effect in their participants' ratings of gratitude for a past event as well. This is consistent with past research that found manipulating individuals' level of gratitude for past events to be extremely challenging, as people tend to rate their gratitude for past benefits in their life very favorably (van Gelder, Beattie, Hosner, Watkins & Kolts, 2009).

Although the training did not significantly impact participants' state gratitude, state narcissism or self-confidence as measured by the modified PANAS, the gratitude means were in the expected direction, supporting the utility of this intervention for studies with adequate statistical power. In future studies utilizing CBM-I in an online format, reducing the number of training scenarios could alleviate the lack of complete responses on the recognition test, as my 83 scenarios seemed to either exhaust or frustrate some participants into quitting the study before completion. Indeed, it took participants in this study more than forty-five additional minutes to complete compared to the CBM-I in Watkins et al. (2021). This could explain why levels of gratitude decreased post-training for participants in both conditions.

Conducting the study online also introduces another possible issue: the type of student signing up for the study. I would argue there could be some qualitative

differences in students who register for in-lab and online studies. It could be that students who preferentially choose to complete in-lab studies are more motivated to participate in research and thus tend to be more conscientious participants. This could explain why many of the participants who quit the study did so during the 83 training trials, likely due to lack of motivation to complete a study that was estimated to take up to an hour and a half. The COVID-19 Pandemic restrictions could also explain why only three participants in the study indicated that they would want to work with another student on a future study per the responses on the prosocial measures. Unfortunately, in retrospect the two prosocial measures seem nonsensical when considering the pandemic restrictions. Thus, it is not surprising that the vast majority of participants chose not to work with another student.

I believe this study illustrates the utility of CBM-I trainings in investigating differences in the emotions of gratitude and pride, as well as the appraisals associated with each. It seems that other-focused interpretation training did indeed elicit more grateful interpretations of ambiguous benefits than did self-focused interpretation training. This finding is consistent with past positive psychology research on appraisals related to gratitude (Algoe & Stanton, 2012; Gordon & Chen, 2013; Watkins et al., 2021). These results address Watkins' et al. (2021) theory that CBM-I for positive emotions has the potential to assist positive psychology researchers in developing a way of classifying positive emotions by identifying the specific appraisal structure associated with each emotion. In conclusion, CBM-I interventions may be an effective treatment for altering individuals' cognitive biases related to their interpretation of ambiguous benefit-related scenarios.

References

Ackerman, R. A. & Donnellan, M. B. (2013). Evaluating Self-Report Measures of

Narcissistic Entitlement. *Journal of Psychopathology and Behavioral Assessment,*

35, 460-474.

Ackerman, R. A., Hands, A. J., Donnellan, B., Hopwood, C. J., & Witt, E. A. (2017).

Expert's view regarding the conceptualization of narcissism. *Journal of*

Personality Disorders, 31(3), 346-361. https://doi.org/10.1007/s10862-013-9352-

7

Algoe, S. B. (2012). Find, remind, and bind: The functions of gratitude in everyday

relationships. *Social and Personality Psychology Compass, 6,* 455-469.

Algoe, S. B., & Stanton, A. L. (2012). Gratitude when it is needed most: Social functions

of gratitude in women with metastatic breast cancer. *Emotion*, *12*(1), 163–168.

https://doi-org.ezproxy.library.ewu.edu/10.1037/a0024024.supp (Supplemental)

Ames, D. R., Rose, P., & Anderson, C. P. (2006). The NPI-16 as a short measure of

narcissism. Journal of Research in Personality, 40, 440–450. http://dx.doi.org/

10.1016/j.jrp.2005.03.002.

Bar-Haim, Y. (2010). Research review: Attention bias modification (ABM): A novel

treatment for anxiety disorders. *Journal of Child Psychology and Psychiatry, 51,*

859-870.

Bartlett, M. Y., Condon, P., Cruz, J., Baumann, J., & Desteno, D. (2012). Gratitude:

Prompting behaviours that build relationships. *Cognition and Emotion, 26*, 2-13.

Bartlett, M. Y., & DeSteno, D. (2006). Gratitude and prosocial behavior: Helping when it

costs you. *Psychological Science, 17*, 319-325.

Baumeister, R. F., Bratslavsky, E., Finkenauer, C., & Vohs, K. D. (2001). Bad is stronger
than good. *Review of General Psychology*, *5*, 323-370.

Bell, J. (2016). *Cynicism and narcissism: Masking the good life?* (Unpublished master's
thesis). Eastern Washington University, Cheney, Washington.

Bowler, J. O., Mackintosh, B., Dunn, B. D., Mathews, A., Dalgleish, T., & Hoppitt, L.
(2012). A comparison of cognitive bias modification for interpretation and
computerized cognitive behavior therapy: Effects on anxiety, depression,
attentional control, and interpretive bias. *Journal of Consulting and Clinical
Psychology*, 1021-1033.

Brown, R. P. & Zeigler-Hill, V. (2004). Narcissism and the non-equivalence of self-
esteem measures: A matter of dominance? *Journal of Research in Personality, 38,*
585-592.

Davis, D. E., Choe, E., Meyers, J., Wade, N., Varjas, K., Gifford, A., Quinn, A., Hook, J.
N., Van Tongeren, D. R., Griffin, B. J., & Worthington, E. L., Jr. (2016).
Thankful for the little things: A meta-analysis of gratitude interventions. *Journal
of Counseling Psychology*, *63*(1), 20–31. https://doi-
org.ezproxy.library.ewu.edu/10.1037/cou0000107

Emmons, R., & McCullough, M. (2003). Counting blessings versus burdens: An
experimental investigation of gratitude and subjective well-being in daily life.
Journal of Personality and Social Psychology, 377-389.

Eysenck, M. W., Mogg, K., May, J., Richards, A., & Mathews, A. (1991). Bias in
interpretation of ambiguous sentences related to threat in anxiety. *Journal of*

Abnormal Psychology, *100*(2), 144–150. https://doi-

org.ezproxy.library.ewu.edu/10.1037/0021-843X.100.2.144

Finkel, E. J., Campbell, W. K., Buffardi, L. E., Kumashiro, M., & Rusbult, C. E. (2009).

The metamorphosis of Narcissus: Communal activation promotes relationship

commitment among narcissists. *Personality and Social Psychology Bulletin*, *35*,

1271-1284. doi:10.1177/0146467209340904

Fleeson, W. (2001). Toward a structure-and process-integrated view of personality: Traits

as density distributions of states. Journal of Personality and Social

Psychology, 80(6), 1011–1027. http://dx.doi.org/10.1037/0022-3514.80.6.1011.

Foster, J. D., & Brennan, J. C. (2010). Narcissism, the agency model, and approach-

avoidance motivation. In W. K. Campbell & J. D. Miller (Eds.), The handbook of

narcissism and narcissistic personality disorder (pp. 89–100). Hoboken, NJ:

Wiley.

Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The

broaden-and-build theory of positive emotions. *American Psychologist, 56,* 218-

226.

Fredrickson, B. L. (2004). Gratitude, like other positive emotions, broadens and builds. In

R. A. Emmons & M. E. McCullough (Eds.), *The psychology of gratitude* (145-

166). New York: Oxford Press.

Furnham, A., Richards, S. C., & Paulhus, D. L. (2013). The dark triad of personality: A

10 year review. *Social and Personality Psychology, 7*(3), 199-216.

Giacomin, M., & Jordan, C. H. (2014). Down-regulating narcissistic tendencies:

Communal focus reduces state narcissism. Personality and Social Psychology

Bulletin, 40, 488–500. http://dx.doi.org/10.1177/0146167213516635.

Giacomin, M., & Jordan, C. H. (2016). The wax and wane of narcissism: Grandiose narcissism as a process or state. Journal of Personality, 84, 154–164. http://dx. doi.org/10.1111/jopy.12148.

Giacomin, M. & Jordan, C. H. (2016) Self-focused and feeling fine: Assessing state narcissism and its relation to well-being. *Journal of Research in Personality, 63,* 12-21.

Gordon, A. M., & Chen, S. (2013). Does power help or hurt? The moderating role of self–other focus on power and perspective-taking in romantic relationships. *Personality and Social Psychology Bulletin*, *39*(8), 1097–1110. https://doi-org.ezproxy.library.ewu.edu/10.1177/0146167213490031

Holmes, E. A., Mathews, A., Dalgleish, T., & Mackintosh, B. (2006). Positive interpretation training: Effects of mental imagery versus verbal training on positive mood. *Behavior Therapy, 37,* 237-247.

Jordan, C. H., Giacomin, M., & Kopp, L. (2014). Let go of your (inflated) ego: Caring more about others reduces narcissistic tendencies. *Social and Personality Psychology Compass*, *8*(9), 511–523. http://doi.org/10.1111/spc3.12128

Jackowska, M., Brown, J., Ronaldson, A., & Steptoe, A. (2016). The impact of a brief gratitude intervention on subjective well-being, biology and sleep. *Journal of Health Psychology, 21*(10), 2207-2217.

Kashdan, T. B., Mishra, A., Breen, W. E., & Froh, J. J. (2009). Gender differences in gratitude: Examining appraisals, narratives, the willingness to express emotions, and changes in psychological needs. *Journal of Personality*, *77*, 691–730.

