The Role of Therapeutic Alliance and Emotional Expressiveness on the Association Between Attachment Style and Treatment Outcomes

Matthew Buczek

In collaboration with Micah Davoren

Advisor: Elizabeth Gordon, Ph.D.

Haverford College
Abstract

Cognitive-behavioral therapy (CBT) is a common treatment for social anxiety disorder, a prevalent anxiety disorder characterized by a persistent fear and avoidance of social situations (Heimberg, 2002). Although most patients emerge from CBT treatment with reduced anxiety and better functioning, not all individuals experience clinically significant improvement. Due to the interpersonal nature of this disorder, it may be useful to examine this problem through the lens of attachment theory. The present study will examine how individual differences in attachment security predict treatment outcomes in a clinical sample of individuals being treated for social anxiety disorder. It will also investigate the role of the therapeutic alliance, or bond a patient forms with their therapist, as a potential mechanism for the relationship between attachment and treatment outcomes. Finally, emotion regulation strategies are intricately tied to one’s attachment style and to the formation of close relationships. Thus, the present study will examine whether emotional expressiveness moderates the relationship between attachment style and therapeutic alliance. Implications will be discussed.
The Role of Therapeutic Alliance and Emotional Expressiveness on the Association Between Attachment Style and Treatment Outcomes

Interacting with other people is a normal and essential part of our daily lives. As social beings, we have a powerful urge to belong and feel attached to others in close relationships (Bowlby, 1969; Baumesiter & Leary, 1995). In many ways, these interpersonal relationships contribute to our psychological well-being, physical health, and quality of life (Baumeister & Leary, 1995). These relationships shape not only our habitual social behavior, but also our sense of self and others (Alden, Mellings, Ryder, 2001). People have good reason, then, to be concerned with how others perceive them.

Feeling anxious about social situations, arising from concerns about being evaluated and perceived by others, is termed social anxiety (Leary & Kowalski, 1997). Social anxiety does not always reach clinical levels but rather exists on a continuum from low to extreme degrees of concern over social evaluation (Rapee & Heimberg, 1997). For this reason, many people confuse shyness, or the regular experience of moderate levels of social anxiety, with social anxiety disorder (SAD), a diagnosable condition. Despite shared somatic, cognitive, and behavioral symptoms, shyness is considered a normal personality trait because it does not typically generate a high level of impairment and distress (Carducci, 1999). Indeed, those with SAD report a significantly greater number of social fears, avoidance of social situations, negative thoughts, and somatic symptoms in comparison with their shy counterparts (Heiser, Turner, Beidel, Roberson-Nay, 2009). This daily, debilitating distress experienced by affected individuals inspires researchers to identify the most efficacious treatments for the disorder, and to clarify which factors may influence treatment success. This is the primary goal of the present study.
Social Anxiety Disorder

The Diagnostic and Statistical Manual of Mental Disorders (DSM) characterizes SAD as having an intense fear of negative evaluation from others in social and/or performance situations (American Psychiatric Association, 2000). SAD is classified as the most common anxiety disorder (Stein & Stein, 2008), with an estimated lifetime prevalence of approximately 12% (Kessler, Burglund, Demler, Jin, Merikangas, Walters, 2005). SAD most commonly begins during early childhood (Schneier, Johnson, Hornig, Liebowitz, & Weissman, 1992) and typically follows a debilitating and unremitting course into adolescence and adulthood (Chartier, Hazan, & Stein, 1998).

The consequences of SAD are numerous and impair many aspects of an affected individual’s life. Due to the interpersonal nature of the disorder, the clear majority of individuals with SAD report that their career, academic, and general social functioning have been seriously impaired by their fears (Turner, Beidel, Dancu, & Keys, 1986). Compared to other psychiatric disorders such as panic disorder with agoraphobia and generalized anxiety disorder, those with SAD are much less likely to marry (Sanderson, Di Nardo, Rapee, & Barlow, 1990). They also tend to have fewer friends and fewer romantic relationships compared to the general population (Schneier et al., 1992). The symptoms of social anxiety have been shown to be associated with low life satisfaction, even after controlling for the level of disability engendered by these symptoms (Hambrick, Turk, Heimberg, Schneier, & Liebowitz, 2003). Finally, 70-80% of those with SAD also meet criteria for an additional condition, and often SAD precedes the onset of the comorbid condition (Schneier et al., 1992). The most common comorbid conditions include agoraphobia, or fear of crowded and public places, major depression, and substance abuse.
(Schneier et al., 1992). These associations increase the risk for suicidal behavior and further impair one’s ability to live a meaningful life (Schneier et al., 1992).

