The Relationship between Fragile Self-Esteem, Mindfulness, and Hostile Attribution Style

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THE RELATIONSHIP BETWEEN FRAGILE SELF-ESTEEM, MINDFULNESS, AND

HOSTILE ATTRIBUTION STYLE

by

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Abstract

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HOSTILE ATTRIBUTION STYLE

by

Robyn L. Haertel

Advisor: Marian C. Fish, Ph.D.

This study aimed to expand upon existing literature pertaining to self-perception, awareness towards the environment, and related attributions. Specifically, mindfulness and self-esteem, as well as the subset of fragile self-esteem, were examined as predictors of a hostile attribution style (HAS). Additionally, self-esteem and fragile self-esteem were investigated as correlates of mindfulness. Undergraduate students from across the country were invited via social media to participate in this online study. A total of 190 students completed four surveys used for data analyses: the Mindful-Attention Awareness Scale (MAAS; Brown & Ryan, 2003), Rosenberg Self-Esteem Scale (RES; Rosenberg 1965), Contingencies of Self-Worth Scale (CSWS; Crocker et al., 2003), and the Ambiguous Intentions Hostility Questionnaire (AIHQ; Combs et al., 2007). Correlations and hierarchical regression analyses were used to determine whether hostile attribution style varies as a function of self-esteem, self-worth, fragile self-esteem, and mindfulness. Furthermore, a three-step path model was proposed to examine the relationship among the variables. Findings confirmed that increased mindfulness is related to decreased HAS, low self-esteem is related to increased HAS, and high self-esteem is related to increased mindfulness. Self-worth as an added moderator did not support the relationship between self-esteem and mindfulness, and self-esteem and HAS. Additionally, fragile self-esteem did not

predict any additional variability. The first mediational path model supported that self-esteem and self-worth can have a direct effect on mindfulness, however, a direct effect on HAS was not supported. The second path model presented mindfulness as a significant mediator between self-esteem and hostile attribution style. Finally, findings suggested that mindfulness and self-esteem covary in their relationship with HAS. Educational implications and interventions are explored.

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Chapter 1: Introduction

There are approximately 21.5 million students attending colleges and universities in the United States and enrollment is expected to continue growing towards new records by 2023 (U.S. Department of Education, 2015). Among those current undergraduates, aged 18 to 24, 526,000 acts of violence are reported each year (Baum & Klaus, 2005). Extensive research has demonstrated that individuals with a hostile attribution style are at an elevated risk for aggressive conduct (e.g., Orobio de Castro et al., 2002). However, to date, the majority of available literature focuses on the K-12 school environment (Espelage & Swearer, 2003), while few studies have examined hostile attribution style during the college years (Chapell, Hasselman, Kitchin, Lomon, MacIver, & Sarullo, 2006). Across college campuses, aggression is a common occurrence that may be able to be prevented if hostile attribution style is examined before behaviors emerge.

Suppose you are walking through a classroom and a classmate suddenly pulls out his desk chair and bumps into you. Was it an accident? Did the classmate want to hurt you? There are multiple ways to interpret this ambiguous situation. Individuals who tend to interpret events such as this one as threatening and initiated with provocative intent are thought to have a hostile attribution style. Hostile attribution style (HAS) represents distortions and negative evaluations within interpersonal situations. Despite social cues, individuals with a hostile attribution style will automatically perceive this situation as an attack on the self. This reaction, in turn, may lead to adverse reactive behaviors such as aggression.

Dodge and colleagues (2015) found that individuals who tend to misinterpret the ambiguous actions of others as purposefully harmful are more likely to engage in aggressive behavior compared to peers who view such outcomes as accidental. Self-esteem and mindfulness

are two constructs that are thought to be predictive of aggression and HAS. Literature seems to show a relationship between self-esteem and aggression, though the findings have been somewhat inconsistent. While mindful individuals demonstrate decreased aggressive tendencies, less is known about the connection with HAS.

The goal of this study is to determine how self-esteem and mindfulness are related to HAS among college students. Specifically, while self-esteem and mindfulness have each been found to separately relate to aggression, the question remains whether they are associated with the intermediate step of HAS. Moreover, if self-esteem is viewed as a multidimensional construct including fragile self-esteem, how does this impact the relationship between self-esteem and hostile attribution. This study aims to provide insight to developing programs focused on altering the cognitive processes that occur before the hostile behavior. In other words, if risk or protective factors can be identified for HAS, then ultimately, aggression may be reduced. To date, there are few studies examining the risk and protective factors for HAS and how it is associated with relational provocations in college students (Bailey & Ostrov, 2008; Crain et al., 2005; Crick et al., 2002; Yeung & Leadbeater, 2007). One such determinant of HAS that was investigated is self-esteem.

Self-Esteem and Self-Worth

Self-esteem is an affective construct consisting of feelings of value, and acceptance (Kernis, 2003). Studies have traditionally examined self-esteem as a dichotomized variable – either high or low self-esteem. However, in examining the relationship between high or low self-esteem and hostile attribution and aggression, results have been mixed and inconsistent. According to Baumeister, Smart, and Boden (1996), low self-esteem can promote distortions in cognitive thinking, which in turn leads to feelings of defensiveness and inadequacy. This is

supported by correlational research demonstrating that individuals with low self-esteem tend to hold feelings of self-contempt, jealousy, and insecurity, leading to violence in domestic situations (Baumeister, Smart, & Boden, 1996). Buss and Perry (1991) further demonstrated a negative correlation between hostility and level of self-esteem due to a processing bias in ambiguous situations. These findings imply that individuals with low self-esteem are more likely to process ambiguous situations in a hostile manner and use aggressive behavior to stabilize their own feelings of self-worth.

At the same time, and somewhat counter-intuitively, other research has shown that individuals with high self-esteem may demonstrate high levels of hostility and aggression. According to Vohs and Heatherton (2004), individuals with high self-esteem demonstrate a self-reparative effect in the face of a threat by making social comparisons and thinking of themselves as better than others. Additionally, Stucke (2003) reported that attributions play a significant role in explaining the relationship between self-esteem and aggression. Specifically, individuals with high self-esteem often report more substantial negative emotions after assuming the intent of an evaluation leading to aggression.

Although this research provides a framework for the impact of self-esteem on behavior, the conflicting findings and dichotomization of the construct of self-esteem leave out an additional factor – that of security – which may play an important role in the makeup of self-esteem (Baumeister et al., 2003). Self-esteem may fluctuate due to the determinant feelings of self-worth, leading to fragile self-esteem. Fragile self-esteem describes those individuals who hold an unjustified sense of high self-esteem, which, in turn, causes an inflated sense of self that is constantly seeking affirmation of worth from peers. Constantly seeking social affirmation and protecting against threat is the basis of fragile high self-esteem. These individuals feel

particularly exposed when self-views are challenged or contradicted. Individuals with fragile self-esteem demonstrate self-evaluations that account for temporary changes in self-esteem due to emotional reactions of positive or negative events (Heatherton & Polivy, 1991). Specifically, fragile self-esteem is contingent upon feedback one receives in areas such as the social approval from peers, physical appearance, or academic performance (Crocker, 2002; Crocker & Knight, 2005; Crocker, Luhtanen, Cooper, & Bouvrette, 2003; Wolfe & Crocker, 2003). According to this contingency model, self-esteem increases or decreases following success or failure in domains upon which self-worth is staked (Niiya, Brook, & Crocker, 2010). For example, in a study examining college students who applied to graduate school, Crocker and colleagues (2003) found that students who reported basing their self-esteem on academic competence experienced greater increases and decreases in self-worth upon receiving acceptance or rejection letters from their schools of choice.

Introducing the additional dimension of security of self-esteem augments the high and low self-esteem dichotomy and can provide a more comprehensive description of the role of self-esteem in social situations. Baumeister, Smart, and Boden's (1996) findings led to the notion that aggressive and hostile interpersonal behaviors are more likely to occur in individuals whose high self-esteem is especially vulnerable to threat (i.e., fragile). Research has documented the impact of both secure and fragile self-esteem as an additional variable to explain why individuals respond the way they do. According to Baumeister, Tice, & Hutton (1989), individuals with fragile low self-esteem are less likely to utilize hostile attributions due to their chronic dislike of the self. As such, individuals with fragile low self-esteem tend to demonstrate more internalized self-strategies such as depression, loneliness, and self-harm (Creemers et al., 2012). Additionally, they tend to respond defensively by making excuses for a poor performance

(Kernis, Grannemann & Barclay, 1992). Baumeister, Smart, and Boden (1996) determined that defensiveness and hostility related to aggression are the result of a fragile high self-esteem.

The additional dimension of security of self-esteem seems to better capture the nature of the relationship between self-esteem and hostile attribution. While level (high/low) of self-esteem appears to be both positively and negatively correlated to aggression, adding in self-worth to determine the level of security may clarify this relationship. According to Kernis, Grannemann, and Barclay (1989), individuals who are overly concerned with social feedback and desirability tend to demonstrate higher rates of hostility and aggression in the face of negative evaluations by peers. In addition, they are highly concerned with their self-image and tend to overreact in order to restore a damaged sense of self-esteem. Specifically, fragile high self-esteem is more strongly correlated with aggression and HAS and fragile low self-esteem is not significantly correlated. In addition to self-esteem, mindfulness is another factor that may be a determinant of HAS.

Mindfulness

Mindfulness is a term used across research in areas such as philosophy, education, psychology, and religion. Brown and Ryan (2003) describe dispositional mindfulness as an innate characteristic of attention and awareness that influences interpretation of moment-to-moment events. Baer, Smith, and Allen (2004) further detail this trait as involving four characteristics: 1) labeling an experience without judgment; 2) accepting, or being non-evaluative, of a present moment experience; 3) observing internal (e.g., body sensations) or external (e.g., sound) experiences; 4) acting with awareness rather than automatically. Based on these characteristics, dispositional mindfulness reflects an unbiased processing that involves objective acceptance of both positive and negative experiences.

Emerging research suggests a negative correlation between mindfulness and aggression (Baer et al., 2004; Heppner et al., 2007). Additionally, studies have shown that individuals who demonstrate high levels of mindfulness tend to let a social evaluation flow through them without assigning judgment or allowing it to alter their self-worth leading to aggression (Brown & Ryan, 2003; Heppner et al., 2007). However, to date, there is a lack of literature available that directly supports a relationship between mindfulness and hostile attributions. In an effort to examine the direct relationship, a few studies have examined the correlation between mindfulness and aggression by attempting to explain the possible influence of HAS (Heppner et al., 2008; Kelley & Lambert, 2012). The current study aims to help fill this gap in the research and investigate the direct relationship between mindfulness and HAS.

Self-Esteem and Mindfulness

While research has shown a relationship between self-esteem and HAS and between mindfulness and aggression, few studies have also shown that fragile self-esteem and mindfulness are related to each other. According to Shapiro and Carlson (2009), it is through mindful awareness that a person perceives and generates a reality. The nature of this reality may be hostile or ambiguous and may be affected by an individual's self-esteem. Moreover, Baer, Smith, and Allen (2004) found that mindful individuals are likely to experience evaluations as relatively non-threatening and without a substantial investment to their own self-esteem. Therefore, it is assumed that mindful individuals will react less defensively.

Recent research has provided support for the positive benefits of mindfulness on self-esteem (e.g., Heppner & Kernis, 2007; Thompson & Waltz, 2007). According to Pepping, O'Donovan, and Davis (2013), mindfulness has direct positive effects on self-esteem, which in turn predicts overall life-satisfaction. Directional links are present, pointing to high self-esteem

relating to high mindfulness and low self-esteem relating to low mindfulness (Thompson & Waltz, 2007). Although the literature demonstrates the relationship between mindfulness and the dichotomized level of self-esteem, little research is available examining the relationship between self-esteem and mindfulness when taking security of self-esteem into account. However, the limited research in this area seems to suggest that mindfulness may help to promote higher levels of secure self-esteem by heightening awareness and acceptance and lowering levels of social comparison (Brown et al., 2007; Rasmussen & Pidgeon, 2011). Heppner, Kernis, and colleagues have examined a possible link between mindfulness and the feelings of a threatened self-worth (Heppner & Kernis, 2007; Heppner et al., 2008; Kernis & Heppner, 2008). A perceived feeling of a threatened self-worth occurs when individuals place substantial importance on moment-to-moment evaluations of environment. It is, therefore, suggested that mindful individuals experience the world without evaluation and non-defensively so that their self-esteem is less likely to be implicated (Heppner et al., 2008). The association between self-esteem and mindfulness is examined in the current study by exploring each construct's association with HAS.

Current Study

The topics of self-esteem, mindfulness, and hostile attribution style have individually received much attention over the years. Past research has demonstrated that self-esteem relates to HAS (Baumeister, Smart & Boden, 1996; Baumeister, Tice, & Hutton, 1989; Buss & Perry, 1991; Lambird & Mann, 2006; Schneider & Turkat, 1975; Vohs & Heatherton, 2004), that mindfulness relates to aggression (Baer, Smith, & Allen, 2004; Brown & Ryan, 2003; Heppner et al., 2007), and that self-esteem is highly correlated with mindfulness (Brown et al., 2007; Heppner & Kernis, 2007; Rasmussen & Pidgeon, 2011; Thompson & Waltz, 2007). Yet the

nature of the relationship between all three variables is still unclear. Further, the addition of the dimension of security of self-esteem may alter some of the correlations that have been established. Finally, the relationship between mindfulness and HAS without the construct of aggression has not been examined. The current study therefore aims to gain a better understanding of how these constructs relate to one another and how they predict hostile attribution style among college students.

Given that research supports that (a) hostile attribution style is based on the interpretation of social cues in a biased manner; (b) individuals with fragile high self-esteem are more likely to seek confirmatory feedback to support their unjustified high self-worth; and (c) mindfulness allows for an unbiased understanding and awareness of the present moment, this study explored both multidimensional self-esteem and mindfulness as predictors of hostile attribution style. Using existing measures to evaluate each construct, this study examined the relationship between self-esteem, mindfulness, and HAS in a sample of undergraduate college students. This is important to the field of educational psychology in order to implement alternative programs to help students in developing social intelligence, and in particular, to reduce hostility and aggression in the schools. Specifically, through the use of self-esteem and mindfulness strategies, social supports and coping mechanisms can be developed within the school setting to help with overall success and satisfaction. To fully examine these topics, the following research questions were addressed:

- How does mindfulness relate to HAS?
- How does self-esteem relate to HAS?
- How does self-esteem relate to mindfulness?
- Does self-worth alter the relationship between self-esteem and HAS?

- Does self-worth moderate the relationship between self-esteem and mindfulness?

- What is the nature of the relationship between self-esteem, mindfulness, and HAS?

    o Does fragile self-esteem mediate the relationship between mindfulness and HAS?

    o Does mindfulness mediate between fragile self-esteem and HAS?

    o Do self-esteem and mindfulness independently measure HAS or do the constructs covary?

Chapter 2: Literature Review

This chapter presents a review of the literature, beginning with an explanation of hostile attribution style, particularly as it relates to aggression, followed by the theories accounting for aggression and hostile attribution. It will then move into research on the relationship between these constructs. Next, the levels and security of self-esteem are examined, along with a detailed discussion of the relationship between self-esteem and HAS. Dispositional mindfulness is then explored, including a historical overview of mindfulness, and related theories. Following this, a review of the research examining mindfulness and hostile attribution is detailed. The final section evaluates the relationship between mindfulness and self-esteem. This chapter concludes with the study rationale, research questions, and hypotheses.

Students often face ambiguous social situations that can be interpreted in various ways. These situations can be as simple as someone bumping into you, or as complex as an interaction with a peer or professor. People who frequently perceive and interpret these ambiguous situations in a negative and hostile manner are considered to have a hostile attribution style (HAS; Dodge, 2006). Interpreting events in a hostile manner often results in aggressive behaviors (Crick & Dodge, 1996; Crick et al. 2002; Nelson & Crick, 1999).

Self-esteem and dispositional mindfulness are two traits that have been explored in the context of hostile attributions and aggression. Self-esteem is an affective construct consisting of feelings of self-worth, value, and acceptance (Kernis, 2003). People are usually described as having either a high or low level of self-esteem. However, more recently, the dimension of security of self-esteem seems to provide a more nuanced understanding of this construct, particularly in how it is determined by self-worth and how it relates to aggression and HAS. Dispositional mindfulness is an innate characteristic of attention and awareness that influences

interpretation of moment-to-moment events (Brown & Ryan, 2003). Research has shown a relationship between mindfulness and aggression, but very little research has been conducted examining how mindfulness relates to HAS.

The current study aims to conduct a more in-depth examination of the relationship between self-esteem, dispositional mindfulness, and HAS among undergraduate students. Specifically, it examines whether the addition of security of self-esteem clarifies the inconsistent research results on the relationship between self-esteem and HAS. Additionally, it looks at how dispositional mindfulness influences HAS. Lastly, the study explores the possibility that self-esteem and mindfulness covary in their predictive ability for HAS.

Attribution Theory

Individuals tend to utilize their momentary environmental information to make inferences about others' behaviors (Kelley & Michela, 1980). Consequently, different people perceive different causations based on the outcome of the same event. Weiner's (1979) attribution theory describes how people perceive and explain events and may explain these different perceptions. This theory establishes a model based on two general assumptions: 1) that individuals are motivated to understand a goal and master their environment; and 2) that individuals attempt to perceive their environment by understanding causal determinants of others related to their own behavior. These assumptions can be affected by prior environmental or personal conditions such as social norms, specific environmental information, individual schemas, or prior knowledge. Weiner's model is comprised of three components: perceived causes, causal dimensions, and psychological consequences.

Within this model, environmental or personal information influences the way individuals perceive the causes of an event. Individuals may attribute the results of an event to factors such

as ability, effort, task difficulty, or luck. Since attributions are perceived intentions of an outcome and not necessarily the factual causes of the event, the individual's reality may not be accurate. These attributions can be categorized along three causal dimensions – stability, locus, and control. Stability refers to how stable the attribution is over time. Causes are then classified as being internal or external (locus) to the individual and as controllable or uncontrollable (control). Self-worth is related most closely with the locus dimension while social-related affects, such as desirability or defensiveness, are related to the control dimension (Weiner, 1986). Based on these inferences of stability and control, a social dynamic of psychological consequences is developed. These psychological consequences of attributions include affective reactions, expectancies of success, and behavioral motivation.

Based on this model, a person goes through three processes: (a) the individual observes another person's behavior; (b) an evaluation of the intentionality of the behavior is made; and finally, (c) the individual must determine if the other person was forced to perform the behavior or not. A real-world example of an ambiguous situation in which the individual must attribute intention would be if he or she was having a discussion with a few classmates. In this event, the individual disagrees with his or her classmates and expresses an opinion. As a result one of the other student replies by saying the individual is not making any sense. Using these three processes the aspect of hostility can enter and bias the individual's perception. In this case, the student (a) hears the comment, (b) must interpret if the comment was hurtful or ambiguous and ask for clarification, and (c) determine if the other student's was acting hostile. Hostility is characterized as a "complex set of attitudes that motivate aggressive behaviors directed toward destroying objects or injuring other people" (Spielberger, Jacobs, Russell, & Crane, 1983, p. 162). A specific form of attribution theory focuses on the hostile assumptions made during an

attribution.

Hostile attribution style (HAS). HAS can be defined as the attribution of hostile intent in an ambiguous social situation (Dodge, 2006). That is, a provocative interpretation is assumed by the individual despite environmental cues that fail to indicate clear intent (Milich & Dodge, 1984). Buss (1961) further describes hostility as having enduring qualities and often involving negative evaluations towards another person. These attributions are often instigated within an interpersonal context and induce a reactive aggressive behavior to restore a damaged sense of self-esteem (Novaco, 1970).

Dodge (2006) proposed a model of HAS consisting of three main tenets: 1) individuals acquire hostile attributions early in life and nonthreatening attributions must be learned; 2) hostile attribution style is developed when individuals fail to learn how to make these nonthreatening attributions; and 3) varying attribution styles between individuals stem from multiple factors including cognitive maturation, innate biological deficits, temperament, and adverse life experiences. These factors then develop, get repeated, and interact over time, leading to stored hostile schemas and an increased permanence in patterns of interpreting events as threatening. Research has examined the relationship between Dodge's three tenets and variables such as social learning, emotional reactivity, and aggression (Blair, 2002; Cohen, Nisbett, Bowdle & Schwarz, 1996; Dodge, 2006; Helmsen, Koglin, & Petermann, 2012; MacBrayer, Milich & Hundley, 2003; Posner & Rothman, 2005).

A number of studies have indicated that social learning in childhood may be a determinant factor in the development of HAS (Dodge, 2006). In a study conducted by MacBrayer, Milich, and Hundley (2003), mothers of aggressive children were found to model hostile perceptions. In this study, mothers tended to view ambiguous situations with higher levels

of threat, which in turn, increased the likelihood of aggressive responses. Furthermore, Posner and Rothman (2005) found that children who experience positive parental behaviors are more likely to attribute positive intent in novel situations and selectively attend to social cues that are consistent with a non-hostile schema. In an adult population, Cohen et al. (1996) found that due to cultural influences, white Southern men were more accepting of violence in response to insult compared to similar men in the North. The authors proposed that the social environment and culture affect aggressive behavior by placing value on personal integrity and respect. According to Cohen et al., these values support hostile attributions in response to personal threats and provocations.

Previous research has also indicated that emotional reactivity early in life may be a shaping factor in the development of hostile attributions (Blair, 2002; Dodge, 2006). Emotional reactivity is an aspect of individual functioning and temperament. It is conceptualized as the extent to which a person experiences emotions, the range of events they respond to, and the intensity and duration of the emotions (Nock et al., 2008). Helmsen, Koglin, and Petermann (2007) examined the relationship between maladaptive emotional reactivity, social cognitive processes, and aggressive behavior among children. This study examined Dodge's theory that hostile attribution biases are acquired early on in a person's life. Supporting Dodge's model, results showed that aggressive behaviors are promoted and endorsed by emotional reactivity, deviant social-processes, and hostile attributions.

Hostile Attribution Style & Aggression

Aggression is a healthy reaction that can be justified in harmful situations where it can be a motivator to protect oneself. This type of aggression is termed proactive aggression and can be instrumental in reaching a desired goal (Baily & Ostrov, 2008; Helfritz-Sinville & Stanford,

2014). In contrast, reactive aggression occurs when an individual intends to harm another person in an impulsive response to a perceived prior incident of provocation. When aggression of this type becomes the immediate response to even nonthreatening situations, maladaptive coping may lead to more serious problems, such as antisocial behavior, criminal activity, employment struggles, risk-taking behavior, and other mental health problems (Fergusson, Horwood, & Ridder, 2005; Huesmann, Eron, & Dubow, 2002). Along similar lines, Helfritz-Sinville and Stanford (2014) defined two subtypes of aggression: premeditated and impulsive. Premeditated aggression, like proactive aggression, is a more goal-directed and planned form of aggression that is carried out in a controlled manner in order to gain social dominance. Further, impulsive aggression, like reactive aggression, involves frequent emotional outbursts that cause an individual to lose control of his or her behavior. This unwarranted reaction is often irrationally perceived as being provoked by the situation.