Konrath, S., Bushman, B. J., & Campbell, W. K. (2006). Attenuating the link between threatened egotism and aggres- sion. *Psychological Science*, *17*, 995-1001. doi:10.1111/ j.1467-9280.2006.01818

Li, C., Sun, Y., Ho, M. Y., You, J., Shaver, P. R., & Wong, Z. (2015). State narcissism and aggression: The mediating roles of anger and hostile attribution bias. Aggressive Behavior, 9999, 1–13. http://dx.doi.org/10.1002/ab.21629.

Mathews, A., & Mackintosh, B. (2000). Induced emotional interpretation bias and anxiety. *Journal of Abnormal Psychology*, *109*, 602-615.

McCullough, M. E., Emmons, R. A., & Tsang, J.-A. (2002). The grateful disposition: A conceptual and empirical topography. *Journal of Personality and Social Psychology*, *82*, 112–127.

McCullough, M. E., Kilpatrick, S. D., Emmons, R. A., & Larson, D. B. (2001). Is gratitude a moral affect? *Psychological Bulletin, 127*, 249-266.

Miller, J. D., Gentile, B., Wilson, L., & Campbell, W. K. (2013). Grandiose and Vulnerable Narcissism and the DSM–5 Pathological Personality Trait Model. *Journal of Personality Assessment*, *95*(3), 284–290.

Miller, J. D., Hoffman, B. J., Gaughan, E. T., Gentile, B., Maples, J., & Campbell, K. W. (2010). Grandiose and vulnerable narcissism: A nomological network analysis. *Journal of Personality, 79*(5), 1014-1042.

Paulhus, D. L, & Williams, K. M. (2002). The dark triad of personality: Narcissism, machiavellianism, and psychopathy. *Journal of Research in Personality, 36*, 556–563.

Rosenberg, E. (1998). Levels of analysis and the organization of affect. *Review of General Psychology, 2*, 247-270.

Rosenberg, M. (1965). *Society and the adolescent self-image.* Princeton, NJ: Princeton University Press.

Scheibe, D., Watkins, P. C., McCurrach, D., & Mathews, A. (2016, May). Cognitive characteristics of gratitude. Poster presented to the Annual Convention of the Association for Psychological Science, Chicago, IL.

Scherer, K., Schorr, A., & Johnstone, T. (2001). *Appraisal processes in emotion theory, methods, research (Series in Affective Science).* Oxford; New York: Oxford University Press.

Solom, S., Watkins, P. C., McCurrach, D., & Scheibe, D. (2017). Thieves of thankfulness: Traits that inhibit gratitude. *Journal of Positive Psychology, 12*, 120-129.

Twenge, J. M., (2013). Overwhelming evidence for generation me: A reply to Arnett. *Emerging Adulthood, 1*(1), 21-26.

van Gelder, M., Beattie, A., Hosner, P., Watkins, P. C., & Kolts, R. L. (2009, April). *Can you ruin a grateful memory?* Poster presented to the 89th Annual Convention of the Westerns Psychological Association, April, 2009, Portland, OR.

Watkins, P. C. (2004). Gratitude and subjective well-being. In R. A. Emmons & M. E. McCullough (Eds.), *The psychology of gratitude* (pp. 167-192). New York: Oxford University Press.

Watkins, P. C. (2011). Gratitude and well-being. In C. Martin-Kumm & C. Tarquinio (Eds), *Traité de Psychologie Positive: Théories et implications pratiques* (pp. 519-537). Bruxelles, France: De Boeck Publishers.

Watkins, P. C. (2014). *Gratitude and the good life: Toward a psychology of appreciation*. Dordrecht, Netherlands: Springer.

Watkins, P. C., & Bell, J. (2017). Advances in theory and research in the psychology of gratitude. In S. Donaldson & M. Rao (Eds.), *Scientific advances in positive psychology* (pp. 103-129). New York: Praeger.

Watkins, P. C., Grimm, D. L., & Kolts, R. (2004). Counting your blessings: Positive memories among grateful persons. *Current Psychology, 23*. 52-67.

Watkins, P. C., Munger, P., Hutton, B., Elliott, K. & Mathews, A. (2021). Increasing an individual's trait gratitude by modifying interpretation biases. *Journal of Positive Psychology* [in press].

Watkins, P. C., Wood, A., & Shields, V. (2016, June). *Institutional gratitude: Understanding grateful responses to salary raises.* Poster presented to the 8th Annual European Convention for Positive Psychology, Angers, France.

Watkins, P. C., Woodward, K., Stone, T., & Kolts, R. D. (2003). Gratitude and happiness: The development of a measure of gratitude and its relationship with subjective well-being. *Social Behavior and Personality, 31,* 431-452.

Watkins, P. C., Uhder, J. & Pichinevskiy, S. (2014). Grateful recounting enhances subjective wellbeing: The importance of grateful processing. *The Journal of Positive Psychology*. doi: 10.1080/17439760.2014.927909

Watson, D., Clark, L. A., & Tellegen, A. (1988*). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology, 54(*6), 1063–1070. https://doi-org.ezproxy.library.ewu.edu/10.1037/0022-3514.54.6.1063

Wood, A., Maltby, J., Stewart, N., Linley, P., Joseph, S., & Phelps, Elizabeth A. (2008). A social–cognitive model of trait and state levels of gratitude. *Emotion,* 281-290.

Appendix

Study Announcement

This study is designed to investigate how your imagination can impact various psychological states. ***You must complete this study with a laptop or desk top computer (no smart phones please), and it is important that you reserve about an hour to complete this in a timeframe where you will not be distracted by other things.*** In this study you will be asked to complete some initial questionnaires and then you will be imagining yourself in a number of different scenarios. For example, you might imagine what it might be like to win an award because of your academic performance. The initial questionnaires should take only a few minutes to complete to complete. First, we will ask you to complete several questionnaires concerning your current emotions (i.e., how you're feeling right now). Then we will ask you to imagine yourself in a number of different scenarios, and we will ask you some questions about each scenario (e.g., "Did you enjoy receiving the award?"). The imagination section of this study should take anywhere from 30 to 40 minutes. After imagining these scenes, we will then administer several additional questionnaires. The questionnaires being administered ask you various questions about your current feelings and your opinions on issues such as how much you agree with the statement "Life has been good to me", and "I love the green of spring." Some questionnaires will ask you to report about other aspects of your life such as your feelings about those you are associated with. We will also ask you to recall several situations in which you feel that you have accomplished something, and will ask several questions about your thoughts as you reflect on these situations (e.g., "As you think about this situation, how happy does it make you?"). In total, this study should take anywhere from 45 minutes to an hour.

Consent (first screen)

This study is designed to investigate how your imagination can impact various psychological states. ***You must complete this study with a laptop or desk top computer (no smart phones please), and it is important that you reserve about an hour to complete this in a timeframe where you will not be distracted by other things.*** In this study you will be asked to complete some initial questionnaires and then you will be imagining yourself in a number of different scenarios. For example, you might imagine what it might be like to win an award because of your academic performance. The initial questionnaires should take only a few minutes to complete to complete. First, we will ask you to complete several questionnaires concerning your current emotions (i.e., how you're feeling right now). Then we will ask you to imagine yourself in a number of different scenarios, and we will ask you some questions about each scenario (e.g., "Did you enjoy receiving the award?"). The imagination section of this study should take anywhere from 30 to 40 minutes. After imagining these scenes, we will then administer several additional questionnaires. The questionnaires being administered ask you various questions about your current feelings and your opinions on issues such as how much you agree with the statement "Life has been good to me", and "I love the green of spring." Some questionnaires will ask you to report about other aspects of your life such as your feelings about those you are associated with. We will also ask you to recall several situations in which you feel that you have accomplished something, and will ask several questions about your thoughts as you reflect on these situations (e.g., "As you think about this situation, how happy does it make you?"). In total, this study should take anywhere from 45 minutes to an hour.

This study involves less than minimal risk to your well-being. You may find that the imagination task is somewhat wearing, but most people don't think the task is very aversive. Your participation in this experiment is anonymous, which means that we can't connect your responses with your identify. You may find that some questions relate to sensitive issues (e.g., "How sad are you right now?"), however, remember that your responses are anonymous. Access to information is restricted to the principal investigator and his research assistants. You may choose to withdraw from this study at any time without penalty. The data obtained in this experiment will be used to promote our understanding of psychological states. Five years after publication of this study your data will be destroyed via shredding. Your participation in this study indicates your consent to be involved in this study. If you agree to participate, please press the 'OK" button below.

Short Positive and Negative Affect Schedule (PANAS; Watson, Clark & Tellegen, 1988) with items from Gratitude Adjectives Scale (GAS; McCullough, Emmons & Tsang, 2002) and exploratory pride adjectives.

This scale consists of a number of words that describe different feelings and emotions. Read each item and then mark the appropriate number in the space next to that word. Indicate to what *extent you feel that way right now, that is, at the present moment*, *not* necessarily how you feel generally or how you feel on average. Use the following scale to record your answers.