Models of SAD

Rapee and Heimberg’s (1997) cognitive behavioral model of SAD examines the many processes that contribute to the genesis and maintenance of the disorder. The model begins as the individual is confronted with a perceived audience, which serves as the primary threat stimulus that inspires anxiety. From there, attentional resources are allocated to focus on a mental representation of the self as seen by the audience. This image is subject to distortion and focuses on the aspects of the self that may influence negative evaluation. Information from long-term memory relating to one’s typical appearance further influences this mental representation and the representation changes on a momentary basis, depending on cues received from the audience. Unfortunately, those with SAD will focus more on threat eliciting stimuli, such as noticing others frowning or appearing uninterested, and once noticed, they will have difficulty disengaging from them. Once this inherently negative mental representation of the self is made, it is compared to the appraisal of the audience’s expected standard, which is higher for those with higher social anxiety. The final piece of the model is the behavioral, cognitive, and physical symptoms of anxiety, which may include safety behaviors or escape from the situation altogether, beliefs that one is incompetent or unlovable, or physical manifestations of anxiety such as perspiration and heart palpitations.

This cognitive model provides valuable information for how the socially anxious individual processes information and interacts with the world. Newer interpersonal models build on the cognitive one while adding a focus on the interpersonal dynamics at play and how they reinforce the underlying cognitive schema. Individuals with clinical levels of social anxiety tend
to avoid social situations and/or partake in safety behaviors meant to prevent feared outcomes and conceal information about one’s self (Alden & Taylor, 2009). These safety behaviors include: avoiding eye contact, moving slowly, and talking less (Wells, Clark, Salkovskis, Ludgate, Hackmann, Gelder, 1995). Such behaviors prevent people with SAD from experiencing an unambiguous disconfirmation of their unrealistic beliefs about feared catastrophes (Wells et al., 1995). Though socially anxious individuals believe they are protecting themselves with these behaviors, employing them has serious interpersonal consequences. In first encounters, socially anxious and phobic individuals are liked less by their conversational partners and are perceived as less sympathetic and less easy to talk to than are non-anxious individuals (Alden & Wallace, 1995). Due to the importance of reciprocation and disclosure in close relationships (Altman & Taylor, 1973), the adoption of safety behaviors may serve as an explanation as to why they are liked less. For those with SAD, interpersonal problems are maintained by a self-perpetuating cycle of events (Alden & Taylor, 2004); breaking this cycle is the goal of treatment.

*Treatment of SAD*

Though the fundamental principles of various treatments for SAD differ, they are united by a common goal: to reduce the suffering individual’s experience with this disorder. The most well-researched psychosocial treatments for SAD are cognitive-behavioral therapies (CBTs) (Heimberg, 2002). Rodebaugh, Holoway, and Heimberg (2004) propose that all forms of CBT appear likely to provide some benefit for adults. The central premise of CBT treatments is that most psychological disturbances are rooted in distorted or dysfunctional thinking, which influence the patient’s mood and behavior (Beck, 1995). Thus, intervening at the cognitive level will be most effective.
One of the major components of CBT is cognitive restructuring, or the process by which one identifies and disputes irrational or maladaptive thoughts known as cognitive distortions (Beck, 1964). In the context of social anxiety, this process targets not only the content of the patients’ maladaptive beliefs about the likelihood and cost of negative evaluation by others, but also the information-processing errors that maintain these beliefs (Leahy et al., 2011). These errors include automatic thoughts, or the very quick assessments people make of their situation, such as, “my mind will go blank.”