Research results indicate that individuals with impulsive aggression were more prone to HAS compared to those who demonstrated premeditated aggression (Helfritz-Sinville & Stanford, 2014). Additionally, numerous studies have established that individuals who demonstrate higher rates of reactive aggression in social settings are more likely to display hostile attributions when evaluating ambiguous and provocative situations (Crick & Dodge 1996; Crick et al. 2002; Nelson & Crick, 1999).

According to Epstein and Taylor (1967), the mental decision to act and the actual act of aggression is mediated by perceptions of hostile intent on the actions of another person, what would be considered HAS. Novaco and Welsh (1989) also suggest that it is the perceptions and expectations of potentially provoking situations that are highly predictive of an aggressive response. Furthermore, a meta-analysis of 41 studies reviewing the association between HAS and

aggression found a significantly robust association (Orobio de Castro, Veerman, Koops, Bosch, & Monshouwer's, 2002).

Based upon the above research, it seems clear that having a HAS is a risk factor for aggressive responses. Examining the social information-processing model helps provide a theoretical understanding of how these attributions may lead to aggressive responses.

Social information-processing model. The social information-processing model (Crick & Dodge, 1994; Dodge, 1980) details the cognitive mechanisms that regulate an individual's response to a social situation or event. This model is of particular relevance when those social cognitions lead to aggressive behaviors due to an attribution of hostile intent (i.e., HAS). According to this theory, individuals are presumed to enter and comprehend new situations based on stored experiences, schemas, and knowledge. A six-step cognitive model was proposed to explain the complex sequence of interpreting social events: 1) encoding cues; 2) interpretation of cues; 3) clarification of goals; 4) response access or construction; 5) response decision; and 6) behavioral enactment. Within each stage of cognitive processing, the situation is described by a specific perception, organization, or assessment of information that directly underlies the behavior.

In the first stage, encoding of cues, an individual perceives and organizes social cues into short-term memory. Dodge (1980) hypothesized that aggressive individuals are more aware of cues that are perceived as threatening. Research supports this proposal, revealing that aggressive people encode fewer pieces of information in a situation prior to judging intent, rarely seek additional clarifying information, and are more likely to attend to hostile cues (Dodge & Frame, 1982; Dodge, Pettit, McClaskey, & Brown, 1986; Milich & Dodge, 1984; Slaby & Guerra, 1988).

The second stage, interpretation of cues, consists of assessing the relevance of and storing of information into long-term memory. It is at this stage that the individual attempts to make attributions of causation and intent about the situation. Dodge (1980) suggested that failure to skillfully process social cues increases the likelihood of interpreting an event as hostile, and in turn, responding with aggressive behaviors. In fact, Dodge and Crick (1994) found a link between hostile attribution and aggressive behaviors, and the likelihood that hostile misinterpretations occur at a higher rate by aggressive individuals compared to their non-aggressive peers. Furthermore, even in situations with previous positive and nonthreatening interactions, an aggressive person is more likely to attribute hostile intent.

At the third stage, clarification of goals, the individual assesses desired goals specifically relating to the situation at hand. Goals may include reaffirming social status or gaining positive feedback. The fourth stage is response access or construction. This stage requires the individual to generate one or more responses. These can be previously learned social behaviors retrieved from long-term memory or newly constructed responses. Dodge (1980) hypothesized that aggressive individuals are more likely to choose hostile responses due to their already expansive repertoire of aggressive behavior in long-term memory.

At the fifth stage, response decision, the individual assesses response options and selects a specific behavioral response to the situation. Dodge (1980) suggested that aggressive people are more likely to value aggressive responses and therefore perceive them as easier to enact.

Lastly, at the sixth stage, the individual performs the decided response. This final stage demonstrates that if an individual's basis for decision-making is a hostile attribution style, they will react with aggressive behavior.

The social information-processing model thus demonstrates how hostile attributions emerge based on social situations being continuously understood and internalized and can lead to aggressive responses (Dodge, Laird, Lochman, & Zelli, 2002). Two stages in particular, the interpretation of cues stage and the response decision stage, are linked to HAS and aggression (Fontaine & Dodge, 2006). Research seems to support the cognitive and information processing components in linking HAS and aggression. Dodge (1980) found that individuals who tend to misinterpret the actions of others as purposefully harmful are more likely to engage in more aggressive behavior compared to peers who view such outcomes as accidental. Furthermore, aggressive participants are more likely to attribute hostile information to ambiguous social cues.

Murray-Close and colleagues (2010) examined the association between HAS components specifically related to social information-processing and reactive aggression in a community-based study of adults. They found that reactive aggression against peers and romantic partners was associated with HAS for relational provocations and with emotional sensitivity. Similarly, in a study by Helfritz-Sinville and Stanford (2014), reactive aggressors were more likely to misread situational cues due to emotional overreactions and executive functioning deficits that could cloud judgment and lead to a perception of threat in undefined situations. Wilkowski and Robinson (2008) also found that aggressive reactions often arise when individuals interpret ambiguous social cues in a hostile manner. Moreover, they affirmed that individuals who are prone to anger are more likely to construe events as hostile. These studies demonstrate the importance of social information-processing in understanding the development of HAS. Since community and peer influence contribute to increased aggression, prevention programs focused on social information-processing and teaching prosocial skills have been shown to demonstrate

reduced levels of HAS (Hudley, 1993; Terzian, Hamilton, & Ling, 2011). Aggression is learned from observing others and experiencing the same behaviors.

Summary. Research to date seems to strongly support the importance of attributions in how people interpret ambiguous social situations and events. Particularly, those who develop a HAS seem to display aggressive responses to situations. The social information-processing model provides a theoretical understanding of this relationship, in that aggressive individuals seem to frequently misattribute incoming social cues, tending to automatically assume that the actions of others are hostile and, as a result, respond maladaptively in ambiguous interpersonal situations. Beyond processing social cues, another factor that can influence the development of HAS is self-esteem.

Self-Esteem

Self-esteem reflects feelings of self-worth, which may in turn affect how people interpret events. The following review will describe the various forms of self-esteem and how each varies in its link with hostile attributions and aggressive responses. In particular, the review will focus on recent research that conceptualizes self-esteem as a multidimensional construct and will specifically address fragile high self-esteem (Kernis, 2003) and its relationship with aggression.

Rosenberg (1965) defines self-esteem as "a positive or negative attitude toward a particular object, namely, the self" (p. 30). In general, research has focused on describing global self-esteem as an affective construct consisting of feelings of self-worth, value, and acceptance (Kernis, 2003). These beliefs are then reflected in the actions, motivations, and goals of an individual (Rosenberg, 1965). For example, stronger feelings of self-worth and success tend to lead to increased motivation and feelings of achievement, which then further fuels positive self-

esteem (Dykman, 1998). Alternatively, if the result ends in failure, self-esteem may be shaken, potentially leading to feelings of worthlessness.

Low and high self-esteem. Traditionally, research has dichotomized the construct of self-esteem into low and high levels (Kernis & Goldman, 2003). Individuals with low self-esteem exhibit an unfavorable evaluation of the self (Kernis et al., 1993), demonstrate a perceived lack of respect for the self, and desire a different self-image (Rosenberg, 1965). They often see the world through a more negative perception and have a general dislike for the world around them. Due to these negative beliefs, literature often describes individuals with low self-esteem as distressed and perhaps depressed (Tennen & Affleck, 1993).

Individuals with low self-esteem are generally recognized as lacking in self-confidence, and predisposed towards deviant behavior and negative emotional outcomes such as depression, shyness, and loneliness (Cheek & Buss, 1981; Philpot, Holliman, & Madonna, 1995). A 10-year longitudinal study by Donnellan, Trzesniewski, Moffitt, Robins, and Caspi (2006) examined low self-esteem as a risk factor for negative life outcomes including physical health, substance abuse, mental health, and criminal behavior. Results revealed that adolescents with low self-esteem presented with more mental and physical health problems in adulthood compared to those with high self-esteem. Additionally, adolescents with low self-esteem were more likely to drop out of school early, not attend college, experience long-term unemployment, and have criminal convictions in adulthood.

In contrast, high self-esteem reflects positive feelings of self-worth, acceptance, and self-liking (Rosenberg, 1965). These individuals experience both positive and negative outcomes that do not implicate their global feelings of worth or value (Kernis, 2003). They are presumed to be psychologically happy and healthy, feel good about themselves, and believe that people value

and respect them (Branden, 1994). Perceptions of positive self-concept are associated with less depression (Tennen & Afflect, 1993), less neuroticism (Robins, Hendin, & Trzesniewski, 2001), and overall higher levels of life-satisfaction (Orth, Robins, & Widaman, 2012).

A 12-year longitudinal study by Orth, Robins, and Widaman (2012) examined the effects of self-esteem on life outcomes including relationship satisfaction, occupational status, salary, job satisfaction, positive and negative affect, and physical health. A population ranging in age from 16-97 was assessed five times over the course of the study. Overall, the results suggested that high self-esteem had a significant impact on life outcomes. The authors revealed that self-esteem was associated with an increase in positive affect and a decrease in negative affect. In addition, self-esteem was positively related to significantly higher levels of relationship satisfaction, occupational status, salary, job satisfaction, and physical health. These findings were consistent across all ages. The authors also noted that within each experience, the positive benefits of high self-esteem were present regardless of situational factors such as earning more money, living longer, engaging in less crime, or achieving objective outcomes.

Despite studies showing positive outcomes of high self-esteem, other studies question this research and instead show negative outcomes associated with a high level of self-esteem. Swann, Chang-Schneider, and McClarty (2007; 2008) and Scheff and Fearon (2004) reviewed current literature and concluded that self-esteem has no impact on life outcomes. Developing research is now questioning the panacea of high self-esteem, instead suggesting that little evidence is available to support the positive characteristics and behaviors once assumed. For instance, while people with high self-esteem are shown to have higher rates of job satisfaction (Orth, Robins, & Widaman, 2012), most laboratory studies demonstrate no difference (Wallace & Baumeister, 2002). Additionally, while people with high self-esteem consider themselves

more well-liked, most of these perceptions are subjective and are not supported by studies examining social interactions (Adams, Ryan, Ketsetzis, & Keating, 2000).

Conflicting results regarding high self-esteem have also been found relating specifically to outcomes following a social threat. Social threat is the perception of negative feedback within a situation that threatens an individual's feelings of self-worth. Wood, Giordano-Beech, Taylor, Michela, and Gaus (1994) showed that individuals with high self-esteem were more likely to report unfavorable views of others after a threat. Compared to those with low self-esteem, this group demonstrated higher rates of engaging in negative social comparisons of peers after a failure in order to boost their own self-esteem. More recently, Fein and Spencer (2008) found that individuals with high self-esteem are more likely to show heightened prejudices after a threat in order to improve their depressed self-esteem. Through boosting their own self-esteem at the expense of others, individuals with high self-esteem are able to devalue the threat and its source (Baumeister et al. 2003).

Level of self-esteem, HAS, and aggression. Hostile attribution is often seen as an interim step between self-esteem and aggression (Reijntjes et al., 2011). When a social threat or rejection is present, some individuals will brush it off, while others lash out aggressively. The difference between the two individuals is their attribution of intent and how they believe it affects their feelings of self-worth. When looking solely at level (high/low) of self-esteem, individuals with high self-esteem are often able to rely on feelings of positive self-worth and acceptance when processing social cues in order to resist hostile attributions, while individuals with low self-esteem are often unable to rely on these resources and are more likely to interpret the event in a threatening way (Baldwin, Baccus, & Fitzsimmons, 2004; Koch, 2002). Nonetheless, findings on these associations have been inconsistent.

Historically, researchers held the view that individuals with low self-esteem were assumed to demonstrate higher levels of aggression. According to Thomaes and Bushman (2011), this argument is intuitively compelling based on a basic assumption that having low self-esteem feels bad and having high self-esteem feels good. Furthermore, studies showed that individuals with low self-esteem are distressed and will act out aggressively in order to feel better (Toch, 1993), and that they will reject prosocial norms and choose to be aggressive (Rosenberg, 1965). More recently, Donnellan, et al. (2005) conducted studies to examine the relationship between reported low self-esteem and aggression, antisocial behavior, and delinquency. Across three studies, the authors found that reported low self-esteem correlated with high scores on a trait aggression scale. Moreover, this relationship was supported across changes in measurements, nationalities, and among both adolescents and undergraduates.

To further examine the link between hostile attribution, self-esteem, and aggression, Reijntjes et al. (2011) asked participants to complete online profiles, which were subsequently evaluated by peers. After receiving either negative or neutral comments, the participants were asked to attribute intent of the peers and if they would choose to act with aggression towards those peers. Participants who attributed hostile intent to the feedback demonstrated lower self-esteem and higher levels of aggression. The analysis of the data supported the predicted relationship that hostile attribution is a strong mediator between low self-esteem and aggression. It thus seems that people have a strong social desire to be accepted by others, and after perceived negative feedback, individuals with a HAS may react with aggression towards that source of threat.

In contrast to the above studies supporting a link between low self-esteem, HAS, and aggression, Baumeister, Smart, and Boden (1996) conducted a literature review that suggested

that little support was available to confirm a positive correlation between low self-esteem and aggression. This seminal study changed the literature on aggression and self-esteem. The authors presented extensive empirical evidence linking *high* self-esteem with aggression. Specifically, the authors revealed that individuals with highly favorable self-views are more susceptible to anger or violence towards a perceived threat that challenges their positive sense of self.

A study by Hughes, Cavell, and Grossman (1997) further supports this link. The authors examined ratings of self-esteem in association with idealized self-perceptions and level of aggression. Rating scales were administered to an aggressive and non-aggressive school population. Results indicated that when compared to the nonaggressive sample, the aggressive population's ratings of personal self-esteem and idealized qualities were much more inflated. In addition, the aggressive individuals were less likely to show any differentiation between their perceptions of self-esteem and relationship quality measures. Hughes and colleagues concluded that for aggressive individuals, a highly positive self-view may be the result of a defensive mechanism. This in turn, may place the individual at an added risk for social maladjustment, including aggressive behaviors.

More recent research continues to support the association between high self-esteem, self-worth attributions, and aggression. Stucke (2003) examined self-worth as a mediator between unjustified high self-esteem and negative emotions following a performance evaluation. In addition to completing self-esteem questionnaires, undergraduate participants were asked to make attributions about their performance on an unrelated task. They were then asked to assess their emotions based on the attributions they made. This collection of data examined whether, as predicted, people's reactions based on attribution and feedback differ in relation to their level of self-worth. Results indicated that individuals with high self-esteem tended to show more angry

reactions to negative feedback. Additionally, self-worth played a significant role in that individuals with high self-esteem often reported more substantial negative emotions after an evaluation.

Despite extensive research investigating self-esteem (Scheff & Fearon, 2004), definitive conclusions are not available and studies continue to attempt to examine the impact of low and high self-esteem. These inconsistent findings may be due to the multidimensional, as opposed to dichotomous, nature of self-esteem. Indeed, adding the dimension of security of self-esteem, in particular that of fragile high self-esteem, seems to elucidate the relationship between self-esteem, HAS and aggression.

Multidimensionality of self-esteem. Due to the discrepant findings of studies when measuring self-esteem as a dichotomous variable, recent research has proposed a multidimensional view of self-esteem with additional divisions within both high and low self-esteem (Kernis, 2003; Kernis et al., 1993). Literature concerning high self-esteem was using the same term to portray qualitatively different descriptions. For example, one individual with high self-esteem could be represented as having a stable sense of positive self-worth that is justified through successfully managing daily events while another individual, also with high self-esteem, could demonstrate feelings of inflated and grandiose self-worth (Baumeister, et al., 2003). This led researchers to question if another theoretical factor was influencing the outcomes (Jordan et al., 2003; Kernis, 2003; Kernis & Goldman, 2003). Consequently, researchers explored security of self-esteem as an added dimension.

Research seems to support distinguishing between level (high/low) and security (secure/fragile) of self-esteem. Webster and colleagues (2007) explored the relationships between level of self-esteem, insecurity of self-esteem, gender, and attitudinal aggression.

Results demonstrated that behavioral aggression was positively related to insecurity of self-esteem but not the level of self-esteem. In this study, gender served to moderate this relationship showing that men with low self-esteem or high levels of fragile self-esteem and woman with low self-esteem and greater fragile self-esteem scored higher on a measure of attitudinal aggression. Further supporting the distinction between level and security of self-esteem, Gable and Nezlek (1998) found that levels (high/low) of self-esteem frequently positively correlated with measures of well-being while insecurity of self-esteem was negatively correlated. Security and level of self-esteem were also found to independently relate to factors such as poor social adjustment, depression, anxiety, and low life-satisfaction in college students (Weyandt & DuPaul, 2013). It thus seems that simply knowing someone portrays high or low self-esteem does not necessarily indicate the motivating factors, or security, behind the behaviors. A more detailed analysis must be conducted in order to determine the nuances within self-esteem.

In light of these findings, a definition of self-esteem has emerged that includes more specific causal descriptors reflecting the additional dimension of security of self-esteem (Kernis & Goldman, 2003). In other words, individuals who demonstrate fragile self-esteem often determine their self-worth as contingent on external factors. The successes and failures directly impact the level of self-esteem, causing it to fluctuate. These causal characteristics describe individuals as either secure or fragile in their level of self-esteem.

Security of self-esteem. The security of self-esteem has now become incorporated as a distinct dimension of self-esteem, reflecting the fluctuations of aspects of self-esteem within a social situation (Kernis, 2003). As this is a recent development in the research, different terms are used to describe the same phenomenon. For example, research uses the terms "true," "stable," "healthy," and "genuine" to depict the nature of secure self-esteem and similarly, the

terms "damaged," "unstable," "insecure," "unhealthy," "contingent" and "defensive" to describe fragile self-esteem (Crocker & Knight, 2005; Deci & Ryan, 1995; Jordan, Spencer, & Zanna, 2005; Jordan, Spencer, Zanna, Hoshino-Browne, & Correll, 2003; Kernis, 2003; Kernis, 2005; Kernis, Cornell, Sun, Berry, & Harlow, 1993; Kernis & Goldman, 2006; Kernis & Waschull, 1995; Schneider & Turkat, 1975). Kernis (2003) explains that the common link among the terms that describe secure self-esteem is that all reflect true stable feelings of self-worth that do not need continual validation. If one is functioning with secure self-esteem, then his or her characteristics are the same as the descriptions listed in the level of self-esteem review. These feelings are well anchored within the self and will not result in attempts to repair a damaged sense of self-esteem based upon a situational outcome of either failure or success. In contrast, the varying terms for fragile self-esteem reflect a self-worth that is dependent on a particular outcome. Specifically, they all describe an increased tendency to become caught up in defending, preserving, and promoting one's positive feelings of self-concept. Fragile self-esteem is contingent upon feedback one receives in areas such as peer approval or academics (Crocker, 2002; Crocker & Knight, 2005; Crocker, Luhtanen, Cooper, & Bouvrette, 2003; and Wolfe & Crocker, 2003). According to this contingency model, self-esteem increases or decreases following success or failure in domains upon which self-worth is staked. In line with Kernis' (2003) work, the current review will use the terms "secure self-esteem" and "fragile self-esteem."

  Secure/fragile low self-esteem. Individuals with secure low self-esteem are less likely to engage in self-enhancement strategies given their chronic dislike of the self (Baumeister, Tice, & Hutton, 1989). Additionally, given their need for upward comparison they tend to actively insult others when faced with social threats (Vohs & Heatherton, 2004). In contrast, rather than

outwardly demonstrating adverse reactions, individuals with fragile low self-esteem tend to use more internalized, self-protective strategies such as making excuses about performance and overgeneralizing failure (Kernis et al., 1992). Individuals with fragile low self-esteem are more likely to react to a threat with a negative self-reinforcing cycle (i.e., depression or social isolation) rather than the outward aggression demonstrated in those with secure low self-esteem (Leary et al., 1995).

Studies have examined the outcomes associated with fragile low self-esteem. Barnett and Gotlib (1988) suggest that individuals with fragile low self-esteem are more prone to depression and depend on the attention of others to maintain this negative feeling of self-worth. This reactivity towards interpersonal experiences is part of the social validation individuals with fragile low self-esteem constantly seek. Supporting this, Butler, Hokanson, and Flynn (1994) and Roberts and Monroe (1992) found fragile low self-esteem to be a better predictor of depression symptoms than level of self-esteem.

Creemers and colleagues (2012) explored whether self-esteem could be associated with internalizing problems. A sample of undergraduate students were instructed to complete self-report questionnaires to assess fragile and secure self-esteem along with specific factors of depression, loneliness, and suicidal ideation. As expected, the authors found that fragile low self-esteem was associated with internalizing problems, depressive symptoms, loneliness, and suicidal ideation.

Based upon these findings, in contrast to the relation between HAS and secure low self-esteem, there does not appear to be a strong association between fragile low self-esteem and HAS or aggression; therefore, the remainder of this literature will only address secure or fragile high self-esteem.

Secure/fragile high self-esteem. Among individuals with high self-esteem, security is related to more favorable reactions and greater self-enhancement tendencies. In contrast, fragile high self-esteem is related to more aggressive reactions and greater defensiveness (Baumeister, Smart, & Boden, 1996; Kernis et al., 1993).

In a study by Kernis et al. (1993), emotional and cognitive reactions to interpersonal evaluations were measured to compare high and low self-esteem as a function of security. Over multiple phases, participants were provided with positive or negative feedback by an evaluator in order to assess the level and security of self-esteem. Findings showed that the security of high self-esteem impacted the participant's reaction; compared to those with secure high self-esteem, those with fragile high self-esteem reacted more favorably to positive feedback and less favorably to negative feedback. The greater reactivity appeared to stem from social desirability and the need to maintain a more secure self-view. Furthermore, when negative evaluations were presented, participants with fragile high self-esteem tended to criticize the research techniques of the evaluator to a greater extent than those with the secure high self-esteem. This research confirms the notion that individuals with fragile high self-esteem have a greater desire to achieve and maintain a secure positive self-view and will react malignly towards peers who contradict their perceptions. The more an individual's self-worth is contingent on evaluative feedback, the more insecure the self-esteem will be. Other studies seem to confirm this, as detailed below.

In a study conducted by Lambird and Mann (2006), the authors evaluated whether individuals with high self-esteem would show poor self-regulation skills following a social threat. Additionally, they examined whether those individuals would portray a higher self-presentation bias (i.e., avoid revealing negative self traits or feelings in addition to endorsing positive qualities). Results indicated that individuals with fragile high self-esteem are particularly

sensitive to negative feedback and will act out defensively in order to maintain a positive self-view. Borton, Crimmins, Ashby, and Ruddiman (2012) reported similar results. The authors examined fragile high self-esteem, which was defined as defensive and rooted in having feelings of self-worth contingent on social feedback, and how it predicted coping with negative thoughts following a social threat among college students. The results indicated maladaptive coping strategies in individuals with fragile self-esteem.

Over the course of several studies involving undergraduate students, McGregor and Marigold (2003) investigated whether individuals with fragile high self-esteem were inclined to effectively mask social uncertainties with greater levels of unwarranted assurance. Individuals were randomly assigned to a control group or an uncertainty-threat group. Individuals within the uncertainty-threat group were asked to think of a personal dilemma with a close relation that was never solved and assign personal value to it. Results of this study demonstrated that when faced with uncertainty-threat situations, individuals with fragile high self-esteem were quicker to assign values as related to the self. The authors also demonstrated that individuals with fragile high self-esteem reacted to the uncertainty-threat situations dependent on a personal relationship with higher rates of certainty about social issues. The authors noted that this finding in particular, demonstrates how individuals with high feelings of self-worth are most likely to try to mask uncertainties with exaggerated claims. In other words, these participants attempted to make themselves look better in order to make up for their own self-doubts. These findings are consistent with views of fragile high self-esteem.