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

____ interested	____ scared	____ ashamed
____ distressed	____ appreciative	____ irritable
____ grateful	____ hostile	____ alert
____ confident	____ enthusiastic	____ self-respecting
____ playful	____ indebted *(feeling like you owe)*	____ joyful
____ excited	____ humiliated	____ inspired
____ upset	____ proud	____ thankful
____ strong	____ amazed	____ obligated
____ guilty	____ superior	____ nervous
____ attentive	____ jittery	____ determined
____ active	____ afraid	____ amazed
____ disgraced	____ Blameworthy	____ self-assured
____ poised	____ humble	____ respectful
____ sad	____ better than others	____ interested
____ curious	____ delighted	____ serene
____ sluggish	____ contented	____ angry
____ at ease	____ bored	____ satisfied with self

Recalling Accomplishments

Please try to recall 2 accomplishments that you achieved in the past four weeks. Others might have been involved in the accomplishments, or they might not have, but it can be any accomplishment that you think enhanced your life in some way. Please write a sentence or two about this event below:

Accomplishment within the last 4 weeks:	About how many days ago did this take place?
1.	____ days ago
2.	____ days ago

Please proceed to the next screen.

Appraisals of Participant Accomplishments/Benefits

Accomplishment/Benefit: _____

The following questions involve your accomplishment/benefit above, and any other people who might have been involved with this benefit. Now we would like you to think about this accomplishment/benefit and put your honest responses to the items below.

How much did you contribute to this accomplishment/benefit?

1	2	3	4	5	6	7
Not at all			I contributed a moderate amount			This was completely due to me

How much did others contribute to this accomplishment/benefit?

1	2	3	4	5	6	7
Not at all			Others contributed a moderate amount			Others contributed a great amount

If others contributed to this accomplishment, how costly was it for them to provide it to you? In other words, how much did it cost this person in terms of time, effort, money, etc.?

1	2	3	4	5	6	7
Not costly at all			Moderately costly			Very costly

___Others did not contribute.

If others contributed to this accomplishment, to what extent do you think their contribution was altruistic—intended for your benefit versus given with ulterior motives?

1	2	3	4	5	6	7
It was primarily given with ulterior motives			Somewhat for ulterior motives and somewhat for my benefit			It was primarily given for my benefit

___Others did not contribute.

How valuable was this accomplishment/benefit for you?

1	2	3	4	5	6	7
Not valuable			Moderately valuable			Very valuable

How much of this accomplishment/benefit was due to your own intelligence?

1	2	3	4	5	6	7
Not due to my intelligence			Moderately due to my intelligence			Very much due to my intelligence

How much of this accomplishment/benefit was due to your own natural talent?

1	2	3	4	5	6	7

Not due to my talent			Moderately due to my talent			Very much due to my talent

How much of this accomplishment/benefit was due to your own skill?

1	2	3	4	5	6	7
Not due to my skill			Moderately due to my skill			Very much due to my skill

How much of this accomplishment/benefit was due to your own effort?

1	2	3	4	5	6	7
Not due to my effort			Moderately due to my effort			Very much due to my effort

Did this accomplishment/benefit meet your expectations of what you think you deserved?

1	2	3	4	5	6	7
It was very much below my expectations			It was about what I think I deserved			It very much exceeded my expectations

How much does this accomplishment/benefit indicate that you are better than others?

1	2	3	4	5	6	7
Not at all			Moderately better than others			Very much better than others

How proud are you of this accomplishment/benefit?

1	2	3	4	5	6	7
Not proud			Somewhat proud			Very proud

How grateful are you for this accomplishment/benefit?

1	2	3	4	5	6	7
Not grateful			Somewhat grateful			Very grateful

How satisfied are you with this accomplishment/benefit?

1	2	3	4	5	6	7
Not satisfied			Somewhat satisfied			Very Satisfied

Interpretation Bias Training Scenarios

Below I provide the scenarios that participants will imagine themselves involved with, along with the word fragment completions, and the questions involved with affirming the interpretation.

Please try to imagine yourself as vividly as you can as the central character in each of the scenarios that will be presented to you. Try to create as vivid a picture of the scenario as you can in your mind. Each scenario will be presented to you on three successive screens, and you will see that on the third screen the last word will be missing. Try to think of what that word will be. Then you will see a word fragment (e.g., w_ rd), and your task will be to press the letter on the keyboard that represents the first correct missing letter. Use your image of the scenario that is presented to produce the correct letter that completes the word fragment. You must choose the correct letter, or you won't be able to proceed to the next screen.

You have to take an important examination and study hard in preparation every day.
Just before the exam you meet with your advisor to discuss what topics are likely to come up.
When you get the exam results you find you have done really well and feel sure you owe this to your
study -fforts/advisor's h-lp. (different endings for pride vs gratitude).

Did you work hard to prepare for the exam? (yes)
Did you get advice about likely exam topics? (Yes)

You find you have become increasingly nervous about speaking in public.
You consult a therapist who guides some practice exercises, gradually increasing the number of people in your audience.
Your confidence slowly returns, and you know you have to thank your own pers-stence/your therap-st.

Did your confidence return without you having to do any practice? (No)
Did your confidence return without your seeing a therapist? (No)

You have just received a letter of acceptance for a graduate program that you really wanted to get into. One of your professors has connections with faculty in that graduate program, and she had written a letter of recommendation for you, but you weren't really sure about how supportive the letter would be. You know that this program is very selective and wonder about why you got in. In the end, you conclude that you were accepted into the program because of your *own hard w_rk (work)/ professor's h_lp.*

Were you accepted because of your diligence in school? (yes)
Did your professor's recommendation letter help you get into the graduate program? (yes)

Over the summer you have studied with a friend for the Graduate Record Exams in order to pursue a graduate degree. You're not really sure if you studied hard enough or if

studying with your friend has been beneficial. You end up scoring better than 94% of others taking the test and conclude that you have to thank *your own intel_gence/ studying with your fri_nd.*

Did you do well because of your own brainpower? (yes)
Was studying with your friend helpful to your performance? (yes)

It is graduation day and you hear your name called to walk across the stage. You hear cheers and applause and know this moment could not have been possible without your *own hard w_rk/parent's s_crifices.*

Was it easy for you to achieve this degree? (no)
Did your parents refuse to help you in your education? (no)

You apply for a job that you're not sure you are qualified for. After the interview you anxiously await to hear back from the employer. You get the call that you got the job and know it's due to your *personality and ch_rm/ new employer reviewed your application th_ughtfully.*

Was the interviewer put off by your character? (no)
Was your new employer careless when they reviewed your application? (no)

Your professor has just completed a test review, and you're nervous about the test. After taking the test you're still anxious about your grade, but you end up getting an excellent grade. In thinking about how you got this grade, in the end you decide it was because of your *int_lligence / intructor's test r_view.*

Did you get this grade because you are gifted intellectually? (yes)
Was your instructor helpful in you achieving this grade? (yes)

Your friends throw you a surprise birthday party and you are surprised at how many people attend. As you look around the crowded room and see everyone smiling and laughing, you wonder why everyone is having such a good time. This party is a hit because of your *p_pularity/ friends' time spent on party pl_nning.*

Was this party successful despite the fact that you're not very well-liked by others? (no)
Was your friends planning irrelevant to why the party was successful? (no)

You find that your car has died in the parking lot and you desperately need to get your car going in order to get to work. You look around and approach a man a couple parking spots away and ask if he will help you. He agrees and as you are driving away, you think about how relieved you are to be on time for work because of *your own per_istence/ the stranger's k_ndness.*

Were you able to get your car fixed because of your own determination? (yes)
Was the stranger's help important to getting your car fixed? (yes)

You have been trying to get into shape, so you join your local fitness club. They assign you a workout assistant and they meet with you for about 10 minutes every week. After being at the club for 2 months your romantic partner comments on how good your physique looks. You know that for getting into shape you have thank your *own hard w_rk/workout ass_stant.*

Were you able to get into shape because of your own diligence? (yes)
Was the workout assistant helpful for you getting in shape? (yes)

Although your grandmother lives quite some distance from you and it had been hard for you to visit her lately, after her death you learn that she has given you a $15,000 inheritance. You had not expected this money and as you think about why she gave this to you, you conclude that it was because *you were d_serving/ of her gener_sity.*

Were you unworthy of your grandmother's inheritance? (no)
Was your grandmother stingy with her money? (no)

You are a person who tends to be anxious on dates and you have a hard time asking others out. You read a book and take an online course on dating anxiety, but you wonder if this is actually what you need. You finally invite someone out and have a wonderful time with them, and you know that you have to thank your *c_urage/ d_te.*

Did you have a good date despite your own cowardice? (no)
Was your date successful despite the behavior of your date? (no)

You have been struggling to lose weight and your friend suggests a new diet that seems to have worked for them. Although you find that the diet is hard to follow, after 8 weeks you have lost 19 pounds. You know that you were successful because of your *own det_rmination/friend's sugg_stion.*

Did you lose weight despite the fact that you didn't try very hard? (no)
Was your friend's advice helpful for your weight loss? (no)