Related to these distorted automatic thoughts are maladaptive assumptions about social situations, such as, “If I’m not perfect, they’ll reject me,” or, “I must get everyone’s approval,” (Leahy et al., 2011). When combined with core beliefs such as “I’m not likeable,” a cognitive model specific to treatment arises that explains how these things drive behavior. The core belief influences subsequent development of intermediate beliefs, or maladaptive assumptions. In a specific situation, these underlying beliefs then influence automatic thoughts, which drive behavior and cause emotional, behavioral, and physiological symptoms (Beck, 1995). Patients are taught to substitute more realistic, “rational” responses for their automatic negative thoughts in CBT (Beck, 1979).

Exposure, in which a patient enters and remains in a feared situation despite distress, is another key component of most CBT treatments (Rodebaugh et al., 2004). Though the initial level of anxiety and distress is extremely high, the anxiety decreases after repeated exposure to feared cues (Leahy et al., 2011). Avoidance of these feared situations is recognized by many psychologists to be problematic in reducing anxiety (Hope, Heimberg, Juster, & Turk, 2000; Foa & Kozak, 1986). When incompatible information is introduced to the “fear structure,” (Foa & Kozak, 1986), the anxiety-provoking association and its meaning are modified. Avoiding
exposure maintains the belief that social situations are dangerous, and thus anxiety is never completely reduced to a non-clinical level. This avoidance can take on the form of distractions or even safety behaviors, which socially anxious individuals employ to reduce fear of negative evaluation (Rodebaugh et al., 2004). Overall, the combination of exposure with cognitive restructuring, two central components of CBT, is most effective in the treatment of SAD (Rodebaugh et al., 2004).

The treatment protocol developed by Heimberg, Juster, Hope, and Mattia (1995) for SAD is well-detailed and defined. After initial assessment and diagnosis, patients are educated about the nature of SAD and the function social anxiety serves in their lives. An important component of this process is exploring the CBT model central to treatment, which identifies the thoughts and behaviors perpetuating the anxiety. Psychoeducation is followed by cognitive restructuring and exposure meant to acknowledge distorted thoughts and beliefs and change subsequent behavior in social situations. A hierarchy of fears and anxiety-provoking situations is constructed, and the patient is first exposed to those fears that evoke the least distress, followed by their worst fears. Once the hierarchy is complete, certain core beliefs about the patient are identified and modified to aide in the appropriate appraisal of the social situation. Finally, the treatment begins to phase out, and patients are encouraged to continue to expose themselves to feared situations, acknowledge any cognitive distortions that arise and dispute these thoughts, and practice the skills they learned in treatment to be proactive when entering a novel social situation.

Though CBT is considered the “gold standard” for treating SAD, only 75-80% of patients completing therapy report making significant gains (Hope et al., 2000). What, then, accounts for the 20-25% of patients who do not respond to treatment? With the treatment plan described, there are many areas which could account for poor outcomes. Due to the interpersonal nature of
SAD, it may be useful to view this problem through the lens of attachment theory (Bowlby, 1969). When doing so, one must acknowledge the important role the therapist plays in CBT. One of the principles of cognitive therapy is that it requires a strong therapeutic alliance (Beck, 1995). Many of the sessions encourage and challenge the patient to experience anxiety-provoking situations. However, if the patient does not feel comfortable with their therapist, they may have trouble fully engaging in such risky exposures and ultimately do worse in treatment. Thus, examining how attachment, the therapeutic alliance, and treatment outcomes interact in the context of CBT is a critical first step in understanding why some people respond better to treatment than others.