Thus, it appears that people with fragile high self-esteem experience more destructive self-perceptions, focus more on threatening aspects of interpersonal relationships, and are more affected by daily positive and negative events compared to those who have secure high self-

esteem (Greenier et al., 1999; Kernis, 2003; Kernis et al., 2000; Waschull & Kernis, 1996).

Those with fragile high self-esteem tend to display higher levels of defensiveness after a social

threat compared to those with secure high self-esteem (Lambird & Mann, 2006). For instance, if

individuals are presented with threatening self-relevant information, they will respond with a

greater intensity of verbally defensive behaviors compared to individuals with secure high self-

esteem. Furthermore, individuals with fragile high self-esteem tend to endorse a more flattering

personality profile as accurate (Bosson et al., 2003) and are more likely to react to an imaginary

threat in a personal relationship with greater certainty about a social issue (McGregor &

Marigold, 2003).

Self-Esteem, Hostile Attribution, and Aggression

Along with the general research on self-esteem, research examining the links between

self-esteem, hostile attribution, and aggression has also yielded varied and often inconsistent

results (Connor, 2002; Donnellan, Trzesniewski, Robins, Moffitt, & Caspi, 2005). Many studies

suggest that low levels of self-esteem promote aggressive behaviors (Donnellan et al., 2005;

Thomaes & Bushman, 2011), while others have failed to find this association (Rigby and Slee,

1993). Moreover, other studies have demonstrated that aggressive individuals tend to overinflate

their self-worth in relation to outcome, suggesting that aggression relates to high, rather than

low, levels of self-esteem (Baumeister, Smart, & Boden, 1996; Hughes et al, 1997).

The following review will present research that supports the model that individuals prone

to aggression tend to respond towards those who present negative feedback with aggressive

behaviors as a way to reject evaluations that threaten their self-worth (Baumeister et al., 1996;

Reijntjes et al., 2011; Thomaes et al., 2010). Much of the research assumes that hostile

attributions occur prior to aggression, without actually labeling the cognitive step (Bailey &

Ostrov, 2008; Hawkins & Cougle, 2013; Helfritz-Sinville & Stanford, 2014). This review will be framed within this understanding.

Fragile high self-esteem, self-worth, hostile attribution, and aggression. Research has shown a stronger correlation between high self-esteem and aggression when the factor of fragile high self-esteem is added (Bushman & Baumeister, 1998; Sandstrom & Jordan, 2008). Kernis et al. (1993) have also suggested that the security of self-esteem changes the relationship between the level of self-esteem and aggression, such that the negative correlation between high self-esteem and aggression turns into a positive correlation with fragile high self-esteem and aggression. Additional research by Lambird and Mann (2006) further supports this correlation, demonstrating that individuals with fragile high self-esteem, but not high self-esteem alone, exhibit poor self-worth and aggression when their sense of self is threatened.

Sandstrom and Jordan (2008) conducted a study to examine the association between fragile self-esteem and aggressive behavior. The purpose of this research was to measure secure and fragile self-esteem as distinct forms of positive self-worth. The authors hypothesized that individuals with fragile high self-esteem, but not secure high self-esteem, would engage in increased rates of aggressive behaviors. The authors reported that a relationship between self-esteem and aggression was not present when only secure self-esteem was considered. However, a robust relationship emerged when both fragile and secure self-esteem were measured in the context of understanding aggression. This led the authors to conclude that it is fragile high self-esteem, rather than secure high self-esteem, that is most strongly associated with aggressive behaviors. That is, even if one has high self-esteem, if that sense of self is fragile, it is associated much more with aggressive responses to situations.

To help explain the link between fragile high self-esteem, self-worth, and aggressive behavior, Baumeister and colleagues (1996) examined three characteristics of fragile high self-esteem: accuracy of self-appraisal, dependency on social validation, and perceived threat. These characteristics, along with supporting research for how each relates to HAS and aggression, are detailed below.

Accuracy of self-appraisal. Baumeister and colleagues (1996) first analyzed the accuracy of self-appraisals and how it influences an individual's perceived feedback from the environment. The extent to which individuals' self-views are accurate will determine their response. The authors indicated that individuals with high and accurate self-appraisals perceived feedback as confirmatory (i.e., feedback that confirms their self-appraisal), however, individuals with high but unrealistic self-appraisals perceived feedback as a threat to the self-view. Individuals with fragile high self-esteem tend to have high but unrealistic appraisals of themselves and therefore have self-worth dependent on meeting peer evaluations and feedback (Kernis, Cornell, Sun, Berry, & Harlow, 1993). This, in turn, leads to an overreliance and sensitivity towards feedback that determines how the individual feels about him or herself.

Dependency on social validation. The second characteristic focused on the degree to which one's self-esteem is dependent on social validation. Baumeister et al. (1996) reasoned that people with favorable self-perceptions require validation to feel good about themselves in order to prevent threats to their self-view. Individuals with fragile high self-esteem are more dependent on social validation and therefore have self-worth contingent on feedback from others. Furthermore, Epstein and Taylor (1967) described how people with HAS choose to act aggressively when that social validation is perceived with hostile intent. The understanding of the social environment is a key factor in both fragile self-esteem and HAS.

In line with this, Brown et al. (2007) found that fragile high self-esteem appears to be influenced by social feedback and comparisons. Rather than experiencing positive and negative outcomes without implication, individuals with fragile high self-esteem validate their feelings of self-worth as contingent upon success (Deci & Ryan, 1995). Due to their need for constantly validating positive self-feelings, individuals with fragile high self-esteem are particularly sensitive to negative feedback. When presented with an inconsistency between the environment and perceptions of high self-esteem, these individuals distort or rationalize threatening information to protect their feelings of self-worth (Crocker, Luhtanen, & Sommers, 2004).

Bushman et al. (2009) hypothesized an association between the level of self-esteem and aggression along with the effect of high self-esteem and high narcissism on aggression. A sample of undergraduate students completed self-report measures on narcissism and self-esteem. Participants were then asked to write an essay in which they received either positive or negative feedback from a peer. The authors determined threat and aggression to be the negative feedback and reaction. Results indicated that the level of self-esteem, both high and low, did not have an effect on aggression, rather it was the security that was significant. The extent and security of high self-esteem, combined with other factors such as narcissism, increased aggression. Similar to individuals with a fragile high self-esteem, narcissists with high self-esteem are eager to claim entitlement and admiration within the social environment, and may turn aggressive when they feel their peers fail to cooperate.

Extensive work by Kernis and colleagues (Kernis et al., 2000; Heppner & Kernis, 2007; Waschull & Kernis, 1996) demonstrated that individuals with fragile high self-esteem are those who possess evaluative beliefs that are superficially grounded in feelings of self-worth and are therefore highly vulnerable to challenge or threat. Since social feedback is so closely tied to

feelings of self-worth, individuals with fragile self-esteem may experience magnified feelings of worthlessness in the face of a negative outcome. As a result, they are quick to engage in self-protective strategies, such as aggression, to defend against the social threats.

In line with this reasoning, in two studies by Vohs and Heatherton (2004), social threat was examined to determine if it elicits different defense responses from college students. Social threat was described as peer feedback that was not consistent with the participant's own beliefs of self-worth. The first study indicated little difference between self-esteem levels when a threat is not present. However, as soon as a threat is present, students with high self-esteem demonstrated a self-reparative effect by making downward social comparisons and thinking of themselves as better than others. Conversely, those with low self-esteem made upward social comparisons by thinking of others as better than themselves. Possible reasons for upward social comparisons include the need to re-affirm the self or seek to improve their own standing after the threat. Furthermore, students with high self-esteem tended to respond immediately in order to repair their sense of worth, while students with low self-esteem held the evaluations of others ahead of their own and showed a lack of repairing self-worth. Individuals with fragile high self-esteem are thought to demonstrate a greater need for more social validation in order to support against their own self-doubt. These findings are closely related to individuals with similar perception and need for social validation present within fragile high self-esteem despite the authors' use of high and low self-esteem.

Perceived threat. The third characteristic posits that an individual with fragile high self-esteem is more likely to see a perceived threat in a situation. A threat may be due to the perceived intention of another as hostile and therefore attributed and reacted towards in a similar

manner. Findings indicate that those with fragile self-esteem experience more vulnerability in their ideal image and therefore were more reactive to external events (Baumeister et al., 1996).

Individuals who possess a combination of high and fragile self-esteem are particularly vulnerable to social threats (Kernis, 1993). According to Baumeister, Tice, and Hutton (1989), threats to a fragile high self-esteem induce defense mechanisms that are potent triggers of aggression. This research supports the notion that aggressive behavior towards others is likely to occur in individuals whose self-esteem is especially vulnerable to threat. Specifically, individuals with fragile high self-esteem are more defensive than their secure high self-esteem counterparts (Kernis, 2003).

Research suggests that individuals who respond to social threats with self-protecting defense strategies may, in fact, be more likely to demonstrate hostile tendencies (Kernis, 2003). Paradise and Kernis (2002) administered a psychological well-being scale to college students to assess the level and security of self-esteem. The results indicated that those with fragile high self-esteem reported lower autonomy, purpose of life, self-acceptance, and positive relations compared to those with secure self-esteem. These findings suggest that fragile feelings of self-worth may undermine effective functioning and strategies. This may occur directly or indirectly through heightened defensiveness, HAS, and emotional reactivity (Kernis, Brown, & Brody, 2000; Kernis & Paradise, 2002). According to Kernis, Grannemann, and Barclay (1989), this adverse reaction is an attempt to protect their feelings and undermine the threat's legitimacy.

Summary. Based on the above review, various conclusions can be drawn about self-esteem and self-worth and how they relate to HAS and aggression. First, theoretical and empirical findings support the idea that following a social event perceived with hostile intent, individuals attempt to repair their damaged self-esteem. The reparation of self-esteem often takes

the form of aggression. When looking solely at high and low self-esteem, mixed results indicate individuals with high self-esteem tend to respond to a threat by becoming more independent and thinking about their own traits, states, and behaviors. They are generally accepting of themselves and do not feel the evaluations are relating to their own self-view. In contrast, those with low self-esteem become more interdependent and develop a self-defense by attending to relational concerns (Vohs & Heatherton, 2001). For example, those with low self-esteem make social comparisons by thinking of others as better than themselves. Possible reasons for social comparisons include the need to re-affirm the self or seek to improve their own standing after the threat. The addition of the dimension of security of self-esteem seems to better explain the relationship between self-esteem and aggression. While high self-esteem was once viewed as a protective factor, fragile high self-esteem research has confirmed an association with aggression (Barry et al., 2007; Hughes, Cavell, & Grossman, 1997; Kirkpatrick et al., 2002; Stucke, 2003). Additionally, secure low self-esteem has been found to be a strong determinant among individuals with high levels of aggression (Kernis, Grannemann & Barclay, 1992; Wallace, Barry, Zeigler-Hill, & Green, 2012). Despite these correlations, fragile high self-esteem seems to be the greatest predictor of hostile attribution and aggression. Individuals with fragile high self-esteem are motivated to maintain their positive, yet insecure, self-views, so they attempt to restore their damaged self-images through aggressive behaviors (Kernis, Lakey, & Heppner, 2008).

While characteristics of self-esteem, self-worth, and fragile self-esteem in particular, demonstrate a correlation with HAS and aggression, mindfulness may be another variable to offer additional direction and support for the relationship. Research has demonstrated a strong correlation between self-esteem and mindfulness (Hinterman, Burns, Hopwood, & Rogers, 2012;

Pepping, O'Donovan, & Davis, 2013), and between mindfulness and aggression. The current

study examines the relationship of both self-esteem and mindfulness in predicting HAS. Within

the school setting, prevention programs that include more than one strategy and multiple areas of

an individual's life may result in more positive outcomes, however, most evaluative research

suggest that most programs only focus on a single construct (Terzian et al., 2011).

Mindfulness

The concept of mindfulness initially emerged from ancient Buddhist practices. Within

these practices, meditation was emphasized to promote the development of enhanced awareness,

an attitude of acceptance, and a focus on the present moment (Christian-Meyer, 1988).

Throughout the years, as mindfulness continued to evolve, these three principles were preserved

as the foundation for definitions and practice of mindfulness. Only within the past two decades

did the Western world begin to incorporate this phenomenon into prominent research,

philosophy, psychological practices, and education (Brown & Cordon, 2009). The current study

explores how dispositional mindfulness relates to hostile attribution style. Further, the study

examines whether mindfulness independently predicts HAS or covaries with self-esteem. This

section will discuss mindfulness as a disposition. Specifically, the uncertain nature of an

operationalized definition will be described, along with related theories, and finally the benefits

of examining dispositional mindfulness.

Mindfulness defined. A definition of what constitutes mindfulness has been debated

over the years, giving rise to the development of a number of mindfulness measures (Baer et al.,

2004, 2006, 2008; Brown & Ryan, 2003; Feldman et al., 2006; Hayes & Feldman, 2004). In the

past, researchers included different elements of mindfulness in their literature, studies, and

measures, leading to uncertainty about one operational definition (Bishop, 2002; Kabat-Zinn,

2003). Given this debate on meaning, the concept of mindfulness has been altered and integrated throughout the years. The most often cited definition was developed by Kabat-Zinn (2003), defining mindfulness as the "awareness that emerges through paying attention on purpose, in the present moment, and nonjudgmentally to the unfolding of experience moment by moment" (p. 145). While frequently cited, this definition provides little insight into the multifaceted nature of the construct. Nonetheless, using the tenets of active awareness, acceptance, and focus, researchers have focused on and analyzed the complex interactions between internal thought processes and external behaviors (Thorpe & Olsen, 1997), leading to a greater understanding of mindfulness. Over time, researchers have come to a general agreement on the definition of mindfulness as the functioning of awareness and acceptance within contexts (Hayes & Feldman, 2004).

Cognitive aspects of mindfulness. Brown, Ryan, and Creswell (2007) describe mindfulness as a cognitive process in which awareness and attention skills are highly engaged. When awareness of an event is strong enough, attention is engaged. Moreover, it is the conceptual qualities of attention that determine the attributes of experiences and behaviors. These qualities are based on characteristics of openness, kindness, and acceptance.

A literature review conducted by Brown and Ryan (2007) identified six main characteristics of mindfulness: clarity; flexibility; nondiscriminatory contact with reality; demonstrating an empirical stance; present oriented consciousness; and stability of attention and awareness. Clarity describes having a receptive awareness of both internal and external contexts. It is a bare understanding of both internal thoughts and external actions that help facilitate insight into reality. Flexibility describes the mindful mode of processing as a fluid regulation of consciousness and attention. For example, one can be mindfully present when one's awareness is

both immediate of situational details and also understanding of the larger circumstance. Nondiscriminatory contact with reality is when environmental events enter into consciousness and are simply processed into an experience. The mindful mode eliminates the desire to categorize, evaluate, or ruminate, as the event is noticed without bias. The fourth characteristic, demonstrating an empirical stance, encourages an objective and unbiased examination of facts. It is a careful awareness of an experience with alert participation and close concern of experiences. Present oriented consciousness involves being entirely aware of and experiencing the current moment. Lastly, stability of attention and awareness facilitates the recognition of being distracted by past concerns or anticipated fears. It allows for an individual to be mindful of the moment and acknowledge the past is no longer present. Continuity ensures that attention can be flexibly sustained without interruption.

Shapiro and Carlson (2009) further explained the characteristics of mindfulness by adding the ability to understand one's own state of mind and emotion without judgment or desire to change. According to these supplemental factors, mindful individuals are more likely to demonstrate an accepting orientation towards their present experience in addition to allowing thoughts and emotions to pass through a stream of consciousness. Bishop et al. (2004) described the stream of consciousness as a component of intention, which is determined by the ability to purposefully and repeatedly sustain moment-to-moment attention over time.

As the definition of mindfulness broadened to include a stream of consciousness, research recognized that everyone has the capacity to attend and to be aware but it is dependent upon their willingness to utilize these skills within the present moment (Brown & Ryan, 2003). Furthermore, as an emerging mainstream topic, research is returning to Kabat-Zinn's (2003) original definition of mindfulness and refocusing on the ideal of mindfulness as an inherent

dispositional capacity (Brown, Ryan, & Creswell, 2007). In sum, the primary characteristics of mindfulness that research appears to support are that it is made up of awareness and attention within the present moment.

Mindfulness as a stable disposition. Dispositional mindfulness is defined as a characteristic of receptive awareness throughout everyday activities (Brown & Ryan, 2003; Cahn & Polich, 2006). Kabat-Zinn pointed out that everyone has some degree of capacity to be mindful because it is a general tendency to understand daily life. Researchers such as Brown and Ryan (2003) and Baer, Smith, and Allen (2004), laid the groundwork for determining and examining dispositional mindfulness among the general population. It is based on this research that the inherent nature of dispositional mindfulness is understood to be a distinct construct.

According to Brown and Ryan (2003), dispositional mindfulness, as with any cognitive trait, contains variability within an individual for both the quality and frequency in which attention and awareness are exhibited. Additionally, Baer, Smith, and Allen (2004) identified four possible constructs reflecting the multidimensionality of dispositional mindfulness: 1) labeling an experience without judgment; 2) accepting, or being non-evaluative, of a present moment experience; 3) observing internal (e.g. body sensations) or external (e.g. sound) experiences; 4) acting with awareness rather than automatically.

In a series of studies, Brown and Ryan (2003) investigated the link between mindfulness and well-being as it varies between and within college students. Using the Mindful Attention Awareness Scale, the authors determined that the scale was tapping into a distinct construct in addition to providing stronger associations with awareness and attention. Follow-up studies indicated that the new measured term, dispositional mindfulness, predicted higher levels of daily autonomous activity. Individuals who were more aware of inner experiences and mindful of

behaviors were also more in tune with their emotional states and able to alter them. Additionally, individuals who were mindfully attentive to their daily activities experienced more autonomous motivation to engage in them and tended to act in ways that were consistent with their self-interests. Overall, the self-report scores for dispositional mindfulness were predictive of awareness and receptiveness to depression, self-consciousness, social anxiety, angry hostility, and rumination. Based on their studies, Brown and Ryan confirmed that even without prior mindfulness training, individuals demonstrate a range of scores on self-report scales measuring mindfulness. Furthermore, mindful individuals differ in their ability to be aware and to sustain immediate attention and also vary in their ability to display mindfulness. Based on these findings, the authors conclude that mindfulness is a unique, measurable disposition.

Positive effects of dispositional mindfulness. Throughout the research, the quality and capacity of dispositional mindfulness has been significantly correlated with increased positive psychological and physical characteristics (e.g., Brown, Ryan, & Creswell, 2007; Shapiro et al., 2007). For example, Baer and Peters (2011) found that self-reported dispositional mindfulness is associated with favorable self-reflection. Mindfulness has also been associated with decreased stress, depression, and anxiety (Branstrom, Duncan, & Moskowitz 2011).

A study by Thompson and Waltz (2007) examining the relationship between mindfulness, unconditional self-acceptance, and self-esteem in undergraduate students further supports the positive effects of mindfulness. Results showed that dispositional mindfulness was positively associated with factors of conscientiousness and agreeability, and inversely related to neuroticism. Further, as predicted, the results of the multiple self-report measures completed by the students suggested that individuals who are more mindful have greater self-esteem and unconditional self-acceptance. Conceptually, mindfulness appeared to foster a decreased

perspective of social threat and a greater acceptance of the present moment (Thompson & Waltz, 2007).

Researchers have also investigated the relationship between dispositional mindfulness and physical health. For example, Murphy, Mermelstein, Edwards, and Gidycz (2012) found that higher levels of dispositional mindfulness contributed to better quality of sleep, healthier eating habits, and better physical health in college-aged females. Results were consistent even when controlling for traditional health habits, suggesting a beneficial relationship between mindfulness and increased physical health. Additionally, Creswell, Way, Eisenberger, and Lieberman (2007) studied the association between dispositional mindfulness, neural regulation, and affect among adults. Results indicated that dispositional mindfulness was associated with prefrontal cortical activation, which potentially links to reduced mood disturbance and negative affect, and an increase in physical health.

These studies, along with others, have revealed positive correlations with openness to experience, emotional intelligence, self-compassion, life satisfaction, and personal wellbeing, as well as negative correlations with maladaptive psychological symptoms (e.g., depression, anxiety, and dissociation), neuroticism, emotion regulation, experiential avoidance, and absent-mindedness (Baer et al., 2004, 2006; Brown & Ryan, 2003, Carmody & Baer, 2008; Feldman et al., 2006). However, very few studies have examined the relationship between mindfulness and hostile attribution style.

Mindfulness and HAS. Research suggests a negative correlation between dispositional mindfulness and aggression (Brown & Ryan, 2003; Heppner et al., 2008). Although HAS is related to and predictive of aggression, to date, there is a lack of literature available that directly supports the relationship between mindfulness and hostile attribution. A few studies have

examined the correlation between mindfulness and aggression by attempting to explain a possible influence of HAS (Heppner et al. 2008; Kelley & Lambert, 2012). In addition, one study demonstrates a link between mindfulness and hostile attribution by examining the construct of rumination (Borders, Earleywine, & Jajodia, 2010). Therefore, this section of the literature review will attempt to draw on distinctions within the self information-processing model and the self-determination theory to possibly relate the two constructs.

According to Baer et al. (2004), mindful individuals are generally less behaviorally defensive and reactive when experiencing negative feedback. Borders, Earleywine, and Jajodia (2010) provided support for this statement in a study examining whether rumination could serve as a mediating factor between mindfulness and aggression in undergraduate students. Rumination was defined as repetitive and uncontrollable thoughts about negative events. The authors aimed to demonstrate new findings about the potential impact of mindfulness in decreasing both rumination and the behavioral, emotional, and cognitive components of aggression. They examined separate forms of aggression including physical aggression, verbal aggression, anger, and hostility rather than reporting a composite score. Results revealed that rumination was a mediating factor between mindfulness and hostility and verbal aggression. The authors indicated that mindful students may show lower levels of verbal aggression because mindfulness provides the ability to cope without assigning negative emotions. Mindfulness was also associated with less physical and verbal aggression but this relationship was not mediated by rumination. Overall, this study suggests that mindfulness is associated with decreased aggression because it promotes self-awareness and fosters personal values.

In a different sample of undergraduates, Kelley and Lambert (2012) examined whether dispositional mindfulness could potentially reduce anger and aggression. The authors also

included the variable of thought recognition, which they defined as the ability to see thought

within the moment as it relates to one's experience. Since this construct is closely related to the

characteristics of mindfulness, the authors hypothesized that higher dispositional mindfulness

would be associated with thought recognition. They also hypothesized that mindfulness would be

related to lower levels of hostile attribution, aggression, and anger. As predicted, the results

indicated an inverse relationship between dispositional mindfulness and self-reported aggression

and hostile attribution bias. Additionally, mindfulness was positively related to thought

recognition. Kelley and Lambert concluded that the relationship between mindfulness and

thought recognition could influence other mechanisms of heightened mental health such as well-

being or coping, as well as reduce HAS, anger, and aggression.