You are in a fairly difficult class that requires a group presentation. Your professor assigns you to a group, but you're concerned about the contributions of the other group members. In your first meeting you make some suggestions for how the group might make the presentation, and after some discussion the group decides to split up the presentation so that each member is presenting one part of the topic. You end up receiving the top grade in the class for your presentation and you know it was due to *your clever s_ggestions/the contribution of the whole gr_up.*

Were your suggestions unhelpful to the success of your group's presentation? (no)
Were the other group members unhelpful for your group's presentation? (no)

You have finally received a significant promotion on your job. This was something that you've sought after for some time, and in discussing this opportunity with your fellow worker they tell you how good you will be in this new position, and happen to say that they had mentioned this to your boss too. You finally conclude that you got the promotion because of your *attractive p_ersonality/friend's con_ribution.*

Did you get the promotion because of your appealing traits? (yes)
Did your friend help you get this promotion? (yes)

You're applying for a very competitive scholarship. You know that it's difficult to get so you consult with a friend who won the scholarship last year. You then are excited to find out that you have been awarded the scholarship and you know that you have to thank your *in_elligence/f_iend.*

Did you get this scholarship because of your cleverness? (yes)
Was your friends advice useful for getting this scholarship? (yes)

Six of your close friends take you out for your birthday. At dinner, one of your friends gives you an expensive gift. You wonder why they spent so much money on you. In the end, you think it was because of your *eng_ging nature/friend's g_nerosity.*

Did your friend give you a nice gift despite your unattractive personality? (no)
Was your friend stingy in their gift? (no)

You're struggling in one of your classes and so you join a study group. Although you meet regularly, you're unsure of how helpful it is. You end up getting a very good grade in the class and conclude it was because *of how you changed your study h_bits/your study group really he_ped.*

Did your determination to change how you study improve your grade (yes)
Was your study group's assistance helpful for improving your grade? (yes)

 You're running for a position in student government and you ask a friend to help you campaign. You end up winning in a landslide and conclude it was because of your *w_nning personality/ friend's supp_rt.*

Did you win the election because you are so likeable? (yes)
Was your friend's assistance important to you winning the election? (yes)

You arrive late for your statistics exam that you have been studying for all week. Once you find your seat, you realize you forgot your calculator. The teaching assistant offers for you to use hers. You find out later that day that you aced the test and ultimately think

I really must have done a great job s_udying/ I'm so glad for the teaching assistant's gen_rosity.

Did you do well on the test because of how you reviewed the material? (yes)
Was the teaching assistant's kindness important for your performance on the test? (yes)

You find out that your favorite tv show came out with a new season on Netflix and you cannot wait to watch all of the episodes. You sign into Netflix and realize your free trial has ended. Your roommate offers for you to use his account and you watch the show together. Later that night, you think to yourself because my roommate wanted to watch, this must mean *my taste in shows is e_cellent/ my roommate is very thou_htful.*

Is your taste of TV shows not very discriminating? (no)
Was your roommate thoughtless in this situation? (no)

You are presenting a project in class and forget your next line in the presentation. Your partner steps in and cues you for the information you forgot. Then you are able to remember the rest of your presentation and you receive a good grade. As you think about why you did well, you think *I really presented in a con_ident way / I'm so glad my partner had my b_ck.*

Did you present your project in an insecure manner? (no)
When your partner cued you during your presentation was this distracting to you? (no)

You miss the bus to school and have to ask you partner to take you. Your partner also seems to be running late to work but agrees to take you if you make dinner that night. You arrive on time to school and know you have to thank *your great c_oking / how your partner is so g_ving.*

Was your cooking talent important to your partner giving you a ride? (yes)
Was your partner generous with their time? (yes)

You have completed your degree and have moved out from your parents' house. You now live in your own apartment with your own job but find yourself $100 short on rent. While eating lunch at your parents' place you happen to mention your financial situation, and the next day you find a $150 check from them. As you think about this benefit, you know that you have to thank how much your parents have *appreciated your dil_gence / s_pported you.*

Did your parents give you the money because of your own persistence? (yes)
Was your parents' support generous? (yes)

You have just purchased a cabin at the beach with a beautiful view of the ocean, but your neighbor's trees are blocking your view. You meet your new neighbor and mention this to them. The next morning you wake up one to find that your neighbor has thinned their

trees unveiling beautiful view of the sea and think, this is because they *really like me as their new n_ighbor / are really very c_nsiderate.*

Did your neighbors trip the trees despite your rather aversive character? (no)
Did your neighbors trim their trees because they are really selfish? (no)

In your research methods class, a fellow classmate gives you an article relevant to your term paper, even though they know you have completed a very extensive literature search. You find yourself thinking a lot about why they gave you the article. You decide that your classmate giving you the article was *because they thought the topic you chose was g_eat / very k_nd.*

Did your classmate give you the article because they thought you had a very interesting topic? (yes)
Did your classmate give you the article out of their thoughtfulness toward you? (yes)

You receive a letter from an aunt you have not heard from for quite some time. She writes that she is concerned about your college education and she includes a $500 check with her letter. You wonder why she sent you the letter and know that you really have to thank the fact that your potential as a student is so gre_t / she is so c_ring.

Was your aunt impressed with your budding academic ability? (yes)
Did your aunt give you this money out of her kindness? (yes)

You have just purchased all of your textbooks for the quarter and are carrying them to your car, which happens to be parked some distance away. You drop a few of them and someone you do not know picks them up and carries them to your car. You find yourself wondering why they are assisting you. You conclude that helped you because you're att_active / of their ge_erosity.

Did the person help you with your books because you were appealing to them? (yes)
Was the person who helped you with your books motivated by their kindness for you? (yes)

You're working on a group project for a class with four other members of your team, each one working on different aspects of the assigned topic. You work very hard on the project and you hope that the other members of your team are doing so also. The team presentation receives a very good grade—96%—and from your experience on this project you conclude that the contributions of the others on your team was *ins_gnificant / imp_rtant.*

Did the other members of your team make a valuable contribution to this project? (no)
Was the contribution of the other team members to this project insignificant? (no)

You answer your phone and it's a recruiter from a company where you recently interviewed. They tell you that you got the job and there were 1,000 applicants. On your

first day you arrive and people are milling about as you walk through the door. You see your new boss on the phone, and you know that you can thank your *own com_etence / new b_ss.*

Did you get this job because of your own skill and ability? (yes)
Was your new boss essential in getting you this new position? (yes)

You have a doctor's appointment at the time of a test in one of your classes, but your professor lets you take the test a day late. You get an excellent grade on the test, and you know that you have to thank your *in_elligence / professor.*

Did you get a good grade on the test despite the fact that you're not very smart? (no)
Was your professor unhelpful in your ability to get a good grade on this test? (no)

You have worked at a grocery store for five years, but after talking to a friend you find that your wages are significantly lower than people working at other grocery stores. Your store manager tells you that they are committed to providing their employees with a competitive wage and this results in a five-dollar per hour raise for you. You think a lot about why they gave you this raise and conclude that you owe this to your *e_cellence on the job / manager's c_nsideration.*

Did you get the raise because you were so good at your job? (yes)
Was your manager's thoughtfulness about your situation important for getting your raise? (yes)

You are studying for a difficult exam and you feel that you have a pretty good handle on the material. While studying, you receive an email from a friend listing a number of questions they think will be on the test. You wonder how helpful this information will be, but you end up getting a good grade on the test. As you reflect on why you got a good grade, you conclude that it was due to your *good study sk_lls / friend's h_lp.*

Did you get a good grade despite your poor study skills? (no)
Was your friend's email unhelpful for your test? (no)

You are very concerned about how you are going to pay for tuition next quarter. A friend of yours' just won $200,000 in the State Lottery, and they give you enough money to pay for your tuition. As you wonder why they gave this money to you, you know that you have to thank your *i_portance to your friend / friend's k_ndness.*

Are you a significant acquaintance in your friend's life? (yes)
Was your friend caring to you? (yes)

You are taking a very difficult class that is core to your major. You spend a lot of time on the class because you want to do well, but when you add up your points you have fallen

three points short of the total required to receive an 'A'. When you receive your grades, you see that your instructor has awarded you an 'A' in the class. You conclude that they gave you that grade because *you 're a s_perior student / of your instructor's ge_erosity.*

Did you get an 'A' because you're a top-quality student? (yes)
Was your professor kind to you? (yes)

You are taking a class in which the term project is completed in teams. There are seven different teams in the class and your instructor assigns a "captain" to each team. The captains are then supposed to choose members for their team, each taking turns to choose each member. You know that one particular captain works hard, is organized, but is obsessed with getting an 'A'. This captain picks you as the first member of their team and you conclude that they chose you because *you were the b_st / they wanted to be c_nsiderate.*

Were you chosen first because you're a superior student? (yes)
Was your captain thoughtful in choosing you first? (yes)

Although you do not know Professor McAllister well, you have taken several classes from her and have done fairly well in her classes. You are applying for a job and you are a little nervous about asking this professor for a letter of recommendation. She agrees to write you a letter, but she says that it is her policy that the letter needs to be confidential, meaning that you will not be able to see the letter. You wonder what the letter will be like, but you get the job and you know it was due to your *qua_ifications / professor's l_tter.*

Did you get the job despite the fact that you were underqualified? (no)
Was your professor's letter unhelpful for getting this job? (no)

You're taking a very difficult class where a grade of a 'C' is required for completing your major.
You work very hard in the class but out of a possible 600 points you only get 430, which is 20 points short of receiving a 'C'. You're worried about your grade, but your professor ends up giving you a 'C' in the class and you feel that this grade was very *j_stified / gen_rous.*

Did you deserve this grade? (yes)
Did your professor give you this grade out of their kind-heatedness? (yes)

One of your good friends has created a profile for you on Match.com and a couple other dating sites, although you had previously mentioned that you needed time to get over your last relationship. You soon find your e-mail and phone flooded with notifications from these sites and know that this is due to your *own attr_ctiveness / friend's s_pport .*

Are you getting responses from this dating site despite the fact that you're not very good looking? (no)

Was your friend unsupportive in signing you up on the dating sites? (no)

You come home after dark and discover that your lights aren't working on your car and you're just about out of groceries. You think about going without dinner, but you call your mother and she brings over some groceries for you. You feel that she has done this because *you're her f_vorite child / she is so g_ving* .