Attachment Theory

Attachment theory as proposed by John Bowlby (1969) has as its central premise that the emotional bond one forms with their caregiver in childhood influences the relationships they develop and maintain in adulthood. The cognitive mechanism by which this operates through is the internal working models concept, where one develops mental representations of the self and others based on repeated experiences with a caregiver in childhood (Bowlby, 1979; Pietromonaco & Barrett, 2000). Ainsworth, Blehar, Waters, and Wall (1978) identified three distinct patterns of attachment based on infants’ responses to separation and reunion with their primary caregivers, typically their mothers. The first is secure attachment, in which infants were distressed upon separation and easily comforted upon reunion. The other two patterns are representative of insecure attachment. An anxious-resistant style is characterized by distress upon separation and an inability to be comforted upon reunion, while those classified as avoidant showed little outward manifestations of distress or comfort during separation and reunion. Attachment security, then, is thought to reflect the level of trust and comfort the child has with
early caregivers and, ultimately, within other close relationships. Findings suggest attachment style is somewhat consistent across the lifespan, supporting the notion that infant attachment style is relevant to adult relationships (Hazan & Shaver, 1994, Scharfe & Bartholomew, 1994). This will influence who will serve as an attachment figure, how accessible those figures are, and principally how they will respond when needed (Main, Kaplan, & Cassidy, 1985).

Considerable research on adult attachment relies on a refined scheme that identifies styles according to internalized positive or negative views of the self and others (Bartholomew & Horowitz, 1991). This model yields four attachment styles: secure, fearful-avoidant, preoccupied, and dismissing-avoidant. A secure attachment style reflects a positive view of both self and others and is characterized by low avoidance and low anxiety. Those with this attachment style are relatively comfortable maintaining close relationships in adulthood. Individuals who fit the fearful-avoidant prototype have both a desire and fear for closeness, originating from the lack of a secure base in childhood. Those who have a negative view of self but positive view of others fit the preoccupied prototype. Based on their feelings of others, they have a chronic, overriding need to achieve intimacy. Inversely, those with a dismissing-avoidant attachment style are particularly self-reliant, as they have a negative view of others but a positive view of self. Central to all attachment styles is the expectation of self-evaluation, and this varies according to differences in attachment security. How one views the self is thought to predict the importance placed on evaluation and the saliency of negative evaluation in interpersonal processes. Therefore, it would seem likely that those with SAD have insecure attachment styles, and there is evidence supporting this claim.

Social Anxiety and Attachment
Eng, Heimberg, Hart, Schneier, and Liebowitz (2001) were the first to examine adult attachment styles among persons with SAD. Their findings revealed that those with SAD were less likely to have a secure attachment style, and more likely to have an insecure attachment style. In the general population, most people (about two-thirds) are securely attached (Mickelson, Kessler, & Shaver, 1997), whereas in the socially anxious population, this ratio is reversed. Socially anxious persons with insecure attachment exhibited more severe social anxiety and avoidance, greater depression, greater impairment, and lower life satisfaction than those with secure attachment. That being said, there were individuals who demonstrated secure attachment comparable to the non-clinical sample. This implies that early threats in relationship security cannot account for all morbidity, as individuals with SAD are still able to have a secure attachment style. Secure attachment may be a manifestation of constructive coping strategies or a reflection of an involvement in an ongoing rewarding relationship (Mikulincer, 1998). Further, securely attached individuals entering treatment for SAD have less severe social anxiety compared to their insecure counterparts (Eng et al., 2001). This may protect an individual from the most impairing variations of social anxiety.

An association between social anxiety and insecure attachment has been similarly detected in the context of close relationships. Darcy, Davila and Beck (2005) hypothesized that social anxiety is associated with both interpersonal avoidance and interpersonal dependency. An avoidant interpersonal style is commonly associated with feelings of inadequacy in social situations, which is commonly associated with social anxiety (Alden & Wallace, 1995). When in salient close relationships, however, dependence may be evident. Their hypothesis fits the prototype for two insecure attachment styles: preoccupied and fearful-avoidant. Results indicated that social anxiety in a non-clinical sample is associated with these insecure attachment styles.
These findings remained when controlling for depressive symptoms, anxiety sensitivity, and trait anxiety. Therefore, an individual with social anxiety may desire intimacy in the context of close relationships. Though these findings are informative, this is a non-clinical sample that may not exhibit the pathology and avoidance characterized by SAD. The relationship between social anxiety and attachment, however, signifies a potential relationship between attachment and treatment outcomes that may help improve therapeutic success.