Social information-processing model. As with HAS and aggression, the social

information-processing model can provide insight into the relationship between HAS and

mindfulness. Consistent with the previous literature on the social information-processing model,

it is during the interpretation of cues phase in which mindfulness plays the most significant role

(Fontaine & Dodge, 2006). In the course of an average day, people often receive evaluations that

refer to any number of personal qualities, such as competence, physical appearance, or social

skill. However, based on perception, people react differently to these social evaluations.

Attributions have a direct impact on the way individuals cope in social situations (Dodge, 1980),

with a HAS often leading to aggressive responses. One internal attribute that could be a powerful

tool in decreasing a HAS is the construct of mindfulness. Mindful thinking can aid in the

perception, processing, and reaction to cues during social interactions. On the other hand,

mindlessly attributing characteristics to themselves or situations can lead to misunderstandings

or inappropriate responses such as aggression (Brown, Ryan, & Creswell, 2007).

According to Baer (2003), individuals use the mindfulness skills of receptive observation and attention during an experience to lessen the defensive processing. The tenets of mindfulness emphasize an observant stance towards experience. Based on this stance and mode of processing, research suggests that mindfulness reduces emotional reactivity (Arch & Craske, 2006), lessens the dependency of self-worth in adaptively responding to threatening social situations (Barnes, Brown, Krusemark, Campbell, & Rogge, 2007), and increases positive self-esteem (Brown & Ryan, 2003).

Self-determination theory, mindfulness, and HAS. Self-determination theory (SDT; Deci & Ryan, 1980) is a theory of human motivation that describes how people are motivated to act on the environment in order to satisfy their need. According to Brown and Ryan (2003), a strong relationship is present between SDT and mindfulness, specifically correlating the principles of awareness and autonomy. Within SDT, the concept of awareness is defined as attention to the present moment, reflected by a sensitive and fully processing function of the self and environment. Autonomy is conceptualized as optimal self-functioning in which actions are informed by what is occurring rather than by environmental forces (Hodgins & Knee, 2002). According to Hodgins and Knee (2002), individuals are considered to be functioning autonomously when they are free from the constraints of reactive responses and instead allowed a window of time to process information and determine the form and direction of their own behaviors. Using the constructs of SDT in terms of HAS and mindfulness, more mindful individuals are able to draw on self-awareness and attention skills prior to automatically reacting with perceptions of social feedback in the environment. Conversely, people who are less mindful will react aggressively in order to motivate an increase in self-regulation.

Mindfulness ties to self-regulation elements of SDT. According to Deci and Ryan (2000), and supporting Brown and Ryan's correlation, when a person's awareness is inhibited, he/she is less capable of engaging in effective self-regulation. Self-regulation is defined as the degree to which conscious behavior is determined as a function of an individual's environmental context and inner resources (Deci & Ryan, 1980). The benefits of awareness in the context of both self-determination theory and mindfulness have been linked to factors such as a lower rate of defensiveness and stronger self-regulation skills (Brown, Ryan, & Creswell, 2007; Ryan et al., 2006). An individual with better self-regulatory abilities is able to modify the basic perspective from being caught up in the personal daily drama of life to being able to stand back and simply witness it (Shapiro et al., 2006).

Mindful attention thus focuses on the direct experience within the mind and body without being caught up in origins, assumptions, expectations, or desires (Bishop et al., 2004). For example, if an individual smiles at an approaching friend in the hallway and the friend does not smile back, a direct description of this experience would be, "My friend didn't smile back when I smiled at him." An individual lacking self-regulation of attention would create a filtered response based on assumptions or elaborative processing such as, "He should have smiled at me because I know he saw me. He must be angry at me and doesn't want to be my friend." Mindful attention focuses on skills such as sustaining attention to items for extended periods of time, intentionally being flexible in switching attention between situations, and reducing ruminative thoughts and feelings that may lead to aggressive reactions (Bishop et al., 2004; Shapiro et al., 2006).

Individual differences in mindfulness have been demonstrated to have an effect on behavioral responses (Brown, Ryan, & Creswell, 2007). In a study on mindfulness by Levesque, Brown, and Kirk (2007), reaction time was measured among undergraduate students to examine

individual differences in self-regulation. Results indicated that individuals with low levels of autonomy tended to impulsively regulate daily behaviors in response to internal and external pressures. However, this effect was not demonstrated across all of the participants. A between-person interaction was observed by the researchers when the variable of mindfulness was introduced. Levesque and Brown speculated that this was due to the fact that individuals high in mindfulness were better able to experience attention and awareness in daily functioning and therefore take an active, nonjudgmental interest in events and promote self-determined behaviors. Taken as a whole, the authors indicate that mindfulness can facilitate more self-determined behavioral regulation and can serve to ameliorate behavioral responses affected by attribution style.

Summary. Dispositional mindfulness is a characteristic of awareness and attention throughout everyday activities (Brown & Ryan, 2003). The social information-processing model and self-determination theory appear to support the possibility that dispositional mindfulness could be a factor in understanding hostile attribution style. Within both theories, present moment awareness and attention in social contexts are important. An individual with effective self-regulatory skills demonstrates the ability to discriminate, appraise new situations based on past experiences, and perceptually assimilate new experiences into existing schema (Brown, Ryan, & Creswell, 2007). It is the individual variance of these abilities that can lead to multiple outcomes, such as hostile attributions and aggressive behaviors. It is hypothesized that developing multiple perspectives and utilizing nonjudgmental assessment could help in attending to and determining the possible hostile intent of a situation. This could be useful in decreasing aggressive behaviors in a school setting. School based social information-processing programs can help promote social awareness and improve behaviors by teaching problem solving-skills. For example,

Hudley (1993) developed a program focusing on the specific stages of the social information-processing model. In this program, individuals were successfully taught to accurately detect intentionality, to make non-hostile attributions when social encounters are ambiguous, and to generate appropriate behavioral responses to ambiguous negative situations.

Self-Esteem and Mindfulness

The previous sections have detailed how self-esteem and mindfulness each relate to HAS. The following section will review how self-esteem and mindfulness relate to each other. According to Baer, Smith, and Allen (2004), mindful individuals are likely to experience evaluations as relatively non-threatening and without a substantial investment to their own self-esteem. Therefore, reactions are assumed to be generally less defensive. According to Pepping, O'Donovan, and Davis (2013), mindfulness has direct positive effects on self-esteem, which in turn, predicts overall life-satisfaction. This relationship is supported in the research by Hinterman, Burns, Hopwood, and Rogers (2012). In a preliminary study investigating the role of mindfulness in relation to coping strategies, the authors hypothesized that undergraduate students with high levels of perfectionism would demonstrate decreased levels of mindfulness, self-esteem, and life satisfaction. The results indicated positive correlations between mindfulness and self-esteem, in addition to life satisfaction. Negative associations were present for coping strategies such as perfectionism, depression, and rumination. This study demonstrates the positive benefits of mindfulness in relation to life satisfaction and overall self-esteem.

According to Shapiro and Carlson (2009), it is through mindful awareness that a person perceives and generates a reality. When an individual is mindful, the experience can pass through consciousness without being attached to the self (Kernis, 2005). In other words, experiences are taken at face value rather than being assigned greater personal implications. Being open to

experiences allows for events to not be anchored to one's self-worth and can thereby inhibit an aggressive defense.

Michalak, Teismann, Heidenreich, Strohle, and Vocks (2011) addressed the question of whether a mindful stance could moderate the relationship between self-esteem and depression. A sample of undergraduate students was assessed with self-report questionnaires for mindfulness, self-esteem, and depression. Results indicated that individuals with low mindful acceptance, self-esteem, and depression were more closely related compared to those with high mindful acceptance. In other words, self-esteem and depression are moderated by the way people relate to experiences. Mindful individuals demonstrate an accepting stance without judgment of situations; this helps maintain a self-esteem that is secure and not fluctuating based on social evaluations. These findings support the notion that portraying a mindful stance of acceptance, allowance, and non-judgment within the present moment is a considerable buffer towards the detrimental effects of low self-esteem. Having a non-judgmental stance may allow individuals to recognize thoughts and feelings and reduce the tendency to develop strong negative emotions.

Mindfulness, self-worth, and fragile self-esteem. Some studies have begun to explore the nature of the relationship between mindfulness and fragile self-esteem. Heppner et al. (2008) conducted a study in which 118 participants completed daily measures of mindfulness-like characteristics such as authenticity and autonomy, in addition to measures of competence, self-esteem, positive affect, and negative affect. Among those students with high self-esteem, two categories were found: (a) secure high self-esteem, and (b) fragile high self-esteem. Heppner and colleagues explained that individuals with secure high self-esteem are well anchored and do not require continual validation from the environment. They are more likely to be satisfied with themselves and accept their own strengths and weaknesses. In contrast, individuals with fragile

high self-esteem are vulnerable to challenge and are weakly adjusted to the environment. They are more prone to engage in self-protection and self-promotion. Thompson and Waltz (2007) also suggest that individuals who are mindful demonstrate a more secure self-esteem.

Recently, Rasmussen and Pidgeon (2011) examined directional links between mindfulness, self-esteem, and social anxiety among undergraduate students. Within the study, the authors proposed a mediation model in which self-esteem provides an explanatory pathway for the positive effect of mindfulness on social anxiety. Participants were asked to complete self-report questionnaires for each construct. As expected, mindfulness and self-esteem were negatively correlated with social-anxiety while mindfulness and self-esteem were positively correlated. Moreover, the results of this study support the role of self-esteem as a mediating factor between mindfulness and social anxiety. These findings provide an additional understanding of how a mindful disposition, grounded in a heightened awareness and acceptance, may support higher levels of secure self-esteem.

These studies provide empirical evidence that individuals high in mindfulness are more likely to possess high self-esteem that is secure rather than fragile. Similarly, it seems that individuals who have a fragile high self-esteem would demonstrate a lack of mindfulness and tend to experience the world with judgment and in ways that link everyday experiences to themselves. The literature indicates that individuals who are focused on an outcome as contingent on their own self-worth may be too fixated on that event to demonstrate moment-to-moment attention and awareness within the environment (Assor, Roth, & Deci, 2004; Brown, Ryan, & Cresswell, 2007; Niemiec, Ryan, & Brown, 2008; Ryan, 1982). However, there is almost no literature exploring whether fragile self-esteem (high and low) is related to mindfulness. An extensive search revealed only one comment article by Heppner and Kernis

(2007) and a book chapter describing implications of secure and fragile self-esteem (Kernis & Lakey, 2010). The current study thus aims to examine whether fragile high self-esteem is implicated in low levels of dispositional mindfulness. Specifically, it is anticipated that people who have a fragile high self-esteem would over-rely on feedback about the self and have an elevated need for validation; these people would be expected to have lower levels of mindfulness.

Summary. In the current study, mindfulness is conceptualized as a relatively secure disposition and is defined as awareness and attention in the present moment (Brown & Ryan, 2003; Kabat-Zinn, 2003). Maintaining attention in the present moment allows for greater acceptance of reality without judgment (Shapiro, Carlson, Astin, & Freedman, 2006). Mindful individuals with secure self-esteem experience the world without evaluation and non-defensively so that their self-worth is less likely to be implicated (Heppner et al., 2007). Rather than struggling against what they cannot change or measuring their own worth by other's standards, a mindful person demonstrates a more secure sense of self-esteem (Kernis, 2003). Regarding mindfulness and fragile self-esteem, the literature indicates that individuals who are focused on an outcome as dependent on their own self-worth may be too fixated on that event to demonstrate moment-to-moment attention and awareness within the environment (Assor, Roth, & Deci, 2004; Brown, Ryan, & Cresswell, 2007; Niemiec, Ryan, & Brown, 2008; Ryan, 1982)**.**

Mindfulness, Self-Esteem, and HAS in the Undergraduate Educational Field

College is a time when most young adults experience new stressors within a novel environment and must learn to cope with social and academic pressures. It is often a time of transition in which students develop new strategies to explain causes of unfamiliar events or situations (Roesch & Weiner, 2001). Within this context, individuals must determine how the

environment can influence feelings of self-worth and perceptions about situations. Nichols (1979) reported that as students age, achievement attributions increase, possibly leading to greater contingency on social evaluations. For example, research by Hall, Gradt, Goetz and Musu-Gillette (2011) suggests that undergraduates with low self-esteem are at risk of poor performance in campus interviews due to maladaptive attribution strategies. Additionally, the authors found that these individuals can benefit from interventions focusing on self-esteem and retraining attributions.

Individuals also are given more responsibility in a college setting leading to greater stress, which in turn, may affect the way attributions are formed. Rates of anxiety, depression, and suicide among college students have escalated within the past decade (Hunt & Eisenberg, 2010). At the same time, colleges and universities are experiencing an increase in aggressive and hostile student behavior (MacDonald & Roberts-Pittman, 2011). In a study conducted by MacDonald and Roberts-Pittman (2011), 15% of students reported being bullied. Additionally, 42% of students reported seeing someone bullied by another student, and 8% reported being the bully in a situation. In addition, almost 15% reported seeing professors bully a student, and 4% reported a professor had bullied them.

These trends – the increase in student mental illness along with the increase in aggression and hostile student behavior – have led to a variety of different interventions. Research conducted by Christopher and Gilbert (2010) found that higher levels of mindfulness in college students mediated a relationship between overall life-satisfaction and decreased depressive symptoms. Furthermore Oman and colleagues (2008) found that after an eight-week mindfulness intervention, college students reported lower scores for perceived stress and higher scores for forgiveness. Similarly, Deckro and colleagues (2002) found that mind/body interventions such as

yoga and mindfulness significantly improved coping skills in college students for stress and anxiety. Despite these findings, little research has explored the potential impact of mindfulness on students' attribution style, or its impact on aggression. Similarly, although college is a time when students' self-esteem may fluctuate, little research has explored the connection of self-esteem and HAS in this population. The current study therefore aims to fill this research gap by exploring self-esteem, HAS, and mindfulness among undergraduate students.

Implications of study results can lead to the development of prevention programs to specifically address aggression and hostile behaviors. While prevention programs for reducing aggression are readily available and evidence-based, they vary in focus on population, needs, and problems. Prevention programs can target specific risk factors in college students or can also be universal programs used in schools to treat an entire population, regardless of risk factors. Two main areas for future focus in the current study for prevention programs are within the schools and communities or peers.

A review of the literature shows support for school-based preventative programs for aggressive behaviors. The following systematic reviews and meta-analysis studies have yielded similar results in support of school-based prevention programs. Comparisons of control groups receiving no prevention programs to groups that did receive prevention programs with pre and post assessments showed significant results for a reduction in aggressive and violent behavior for those receiving the prevention programs (Mytton et al., 2002). A study published by the Centers for Disease Control and Prevention (2007) found universal school-based programs to be effective and to show improvement in other areas as well, including attendance, school achievement, reduction in drug use, and other risky and inappropriate behaviors.

Taking a cognitive-behavioral stance, suitable guidelines may be developed for

differentiating mechanisms such as self-esteem or mindfulness within a social context linking to aversive experiences like HAS leading to aggression. Often, hostile attribution may lead to a greater intent for aggression. Potentially, this study will provide insight to developing programs that can be aimed to alter the cognitive processes that occur before the behavior. In other words, if risk or protective factors can be identified for HAS, then ultimately, aggression may be reduced. There are few studies examining the risk and protective factors for HAS and how that is associated with social provocations (Bailey & Ostrov, 2008; Crain et al., 2005; Crick et al., 2002; Yeung & Leadbeater, 2007).

Based on the information-processing model, an individual is able to redevelop situation-relevant scripts, or ways of thinking and behaving, when encountering a social problem. When encountering a hostile social situation, the individual can be trained to rehearse different ways of evaluating the environmental cues and searching for a new way to respond. Using mindfulness and/or self-esteem focused programs could be a way to focus on observing and evaluating social cues through a less hostile lens. Prevention and intervention programs across each of the constructs have been developed within school-based programs. In fact, Seear and Vella-Brodrick (2012) conducted an intervention study examining dispositional mindfulness as a potential moderator of the efficacy between two interventions. The interventions were expected to increase mental well-being and positive affect and decrease negative affect among adults. The researchers hypothesized that those who developed the highest levels of mindfulness within the programs would benefit most in terms of increasing overall well-being. The results supported the efficacy for the interventions and indicated that it can be most beneficial for those with low levels of dispositional mindfulness.

Mindfulness training has been shown to promote psychological health and well-being (Brown & Ryan, 2003). Research indicates that mindfulness treatments can effectively decrease symptoms of stress, depression, anxiety, substance abuse, impulsiveness, and eating disorders (Baer, 2003; Shapiro et al., 2008). Using mindfulness as a technique, students can be taught specific cognitive approaches and meditation. Situational evidence has emerged to support each of these trainings to cultivate a mindful state. Singh at al. (2003) developed a mindfulness training called "soles of the feet" in which highly aggressive individuals were taught to focus their attention on neutral body parts, such as the soles of their feet, when encountering aggressive stimuli. The purpose of this self-control strategy was to increase awareness and redirect it away from the anger-provoking situation. After practice with a sample of adults, results indicated that teaching this mindful technique decreased aggressive behaviors. Furthermore, in a study conducted by Heppner et al. (2008), mindfulness training was induced prior to receiving either social acceptance or social rejection feedback from peers. Using an aggressive behavior measurement, the researchers found that participants who engaged in the mindfulness training prior to receiving social rejection feedback displayed less aggression than those who did not undergo the training. Additionally, the aggression levels of the participants with high levels of mindfulness who received social rejection feedback were not significantly different than those participants who received acceptance feedback.

There are also school-based interventions aimed at increasing self-esteem. Many researchers have determined that participants with both high and low self-esteem react differently to success and failure (e.g., Baumeister & Tice; Brown & Dutton, 1995; Dodgson & Wood, 1998). For the most part, studies appear to better manipulate state self-esteem than global self-esteem (e.g., Heatherton & Polivy, 1991), indicating that global self-esteem is relatively

secure. This is an important note for developing future programs to impact fragile self-esteem and the contingencies based on specific domains (e.g., social or academic). German (2013) used a strength-based psychosocial intervention program in a whole-class setting in an attempt to increase self-esteem through exploring students' own family background and culture. Results indicated a significant improvement after the intervention in the students' self-concepts and also reported positive improvements in cultural understanding towards themselves and others. Additional programs were created to increase high self-esteem. For example, the state of California created community programs aimed at increasing the self-esteem of individuals in order to reduce problems such as crime, teen pregnancy, drug abuse, and academic underachievement (Mecca, Smelser, & Vasconcellos, 1989). However, it is unclear whether self-esteem actually causes any of the outcomes often associated with it. In a review of these programs, Baumeister et al., (2003) did not find a significant association between high self-esteem as a protective factor and physical issues such as drug and alcohol abuse and risky sexual behaviors.

Given programs in practice within the educational field, few interventions are available that take multidimensional self-esteem into account. The current study aims to go one step further and consider possible future programs based on the relationship between self-esteem and mindfulness to decrease hostile attribution style and ultimately, aggression.

Study Rationale

Based on the above review, it appears that a student with a hostile attribution style is at risk for aggressive behaviors in response to social situations. Both self-esteem and mindfulness may impact on the development of a HAS in college students. Research indicates that self-esteem is negatively correlated with HAS (Waschull & Kernis, 1996) and positively correlated

with mindfulness (Brown et al., 2007; Heppner & Kernis, 2007). Empirical research also supports a relationship between mindfulness and aggression, such that higher levels of mindfulness is associated with lower levels of aggression (Baer et al., 2004; Brown & Ryan, 2003), while the relationship between mindfulness and HAS is still being explored. Lastly, studies reveal a strong correlation between self-esteem and mindfulness (Hinterman, Burns, Hopwood, & Rogers, 2012; Pepping, O'Donovan, & Davis, 2013). To date, however, no studies have examined the nature of the relationship among all three constructs. Additionally, this study focused on college-aged students. The majority of currently available literature focuses on the K-12 school environment (Espelage & Swearer, 2003), while few studies have examined aggression during the college years (Chapell et al., 2006). This study aims to address these gaps in the literature.

Specifically, this study aims to explore whether self-esteem and mindfulness are independent enough that together they would be more predictive of HAS or whether they are so highly correlated that they covary and measure similar traits within an undergraduate population.

Research Questions and Hypotheses

The following research questions and hypotheses will be addressed:

1. How does mindfulness relate to HAS?

   H_1) It is expected that mindfulness will be negatively correlated with HAS. That is, when people demonstrate high levels of awareness and attention in the present moment, they are expected to reduce their negative interpretations of ambiguous social cues.

2. How does self-esteem relate to HAS?

   H_2) It is expected that low self-esteem will demonstrate a higher correlation with HAS than high self-esteem.

3. How does self-esteem relate to mindfulness?

   H_3) It is expected that a significant positive correlation will be present between high self-esteem and mindfulness.

4. Does self-worth moderate the relationship between self-esteem and HAS?

   H_4) It is expected that a significant positive correlation will be present between the interaction term of fragile high self-esteem and HAS, exceeding the correlation of the previous self-esteem findings.

5. Does self-worth moderate the relationship between self-esteem and mindfulness?

   H_5) It is expected that the interaction term of fragile high self-esteem will be shown to have a negative correlation with mindfulness, over and above the previous findings using self-esteem.

6. What is the nature of the relationship between self-esteem, mindfulness, and HAS?

   a. Does fragile self-esteem mediate the relationship between mindfulness and HAS?

      H_{6a}) It is hypothesized that the levels of mindfulness as measured by self-esteem, self-worth, and fragile self-esteem will predict levels of HAS. Using a mediational variable of mindfulness, self-esteem will be negatively correlated with HAS and individuals with higher contingency scores of self-worth will also rate HAS higher. The addition of mindfulness to fragile self-esteem will significantly increase the correlation with HAS.

b. Does mindfulness mediate between fragile self-esteem and HAS?

H$_{6b}$) It is hypothesized that self-esteem, self-worth, and fragile self-esteem as measured by level of mindfulness will predict levels of HAS. The presence of mindfulness will be negatively correlated with HAS and the addition of fragile self-esteem will further show a significant relationship with HAS.

c. Do self-esteem and mindfulness independently relate to HAS or do they covary?

H6$_{c)}$ It is hypothesized that self-esteem and mindfulness will be positively correlated. It expected that, self-esteem and mindfulness will show a significant partial correlation such that when controlling for one variable, the other will not independently predict HAS. The results will uncover the degree of impact that mindfulness and self-esteem have on HAS.

Chapter 3: Method

This chapter will review the methodology and instrumentation used in this study. To begin, participant demographics and participation are described. Next, the instruments selected to measure the variables of mindfulness, self-esteem, self-worth, and hostile attribution style are discussed. Lastly, statistical analyses are presented.

Participants

A total of 288 responses were received but only 190 questionnaires were completed and used for data analysis. To meet criteria for inclusion, participants reported full or part time status in an undergraduate campus within the United States and reported being between the ages of 18-28 years. This age range was chosen for the current study because according to the National Center for Education Statistics, the college age population mainly falls into the 18-24 year range, however, an increase in the 25-29 year range is expected to occur in the next 5 years (Hussar & Bailey, 2016). Table 1 shows the demographic characteristics of the participants. An examination of the sample reveals nearly all of the participants fell between the age range of 18-23 years, minimizing a maturation effect, and over three quarters of the sample (76.8%) consisted of females. Additionally, most participants were Caucasian (53.7 %) and full-time students (92.1%). Participants were relatively equally spread across year in college. Interestingly, although the study was advertised as mindfulness research, the majority (59.5%) did not regularly practice mindful techniques such as yoga, tai chi, meditation, qigong, or self-hypnosis.