Are you your mother's favored child? (yes)
Was your mother generous? (yes)

You have asked someone out on a date. You seem to have a good time with them, and when the check comes, they offer to pay for the meal. This surprises you, but as you think about it you realize they paid the check because of your *app_al / date's kin_ness.*

Did your date pay for the mean because you were so attractive to them? (yes)
Did your date pay for the date because they're a kindhearted person? (yes)

You have to take a statistics class and you're concerned about it because math really makes you nervous. After you don't do very well on your first test your professor calls you into her office and gives you some advice about relaxing during tests. You notice that you're starting to feel more relaxed on your homework assignments, and you do well on your remaining tests. As you think about your performance in this class you know that you have to thank your *own d_ligence / professor's adv_ce* .

Were you actually somewhat lax in your effort and time spent on this class? (no)
Was your professor's assistance not very useful for your performance on your tests? (no)

You are competing for a scholarship that requires you to give a public speech. You have always been a bit nervous about public speaking, so you work really hard on the speech and your roommate listens to your speech several times and offers some advice. You are awarded the scholarship and know that you have to thank your *speech writing a_ility / friend's ass_stance.*

Are you a really good speech writer? (yes)
Was your friend helpful to you? (yes)

You have been dating someone for two months and you're wondering if you should make a commitment to them. You discuss the matter with your friend and end up deciding that you should offer your commitment to the person you're dating. It's now six months later, and this has proved to be a very fulfilling relationship. You know that you made this good decision because of your *own wisdom / friend's guid_nce.*

Did you have good insight into this relationship? (yes)
Was your friend's advice valuable? (yes)
You're having a problem with your computer and are looking online for information on how to fix it. After struggling to fix it you find a forum that contains information about

your problem. Ultimately you feel glad that you were rewarded *by your own dili_ence/ by the information provided by o_her*s.

Were you persistent in providing the solution to your problem? (yes)
Were you helped by the information others provided online? (yes)

You're struggling in one of your classes and have been studying a lot but decide to go to your instructor's office hours for extra help. You do well on the next exam, and you attribute your success to your *extensive stu_ying / instructor's h_lp.*

Did your study efforts pay off? (yes)
Was your instructor helpful? (yes)

You're applying for college and one of your professors writes you a letter of recommendation. You end up getting into the school of your choice. Ultimately, you know that you got in because *you're an excellent stu_ent / of the recomm_ndation.*

Are you a bad student? (no)
Was your professor's letter unhelpful? (no)

You're at a new school and don't know anyone but you make a new friend in one of your classes which turns out to be a great friendship. You feel that this friendship is due to *your own like_bility / the other person's fr_endliness.*

Are you an unpleasant person? (no)
Was the new person you met unfriendly? (no)

There's a student leadership position open that you are somewhat interested in and your friend encourages you to run for it. You end up winning the election and know that this was because *you were the best c_ndidate / of your friend's en_ouragement.*

Were you a poor candidate? (no)
Was your friend's encouragement useless? (no)

You're sick and have to miss a couple days of class. Your friend notices you're absent and sends you their notes from the lectures you've missed so that you don't fall behind. You think they did this for you because your friend *thinks you're wo_derful / is so tho_ghtful.*

Does your friend dislike you? (no)
Was your friend insensitive? (no)

You're practicing hard to improve at your favorite sport. As a gift, your parents pay for some private training sessions. The next season you do really well, and you feel that you owe this to your *own hard w_rk / parents' g_nerosity.*

Did you spend a lot of time and effort at your sport? (yes)
Were the extra training session helpful? (yes)

You're struggling to find a career path while at your university and your advisor mentions a path that they think might suit you. You choose to pursue that field and end up excelling. You feel you have this success because *in this profession you are very c_mpetent / of your advisor's g_idance.*

Are you untalented for your career? (no)
Was your advisor's advice unhelpful? (no)

You have a presentation to give in one of your classes and you are pretty nervous for this one in particular. You practice your speech a lot and a good friend of yours offers to help you rehearse it. The presentation ends up going really well. In the end you feel you owe this to your *own hard w_rk / friend's he_p.*

Did your time and effort on the speech pay off? (yes)
Was your friend's assistance helpful? (yes)

You're buying a car from a family friend and negotiate the price with them. You end up getting a great deal on the car and feel that you got this deal because of your *cl_ver negotiating skills / friend's kin_ness.*

Were you bad at haggling? (no)
Was your friend cruel to you? (no)

You want to work on your fear of public speaking, so you take a speech class. You work hard in the class and your teacher offers constructive criticism and tries to create a good environment for speeches. You make significant progress in overcoming your fear and attribute this to your *own c_urage / teacher's he_p.*

Were you brave in this class? (yes)
Was your instructor's teaching beneficial? (yes)

Your friend buys you a nice gift that you did not expect. You wonder about this gift and conclude that they've done this because *you're a gr_at person / friend is very c_nsiderate.*

Were you given this because your friend thinks you're a terrible person? (no)
Was your friend's act thoughtless? (no)

Your father introduces you to a new hobby—playing chess. You agree to try it and he helps get you started. You end up enjoying chess a lot. You determine that you owe your enjoyment to your *natural ta_ent / father's encoura_ement.*

Did you have an aptitude for playing chess? (yes)

Was your father instrumental in you pursuing chess? (yes)

You attend a college basketball game and during halftime there is an event where they pick one person from the stands to try and make a shot from half court. If the person makes the shot, they win a round trip vacation package from a sponsor. You're are selected to try the shot, you make it and win the vacation! You feel you owe this vacation to *your great basketball t_lent / the sponsor's g_nerosity.*

Were you incompetent at basketball? (no)
Was the sponsor stingy? (no)

Your boss tells you that you're getting a sizeable year-end bonus. As you ponder this bonus, you realize that you have to thank your *hard w_rk / bosses' gene_osity.*

Did you put in a lot of effort for the bonus? (yes)
Was your bosses' kindness important to getting the bonus? (yes)

You're looking for a job and your friend puts in a reference for you at a company they work for. The company interviews you and eventually offers you employment. Ultimately, you feel that you got the job because your *application was e_cellent / friend's recommendation was b_neficial.*

Did you get the job despite having a bad application? (no)
Was your friend's recommendation unhelpful for you getting the job? (no)

You have just passed your drivers exam and have gotten your license. This comes at a great relief because you have been training to pass this exam for months. Your mother has allowed you to drive her around for hours at a time even when it was a burden on her to do so. As you reflect on why you got your driver's license, you know that you have to thank your *own pe_sistence / mother's s_crifice.*

Did you study hard for your license? (yes)
Was your mother's help important for receiving your license? (yes)

Because of health concerns, you determine that you need to lose 26 pounds. You work hard at your diet and exercise, but a friend gives you a new diet book that you begin to read. You end up losing 30 pounds and know that you owe it to your *d_ligence / friend's th_ughtfulness.*

Did you lose weight despite not working hard for it? (no)
Did you lose weight even though your friend was inconsiderate of you? (no)

You have really been trying to get good grades because you know that the graduate school that you would like to attend is very competitive. You parents provide you with tuition money, graduate school application preparation courses, and pay for your

applications. You end up getting accepted to your top graduate school and know that you have to thank your *great in_elligence / parent's assi_tance.*

Did you get into graduate school because of how smart you are? (yes)
Was your parent's help important for you getting into graduate school? (yes)

You get into an argument with a friend over a mistake you made in the past. You apologize because you are worried about your friendship. You feel relieved when you hear your friend say that they forgive you. Your feel that friendship was saved because of your *h_mility / friend is so und_rstanding.*

 Was your friendship harmed by your humility? (no)
Was your friend unkind to you? (no)

After four years of classes, you are in the last quarter before your graduation. Although you have received good grades throughout your studies, in the last quarter a good friend of yours dies and you find it very difficult to concentrate. In fact, in one of your classes you attain 51% of the points possible, which should be a failing grade and would prevent you from graduating. Your professor assigns you a passing grade and you know that you received your college degree due to your *hard s_udying / professor's k_ndness .*