Table 1

Sample Characteristics

Characteristic	Frequency	Percent
Gender		
Female	146	76.8
Male	41	21.6
Transgender	1	.5
Ethnicity		
African American	27	14.2
Asian/Pacific Islander	24	12.6
Caucasian	102	53.7
Hispanic	26	13.7
Native American	1	.5
Other	10	5.3
Religion or Spiritual Belief		
Catholic	57	30.0
Christian	51	26.8
Agnostic	13	6.8
Hinduism/Buddhism	9	4.7
Judaism	10	5.3
Muslim	3	1.6
Non-religious	27	14.2
Spiritual	20	10.5
Frequency of mindful practice		
0, do not practice	113	59.5
1-2 per week	55	28.9
3-5 per week	18	9.5
6-7 per week	3	1.6
Full time student		
Full-time	175	92.1
Part-time	15	7.9

Characteristic	Frequency	Percent
Current Year in College		
Freshman	54	28.4
Sophomore	39	20.5
Junior	46	24.2
Senior	47	24.7
Living Situation		
Apartment, off campus, alone	8	4.2
Apartment off campus, with others	61	32.1
On campus, alone	7	3.7
On campus, with others	29	15.3
With family at home	81	42.6
Other	4	2.1
Relationship Status		
Single	146	76.8
Partnership	33	17.4
Married	3	1.6

Measures

Four main measures were used for data collection: the Mindful-Attention Awareness Scale (MAAS), Rosenberg Self-Esteem Scale (RSE), Contingencies of Self-Worth Scale (CSWS), and the Ambiguous Intentions Hostility Questionnaire (AIHQ). These instruments were combined into one online survey using SurveyMonkey.

Ambiguous Intentions Hostility Questionnaire (AIHQ; Combs et al., 2007). The AIHQ is a measure of hostile social-cognitive biases where 15 vignettes are presented that reflect causes that are 5 ambiguous, 5 intentional, and 5 accidental. Because HAS explains reactions in ambiguous situations, the current study only examined the ambiguous questions. The brief scenarios (e.g., "You walk past a bunch of teenagers at a mall and you hear them start to laugh.") are followed by three self-rated Likert scale questions that ask the person to evaluate the

intentionality of the other person's actions, how angry it would make them, and how much they would blame the other person. It was predicted that low mindfulness and high fragile self-esteem would increase intentional attributions in ambiguous sentences. Scores on the Hostility items for ambiguous items ranged from 5-25, from 5-25 on Aggression, and from 15-80 on Blame. The blame scores were computed by averaging the ratings for intentional, anger, and purpose for a mean score. Then for each item, an overall mean score for ambiguous situations was computed. In past studies, the AIHQ has demonstrated good internal consistency (a = .83 – .86). The current study had a Cronbach's a = .89. Studies have shown that AIHQ scores correlate significantly with the presence of social biases among college students (Combs et al., 2005; Waldheter et al., 2005). Questionnaire items are included in Appendix A.

Contingencies of Self-Worth Scale (CSWS; Crocker, Luhtanen, Cooper, & Bouvrette, 2003). Fragile Self-esteem was assessed using Crocker and colleagues' Contingent Self-Worth Scale. Crocker and Wolfe (2000) posit that the effects of success and failure on self-esteem can be understood more fully if we consider how important a domain is to a person's self-worth. Some domains will be more important to some people than to others. For some, feelings of self-worth may be tied to how loved they feel by their family, or how well they are doing in school. For others, self-esteem may be contingent on how virtuous they feel. Crocker and Wolfe proposed that self-esteem will rise or fall following success or failure depending on the degree to which a person's self-esteem is contingent upon performance in that domain. The present research administered the Approval from Others subscale because the present study chose to examine how one's self-esteem is dependent on social validation and perceived responses in ambiguous interactions.

In the current study, the 7- point Approval from Others subscale was used to rate the degree to which students agree with various statements from 1 (*strongly agree*) to 7 (*strongly disagree*). A sample question included: "I don't care if other people have a negative opinion about me." The subscale contains 5 items and scores can range from 5 to 35. To score the CSWS, answers to the five items were summed and then divided by 5.

The CSWS has been standardized using a college population and was found to be a valid instrument in various cultures and languages such as Japanese, Spanish, German, Dutch, French and Turkish (Crocker, Luhtanen, Cooper, & Bouvrette, 2003). In a study examining self-esteem among college students, Park, Crocker, and Mickelson (2004) reported internal consistency for the CSWS subscales ranging from .81 to .96, and test-retest reliability over 8.5 months ranging from .51 to .88. Specifically, Approval from Others demonstrated internal consistency of .81. Internal consistency in the current study was Cronbach's a = .83. Questionnaire items are included in Appendix B.

Rosenberg Self-Esteem Scale (RSE; Rosenberg, 1965). The RSE is a 10-item self-report scale that measures self-esteem as a whole factor. Participants are instructed to rate each item on a 4- point Likert-type scale, ranging from 0 (*strongly disagree*) to 3 (*strongly agree*). Sample questions include: "I feel that I have a number of good qualities;" and "I am able to do things as well as most other people." Negatively worded items are reverse scored and the total rating scores are summed to create a global self-esteem score. The RSE demonstrates adequate psychometric properties (Bushman & Baumeister, 1998; Rosenberg, 1965). Adequate internal consistencies ranging from .74 to .80 have been reported in the literature (e.g., Heatherton & Wyland, 2003; McCarthy & Hodge, 1982), and were found to be Cronbach's a = .91 in the current sample. Adequate test-retest reliability (.85) over a 2-week period was reported by Silber

& Tippett (1965). The RSE is one of the most widely used assessment tools in self-esteem research. It was normed on a national population of adolescents and adults and demonstrates strong cross-cultural validity (Bagley, Bolitho, & Bertrand, 1997). Research has found the RSE and MAAS to be positively correlated (.50; Brown & Ryan, 2003). To score the RSE, a sum of scores for the 10 items is calculated. The higher the score, the higher the self-esteem. Scores can range from 0 – 40. Questionnaire items are included in Appendix C.

Mindful-Attention Awareness Scale (MAAS; Brown & Ryan, 2003). The MAAS is a 15-item self-report scale that measures daily mindfulness. Items on this scale were created to examine the relationship between present attention-awareness and well-being variables. Based on a single factor ("attention and awareness"), participants are instructed to rate each item on a 6-point Likert-type Scale (1 = *almost always* to 6 = *almost never*). The total mean rating is calculated with higher scores reflecting a greater degree of mindfulness. The scale includes statements such as: "I break or spill things because of carelessness, not paying attention, or thinking of something else;" "I find it difficult to stay focused on what's happening in the present;" and, " I tend to walk quickly to get where I'm going without paying attention to what I experience along the way." The measure is scored by computing the mean of the 15 items, with higher scores reflecting higher levels of dispositional mindfulness.

Prior research has provided extensive support for the MAAS as a valid measurement of mindfulness (MacKillop & Anderson, 2007). The scale was standardized measuring college student population with a mean age of 20.1 years, two-thirds were female, and about 50 percent self-identified as Caucasian (Osman et al., 2016). According to the authors of the measurement, internal consistency is high (a = .80 to .87) across a variety of undergraduate, community, and national samples. Test-retest reliability was also adequate (r = .81) over a 4-week period (Brown

& Ryan, 2003). The MAAS exhibited convergent validity with higher levels of self-esteem, emotional intelligence, openness to experience, positive affect, and lower levels of conflict (Barnes et al., 2007; Brown & Ryan, 2003). Internal consistency for the current study was Cronbach's a = .89. Questionnaire items are included in Appendix D.

Aggression Questions. Three aggression questions were included in the demographic section of the study (Appendix E). The questions asked about how frequently the individual demonstrated physical, verbal, and passive forms of aggression in the past two months. Questions were scored using a 4-point scale ranging from 0 to 12 or more occurrences.

Procedure

The previously described measures were combined into a single questionnaire on SurveyMonkey and were administered to participants via the internet. In order to avoid priming the participants with knowledge of mindfulness or feelings of self-worth, the AIHQ was administered first in the questionnaire. This was followed by the CSWS, the RSE, the MAAS, and finally the demographic questions. Participants were recruited using postings to college-focused groups on social media web pages (i.e., Facebook, Reddit, Twitter) by the primary investigator with approval from the social media group. All postings on social media sites consisted of the IRB approved participation invitation and the link to the questionnaire in SurveyMonkey (Appendix F). Data for the present study was only collected in SurveyMonkey and not connected to any other site.

Additionally, a snowball effect method was used in that the social media postings indicated that the link could be shared with additional college students known by participant. General emails were also sent to colleagues of the primary investigator requesting the forwarding of the recruitment letter.

On the initial pages of the survey, a statement of the participant's rights and informed consent were included. The entire survey could be completed in approximately 30 minutes. Eligible participants were invited to contact the researcher with his or her personal email address to participate in the drawing for Amazon.com gift certificates.

Statistical Procedures

Survey responses were uploaded to SPSS and MPlus. The following statistical procedures were used to analyze each research question:

Table 2

Research Questions and Analyses

Research Questions	Analysis
1. How does mindfulness relate to HAS?	Pearson correlation
2. How does self-esteem relate to HAS?	Pearson correlation
3. How does self-esteem relate to mindfulness?	Pearson correlation
4. Does self-worth moderate the relationship between self-esteem and HAS?	Multiple regression
5. Does self-worth moderate the relationship between self-esteem and mindfulness?	Multiple regression
6. What is the nature of the relationship between self-esteem, mindfulness, and HAS?	
a. Does fragile self-esteem mediate the relationship between mindfulness and HAS	Hierarchical path analysis
b. Does mindfulness mediate between fragile self-esteem and HAS?	Hierarchical path analysis
c. Do self-esteem and mindfulness independently relate to HAS or do they covary?	Pearson Correlation ANOVA

Chapter 4: Results

This chapter presents the findings of the statistical analyses. First, an overview of the preliminary analyses will be presented. This section will include covariate analysis, missing data, and reliability of measures. Second, a summary of descriptive statistics explaining the means, and standard deviations of the data will be provided. Additionally, the relationship of scales will be reviewed. Finally, the results of the analyses are reported for testing each hypothesis.

Preliminary Analyses

Prior to data analysis, data were screened to determine out of range values, missing values, normality of distribution, and outliers. Examination of the data revealed no out of range values on any of the variables and no missing data ($N = 190$). All participants' scores fell within the expected range for all the variables.

T-tests found no statistically significant difference for the HAS measure among participants based on gender. Furthermore, based on a one-way ANOVA, no differences were found based on ethnicity, year in college, or frequency of mindful practice. The participants in this study were primarily homogenous on variables such as relationship status and full-time student status. Variable distributions were examined for normality using Z tests. Skewness and kurtosis were not significant for any of the variables and fell within the proper range (Jaccard & Becker, 1997), indicating the variables were adequately normally distributed. Further, visual inspection of histograms and Q-Q Plots also demonstrated normal distributions for each variable. Therefore, no covariates were used in the analysis.

Summary of Statistics

Means, standard deviations, frequencies and ranges were computed for the four measures. All measures fell within normality for skewness and kurtosis. Descriptive statistics are summarized in Table 3 and are explained below**.**

HAS measure. On the AIHQ, college students rated the intentions of others in response to ambiguous vignettes on a scale of 1 to 6. They were then asked to rate how angry and how much blame they would place for each vignette on a scale of 1 to 5. The mean score on the measure for the study participants was 3.12, suggesting an average level of hostile interpretations to ambiguous situations.

Self-esteem measures. On the RES, college students rated general feeling about the self on a scale of 0 to 3. The mean score on the measure for the study participants was 18.93 (*SD* =5.95). As scores below 15 suggest low self-esteem, the study mean score indicates generally higher levels of self-esteem for this participant group.

On the CSWS, college students self-reported their perceived feelings of acceptance from others on a scale of 1 to 7. The mean score on the measure for the study participants was 3.72, indicating participants in this study scored a more secure sense of self-worth.

Mindfulness measure. On the MAAS, college students self-reported their levels of attention and awareness towards experiences on a scale of 1 to 6. The mean score on the measure for the study participants was 3.59 indicating a reasonable sense of mindfulness.

Table 3

Summary Statistics: Means, Standard Deviation, Ranges for the Study Measures

	M	SD	Range
Hostile Attribution Bias:			
AIHQ ambiguous	3.12	0.67	1.40 - 5.07
Self-Esteem:			
CSWS	3.72	1.37	1.00 - 6.80
RSE	18.93	5.95	0.00 - 30.00
Mindfulness:			
MAAS	3.59	0.82	1.60 - 5.73

Note. N=190. AIHQ = Ambiguous Intentions Hostility Questionnaire*, CSWS* = Contingencies of Self-Worth Scale, *RSE* = Rosenberg Self-esteem Scale, *MAAS* = Mindful-Attention Awareness Scale

Correlational Analyses: Mindfulness, Self-Esteem, and HAS

The first three research questions and hypotheses explored how the variables of mindfulness, self-esteem, and HAS relate to each other. Correlational analyses were employed to analyze these relationships. First, the relationship between mindfulness and HAS was analyzed. Pearson correlations between mindfulness and ambiguous HAS indicate statistically significant findings, $r = -.26$, $p < .01$, two-tailed. This supports Hypothesis 1 which posited that greater mindfulness is negatively related to HAS. In other words, individuals with greater mindfulness are able to let ambiguous situations flow through them without attaching negative attributions.

The second correlation examined how self-esteem relates to HAS. Pearson correlations between self-esteem and ambiguous HAS were statistically significant, $r = -.16$, $p < .05$, two-tailed, demonstrating that self-esteem is negatively related to ambiguous levels of HAS. An individual who is secure in thinking of their positive traits is less likely to believe ambiguous events are meant to be intentionally harmful. This supports Hypothesis 2 which suggested that low self-esteem is related to higher HAS.

In the final correlational analyses, self-esteem was examined for its relationship to mindfulness. Self-esteem was hypothesized to have a positive relationship with mindfulness. Supporting Hypothesis 3, results confirm a statistically significant positive correlation, $r = .40$, $p < .01$, two-tailed. In other words, higher levels of self-esteem are associated with greater mindfulness. Individuals with positive self-esteem also demonstrate the ability to positively experience the environment without judgment.

Table 4

Correlations between Self-Esteem, Self-Worth, Mindfulness, and HAS

Variable	Self Esteem	Self-Worth	Mindfulness	HAS
Self-Esteem	–			
Self-Worth	-.54**	–		
Mindfulness	.40**	-.25**	–	
HAS	-.16*	.05	-.26**	–

*Note. HAS = Hostile Attribution Style. * p<.05, ** p<.01.*

Hierarchical Regressions: Impact of Self-Worth

The fourth and fifth research questions examine the impact of self-worth on the relationship between the main study variables. Hierarchical regressions were used for these analyses. For each of these analyses, an interaction term of fragile self-esteem was created by mean centering RSE and CSWS scores to prevent multicollinearity and then multiplied together. The fragile self-esteem interaction term was necessary since a true measure of the construct is not available. Based on previous literature, combining self-esteem and self-worth measures could develop the variable of fragile self-esteem.

The fourth research questions asks whether self-worth alters the relationship between self-esteem and HAS? It was hypothesized that self-worth moderates the relationship between self-esteem and HAS, such that those with "fragile self-esteem" (high self-esteem coupled with low self-worth) would score higher on the HAS ambiguous scale than the other three combinations. In step 1 of the regression, the two main effects were entered (self-esteem and self-worth), predicting 2.8% of the variability in HAS scores, $p = .07$. In the second step, the interaction term was entered and predicted a non-significant 0.1% of additional variability ($p = .71$). As shown in Table 5, adding in the interaction variable of fragile self-esteem was not significantly associated with HAS, thereby not supporting Hypothesis 4.

Table 5

Hierarchical Regression Analysis for the Interaction between Self-Esteem and Self-Worth Predicting HAS.

Variable	B	$SE\ B$	β	R^2	ΔR^2	ΔF	p
Step 1				.03	.03	2.65	.07
Self-Esteem	-.02	.01	-.18				
Self-Worth	-.03	.04	-.05				
Step 2				.03	.00	.14	.71
Self-Esteem	-.02	.01	-.18				
Self-Worth	-.03	.04	-.05				
Fragile Self-esteem (INT)	.00	.01	.03				

Note. $N = 190$.

The fifth research question examined whether self-worth moderates the relationship between self-esteem and mindfulness. A second hierarchical regression was applied to determine a new model with mindfulness as the dependent variable. The independent variable remained as

self-esteem and the moderator as self-worth. In the first step, self-esteem and self-worth were entered into the equation. In the second step, the interaction term (representing fragile self-esteem) was entered. As shown in Table 6, the interaction was not significant ($p=.56$), and Hypothesis 5 was not supported.

Table 6

Hierarchical Regression Analysis for the Interaction between Self-Esteem and Self-Worth Predicting Mindfulness.

Variable	B	$SE\ B$	β	R^2	ΔR^2	ΔF	p
Step 1				.16	.16	18.07***	.00
Self-esteem	.05	.01	.37***				
Self-Worth	-.03	.05	-.05				
Step 2				.16	.00	.35	.00
Self-Esteem	.05	.01	.36***				
Self-Worth	-.03	.05	-.06				
Fragile Self-esteem(INT)	-.00	.01	-.04				

*Note. N = 190. ***p<.001. One-tailed.*

Hierarchical Path Analysis: Nature of Relationship between Study Variables

The final research question examined the nature of the relationship between self-esteem, mindfulness, and HAS. Specifically, does fragile self-esteem mediate between mindfulness and HAS; does mindfulness mediate between self-esteem and HAS; and lastly, do self-esteem and mindfulness independently predict HAS or do they covary? To address these questions, the study used two unidirectional path models and examined the covariance of variables.

The first hypothesized path model, Hypothesis 6A, examined whether fragile self-esteem would mediate lower levels of mindfulness because, in theory, more stable feelings of self-worth

should allow for hostile attribution to not be assigned to awareness of the environment (see

Figure 1). In this hypothesis, the dependent variable was mindfulness, the independent variable

was HAS, and fragile self-esteem, self-esteem, and self-worth scores were entered as mediators.

Each form of self-esteem was predicted to effect the level of mindfulness on HAS. The model

and path coefficient estimates are illustrated in Figure 1. The coefficient assessing the

relationship between mindfulness and HAS demonstrated a statistically significant direct

negative effect (β= -0.19, p<0.00). Additionally, mindfulness demonstrated a significant direct

relationship with both self-esteem and self-worth (β= 2.90, p<0.001; β= -0.42, p<0.001,

respectively). The relationship with the fragile self-esteem interaction variable approached, but

did not reach significance (β= -1.38, p<0.06). The sum of the indirect effects of mindfulness to

ambiguous HAS was not significant (*indirect effect*= -0.02, p<0.38). Additionally, the specific

indirect effects were also not significant (Table 7). Therefore, hypothesis 6A was not supported

and the model is rejected.
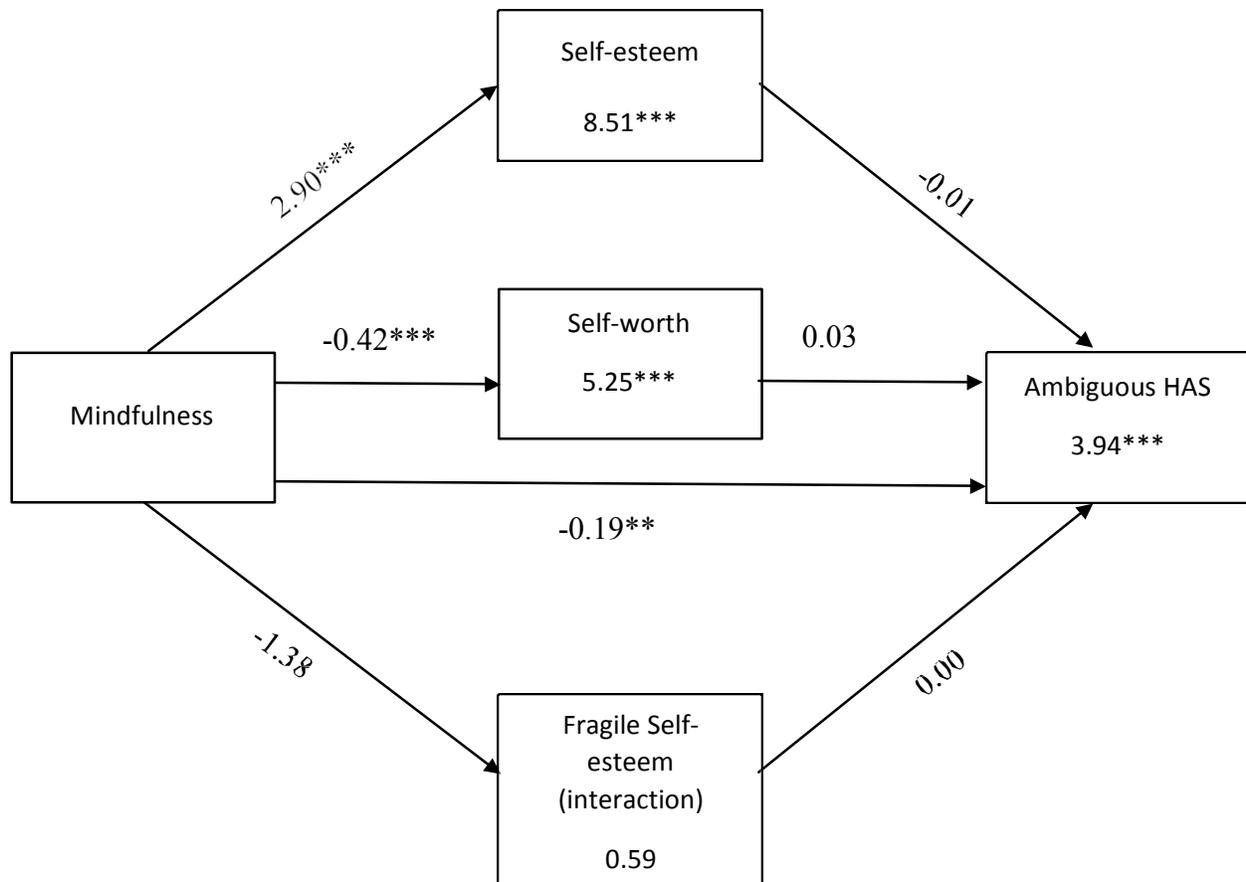
Figure 1. Path model exploring the relationship of fragile self-esteem as a mediator between mindfulness and HAS. Path coefficient direct effect estimates are reported along the unidirectional arrows. Intercept values as well as their significance levels are reported in the respective boxes.

Note. *N*=190. ** *p* < .01. *** *p* < .001 level. *Two-tailed*. HAS = Hostile Attribution Style.

Table 7

Indirect Effects Results for Fragile Self-Esteem Mediation Model

Indirect Effects	Estimate	SE	P-value
Mindfulness to Ambiguous HAS	-0.02	0.03	0.38
Specific Indirect:			
Ambiguous HAS Self-esteem Mindfulness	-0.03	0.03	0.29
Ambiguous HAS Self-worth Mindfulness	0.01	0.02	0.44
Ambiguous HAS Fragile Self-esteem (INT) Mindfulness	-0.00	0.01	0.80

Note. $N = 190$. *HAS* = Hostile Attribution Style

The second path model, 6B, depicted the hypothesis that higher mindfulness may mediate between fragile self-esteem and HAS (see Figure 2). In theory, fragile self-esteem creates a dependence on approval of others and dependence on feedback, which may be facilitated by mindfulness removing the contingency and allowing individuals to be confidently self-aware. Therefore, the coefficients for each of the paths are present in Figure 2. As seen in the diagram, self-esteem as measured by the RSE has a direct effect on mindfulness (β= 0.05, p<0.00). Likewise, the path coefficient assessing the relationship between mindfulness and HAS is significant (β= -0.19, p<0.00). Within this model, there was a small effect size; self-esteem indirectly predicted HAS on the AIHQ ambiguous measure (indirect effect = -0.01, p<0.01, Table 8). Therefore, hypothesis 6B is partially supported. This path model supported new findings that mindfulness mediates the effect of self-esteem on HAS.

Figure 2. Path model exploring the relationship of mindfulness as a mediator between fragile self-esteem and HAS. Path coefficient direct effect estimates are reported along the unidirectional arrows. Intercept values as well and their significance levels are reported in the respective boxes.

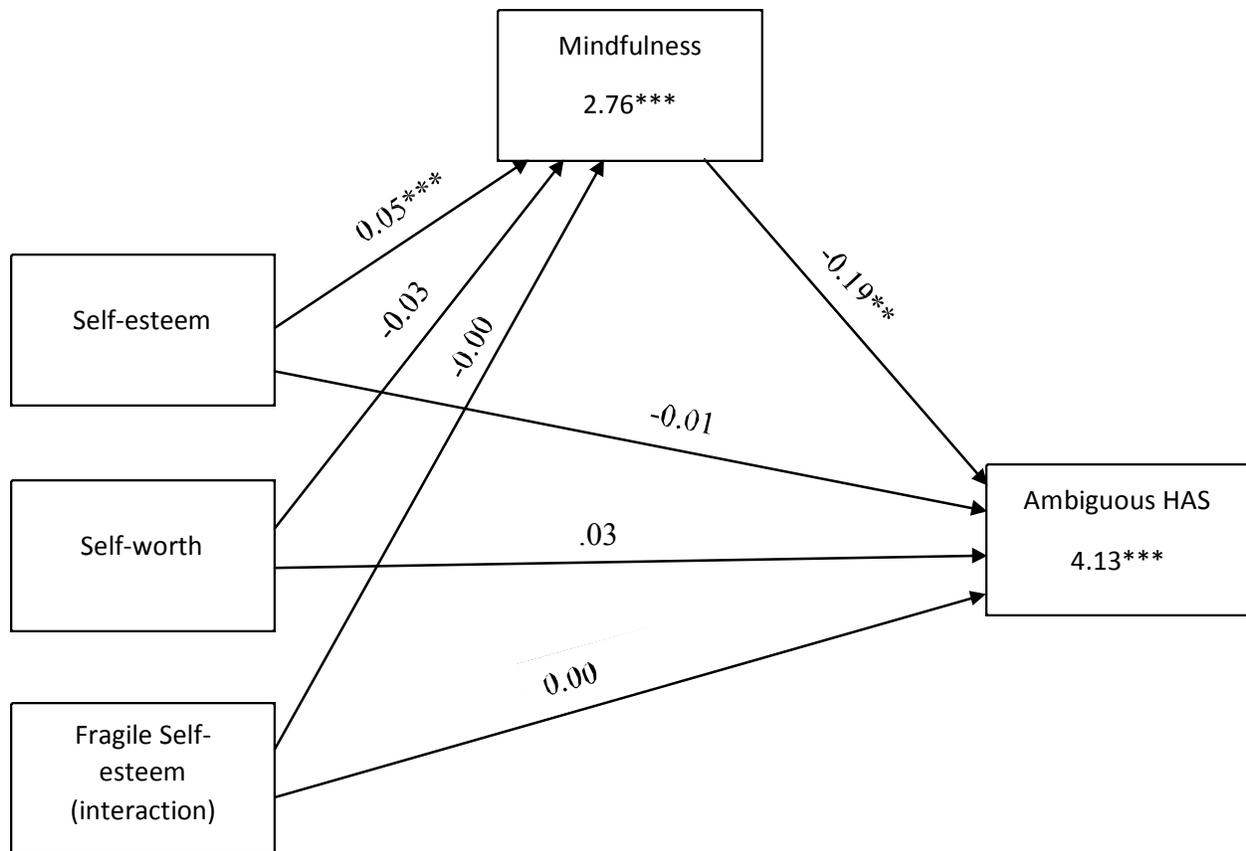Note. *N*=190. ** *p* < .01 level. *** *p* < .001. *Two-tailed*. HAS= Hostile Attribution Style.

Table 8

Indirect Effect Results for Mindfulness Mediation Model

Indirect Effects	Estimate	SE	P-value
Self-esteem to Ambiguous HAS	-0.01	0.00	0.01*
Self-worth to Ambiguous HAS	0.01	0.01	0.48
Fragile self-esteem (INT) to Ambiguous HAS	0.00	0.00	0.56

*Note. N = 190. *p<.05. Two-tailed. HAS =* Hostile Attribution Style

The final hypothesis (6C) examined the covariance of mindfulness and self-esteem measures when relating to HAS. This question used a series of correlations and linear multiple regression to determine the independence of measures. It was expected that together, self-esteem and mindfulness would be shown to have a greater significant correlation with HAS than either construct independently. Correlations indicate that the model is significant at 7.4% and the variables significantly covary at $r<.4$, $p<.001$. Additionally, the ANOVA model is significant at the 0.01 level, however, breaking it down, mindfulness controlling for self-esteem is significant while self-esteem controlling for mindfulness is not significant. B coefficients indicate that the self-esteem *partial correlation* is -.08 and the mindfulness *partial correlation is* -.22 (Table 9). Therefore, the results uncover the degree of impact that mindfulness and self-esteem have on HAS. Self-esteem and Mindfulness appear to covary in their relation to HAS. Once controlled for mindfulness, only an indirect effect is present; self-esteem does not independently relate with HAS. These results support Hypothesis 6C.

Table 9

Independence of Self-esteem and Mindfulness for Partial Correlation with HAS

Variable	B	SE B	β	t	p	Partial Correlation
Self-esteem	-.01	.01	-.10	-1.07	.29	-.08
Mindfulness	-.19	.06	-.23	-3.02	.00**	-.22

*Note. N = 190. **p<.01*

Exploratory Question: Frequency of Aggression and Study Variables

Participants were asked to describe the frequency of verbal, physical, and passive aggression that they committed in the past two months. Spearman correlations were run to examine the association between the study variables and ordinal values of aggression. Results demonstrated that level of self-esteem was significantly associated with verbal and passive aggression. Furthermore, higher HAS was associated with increased verbal aggression and higher contingency scores for self-worth were related to more passive aggression (Table 10).

Table 10

Correlations of the Frequency of Aggression in the Past Two Months with HAS, Self-esteem, and Self-worth

	Physical aggression	Verbal aggression	Passive aggression
HAS	.05	.15[*]	.06
Self-esteem	.01	-.18[*]	-.20[**]
Self-worth	-.07	.05	.18[*]

Note. N= 190. * p<.05, ** p<.01. Two-tailed.

Summary

An overall summary of hypotheses and findings to the current investigation are displayed in Table 11. Therefore in the present study, there were significant associations between mindfulness and both self-esteem and self-worth such that individually, higher levels of self-esteem and self-worth are both related to higher scores of mindfulness. However, self-worth did not moderate the relationship between self-esteem and mindfulness. The interaction term, fragile self-esteem, did not predict any additional variability. Hypothesis five thus was not supported. The first mediational path model supported that self-esteem and self-worth can have a direct effect on mindfulness, however, a direct effect on hostile attribution style was not supported. The

second path model presented mindfulness as a significant mediator between self-esteem and

hostile attribution style.

Table 11

Summary of the Hypotheses and Findings

Hypotheses	Findings
H_1 It is expected that mindfulness will be negatively correlated with HAS.	This hypothesis was supported. High levels of awareness and attention in the present moment were associated with reduced negative interpretations of ambiguous social cues.
H_2 It is expected that low self-esteem will demonstrate a higher correlation with HAS than high self-esteem.	This hypothesis was supported. Low self-esteem was related to distortions in cognitive thinking when perceiving ambiguous events.
H_3 It is expected that a significant positive correlation will be present between high self-esteem and mindfulness.	This hypothesis was supported. High self-esteem was associated attention and awareness in the present moment.
H_4 It is expected that a significant positive correlation will be present between the interaction term of fragile high self-esteem and HAS.	Not Supported. Fragile Self-esteem was not associated with HAS.
H_5 It is expected that the interaction term of fragile high self-esteem will be shown to have a negative correlation with mindfulness, over and above the previous findings using self-esteem.	Not supported. Higher levels of self-esteem and self-worth were related to higher scores of mindfulness. However, fragile self-esteem, did not predict any additional variability.
H_{6a} It is expected that the levels of mindfulness as measured by self-esteem, self-worth, and fragile self-esteem will predict levels of HAS.	Not supported; Path model rejected. Self-reported fragile self-esteem, self-worth, and self-esteem did not affect the levels of mindfulness on HAS.

(continued)

Hypotheses	Findings
H_{6b} It is expected that self-esteem, self-worth, and fragile self-esteem as measured by level of mindfulness will predict levels of HAS.	Not supported; Path model partially supported. Mindfulness may serve as a protective factor between self-esteem and HAS.
H_{6c} It is hypothesized that self-esteem and mindfulness will show a significant partial correlation such that when controlling for one variable, the other will not independently predict HAS.	This hypothesis was supported. The results uncovered the degree of covariance that mindfulness and self-esteem have on HAS.

Chapter 5: Discussion

The primary purpose of this dissertation study was to examine the relationship between mindfulness, self-esteem, and hostile attribution style in undergraduate students. Participants were administered the Mindful-Attention Awareness Scale (MAAS; Brown & Ryan, 2003), Rosenberg Self-Esteem Scale (RES; Rosenberg 1965), Contingencies of Self-Worth Scale (CSWS; Crocker et al., 2003), and the Ambiguous Intentions Hostility Questionnaire (AIHQ; Combs et al., 2007) combined in an online questionnaire. Results showed that self-esteem, mindfulness, and HAS are all correlated. The additional dimension of self-worth was not supported as a moderator. Fragile self-esteem did not predict additional variability. Mindfulness significantly mediated between self-esteem and HAS, but did not support the relationship with fragile self-esteem. Additionally, mindfulness was negatively associated with the mediators of self-esteem and self-worth, yet the path model was not significant in connecting to HAS. Based on these results, the importance of mindfulness, and fragile self-esteem, along with how they relate to HAS and aggression are discussed below. Implications of the findings for the educational setting, limitations of the study, and suggestions for future research are also explored.

The Importance of Mindfulness

Throughout the present research findings, the construct of mindfulness consistently demonstrated positive relationships with self-esteem and served as a protective buffer for HAS. Individuals who reported higher levels of mindfulness were found to report fewer hostile attributions. This finding suggests that a mindful orientation allows individuals to be less behaviorally defensive and reactive when experiencing negative feedback (Baer et al., 2004). Mindful undergraduates may show lower levels of aggression because mindfulness provides the

ability to cope without assigning negative emotions. This finding adds to the research by Heppner and colleagues (2008) stating that mindful individuals are less likely to interpret ambiguous behaviors as reflecting aggressive intent and to react with angry desires.

The current sample of undergraduates with high levels of mindfulness demonstrated higher self-esteem and more secure self-worth. They potentially felt confident in their own abilities and therefore allowed for experiences to flow through awareness without assigning meaning. This finding is in line with previous research by Brown and Ryan (2003) and Thompson and Waltz (2008). It is through mindful awareness that a person perceives and generates a reality. Mindful individuals can experience events and allow these events to pass through consciousness without being attached to the self (Kernis, 2005), leading to increased self-esteem. Research by Baer (2003) explains that individuals use mindfulness skills of receptive observation and attention during an experience to reduce their defensive processing. Being open to experiences allows for events to not be anchored to one's self-worth (Kernis, 2005). Mindfulness appears to be a crucial component of self-worth in allowing individuals to accept and embrace their inner-self rather than relying on the approval of others. It may be that individuals with contingent self-worth require continual validation from the environment and are more vulnerable to the environment, and therefore experience the world through a filter of judgment. Carlson (2013) suggests that mindfulness may be a barrier for how people process information and an experience in a non-evaluative way.

This study makes a significant contribution to the literature looking at the relationship between mindfulness and HAS. The current results found that mindful individuals are less likely to attribute hostile perceptions during ambiguous events. Individuals with a HAS tend to utilize their momentary environmental information to make inferences about others' behaviors (Kelley

& Michela, 1980). Therefore, different people perceive different causations based on the outcome of the same event. If mindfulness can alter the way individuals perceive causality and remove the contingency to the self towards an event, the outcome can be more positive. Allowing information to flow through can allow individuals to manage feelings of self-worth and increase self-esteem to create a more positive image and functioning. Mindfulness would allow for negative feedback to be tolerated more effectively and therefore make better choices in perceiving the environment. The tenets of mindfulness emphasize observation and attention. Based on this stance and mode of processing, research suggests that mindfulness reduces emotional reactivity (Arch & Craske, 2006), lessens the dependency of self-worth in adaptively responding to threatening social situations (Barnes et al., 2007), and increases self-esteem (Brown & Ryan, 2003).

Most importantly, this study contributes findings to the current body of literature in determining that mindfulness can serve as a buffer between self-esteem and HAS. Greater mindfulness allowed students to increase feelings of self-esteem, which in turn decreased HAS. Mindful thinking can aid in the perception, processing, and reaction to social interactions. On the other hand, mindlessly attributing characteristics to themselves or situations can lead to misunderstandings or inappropriate responses such as aggression (Brown, Ryan, & Creswell, 2007). According to Baer, Smith, and Allen (2004), mindful individuals are likely to experience evaluations as relatively non-threatening and without a substantial investment to their own self-esteem. Therefore, reactions are assumed to be generally less defensive. Mindfulness may be an effective buffer for increasing feelings of self-esteem and self-worth and therefore creating a more positive sense of self. Teaching students to develop self-control strategies is a way to increase awareness and redirect focus away from the anger-provoking situations. With practice

developing mindfulness, individuals would be able to receive either social acceptance or social rejection feedback from peers without assigning personal self-worth.

Finally, new findings emerged examining the measures of mindfulness and self-esteem as covariants in their prediction of HAS. It appears that many of the constructs and questions that are asked in the measures hit upon similar themes. Once controlled for mindfulness, self-esteem did not independently relate to hostile attribution style. The constructs of self-esteem and mindfulness ask similar questions in determining how people view themselves and what they pay attention to. One measure determines how events impact the self, while the other determines how those same events can flow through consciousness. The constructs overlap in measuring HAS and are both necessary.

The Importance of Fragile Self-Esteem

In addition to mindfulness, this study also examined the influence of self-esteem. Previous research demonstrated that individuals with fragile forms of self-esteem are more vulnerable to attacks on their self-worth (Baumeister et al., 2000). It may be that these individuals require continual validation from the environment and are more vulnerable to the feedback, and therefore have less self-acceptance and experience the world through a filter of judgment. Self-esteem is generally correlated with the positivity of what individuals believe others think of them more than how others actually see them (Leary & Baumeister, 2000).

Although the findings did not provide many significant results, there is still evidence that fragile self-esteem is a construct that merits additional research. In the present study, fragile self-esteem was operationalized as the co-occurrence of high self-esteem and high self-worth, intended to determine the tendency to misrepresent one's self-feelings as overly positive while simultaneously being overly reliant on the social feedback of others (Schneider & Turkat, 1975).

Higher scores of self-worth in particular were thought to measure the proclivity for an individual's identity to be contingent on the appraisals of others.

It is noteworthy that inconsistent findings among studies measuring fragile self-esteem have emerged in the past (Kernis, 2005; Paradise et al., 2002). One theory, according to Paradise and colleagues (2002), is that the construct of fragile self-esteem functions differently among individuals with low self-esteem as opposed to individuals with high self-esteem. The authors posit that fragile low self-esteem may provide liberation from negative self-feelings that may improve well-being scores. While in contrast, fragile high self-esteem appears to undermine psychological functioning. Further research on the topic of fragile self-esteem may support previous findings such as a high association with defensiveness (Kernis et al., 1997) and that individuals self-worth is more contingent on feedback from others (Kernis, 2005). Previous research also supports findings that individuals with fragile self-esteem often score high on hostility inventories (Kernis, Lakey & Heppner, 2008).

While none of the interaction hypotheses were supported, some significant main effects were found to be consistent with previous research regarding self-esteem and HAS. For example, the findings from the current study suggest that low self-esteem is related to high HAS. Additionally, individuals who demonstrated self-worth contingent on the approval of others also had higher levels of HAS. Examining the interaction of self-worth and self-esteem may support previous research findings (Baumeister et al., 2003). Rather than focusing on programs that directly teach components of self-esteem, it is important to also focus on feelings of self-worth and the ability to cope with negative feedback. Suggestions include helping individuals regulate emotions, reframing social feedback as non-contingent to the self, and developing more accurate

self-appraisals (Baumeister et al., 2000; Costello & Dunway, 2003; Esposito et al., 2005; Hugh et al., 1997; Lochman & Wells, 2002).

Mindfulness and Self-esteem are distinct constructs that appear to overlap when self-worth is implicated.

The Importance of Self-Esteem and HAS Relating to Aggression

As expected, undergraduates with higher self-esteem reported significantly lower levels of HAS. Individuals who are secure in thinking about their positive traits are less likely to believe that ambiguous events are meant to be intentionally harmful. Individuals with high self-esteem may have higher levels of confidence (Leary & MacDonald, 2003) and higher levels of life-satisfaction (Orth, Robins, & Widaman, 2012). Individuals with low self-esteem are often distressed and will act out aggressively (Toch, 1993). According to Helfritz-Sinville and Stanford (2014), individuals more prone to hostile attributions may react impulsively, and therefore react aggressively in social settings.

Hostile attribution has been noted as an interim step between self-esteem and aggression (Reijntjes et al., 2011). When a social threat or rejection is present, some individuals brush it off, while others lash out. In college-age students, higher rates of self-reported verbal and passive aggression were related to low self-esteem. Additionally, passive aggression was related to high contingency of approval from others. Given these results, focusing on outward aggression may not be as effective as focusing on internal thoughts and expressions of ideas. Individuals with higher hostile attribution styles also indicated higher levels of verbal aggression. Individuals with a strong need of social approval from others may choose to react passively, hoping to remain in good favor. Supporting these findings, Crocker, Luhtanen, and Sommers (2004) reported that dependence on social validation can lead individuals to distort or rationalize threatening

information. This distortion can lead individuals to engage in self-protective strategies and become indirectly aggressive.

Educational Implications

Colleges are currently experiencing an increase in aggressive behaviors on campus, however little insight is provided for how campuses can successfully handle situations before they occur. Therefore, the present findings have important potential educational and applied implications. They can serve as a step in developing mindfulness-based intervention programs that can help buffer HAS and prevent aggression on college campuses. Developing cognitive modification procedures can successfully encourage individuals with the tendency for HAS to override their aggressive urges (Wilkowski, Crowe & Ferguson, 2015). The current findings suggest that focusing on mindful strategies can serve college students in developing coping mechanisms when interpreting situations as hostile and feeling like others are "out to get them." Trainings can be developed to teach strategies or increase the mindfulness that individuals already possess. Using mindfulness as a technique, students can be taught specific cognitive approaches and meditation. Situational evidence has emerged to support each of these trainings to cultivate a mindful state. Singh at al. (2003) developed a mindfulness training called "soles of the feet" in which highly aggressive individuals were taught to focus their attention on neutral body parts, such as the soles of their feet, when encountering aggressive stimuli. The purpose of this self-control strategy was to increase awareness and redirect it away from the anger-provoking situation.

The current study findings indicate that the benefits of awareness in the context of mindfulness are linked to lower rates of defensiveness and stronger self-esteem skills. An individual with higher self-esteem is able to modify the basic perspective from contingencies of

daily drama to being able to stand back and simply witness it (Shapiro et al., 2006). These results can lead to developing future programs to impact fragile self-esteem and the contingencies based on specific domains (e.g., social or academic). German (2013) used a strength-based psychosocial intervention program in a whole-class setting in an attempt to increase self-esteem through exploring students' own family background and culture. Teaching skills that mindful people possess, such as receptive awareness and nonjudgment in the present moment, helped decrease hostile attributions and increase feelings of self-worth.

According to the present study findings, mindfulness as a mediating intervention step can support traditionally held theories that low self-esteem is a risk factor for negative life outcomes (Donnellan et al., 2005) and those individuals will reject prosocial norms and act out aggressively in distress (Rosenberg, 1965; Toch, 1993).

Limitations of the Current Study

There were several limitations with the methodology of this study. The first limitation involves the difficulty in capturing the construct of fragile self-esteem. The lack of significant findings could be due to poor measurement of self-esteem. It cannot be ignored that the construct of fragile self-esteem is a relatively emerging concept and has potential limitations (Bosson et al., 2003; Schimmack & Diener, 2003). One such limitation in the current study was that it used two established measures. Focusing on contingent self-worth and self-esteem measures to construct an interaction term of fragile self-esteem limited the ability to draw paths and relationships between constructs. Furthermore, a larger sample may have allowed for the possibility of examining the trending significance of fragile self-esteem. Findings indicated trending significance for the fragile self-esteem term. A larger sample would have allowed for a more complete understanding of the population.

An additional limitation of the study relates to the sample. This particular sample was obtained by collecting responses from a specific population of college-aged students who had access to Internet and were willing to dedicate 30 minutes of their time without guaranteed compensation. Additionally, the population demographics were mainly Caucasian, female, and full-time students. This is an important limitation in considering the generalizability of these findings. A more ethically and gender diverse sample may have yielded different results.

Finally, the few significant findings of the current study only demonstrate correlational relationships between the variables of mindfulness, self-esteem, and hostile attribution style. Therefore, the results cannot definitively speak to the causal directionality of the model. Only experimental manipulation of the variables research could address this question.

Future Research

Further research remains to clarify the relationship between fragile self-esteem, mindfulness, and hostile attribution. Research is currently lacking, especially in the areas of fragile self-esteem and HAS in college students, and what is available appears inconsistent. There are several ways in which future research could improve the understanding of these variables.

Future research needs to continue defining and assessing the variables of fragile self-esteem and mindfulness. Because fragile self-esteem is a newly studied construct, research in general is necessary. This may pertain to looking at differences in constructs that make up fragile self-esteem such as in-person as well as environmental factors that promote or inhibit the development of fragile self-esteem. Furthermore, as an emerging trending term, research must also continue to further define the essential components of mindfulness. The concept of mindfulness continues to evolve. In the past, researchers included different elements of

mindfulness in their literature, studies, and measures, leading to uncertainty about one operational definition (Bishop, 2002; Kabat-Zinn, 2003).