Did you put out a lot of effort to get your degree? (yes)
Was your professor generous in giving you a passing grade? (yes)

You apply for your dream job and get called back for an interview, which you have heard is very rare. You feel the interview does not go as well as you'd hoped, but you see an old friend in the lobby and find out they work at that company. They say they will talk to the boss, but you wonder what they might say to him. You get the job and ultimately attribute this to *the fact that you were the candidate who was b_st / your friend's s_pport.*

Did you get the job because you were the best person who applied for it? (yes)
Was your friend's help beneficial? (yes)

You have just completed a fitness contest and have won the competition. When you are on the stage receiving your reward, you look to your consultant you have paid to coach you. In the end, you conclude that won this award because of your *own e_forts / c-ach*

Were you lazy in preparing for this competition? (no)
Was your coach unhelpful for this competition? (no)

You have a large term paper due in a week. You have spent time on your literature review and your writing, but feel unsure about the paper. You visit the Writing Center for some help but wonder if they're giving you good advice. You end up getting an 'A' on the paper, and you know that you have to thank *your own writing a_ility / the W_iting Center.*

Are you a good writer? (yes)
Was the advice from the Writing Center helpful? (yes)

You are applying for a very competitive internship that you know will be helpful in getting a good job after graduation. You spend time on your application, but you also consult with your university advisor who offers you some application guidance. After waiting a while, you are offered the internship and know that this was due to the fact that your *application was e_cellent / advisor was he_pful.*

Did you submit a bad application? (no)
Did your advisor give you bad advice? (no)

You are applying for graduate school and you have already submitted 12 applications. You have spent some time on these applications but a friend of yours informs you of another program that seems to fit your interest, and so you apply. This graduate school offers you a position in their program and was the only program that accepted you. After pondering your acceptance, you conclude that it was primarily due to your *own qua_ifications / friend's tho_ghtfulness.*

Were you well qualified for this graduate program? (yes)
Was your friend's advice helpful? (yes)

You are close to graduating but have discovered that you're short of funds for tuition for your last quarter. A friend of yours learns of your situation and starts a "Go Fund Me" campaign for your tuition. It doesn't seem to be getting many donations, so your friend asks you to post an update on "Go Fund Me" that explains what you'd like to do with your degree. After a month, the fund actually provides for your needed tuition dollars and you know that you owe this to your *own ef_orts / friend's ass_stance.*

Was your contribution to the "Go Fund Me" campaign unsuccessful? (no)
Was your friend unhelpful? (no)

You are applying for graduate school and are studying for the standardized test that is required. Because you're very concerned about your performance, you spend a lot of time studying for the test. Two weeks before you take the exam you talk with a friend of yours who has taken the test and she tells you about what the test emphasizes. You end up scoring very high on the test and realize that it was mostly due to your *study s_ills / friend's a_vice*

Did you study well for this test? (yes)
Was your friend's help beneficial? (yes)

You were involved in a serious car accident that prevented you from jogging for three months. You have many appointments with a physical therapist and finally are able to get back to running. You have just recorded your fastest time for running a mile, and you know that you can thank your *p_rsistance / th_rapist .*

Was your consistent exercise useless? (no)
Was your physical therapist useless? (no)

Your place of employment has a very strict work schedule policy, and unfortunately your work schedule makes some important leisure activities unavailable for you. After speaking to your supervisor, you don't think your schedule will change. However, when your work schedule is posted you see that now it doesn't interfere with your leisure activities. After reflecting on this change, you conclude that your schedule changed because of your *inf_uence / supervisor's g_nerosity*.

Were you effective in convincing your supervisor? (yes)
Was your supervisor kind to you? (yes)

You are purchasing a new car and you pick a reasonable but attractive car that is just above your price range. You explain to the dealer what you can afford. The dealer lowers the price and you know that you owe this price to *your negotiation s_ills / the dealer's th_utfulness*.

Was your explanation ineffective? (no)
Was the car dealer unkind? (no)

You are late for class and take a chance to travel about 10 mph above the speed limit to get to school. Unfortunately, a police officer notices your speed and pulls you over. You explain your situation and the officer lets you off with a warning. As you drive to school you know that you have to thank *your pers_asiveness / the officer's c_mpassion.*

Was your explanation to the officer effective? (yes)
Was the officer kind to you? (yes)

You have finally saved up enough money to buy a home, and the sellers have accepted your offer. As you think about this important milestone in your life, you reflect on how long it took you to save and how your parents taught you to handle money. As you walk into your new home, you know that you have to thank your *own d_ligence / parents' w_sdom.*

Was it easy for you to save for your home? (no)
Was your parents' advice on money foolish? (no)

At work you are assigned to a group whose goal is to get a major company to hire your firm. Many suggestions are made in your team discussions for the best way to present your services to this company, and you also make some suggestions but you're not sure how well they are received. After your team makes the presentation, the client ends up hiring your firm for a major contract and you know that this was due to your brilliant *sug_estions / te_mmates.*

Were your suggestions for your presentation effective? (yes)
Were your teammates helpful for winning this contract? (yes)

You've just started on a new job and you're a bit anxious about meeting the other employees. You spend some time in the lunchroom and try to have some conversations with your fellow workers, but you're unsure of how well it went. On the first Friday of your new job, one of the employees asks you to a party with your fellow workers and you conclude that you received this invitation because of your *a_peal / fellow employee's though_fulness.*

Are you disliked by the other employees? (no)
Was the other employees' invitation unkind? (no)

You are graduating and the faculty of your department has voted for you to receive an award that only two other students receive. As you think about this award you know that you have to thank your *superb in_elligence / the faculty's c_nsideration.*

Did you earn this award because of your brainpower? (yes)
Did you earn the award because of the thoughtfulness of the faculty? (yes)

You move to a new town where you do not know anybody. On your first day there, a neighbor approaches you and you chat for a bit. Later, they call and invite you to an outing with other neighbors, likely due to *your ch_rm/their ge_erosity.*

Was your neighbor impressed with you? (yes)
Was your neighbor kind? (yes)

You move in next door to a family with a dog that barks constantly. You politely mention to your neighbor that their dog is distracting you from working during the day because of its barking. The next day, you do not hear any barking and are able to get all of your work done because *you were so po_ite / they were willing to he_p.*

Was your communication to your neighbors ineffective? (no)
Were your neighbors insensitive to your request? (no)

You start a new job and are struggling on your first day of work. Your boss tells an older employee to mentor you for a few days. After your first week, you feel more comfortable in your role and are even praised by your boss for your great work, primarily due to your *ability to learn qu_ckly/coworker's s_pport.*

Did you show an ability to learn you job well? (yes)
Was your coworker's mentorship helpful? (yes)

Modified Positive and Negative Affect Schedule Post-Training:

This scale consists of a number of words that describe different feelings and emotions. Read each item and then mark the appropriate number in the space next to that word.

Indicate to what **extent you feel that way right now, that is, at the present moment**, *not* necessarily how you feel generally or how you feel on average. Use the following scale to record your answers.

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

_____ interested	_____ scared	_____ ashamed
_____ distressed	_____ appreciative	_____ irritable
_____ grateful	_____ hostile	_____ alert
_____ confident	_____ enthusiastic	_____ self-respecting
_____ playful	_____ indebted *(feeling like you owe)*	_____ joyful
_____ excited	_____ humiliated	_____ inspired
_____ upset	_____ proud	_____ thankful
_____ strong	_____ amazed	_____ obligated
_____ guilty	_____ superior	_____ nervous
_____ attentive	_____ jittery	_____ determined
_____ active	_____ afraid	_____ amazed
_____ disgraced	_____ blameworthy	_____ self-assured
_____ poised	_____ humble	_____ respectful
_____ sad	_____ better than others	_____ interested
_____ curious	_____ delighted	_____ serene
_____ sluggish	_____ contented	_____ angry
_____ at ease	_____ bored	_____ satisfied with self

Prosocial Measure (Bartlett, Condon, Cruz, Baumann & Desteno, 2012)

In the coming weeks, we will be conducting another study that we would like you to participate in. In this study, you will have the choice of working alone or working with another student, and in either case, the study will take about 15 to 20 minutes. Would you prefer to alone, or with another student in this study?

I would prefer to work alone   I would prefer to work with another student

Additional Exploratory Question Designed in Lab

If we asked you to work with another person, how much would you like/dislike working with them?

1	2	3	4	5	6	7
I would not like working with another student at all			I really don't care whether or not I would be working with another student			I would really like working with another student

Recalling Accomplishments

Now we would like you to rate your other accomplishment that you recalled earlier. Below, we filled in a reminder of this accomplishment. As before, others might have been involved in the accomplishment, or they might not have.

Other Accomplishment within the last 4 weeks: _____	About how many days ago did this take place?
2.	____ days ago

Please proceed to the next screen.

Accomplishment/Benefit: _____

The following questions involve your accomplishment/benefit above, and any other people who might have been involved with this benefit. Now we would like you to think about this accomplishment/benefit and put your honest responses to the items below.

How much did you contribute to this accomplishment/benefit?

1	2	3	4	5	6	7
Not at all			I contributed a moderate amount			This was completely due to me

How much did others contribute to this accomplishment/benefit?