In terms of methodology, future research may increase the sample size by including a balanced representation of undergraduates to provide a more statistically sound demonstration of main effects and interactions of these variables. Additionally, the sample characteristics could have had an impact on the results. When examining HAS, a measure of background experiences may provide insight into prior knowledge and events that shaped a person to respond with hostile attributions. If an individual consistently experiences events with negative outcomes, they may be primed to anticipate situations with HAS. Socioeconomic statuses, culture, or race could be areas to investigate relationships with such experiential biases.

Future research could also employ longitudinal studies to examine the stability of fragile self-esteem. Examining the level of self-esteem at different times may provide insight into the fluctuations and variability of the construct. Finally, the use of more meaningful experimental manipulations could be employed to investigate the effectiveness of teaching mindfulness to undergraduates as a means to enhance their self-esteem and decrease hostile attributions.

Conclusions

The goal of the present study was to explore the association between self-esteem and mindfulness related to hostile attribution style. Results showed that higher self-esteem was related to a lower HAS, as well as to higher levels of mindfulness. Mindfulness, in turn, was associated with decreased hostile attribution. The path models demonstrated that mindfulness has a buffering affect between self-esteem and HAS. The study hypotheses relating to fragile self-esteem were not supported, possibly due to methodological issues. Nonetheless, additional research is warranted in this area given previous mixed results. The results from this study

support the development of comprehensive programs and interventions within the college setting

that employ mindfulness to reduce and prevent future hostile thoughts and actions.

Appendix A

Ambiguous Intentions Hostility Questionnaire (AIHQ)

Please read each of the situations listed below and imagine the situation happening to you. For each situation rate whether you think the person acted that way toward you on purpose. You will then be asked to rate how angry that situation makes you feel and how much you blame the other person.

1. You've been at a new job for three weeks. One day, you see one of your new co-workers on the street. You start to walk up to this person and start to say hello, but she/he passes by you without saying hello.

A. Do you think your co-worker did this to you on purpose?

1	2	3	4	5	6
Definitely No	Probably No	Maybe No	Maybe Yes	Probably Yes	Definitely Yes

B. How angry would this make you feel?

1	2	3	4	5
Not at all Angry				Very Angry

C. How much would you blame the co-worker for passing by you?

1	2	3	4	5
Not at all				Very Much

2. You have an appointment with an important person. When you arrive at your appointment, the secretary informs you that the person is not in; the person took the day off.

A. Do you think the person did this to you on purpose?

1	2	3	4	5	6
Definitely No	Probably No	Maybe No	Maybe Yes	Probably Yes	Definitely Yes

B. How angry would this make you feel?

1	2	3	4	5
Not at all Angry				Very Angry

C. How much would you blame the person for not keeping your appointment?

1	2	3	4	5
Not at all				Very Much

3. You walk past a bunch of teenagers at a mall and you hear them start to laugh.

A. Do you think the teenagers did this to you on purpose?

1	2	3	4	5	6
Definitely No	Probably No	Maybe No	Maybe Yes	Probably Yes	Definitely Yes

B. How angry would this make you feel?

1	2	3	4	5
Not at all Angry				Very Angry

C. How much would you blame the teenagers for laughing as you walked past them?

1	2	3	4	5
Not at all				Very Much

4. You are supposed to meet a new friend for lunch at a restaurant but she/he never shows up.

A. Do you think your new friend did this to you on purpose?

1	2	3	4	5	6
Definitely No	Probably No	Maybe No	Maybe Yes	Probably Yes	Definitely Yes

B. How angry would this make you feel?

1	2	3	4	5
Not at all Angry				Very Angry

C. How much would you blame your new friend for not showing up at the restaurant?

1	2	3	4	5
Not at all				Very Much

5. You call a friend and leave a message on the answering machine, asking to call you back. One week passes and your friend has not called you back.

A. Do you think your friend didn't call you back on purpose?

1	2	3	4	5	6
Definitely No	Probably No	Maybe No	Maybe Yes	Probably Yes	Definitely Yes

B. How angry would this make you feel?

1	2	3	4	5
Not at all Angry				Very Angry

C. How much would you blame your friend for not calling you back?

1	2	3	4	5
Not at all				Very Much

Appendix B

Contingencies of Self-Worth Scale (CSWS)

INSTRUCTIONS: Please respond to each of the following statements by circling your answer using the scale from "1 = Strongly disagree" to "7 = Strongly agree." If you haven't experienced the situation described in a particular statement, please answer how you think you would feel if that situation occurred.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Strongly agree

_____ 1. I don't care if other people have a negative opinion about me.

_____ 2. I can't respect myself if others don't respect me.

_____ 3. I don't care what other people think of me.

_____4. What others think of me has no effect on what I think about myself.

_____ 5. My self-esteem depends on the opinions others hold of me.

Appendix C

Rosenberg Self-Esteem Questionnaire (RSE)

Below is a list of statements dealing with your general feelings about yourself. Please indicate how strongly you agree or disagree with each statement.

		Strongly Disagree	Disagree	Agree	Strongly Agree
1	On the whole, I am satisfied with myself.	**0**	**1**	**2**	**3**
2	At times, I think I am no good at all.	**0**	**1**	**2**	**3**
3	I feel that I have a number of good qualities	**0**	**1**	**2**	**3**
4	I am able to do things as well as most other people.	**0**	**1**	**2**	**3**
5	I feel I do not have much to be proud of.	**0**	**1**	**2**	**3**
6	I certainly feel useless at times.	**0**	**1**	**2**	**3**
7	I feel that I'm a person of worth, at least on an equal plane with others.	**0**	**1**	**2**	**3**
8	I wish I could have more respect for myself.	**0**	**1**	**2**	**3**
9	All in all, I am inclined to feel that I am a failure.	**0**	**1**	**2**	**3**
10	I take a positive attitude toward myself.	**0**	**1**	**2**	**3**

Appendix D

Mindful Attention Awareness Scale (MAAS)

Below is a collection of statements about your everyday experience. Using the 1-6 scale below, please indicate how frequently or infrequently you currently have each experience. Please answer according to what really reflects your experience rather than what you think your experience should be.

1 = *almost always*
2 = *very frequently*
3 = *somewhat frequently*
4 = *somewhat infrequently*
5 = *very infrequently*
6 = *almost never*

Items

1. I could be experiencing some emotion and not be conscious of it until some time later.

2. I break or spill things because of carelessness, not paying attention, or thinking of something else.

3. I find it difficult to stay focused on what's happening in the present.

4. I tend to walk quickly to get where I'm going without paying attention to what I experience along the way.

5. I tend not to notice feelings of physical tension or discomfort until they really grab my attention.

6. I forget a person's name almost as soon as I've been told it for the first time.

7. It seems I am "running on automatic" without much awareness of what I'm doing.

8. I rush through activities without being really attentive to them.

9. I get so focused on the goal I want to achieve that I lose touch with what I am doing right now to get there.

10. I do jobs or tasks automatically, without being aware of what I'm doing.

11. I find myself listening to someone with one ear, doing something else at the same time.

12. I drive places on "automatic pilot" and then wonder why I went there.

13. I find myself preoccupied with the future or the past.

14. I find myself doing things without paying attention.

15. I snack without being aware that I'm eating.

Appendix E
Demographic Survey

1. Age: _____

2. Gender:
__ Female __ Male __ Transgender

3. Ethnicity:
__ African-American __ Asian/Pacific Islander __ Caucasian __ Hispanic
__ Native American __ Multiracial (specify _____)

4. What, if any, religion or spiritual belief system do you identify with? _____

5. Please circle the number that best describes how religious you are:

1	2	3	4	5	6	7	8	9	10
Not at all									Very
Religious									Religious

6. Do you currently practice mindful exercise or relaxation techniques (e.g. yoga, tai chi, meditation, qigong, self-hypnosis, etc.)
__ Yes
__ No

7. How often do you typically practice during one week?
__ 0, I do not practice
__ 1-2 times a week
__ 3-5 times a week
__ 6-7 times a week

8. What is your primary undergraduate campus? _____

9. Are you a full time student?
__ Full-time
__ Part-time

10. Current Year in College
__ Freshman
__ Sophomore
__ Junior
__ Senior

11. Where do you currently live?
__ Apartment off campus, live alone
__ Apartment off campus, live with other(s)
__ On-campus housing, live alone
__ On-campus housing, live with other(s)
__ Live with parents/family members at home
__ Other

12. What is your current relationship status?
__ Single
__ Partnership
__ Married

13. How often in the past 2 months were you physically aggressive towards another person (i.e. pushing, hitting, kicking)
__ 0 occurrences
__ 1-5 occurrences
__ 6-11 occurrences
__ 12 or more occurrences

14. How often in the past 2 months were you verbally aggressive towards another person (i.e. teasing, yelling, threatening)
__ 0 occurrences
__ 1-5 occurrences
__ 6-11 occurrences
__ 12 or more occurrences

15. How often in the past 2 months were you passively aggressive towards another person (i.e. feeling resentful, backhanded compliments, slipping a subtle insulting remark as the "final punch")
__ 0 occurrences
__ 1-5 occurrences
__ 6-11 occurrences
__ 12 or more occurrences

Appendix F

Social Media Recruitment Post

Dear friends,

      I am seeking college students, ages 18-28, to complete a survey on mindfulness, self-esteem, and social perceptions to provide data for my dissertation study. The survey takes about 30 minutes to complete. If you complete the survey, you may enter a drawing to win one of ten $25 iTunes gift cards. Please click the link to check out my survey and/or forward it to those individuals whom you think may be interested in participating.

Thank you!

https://www.surveymonkey.com/r/mindfulawareness

References

Adam, G, Ryan, B, Ketsetzis, M., Keating, L. (2000). Rule compliance and peer sociability: A study of family process, school-focused parent-child interactions, and children's classroom behavior. *Journal of Family Psychology, 14*, 237-250.

Arch, J. J., & Craske, M. G. (2006). Mechanisms of mindfulness: Emotion regulation following a focused breathing induction. *Behavior Research and Therapy, 44*, 1849-1858.

Assor, A., Roth, G., & Deci, E. L. (2004). The emotional costs of parents' conditional regard: A self-determination theory analysis. *Journal of Personality, 72*, 47-88.

Baer, R. A. (2003). Mindfulness training as a clinical intervention: A conceptual and empirical review. *Clinical Psychology: Science and Practice, 10*, 125-143.

Baer, R. A., Smith, G. T., Lykins, E., Button, D., Krietemeyer, J., Sauer, S., Walsh, E., Duggan, D., & Williams, J. M. G. (2008). Construct validity of the five facet mindfulness questionnaire in meditating and non-meditating samples. *Assessment, 15,* 329-342.

Baer, R. A., & Peters, J. R. (2011). Assessment of acceptance and mindfulness in behavioral medicine. In L. M. McCracken (Ed.), *Mindfulness and acceptance in behavioral medicine: Current theory and practice* (pp. 187-214). Oakland, CA US: Context Press/New Harbinger Publications.

Baer, R. A., Smith, G. T., & Allen, K. B. (2004). Assessment of Mindfulness by Self-Report: The Kentucky Inventory of Mindfulness Skills. *Assessment, 11*, 191-206.

Bagley, C., Bolitho, F., Bertrand, L., (1997). Norms and Construct Validity of the Rosenberg Self-Esteem Scale in Canadian High School Populations: Implications for Counselling. *Canadian Journal of Counselling, 31*, 82-92.

Bailey, C. A., & Ostrov, J. M. (2008). Differentiating forms and functions of aggression in emerging adults: Associations with hostile attribution biases and normative beliefs. *Journal of Youth and Adolescence, 37*, 713-722.

Baldwin, M. W., Baccus, J. R., & Fitzsimons, G. M. (2004). Self-esteem and the Dual Processing of Interpersonal Contingencies. *Self and Identity, 3*, 81-93.

Barnes, S., Brown, K., Krusemark, E., Campbell, W., & Rogge, R. D. (2007). The role of mindfulness in romantic relationship satisfaction and responses to relationship stress. *Journal of Marital and Family Therapy, 33*, 482-500.

Barnett, P., & Gotlib, I. (1988). Personality and depression: New scales and a model of relationships. Paper presented at the annual meeting of the Canadian Psychological Association, Montreal.

Baum, & Klaus, (2005). Violent victimization of college students, 1995-2002. Washington, DC: U.S. Department of Justice, Office of Justice Programs, Bureau of Justice Statistics.

Baumeister, R.F., Bushman, B.J., & Campbell, W.K. (2000). Self-esteem, narcissism, and aggression: Does violence result from low self-esteem or from threatened egotism? *Current Directions in Psychological Science, 9*, 26-29.

Baumeister, R.F., Dale, K.L., & Muraven, M. (2000). Social movements, volition, self-esteem, and the need to belong. In S. Strykyer, T.J. Owens & R.W. White (Eds.), *Self, identity, and social movements* (pp. 239-251). Minneapolis, MN: University of Minnesota Press.

Baumeister, R. F., Smart, L., & Boden, J. M. (1996). Relation of threatened egotism to violence and aggression: The dark side of high self-esteem. *Psychological Review, 103*, 5-33.

Baumeister, R. F., Tice, D. M., & Hutton, D. G. (1989). Self-presentational motivations and personality differences in self-esteem. *Journal of Personality, 57*, 547-579.

Baumeister, R. F., Campbell, J. D., Krueger, J. I., & Vohs, K. D. (2003). Does high self-esteem cause better performance, interpersonal success, happiness, or healthier lifestyles?. *Psychological Science In The Public Interest, 4*, 1-44.

Bishop, S. R. (2002). What do we really know about Mindfulness-Based Stress Reduction? *Psychosomatic Medicine, 64*, 71-83.

Bishop, S. R., Lau, M., Shapiro, S., Carlson, L., Anderson, N. D., Carmody, J., & Devins, G. (2004). Mindfulness: A proposed operational definition. *Clinical Psychology: Science and Practice, 11*, 230-241.

Blair, I. V. (2002). Implicit Stereotypes and Prejudice (pp. 359 – 374). In, G. Moskowitz (Ed.), *Cognitive social psychology: On the tenure and future of social cognition*. Mahwah, NJ: Erlbaum

Borders, A., Earleywine, M., & Jajodia, A. (2010). Could mindfulness decrease anger, hostility, and aggression by decreasing rumination?. *Aggressive Behavior, 36*, 28-44.

Borton, J. S., Crimmins, A. E., Ashby, R. S., & Ruddiman, J. F. (2012). How do individuals with fragile high self-esteem cope with intrusive thoughts following ego threat?. *Self and Identity, 11*, 16-35.

Bosson, J. K., Brown, R. P., Zeigler-Hill, V., & Swann, W. (2003). Self-enhancement tendencies among people with high explicit self-esteem: The moderating role of implicit self-esteem. *Self and Identity, 2*, 169-187.

Branden, N. (1994). The six pillars of self-esteem. New York, NY England: Bantam Books, Inc.

Branstrom, R., Duncan, L. G., & Moskowitz, J. (2011). The association between dispositional mindfulness, psychological well-being, and perceived health in a Swedish population-based sample. *British Journal of Health Psychology, 16*, 300-316

Brown, K., & Cordon, S. (2009). Toward a phenomenology of mindfulness: Subjective experience and emotional correlates. In F. Didonna (Ed.) , *Clinical handbook of mindfulness* (pp. 59-81). New York, NY US: Springer Science + Business Media.

Brown, K., & Kasser, T. (2005). Are psychological and ecological well-being compatible? The role of values, mindfulness, and lifestyle. *Social Indicators Research, 74*, 349-368.

Brown, K., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology, 84*, 822-848. Brown, K., Ryan, R. M., & Creswell, J. (2007). Addressing fundamental questions about mindfulness. *Psychological Inquiry, 18*, 272-281.

Brown, K., Ryan, R. M., & Creswell, J. (2007). Mindfulness: Theoretical foundations and evidence for its salutary effects. *Psychological Inquiry, 18*, 211-237.

Brown, K., Ryan, R. M., Creswell, J., & Niemiec, C. P. (2008). Beyond me: Mindful responses to social threat. In H. A. Wayment, J. J. Bauer (Eds.), *Transcending self-interest: Psychological explorations of the quiet ego* (pp. 75-84). Washington, DC US: American Psychological Association.

Bushman, B. J., & Baumeister, R. F. (1998). Threatened egotism, narcissism, self-esteem, and direct and displaced aggression: Does self-love or self-hate lead to violence?. *Journal of Personality and Social Psychology, 75*, 219-229.

Bushman, B. J., Baumeister, R. F., Thomaes, S., Ryu, E., Begeer, S., & West, S. G. (2009). Looking again, and harder, for a link between low self-esteem and aggression. *Journal of Personality, 77*, 427-446.

Buss, A.H. (1961). *The psychology of aggression* (p. 307). New York: Wiley. p. 307

Buss, A. H., & Perry, M. (1992). The Aggression Questionnaire. *Journal of Personality and Social Psychology, 63*, 452-459.

Butler, A. C., Hokanson, J. E., & Flynn, H. A. (1994). A comparison of self-esteem lability and low trait self-esteem as vulnerability factors for depression. *Journal of Personality and Social Psychology, 66*, 166-177

Cahn, B., & Polich, J. (2006). Meditation states and traits: EEG, ERP, and neuroimaging studies. *Psychological Bulletin, 132*, 180-211.

Carlson, E. N. (2013). Overcoming the barriers to self-knowledge: Mindfulness as a path to seeing yourself as you really are. *Perspectives on Psychological Science, 8,* 173-186.

Carmody, J., & Baer, R. A. (2008). Relationships between mindfulness practice and levels of mindfulness, medical and psychological symptoms and well-being in a mindfulness-based stress reduction program. *Journal of Behavioral Medicine, 31*, 23-33.

Carr, J. L. (2005). *American College Health Association campus violence white paper*. Baltimore, MD: American College Health Association.

Chapell, M. S., Hasselman, S. L., Kitchin, T., Lomon, S. N., MacIver, K. W., & Sarullo, P. (2006). Bullying in elementary school, high school, and college. *Adolescence*, *41*, 633   648.

Cheek, J. M., & Buss, A. H. (1981). Shyness and sociability. *Journal of Personality and Social Psychology, 41*, 330-339.

Christopher, M. *&* Gilbert, B. (2010). Incremental Validity of Components of Mindfulness in the Prediction of Satisfaction with Life and Depression. *Current Psychology, 29,* 10–23.

Cohen, D., Nisbett, R. E., Bowdle, B. F., & Schwarz, N. (1996). Insult, aggression, and the southern culture of honor: An 'experimental ethnography.'. *Journal of Personality and Social Psychology, 70*, 945-960.

Combs DR, Penn DL, Wicher M & Waldheter E. (2007). The Ambiguous Intentions Hostility Questionnaire (AIHQ): a new measure for evaluating hostile social cognitive biases in paranoia. *Cognitive Neuropsychiatry, 12,* 128–143.

Costello & Dunaway (2003). Egotism and Delinquent Behavior. *Journal of Interpersonal Violence, 18*, 572-590.

Crain, M. M., Finch, C. L., & Foster, S. L. (2005). The Relevance of the Social Information Processing Model for Understanding Relational Aggression in Girls. *Merrill-Palmer Quarterly*, *51*, 213-249.

Creemers, D. M., Scholte, R. J., Engels, R. E., Prinstein, M. J., & Wiers, R. W. (2012). Implicit and explicit self-esteem as concurrent predictors of suicidal ideation, depressive symptoms, and loneliness. J*ournal of Behavior Therapy and Experimental Psychiatry, 43*, 638-646.

Creswell, J., Way, B. M., Eisenberger, N. I., & Lieberman, M. D. (2007). Neural correlates of dispositional mindfulness during affect labeling. *Psychosomatic Medicine, 69*, 560-565.

Crick, N. R., & Dodge, K. A. (1996). Social information-processing mechanisms on reactive and proactive aggression. *Child Development, 67*, 993-1002.

Crick, N. R., Grotpeter, J. K., & Bigbee, M. A. (2002). Relationally and physically aggressive children's intent attributions and feelings of distress for relational and instrumental peer provocations. *Child Development, 73*, 1134-1142.

Crick, N. R. (1995). Relational aggression: The role of intent attributions, feelings of distress, and provocation type. *Development and Psychopathology, 7*, 313-322.

Crick, N. R., & Dodge, K. A. (1994). A review and reformulation of social information-processing mechanisms in children's social adjustment. *Psychological Bulletin, 115*, 74-101.

Crocker, J. (2002). The costs of seeking self-esteem. *Journal of Social Issues, 58,* 597-615.

Crocker, J., & Knight, K. M. (2005). Contingencies of Self-Worth. *Current Directions In Psychological Science*, *14*, 200-203.

Crocker, J., Luhtanen, R. K., Cooper, M. L., & Bouvrette, A. (2003). Contingencies of Self-Worth in College Students: Theory and Measurement. *Journal Of Personality And Social Psychology*, *85*, 894-908.

Crocker, J., Luhtanen, R. K., & Sommers, S. R. (2004). Contingencies of self-worth: Progress and prospects. *European Review of Social Psychology, 15*, 133-181.

Crocker, J., Sommers, S. R., & Luhtanen, R. K. (2002). Hopes dashed and dreams fulfilled: Contingencies of self-worth and graduate school admissions. *Personality and Social Psychology Bulletin*, 28, 1275-1286.

Crocker, J., & Wolfe, C. T. (2001). Contingencies of self-worth. *Psychological Review*, 108, 593-623.

Deci, E. L., & Ryan, R. M. (1995). Human autonomy: The basis for true self-esteem. In M. H. Kernis (Ed.), *Efficacy, agency, and self-esteem* (pp. 31-49). New York, NY US: Plenum Press.

Deci, E. L., & Ryan, R. M. (2000). The 'what' and 'why' of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11*, 227-268.

Deckro, G., Ballinger, K., Hoyt, M., Wilcher, M., Dusek, J., Myers, P., Greenberg, B., Rosenthal, D., & Benson, H. (2002). The Evaluation of Mind/Body Intervention to Reduce Psychological Distress and Perceived Stress in College Students. *Journal of American College Health, 50,* 281-287.

Dodge, K. A. (1980). Social cognition and children's aggressive behavior. *Child Development, 51*, 162-170.

Dodge, K. A. (2006). Translational science in action: Hostile attributional style and the development of aggressive behavior problems. *Development and Psychopathology, 18*, 791-814.

Dodge, K. A., & Frame, C. L. (1982). Social cognitive biases and deficits in aggressive boys. *Child Development, 53*, 620-635.

Dodge, K. A., Laird, R., Lochman, J. E., & Zelli, A. (2002). Multidimensional latent-construct analysis of children's social information processing patterns: Correlations with aggressive behavior problems. *Psychological Assessment, 14*, 60-73.

Dodge, K.A., Malone, P., Lansford, J., Sorbring' E., Skinner, A., Tapanya, S., Uribe Tirado, L., Zelli, A., Peña Alampay, L., Al-Hassan, S., Bacchini, D., Bombi, A., Bornstein, M., Chang, L., Deater-Deckard, K., Di Giunta, L., Oburu, P., and Pastorelli, C. (2015). Hostile attributional bias and aggressive behavior in global context. *Assessment, 112*, 9310–9315.

Dodge, K. A., Pettit, G. S., McClaskey, C. L., & Brown, M. M. (1986). Social competence in children. *Monographs of The Society For Research In Child Development, 51*, 1-85.

Donnellan, M., Trzesniewski, K. H., Robins, R. W., Moffitt, T. E., & Caspi, A. (2005). Low Self-Esteem Is Related to Aggression, Antisocial Behavior, and Delinquency. *Psychological Science, 16*, 328-335.

Dykman, B. M. (1998). Integrating cognitive and motivational factors in depression: Initial tests of a goal-orientation approach. *Journal of Personality and Social Psychology, 74*, 139-158.

Epps, J., & Kendall, P. C. (1995). Hostile attributional bias in adults. *Cognitive Therapy and Research, 19*, 159-178.

Epstein, S., & Taylor, S. P. (1967). Instigation to aggression as a function of degree of defeat and perceived aggressive intent of the opponent. *Journal of Personality, 35*, 265-289.

Espelage, D., & Swearer, S. (2003). Research on bullying and victimization: What have we learned and where do we need to go? *School Psychology Review 32*, 365-383

Fein, S., & Spencer, S. J. (2008). Prejudice as self-image maintenance: Affirming the self through derogating others. In R. H. Fazio, R. E. Petty (Eds.), *Attitudes: Their structure, function, and consequences* (pp. 261-281).

Fergusson, D. M., Horwood, L., & Ridder, E. M. (2005). 'Partner violence and mental health outcomes in a New Zealand birth cohort': Rejoinder. *Journal of Marriage and Family, 67*, 1131-1136.

Fontaine, R., & Dodge, K. A. (2006). Real-Time Decision Making and Aggressive Behavior in Youth: A Heuristic Model of Response Evaluation and Decision (RED). *Aggressive Behavior, 32*, 604-624.

Gable, S. L., & Nezlek, J. B. (1998). Level and instability of day-to-day psychological well-being and risk for depression. *Journal of Personality and Social Psychology, 74*, 129-138.

German, M. (2013). Developing our cultural strengths: Using the 'Tree of Life' strength-based, narrative therapy intervention in schools, to enhance self-esteem, cultural understanding and to challenge racism. *Educational and Child Psychology*, *30*, 75-99.

Greenier, K. D., Kernis, M. H., McNamara, C. W., Waschull, S. B., Berry, A. J., Herlocker, C. E., & Abend, T. A. (1999). Individual differences in reactivity to daily events: Examining the roles of stability and level of self-esteem. *Journal of Personality, 67*, 185-208.

Hall, N., Gradt, *S.,* Goetz, T., Musu-Gillette, L. (2011). Attributional Retraining, Self-Esteem, and the Job Interview: Benefits and Risks for College Student Employment. *The Journal of Experimental Education, 79*, 318-339.

Hawkins, K. A., & Cougle, J. R. (2013). Effects of interpretation training on hostile attribution bias and reactivity to interpersonal insult. *Behavior Therapy, 44*, 479-488.

Hayes, A. & Feldman, G. (2004). Clarifying the construct of mindfulness in the context of emotion regulation and the process of change in therapy. *Clinical Psychology: Science and Practice, 11*, 255-262.

Heatherton, T. F., & Polivy, J. (1991). Development and validation of a scale for measuring state self-esteem. *Journal of Personality And Social Psychology*, *60*, 895-910.

Heatherton, T. F., & Wyland, C. L. (2003). Assessing self-esteem. In S. J. Lopez, C. R. Snyder (Eds.), *Positive psychological assessment: A handbook of models and measures* (pp. 219-233). Washington, DC US: American Psychological Association.

Helfritz-Sinville, L. E., & Stanford, M. S. (2014). Hostile attribution bias in impulsive and premeditated aggression. *Personality and Individual Differences*, *56*, 45-50.

Helmsen, J., Koglin, U., & Petermann, F. (2012). Emotion regulation and aggressive behavior in preschoolers: The mediating role of social information processing. *Child Psychiatry and Human Development, 43*, 87-101.

Heppner, W. L., & Kernis, M. H. (2007). 'Quiet ego' functioning: The complementary roles of mindfulness, authenticity, and secure high self-esteem. *Psychological Inquiry, 18*, 248-251.

Heppner, W. L., & Kernis, M. H. (2011). High self-esteem: Multiple forms and their outcomes. In S. J. Schwartz, K. Luyckx, V. L. Vignoles (Eds.), *Handbook of identity theory and research* (pp. 329-355). New York, NY US: Springer Science + Business Media.

Heppner, W. L., Kernis, M. H., Lakey, C. E., Campbell, W., Goldman, B. M., Davis, P. J., & Cascio, E. V. (2008). Mindfulness as a means of reducing aggressive behavior: Dispositional and situational evidence. *Aggressive Behavior, 34*, 486-496.

Heppner, W. L., Kernis, M. H., Nezlek, J. B., Foster, J., Lakey, C. E., & Goldman, B. M. (2007). Within-person relationships among daily self-esteem, need satisfaction, and authenticity. *Psychological Science, 19*, 1140-1145.

Hinterman, C., Burns, L., Hopwood, D., Rogers, W. (2012). Mindfulness: Seeking a more perfect approach to coping with life's challenges. *Mindfulness, 3,* 275-281.

Hodgins, H. S., & Knee, C. (2002). The integrating self and conscious experience. In E. L. Deci, R. M. Ryan (Eds.), *Handbook of self-determination research* (pp. 87-100). Rochester, NY US: University of Rochester Press.

Hudley, C. A. (1993). Comparing teacher and peer perceptions of aggression: An ecological approach. *Journal of Educational Psychology, 85*, 377-384.

Huesmann, L., Eron, L. D., & Dubow, E. F. (2002). Childhood predictors of adult criminality: Are all risk factors reflected in childhood aggressiveness?. *Criminal Behavior and Mental Health, 12*, 185-208.

Hughes, J. N., Cavell, T. A., & Grossman, P. A. (1997). A positive view of self: Risk or protection for aggressive children?. *Development and Psychopathology, 9*, 75-94.

Hunt J, Eisenberg D. (2010). Mental health problems and help-seeking behavior among college students. *Journal of Adolescent Health, 46,* 3-10.

Hussar, W.J., and Bailey, T.M. (2016). *Projections of Education Statistics to 2023* (NCES 2015-073). U.S. Department of Education, National Center for Education Statistics. Washington, DC: U.S. Government Printing Office.

Jordan, C. H., Spencer, S. J., Zanna, M. P., Hoshino-Browne, E., & Correll, J. (2003). Secure and Defensive High Self-Esteem. *Journal of Personality and Social Psychology, 85*, 969-978.

Kabat-Zinn, J. (1990). Full catastrophe living: Using the wisdom of your body and mind to face stress, pain, and illness. Dell Publishing, New York.

Kabat-Zinn, J. (2003). Mindfulness-based interventions in context: Past, present, and future. Clinical Psychology: *Science and Practice, 10*, 144-156.

Kelley, H. H., & Michela, J. L. (1980). Attribution theory and research. *Annual Review Of Psychology, 31*, 457-501.

Kelley, T. M., & Lambert, E. G. (2012). Mindfulness as a potential means of attenuating anger and aggression for prospective criminal justice professionals. *Mindfulness, 3*, 261-274.

Kernis, M. H. (1993). The roles of stability and level of self-esteem in psychological functioning. In R. F. Baumeister (Ed.), Self-*esteem: The puzzle of low self-regard* (pp. 167-182). New York, NY US: Plenum Press.

Kernis, M. H. (2002). Self-esteem as a multifaceted construct. In T. M. Brinthaupt, R. P. Lipka (Eds.), *Understanding early adolescent self and identity: Applications and interventions* (pp. 57-88). Albany, NY US: State University of New York Press.

Kernis, M. H. (2003). High self-esteem: A differentiated perspective. In E. C. Chang, L. J. Sanna (Eds.), *Virtue, vice, and personality: The complexity of behavior* (pp. 3-22). Washington, DC US: American Psychological Association.

Kernis, M. H. (2005). Measuring self-esteem in context: The importance of stability of self-esteem in psychological functioning. *Journal of Personality, 73*, 1569-1605.

Kernis, M. H., Brown, A., & Brody, G. (2000). Fragile self-esteem in children and its associations with perceived patterns of parent-child communication. *Journal of Personality, 68*, 225-252.

Kernis, M. H., Cornell, D. P., Sun, C. R., Berry, A., & Harlow, T. (1993). There's more to self-esteem than whether it is high or low: The importance of stability of self-esteem. *Journal of Personality and Social Psychology, 65*, 1190-1204.

Kernis, M. H., & Goldman, B. (2003). Stability and variability in self-concept and self-esteem. In M. R. Leary, J. Tangney (Eds.), *Handbook of self and identity* (pp. 106-127). New York, NY US: Guilford Press.

Kernis, M. H., Grannemann, B. D., & Barclay, L. C. (1989). Stability and level of self-esteem as predictors of anger arousal and hostility. *Journal of Personality And Social Psychology, 56*, 1013-1022.

Kernis, M. H., Grannemann, B. D., & Barclay, L. C. (1992). Stability of self-esteem: Assessment, correlates, and excuse making. *Journal of Personality, 60*, 621-644.

Kernis, M. H., & Heppner, W. L. (2008). Individual differences in quiet ego functioning: Authenticity, mindfulness, and secure self-esteem. In H. A. Wayment, J. J. Bauer (Eds.) , *Transcending self-interest: Psychological explorations of the quiet ego* (pp. 85-93). Washington, DC US: American Psychological Association.

Kernis, M. H., & Lakey, C. E. (2010). Fragile versus secure high self-esteem: Implications for defensiveness and insecurity. In R. M. Arkin, K. C. Oleson, P. J. Carroll (Eds.), *Handbook of the uncertain self* (pp. 360-378). New York, NY US: Psychology Press.

Kernis, M. H., Lakey, C. E., & Heppner, W. L. (2008). Secure versus fragile high self-esteem as a predictor of verbal defensiveness: Converging findings across three different markers. *Journal of Personality, 76*, 477-512.

Kernis, M. H., & Paradise, A. W. (2002). Distinguishing between secure and fragile forms of high self-esteem. In E. L. Deci, R. M. Ryan (Eds.), *Handbook of self-determination research* (pp. 339-360) Rochester, NY US: University of Rochester Press.

Kernis, M. H., Paradise, A. W., Whitaker, D. J., Wheatman, S. R., & Goldman, B. N. (2000). Master of one's psychological domain? Not likely if one's self-esteem is unstable. *Personality and Social Psychology Bulletin, 26*, 1297-1305.

Kernis, M. H., & Waschull, S. B. (1995). The interactive roles of stability and level of self-esteem: Research and theory. In M. P. Zanna (Ed.), *Advances in experimental social psychology*, (pp. 93-141). San Diego, CA US: Academic Press.

Lakey, C. E., Kernis, M. H., Heppner, W. L., & Lance, C. E. (2008). Individual differences in authenticity and mindfulness as predictors of verbal defensiveness. *Journal of Research In Personality, 42*, 230-238.

Lambird, K., & Mann, T. (2006). When Do Ego Threats Lead to Self-Regulation Failure? Negative Consequences of Defensive High Self-Esteem. *Personality and Social Psychology Bulletin, 32*, 1177-1187.

Leary, M. R. & MacDonald, G. (2003). Individual differences in trait self-esteem: A theoretical integration. In M. Leary and J. Tangney (Eds.) *Handbook of self and identity* (pp. 401–418). New York: Guildford Publications.

Leary, M. R., Schreindorfer, L. S., & Haupt, A. L. (1995). The role of low self-esteem in emotional and behavioral problems: Why is low self-esteem dysfunctional?. *Journal of Social and Clinical Psychology, 14*, 297-314.

Levesque, C., & Brown, K. (2007). Mindfulness as a moderator of the effect of implicit motivational self-concept on day-to-day behavioral motivation. *Motivation and Emotion, 31*, 284-299.

Lochman, J. E., & Wells, K. C. (2002). The Coping Power Program at the middle school transition: Universal and indicated prevention effects. *Psychology of Addictive Behaviors, 16*, 40-54.

McGregor, I., & Marigold, D. C. (2003). Defensive Zeal and the Uncertain Self: What Makes You So Sure?. *Journal of Personality and Social Psychology, 85*, 838-852.

MacBrayer, E., Milich, R., & Hundley, M. (2003). Attributional Biases in Aggressive Children and Their Mothers. *Journal of Abnormal Psychology, 112*, 698-708.

MacDonald, C. & Roberts-Pittman, B. (2011) Cyberbullying among college students: prevalence and demographic differences. *Procedia Social and Behavioral Sciences, 9*, 2003–2009.

MacKillop, J., & Anderson, E. J. (2007). Further psychometric validation of the Mindful Attention Awareness Scale (MAAS). *Journal of Psychopathology and Behavioral Assessment, 29*, 289-293.

Michalak, J., Teismann, T., Heidenreich, T., Ströhle, G., & Vocks, S. (2011). Buffering low self-esteem: The effect of mindful acceptance on the relationship between self-esteem and depression. *Personality and Individual Differences, 50*, 751-754.

Milich, R., & Dodge, K. A. (1984). Social information processing in child psychiatric populations. *Journal of Abnormal Child Psychology, 12*, 471-489.

Murphy, M. J., Mermelstein, L. C., Edwards, K. M., & Gidycz, C. A. (2012). The benefits of dispositional mindfulness in physical health: A longitudinal study of female college students. *Journal of American College Health, 60*, 341-348.

Murray-Close, D., Ostrov, J. M., Nelson, D. A., Crick, N. R., & Coccaro, E. F. (2010). Proactive, reactive, and romantic relational aggression in adulthood: Measurement, predictive validity, gender differences, and association with intermittent explosive disorder. *Journal of Psychiatric Research, 44*, 393-404.

Mytton J. A., DiGuiseppi C., Gough D., Taylor R. S., Logan S. (2002). School-based secondary prevention programmes for preventing violence. *Cochrane Database of Systematic Reviews*, 3, 1–93.

Niemiec, C. P., Ryan, R. M., & Brown, K. W. (2008). The role of awareness and autonomy in quieting the ego: A self-determination theory perspective. In H. A. Wayment & J. J. Bauer (Eds.), *Transcending self-interest: Psychological explorations of the quiet ego* (pp. 107-115). Washington, DC: APA Books.

Niemiec, C. P., Ryan, R. M., & Deci, E. L. (2010). Self-determination theory and the relation of autonomy to self-regulatory processes and personality development. In R. H. Hoyle (Ed.), *Handbook of personality and self-regulation* (pp. 169-191). Wiley-Blackwell.

Novaco, R.W. and W.N. Welsh, (1989). "Anger Disturbances: Cognitive Mediation and Clinical Prescriptions." In: K. Howells and C. Hollin (eds.), *Clinical Approaches to Violence.* Chichester, UK: Wiley.

Niiya, Y., Brook, A. T., & Crocker, J. (2010). Contingent self-worth and self-handicapping: Do contingent incremental theorists protect self-esteem? *Self and Identity, 9*, 276-297.

Orobio de Castro, B., Veerman, J. W., Koops, W., Bosch, J. D., & Monshouwer, H. J. (2002). Hostile attribution of intent and aggressive behavior: A meta-analysis. *Child Development, 73*, 916-934.

Orth, U., Robins, R. W., & Widaman, K. F. (2012). Life-span development of self-esteem and its effects on important life outcomes. *Journal of Personality and Social Psychology*, 102, 1271–1288.

Osman, A., Lamis, D., Bagge, C., Freedenthal, S., Barnes, S., (2016). The Mindful Attention Awareness Scale: Further Examination of Dimensionality, Reliability, and Concurrent Validity Estimates. *Journal of Personality Assessment , 98*, 189-199.

Paradise, A. W., & Kernis, M. H. (2002). Self-esteem and psychological well-being: Implications of fragile self-esteem. *Journal of Social and Clinical Psychology, 21*, 345-361.

Philpot, V. D., Holliman, W. B., & Madonna, S. (1995). Self-statements, locus of control, and depression in predicting self-esteem. *Psychological Reports*, *76*, 1007-1010.

Rasmussen, M. K., & Pidgeon, A. M. (2011). The direct and indirect benefits of dispositional mindfulness on self-esteem and social anxiety. *Anxiety, Stress & Coping: An International Journal, 24*, 227-233.

Reijntjes, A., Thomaes, S., Kamphuis, J,.Bushman, B., Orobio de Castro, B., & Telch, M. (2011). Explaining the Paradoxical Rejection-Aggression Link: The Mediating Effects of Hostile Intent Attributions, Anger, and Decreases in State Self-Esteem on Peer Rejection-Induced Aggression in Youth. *Personality and Social Psychology Bulletin, 37*, 955 –963.

Robins, R.W., Henden, H.M., and Trzesniewski, K.H. (2001). Measuring global self- esteem: Construct validation of a single-item measure and the Rosenberg Self- Esteem Scale. *Personality and Social Psychology Bulletin, 27*, 151-161.

Roesch, S. C., & Weiner, B. (2001). A meta-analytic review of coping with illness: Do causal attributions matter? *Journal of Psychosomatic Research, 50*, 205–219.

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

Sandstrom, M. J., & Jordan, R. (2008). Defensive self-esteem and aggression in childhood. *Journal of Research In Personality, 42*, 506-514.

Scheff, T. J., & Fearon, D. S. (2004). Cognition and emotion? The dead end in self-esteem research. *Journal for the Theory of Social Behavior, 34,* 73–91.

Schimmack, U., & Diener, E. (2003). Editorial - Experience sampling methodology in happiness research. *Journal of Happiness Studies: An Interdisciplinary Periodical on Subjective Well-Being*, *4*, 1-4.

Schneider, D. J., & Turkat, D. (1975). Self-presentation following success or failure: Defensive self-esteem models. *Journal of Personality, 43*, 127-135.

Seear, K.H., & Vella-Brodrick, D.A. (2012). Efficacy of positive psychology interventions to increase well-being: Examining the role of dispositional mindfulness. *Social Indicators Research, 13,* 1-20.

Shapiro, S. L., & Carlson, L. E. (2009). Future directions. The art and science of mindfulness: Integrating mindfulness into psychology and the helping professions (pp. 131-142). Washington, DC US: American Psychological Association.

Shapiro, S. L., & Carlson, L. E. (2009). What is mindfulness?. The art and science of mindfulness: Integrating mindfulness into psychology and the helping professions (pp. 3-14). Washington, DC US: American Psychological Association.

Shapiro, S. L., Carlson, L. E., Astin, J. A., & Freedman, B. (2006). Mechanisms of Mindfulness. *Journal of Clinical Psychology, 62*, 373-386.

Shapiro, S. L., Oman, D., Thoresen, C. E., Plante, T. G., & Flinders, T. (2008). Cultivating mindfulness: Effects on well-being. *Journal of Clinical Psychology, 64*, 840-862.

Silber, E., & Tippett, J. S. (1965). Self-esteem: Clinical assessment and measurement validation. *Psychological Reports, 16*, 1017-1071.

Singh, N. N., Wahler, R. G., Adkins, A. D., & Myers, R. E. (2003). Soles of the Feet: A mindfulness-based self-control intervention for aggression by an individual with mild mental retardation and mental illness. *Research in Developmental Disabilities, 24*, 158-169.

Slaby, R. G., & Guerra, N. G. (1988). Cognitive mediators of aggression in adolescent offenders: I. Assessment. *Developmental Psychology, 24,* 580-588.

Spielberger, C. D., Jacobs, G., Russell, S., & Crane, R. (1983). Assessment of anger: The State-Trait Anger Scale. In J. N. Butcher & C. D. Spielberger (Eds.), *Advances in personality assessment* (pp. 159-187). Hillsdale, NJ: Erlbaum.

Stucke, T. S. (2003), Who's to blame? Narcissism and self-serving attributions following feedback. *European Journal of Personality, 17,* 465–478.

Swann, W. B., Chang-Schneider, C., & McClarty, K. L. (2007). Do people's self-views matter? *American Psychologist, 62,* 84–94.

Tennen, H., & Affleck, G. (1994). A Primer on Personal Growth. *Psyccritiques, 39*, 36-38.

Terzian M, Hamilton K, Ling T. 2011. What works for acting-out (externalizing) behavior: Lessons from experimental evaluations of social interventions. Washington, DC: Child Trends, 10.

Thompson, B. L., & Waltz, J. (2007). Everyday mindfulness and mindfulness meditation: Overlapping constructs or not?. *Personality and Individual Differences, 43*, 1875-1885.

Thomaes, S., & Bushman, B. J. (2011). Mirror, mirror, on the wall, who's the most aggressive of them all? Narcissism, self-esteem, and aggression. In P. R. Shaver, M. Mikulincer (Eds.), *Human aggression and violence: Causes, manifestations, and consequences* (pp. 203-219). Washington, DC US: American Psychological Association.

U.S. Department of Education, National Center for Education Statistics. (2015). *Digest of Education Statistics, 2013* (NCES 2015-011), Chapter 3.

Vohs, K. D., & Heatherton, T. F. (2004). Ego threats elicits different social comparison process among high and low self-esteem people: Implications for interpersonal perceptions. *Social Cognition, 22*, 168-191.

Wallace, H.M., & Baumeister, R.F. (2002). The performance of narcissists rises and falls with perceived opportunity for glory. *Journal of Personality and Social Psychology, 82*, 819-834.

Waschull, S. B., & Kernis, M. H. (1996). Level and stability of self-esteem as predictors of children's intrinsic motivation and reasons for anger. *Personality and Social Psychology Bulletin, 22*, 4-13.

Webster, G. D., Kirkpatrick, L. A., Nezlek, J. B., Smith, C., & Paddock, E. (2007). Different Slopes for Different Folks: Self-Esteem Instability and Gender as Moderators of the Relationship between Self-Esteem and Attitudinal Aggression. *Self and Identity, 6*, 74-94.

Weyandt, L. L., & DuPaul, G. J. (2013). Academic, Social, and Psychological Functioning. In *College Students with ADHD* (pp. 25-35). Springer New York.

Wilkowski, B.M., Crowe, S.E., & Ferguson, E.L. (2015). Learning to keep your cool: Reducing aggression through the experimental modification of cognitive control. *Cognition and Emotion, 13*, 774-781.

Wilkowski, B. M., & Robinson, M. D. (2008). Guarding against hostile thoughts: Trait anger and the recruitment of cognitive control. *Emotion, 8*, 578-583.

Wolfe, C., & Crocker, J. (2003). What does the self want? Contingencies of self-worth and goals. In S. J. Spencer, S. Fein, M. P. Zanna, J. M. Olson (Eds.), *Motivated social perception: The Ontario symposium,* (pp. 147-170). Mahwah, NJ US: Lawrence Erlbaum Associates Publishers.

Wood, J. V., Anthony, D. B., & Foddis, W. F. (2006). Should People with Low Self-Esteem Strive for High Self-Esteem?. In M. H. Kernis (Ed.), *Self-esteem issues and answers: A sourcebook of current perspectives* (pp. 288-296). New York, NY US: Psychology Press.

Wood, J. V., Giordano-Beech, M., Taylor, K. L., Michela, J. L., & Gaus, V. (1994). Strategies of social comparison among people with low self-esteem: Self-protection and self-enhancement. *Journal of Personality and Social Psychology, 67*, 713-731.

Yeung, R., & Leadbeater, B. (2007). Does hostile attributional bias for relational provocations mediate the short-term association between relational victimization and aggression in preadolescence?. *Journal of Youth and Adolescence, 36*, 973-983.