1	2	3	4	5	6	7
Not at all			Others contributed a moderate amount			Others contributed a great amount

If others contributed to this accomplishment, how costly was it for them to provide it to you? In other words, how much did it cost this person in terms of time, effort, money, etc.?

1	2	3	4	5	6	7
Not costly at all			Moderately costly			Very costly

___Others did not contribute.

If others contributed to this accomplishment, to what extent do you think their contribution was altruistic—intended for your benefit versus given with ulterior motives?

1	2	3	4	5	6	7
It was primarily given with ulterior motives			Somewhat for ulterior motives and somewhat for my benefit			It was primarily given for my benefit

___Others did not contribute.

How valuable was this accomplishment/benefit for you?

1	2	3	4	5	6	7
Not valuable			Moderately valuable			Very valuable

How much of this accomplishment/benefit was due to your own intelligence?

1	2	3	4	5	6	7
Not due to my intelligence			Moderately due to my intelligence			Very much due to my intelligence

How much of this accomplishment/benefit was due to your own natural talent?

1	2	3	4	5	6	7
Not due to my talent			Moderately due to my talent			Very much due to my talent

How much of this accomplishment/benefit was due to your own skill?

1	2	3	4	5	6	7
Not due to my skill			Moderately due to my skill			Very much due to my skill

How much of this accomplishment/benefit was due to your own effort?

1	2	3	4	5	6	7
Not due to my effort			Moderately due to my effort			Very much due to my effort

Did this accomplishment/benefit meet your expectations of what you think you deserved?

1	2	3	4	5	6	7
It was very much below my expectations			It was about what I think I deserved			It very much exceeded my expectations

How much does this accomplishment/benefit indicate that you are better than others?

1	2	3	4	5	6	7
Not at all			Moderately better than others			Very much better than others

How proud are you of this accomplishment/benefit?

1	2	3	4	5	6	7
Not proud			Somewhat proud			Very proud

How grateful are you for this accomplishment/benefit?

1	2	3	4	5	6	7
Not grateful			Somewhat grateful			Very grateful

How satisfied are you with this accomplishment/benefit?

1	2	3	4	5	6	7
Not satisfied			Somewhat satisfied			Very Satisfied

Prosocial Measure (Algoe & Haidt, 2009)

Right now, I feel (more or less) like…

…being a better person

-4	-3	-2	-1	0	1	2	3	4
much less than				no different than				much more than
I usually feel				I usually feel				I usually feel

…doing something good for others

-4	-3	-2	-1	0	1	2	3	4
much less than				no different than				much more than
I usually feel				I usually feel				I usually feel

…seeking what really matters in life

-4	-3	-2	-1	0	1	2	3	4
much less than				no different than				much more than
I usually feel				I usually feel				I usually feel

…being with others

-4	-3	-2	-1	0	1	2	3	4
much less than				no different than				much more than
I usually feel				I usually feel				I usually feel

…saying something negative about others

-4	-3	-2	-1	0	1	2	3	4
much less than				no different than				much more than
I usually feel				I usually feel				I usually feel

…getting to know other people

-4	-3	-2	-1	0	1	2	3	4
much less than				no different than				much more than
I usually feel				I usually feel				I usually feel

…taking care of others

-4	-3	-2	-1	0	1	2	3	4
much less than				no different than				much more than
I usually feel				I usually feel				I usually feel

…saying something positive about others

-4	-3	-2	-1	0	1	2	3	4
much less than				no different than				much more than
I usually feel				I usually feel				I usually feel

…meeting new people

-4	-3	-2	-1	0	1	2	3	4
much less than				no different than				much more than
I usually feel				I usually feel				I usually feel

…being alone

-4	-3	-2	-1	0	1	2	3	4
much less than				no different than				much more than
I usually feel				I usually feel				I usually feel

"Recognition Test"—Interpretation Bias Measure

You are about to read a number of stories. Try to imagine yourself in each situation as it is described. Try not to memorize the sentences, but try to understand their meaning because you will be asked questions about them later.

(All of the recognition test items are listed below with the related scenario, but these will be presented with each scenario title after each participant studies all of the below scenarios).

Over for Dinner

You have just moved into a new house and some neighbors close to your new place invite you over for dinner. They serve you a very nice dinner that seemed to require a lot of cooking with expensive food. At the end of the evening they invite you over for another meal and you wonder about why your neighbors have invited you again.

Did your neighbors discuss property taxes with you?   Yes   No

Your new neighbors invited you over for dinner again because they think you're an attractive person.
Your new neighbors are very generous.
Your new neighbors think that you are a powerful politician who can provide favors.
Your new neighbors are quite well off and will actually give you some money.

Group Presentation

You have a group presentation with three other people that is a class assignment. On your first meeting, everyone is assigned different tasks to complete the project and you wonder how much time and effort the others will actually spend on their tasks. You end up receiving a good grade for the presentation.

Were there more than five members on your class project team?   Yes   No

You received a good grade on this project primarily because of your own effort.
You received a good grade on this project because everyone made a valuable contribution to the presentation.
You received a much higher grade on the presentation than the other members on your team.
Your instructor gave considerable praise to the other members of your team.

Computer Malfunction

You are writing a term paper that is due tomorrow. When you are almost done with the paper, the computer goes blank and you fear that you have lost all of your work. You try a number of things, but the monitor remains blank. Your roommate happens to come by

and notices your problem. They offer to help and manage to recover the file which is still intact. You end up getting an excellent grade on your paper.

Did you lose the work on your paper?   Yes   No

Your grade on the paper was completely due to your own hard work and writing skills.
Your roommate's help was responsible for your being able to get a good grade.
Your instructor told you it was the best paper they had ever read.
Your roommate wrote the last half of the paper for you.

50th Wedding Anniversary

Your parents are celebrating their 50th wedding anniversary, and you meet with your siblings to plan a party for them. You have a very animated discussion as to what the party should be like and discuss different aspects of the party that you and your siblings will be responsible for. After the meeting, you are a bit worried about whether your siblings will follow through. The party ends up being a huge success.

Was the wedding anniversary a failure?   Yes   No

The party was a success because you put a lot more effort into the event than your siblings.
Your siblings made a substantial contribution to the success of the party.
You bought your parents the most expensive give for the party.
Your siblings put on the party completely without your help.

A Major Grant

You have been working on a major grant application for your institution worth $300,000. This is the first major grant that you have applied for, and your grants department gives you some advice about applying for this grant. As you reflect on your grants department you wonder how helpful their advice will be, but you spend several months preparing the application. You know that the grant competition is very competitive, and the evaluation committee tends to be harsh, but you end up being awarded the grant.
Was the grant worth less than $5,000?   Yes   No

The only reason you received the grant was because of your hard work and intelligence.
The help that you received from the grants department was crucial for receiving this grant.
Your grant application received the Gold Medal for the grant that was judged the best.
The grants department wrote most of the application for you.

Chosen as the Team Leader

You are taking a class in which the term project is completed in teams. There are 5 different teams in the class and your instructor assigns a "Team Leader" to each team.

These positions are felt to be honored positions and your instructor first picks you as a Team Leader. You wonder why they chose you first.

You were chosen first as a team captain because you are an outstanding student.
You were chosen as a team captain because of the thoughtfulness of your instructor.
You were recognized for your brilliance and were awarded you an automatic 'A' for the project.
Your instructor awarded you an 'A' for the project even though your team did not do exceptionally well.

Finding an Internship

It is Winter Quarter of your senior year and you expect to graduate in the spring. You're concerned about getting work after you graduate but several of your friends have been able to get jobs after participating in internships at several potential work sites. One of your friends recommends a particular internship that he was involved in, and you wonder if you are qualified for the internship. You go ahead and apply, and you receive the internship and they offer you a job after you graduate.

Are you on schedule to graduate in the spring?   Yes   No

You got the internship because of your own effort and qualifications.
Your friend's help was the reason that you received the internship.
The internship offered you a job with a salary of over $100,000 per year.
The internship told you that they offered you the position because they liked your friend so much.

A Nice Retirement Fund

You have worked hard for your company for 35 years and you are now ready to retire. Although your company does not have a pension plan, when you were 30 years old they encouraged you to take out 5% of your salary that they would match for a 401K retirement plan. Your retirement fund now has plenty of money for a comfortable retirement, and you wonder about how the fund became so substantial.

Do you have enough money to retire?   Yes   No

You had a substantial amount of money for retirement because of your own careful planning and investment for retirement.
Your company's contribution and direction was crucial for your substantial retirement fund.
The primary reason you were able to retire comfortably was because you made the wise choice of investing in Starbuck's
The primary reason you were able to retire comfortably was because you received a large inheritance.

A Fitness Plan

You have recently joined a fitness club with the intention to lose weight and get in shape. A club "fitness pro" offers you some initial advice about exercise and diet. You're not sure how helpful this advice will be, but you go consistently to the club and over the course of three months you lose 15 pounds.

Have you been a member of the club for at least three months?   Yes   No

You lost weight only because of your dedication to diet and exercise.
The advice given by the "fitness pro" was important to you losing weight.
You were awarded the club award for losing the most weight in a month.
The club gave you an additional 3 months of membership for free.

Buying a New Car

You have a friend who is older than you and enjoys mentoring you on personal finance. They emphasize saving for major purchases rather than taking on significant debt, but you wonder how helpful this advice will be. After you graduate, you find a nice job and try put a little money each month into a fund. After a while you check the fund and are surprised to find that you have enough money for a significant down payment on a car that is very appealing to you. You are able to purchase the car and find yourself wondering about how you were able to purchase it.

Did you buy a car that was attractive to you?   Yes   No

You were able to buy the car only because of your hard work.
Your mentor's advice was crucial for being able to buy the car.
You were able to buy the car because the car salesman thought you were such a great person.
Your grandmother gave you a significant amount of cash that enabled you to buy the car.

A Family History Book

You do a little digging and find out that your grandparents and great grandparents have had a very interesting history, and you suggest to your siblings that you should write a book together about it. Your siblings think it's a good idea and they help you with more research. You have your sister write up the final manuscript because you know she is a good writer. The book ends up being published, sells quite well, and even earns a few literary awards.

Did your book end up getting published?

The main reason this book was successful was because of your initial idea about the book.

The contribution of your siblings was essential to the success of the book.

Because of the success of the book, you were awarded the "Top Entrepreneur" award by *Best Books* magazine.

Your sister's writing was so amazing that the book made the New York Times "best sellers" list.

Overcoming a Problem

You have been concerned because you have felt that you become too easily angry at people in various situations. You have read several books on the topic and meet with a counselor for four sessions. You wonder about the help you receive, but in the end, you are able to significantly decrease your anger reactions.

Did you have 10 sessions of counseling?   Yes   No

You were able to overcome your anger primarily because of your own ingenuity and tenacity.

Your counselor provided vital help for overcoming your anger problem.

Your counselor told you that you were the best client they had ever had.

Your counselor was so kind that they gave you your sessions for free.

Joining a Yacht Club

You have become very interested in boating and would like to join a yacht club that is somewhat exclusive. You go to a meeting that introduces you to the club and meet some of the board's officers. You apply for membership but aren't really sure if you can afford the monthly dues. The board accepts you as a member and gives you a discounted rate for your dues that you think you can afford.

You were accepted into the yacht club because of your engaging personality.

You were impressed with the club executives for their kindness.

You were awarded as the yacht club's top new member.

The club gave you two years of free membership to the yacht club.

Becoming a Doctor

After you get your bachelor's degree, you get married and then get into medical school. Your spouse works to help you get through med school and when you finally finish your training you think a lot on how you managed to get your degree.

Did you get married before you got your medical degree?

You earned your M.D. primarily because of your intelligence and dedication.

Your spouse's help was crucial to completing your M.D.

You were received an award for having the most potential as a doctor.
You were granted a scholarship that paid for all of your medical school tuition.

Getting Married

You have dated a lot and you find someone you think you can spend your life with. You end up getting married and ten years later you find yourself reflecting on your happy marriage, and you wonder how this has become a successful marriage.

Did you get divorced?   Yes   No

You realize that your marriage is successful because you are good at relating to your spouse.
You know that you your spouse's contribution to your marriage was vital.
You have a happy marriage because you had so much money before you got married.
Your marriage was successful because your marriage counselor was so helpful.

Completing a Group Assignment

You are working on a group assignment for one of your classes. Sometime after it was assigned, you have a family emergency that you think will prevent you from being able to complete your part of the group assignment. You tell your group members about this and they tell you that they don't mind finishing your portion of the work. You feel relieved and wonder why they were willing to complete your portion of the work.

Did you have a family emergency?   Yes   No

Your group for the assignment really liked you because you are an appealing person.
Your group for the assignment was very understanding toward you.
Your assignment group decided that because of your influence with the professor, you would not have to complete your portion of the assignment.
Your professor let you out of the assignment because of your dire situation.

Help from a Professor

You are taking a difficult class from a professor that you know is a hard grader. You do very well in the class and have completed everything in the course except for the final test which is worth 25% of the total points. Unfortunately, you become ill right before the test. You email your professor and they tell you that you won't have to take the test and you end up getting an 'A' in the class. You wonder about why your professor did this.

Did you complete all aspects of the class?   Yes   No

Your professor gave you an 'A' because they knew you were a superb student.
The professor did not require you to take the final test because they were very kind to you.

You received an 'A' because you had plenty of points from your other tests to meet the class requirements for an 'A'.
You received an 'A' in the class because other students in the class intervened with the professor on your behalf.

Help from your Grandmother

You have been saving for a new car that you really want. The car dealer has a great sale on your chosen vehicle, but you don't quite have enough money for the car. Your grandmother finds out about the situation and provides you with the needed cash for the purchase, and you wonder why she helped you out.

Did you have enough money for the car from your own funds?   Yes   No

Your grandmother provided the needed cash for the car because you're such a great grandchild.
Your grandmother provided you with the needed funds for the car because she is such a considerate person.
You were able to purchase the car because the car dealer thought you would be a great owner of this car.
You were able to purchase the car because the car dealer granted you a $5,000 discount.

Help with your Car

You are driving to campus but unfortunately your car breaks down. As you are looking at the car engine on the side of the road, someone stops to look at the car with you. They fool around with a few things in the engine and you're able to start your car and get to class. You find yourself wondering about why this person helped you.

Were you heading to campus when your car broke down?   Yes   No

The person helped you get your car started because they thought you were an attractive person.
The person helped you with the car because of they were a considerate person.
The person gave you a ride to campus because they thought you were attractive and they wanted to go out with you.
The person who looked at your car used their AAA membership to get your car fixed.

A Substantial Inheritance

An elderly great aunt has passed away and she leaves you with a $50,000 inheritance. This was a complete surprise to you, and you wonder why she included you in her inheritance.

Did you expect this inheritance?   Yes   No

You received a large inheritance from your aunt because she thought you were a wonderful person.

You received a large inheritance from your aunt because she was a generous and considerate person.

Your aunt told you that you were her favorite relative.

Your aunt also gave you 50 lottery tickets, and one of them won you $100,000

Scale to be used for each of the above recognition items:

1	2	3	4
very different in meaning	*different in meaning*	*similar in meaning*	*very similar in meaning*

Demographics Form

Do you believe in a personal God? (Please circle one)

Yes　　　　　No　　　　　　I'm not sure

Age: ____ years old
Year in School　Fr　So　Jr　Sr　Graduate Student　Not a student

Gender: ___M　　___F　　___Other

Race or Ethnicity: _____ (feel free to not declare)

Approximate Income of **Parents** last year (combined; please check the blank that represents your best estimate):

___0-5,0000　___5,000-10,000　　___11,000-20,000　　　　___21,000-30,000

___31,000-40,000　　___41,000-50,000　　___51,000-75,000　　___76,000-100,000

___101,000-150,000　　　___151,000-200,000　　　___Greater than 200,000

Are you confident of your judgment for the above question about income? (please circle one)
　　　Yes　　　　　No　　　I really didn't know how to answer this question

Approximate **Personal Income** (what you earned through various jobs; please check the blank that represents your best estimate):

___0-5,0000　___5,000-10,000　　___11,000-20,000　　　　___21,000-30,000

___31,000-40,000　　___41,000-50,000　　___51,000-75,000　　___76,000-100,000

___101,000-150,000　　　___151,000-200,000　　　___Greater than 200,000

Impact of COVID-19 on you: please check anything below that has happened to you since March, 2020, primarily because of the COVID-19 pandemic:
___I lost my job
___My hours or pay at work were significantly reduced
___Parent lost job or had hours or pay at work significantly reduced
___A loved family member or friend died because of COVID-19
___I couldn't attend religious services
___I did much more poorly at school
___Someone close to me was diagnosed with COVID-19
___I was diagnosed with COVID-19 (not a self-diagnosis)

Open-ended question designed to assess participants' awareness of the purpose of the interpretation bias training

When completing the imagination task where we asked you to imagine yourself in various scenarios and you completed some word fragments, what do you think we were trying to do with you? Please put down any ideas you might have below, but if you really don't think you know, please simply state "I do not know."

Debrief

Thanks so much for your participation in this study. In this study, we were investigating whether we could actually change how you tend to interpret situations, particularly situations that involved some kind of accomplishment on your part. We were also interested in how changing those interpretations might have impacted other things, such as your emotional state. If you have any other questions about this study, please contact Dr. Watkins at pwatkins@ewu.edu.

VITA

Author: Kahle J. Elliott

Place of Birth: Pullman, Washington

Undergraduate Schools Attended: Seattle University,
                                 Eastern Washington University

Degrees Awarded: Bachelor of Arts, 2019, Eastern Washington University

Honors and Awards: Graduate Student Assistantship, Psychology Department, 2019-
                   2020 Eastern Washington University

                   Travel Grant, for presentation at Association for Psychological
                   Science Conference, Chicago, Illinois, 2020

                   Graduated Cum Laude, Eastern Washington University, 2019

Professional
Experience: Research Internship, Psychology Department, 2021, Eastern
                   Washington University

                   Behavioral Health Clinician, Frontier Behavioral Health, Spokane,
                   Washington, expected start date of July 6th 2021