Attachment and Treatment Outcomes

There is an increasing interest in the application of attachment theory to psychotherapy outcomes research (Levy, Ellison, Scott, Bernecker, 2011; Berant & Ogebi, 2010). Attachment style can potentially influence multiple aspects of psychotherapy, including one’s intention to seek treatment. Theoretically, avoidant individuals have a negative view of others, as their attachment figures in childhood may have been aloof in times of distress and vulnerability (Bowlby, 1969). Thus, avoidant individuals, placing emphasis on self-reliance, may view psychotherapy as a last resort (Berant & Ogebi, 2010). Lopez, Melendez, Sauer, Berger, and Wyssman (1998) found that avoidant adults express less interest in psychological treatment even when they are distressed. More generally, this study found individuals with positive self-models acknowledged significantly fewer problems than did their counterparts with negative self-models. Further, there was an interaction of positive or negative other-model and problem level on willingness to seek counsel. When the problem level was low, those with a positive other-model and negative other-model did not differ. Once the severity of the problem increased, however, those with a positive other-model were significantly more likely to seek counsel than those with a negative other-model. This has implications for how attachment theory functions
through the internal working models concept in the context of psychiatric disorders and severe clinical difficulties.

Vogel and Wei (2005) examined how various forms of insecure attachment styles, particularly preoccupied and fearful-avoidant, are associated with help-seeking, social support, and experienced distress. Attachment anxiety was positively related to acknowledging distress and to seeking help, perhaps due to the dependency characteristic of those with a preoccupied attachment style. Inversely, individuals with attachment avoidance denied their distress and were reluctant to seek help, consistent with other findings (Lopez et al., 1998). In examining the association between social support and attachment, those with insecure attachment styles tended to have lower perceptions of social support (Mikulincer & Nachshon, 1991). Therapy may provide social support for the insecurely attached individual, thereby serving as the motivator through which someone with an insecure attachment style seeks counseling. This was consistent with Vogel and Wei’s (2005) model, as perceived social support mediated the relationship between attachment anxiety and avoidance and help-seeking intent. Therefore, providing an environment of social support (which CBT arguably does) may help someone remain in treatment.

Once in treatment, the relationship between attachment and outcomes has been examined both theoretically and empirically (Berant & Ogebi, 2010; Levy et al., 2011). Patients characterized by an avoidant attachment style may be more inclined to discontinue treatment when the early focus of therapy challenges their attachment-related goals (Berant & Ogebi, 2010). Interventions with a strong focus on emotional intimacy or dysfunctional schemas is likely to trigger deactivating strategies. Emotional intimacy is defined as pressures to disclose or engage in close interpersonal processes, whereas dysfunctional schemas focus on core beliefs
related to weakness or inferiority (Berant & Ogebi, 2010). These strategies are employed by avoidant individuals to abort an emotionally challenging relationship. This is especially relevant in the context of SAD, where problems with emotional intimacy and interpersonal problems drive the anxiety (Alden & Taylor, 2004). Dysfunctional interpersonal schemas are also central to insecure attachment styles and one of CBT’s major focal points (McBride & Atkinson, 2009).

Those with attachment anxiety, however, may enter treatment with a high subjective sense of distress, as evidenced by previous studies (Vogel & Wei, 2005). Their dependence on others make them eager to discuss their worries and relationship difficulties, as well as their own role in these problems (Dozier, 1990). A contradictory view of self and others may make treatment difficult, however, and the desire to achieve intimacy may not be fulfilled. As a result, when they do not find treatment satisfying, due to perceived lack of support, they may be more likely to terminate treatment (Berant & Ogebi, 2010). Empirical evidence on variations in attachment security support these statements.

A recent meta-analysis by Levy et al. (2011) examined the strength of the relationship between attachment anxiety, avoidance, and security on psychotherapy outcome. The study first sought to clarify how those characterized by different attachment styles engaged in the therapeutic process. Researchers found that, on average, securely attached individuals, in accordance with their trusting pre-disposition, tended to be collaborative, trusting of their therapists, and able to integrate their therapists’ comments during therapy (Dozier, 1990). Inversely, preoccupied individuals tended to have excessive demands and to make treatment difficult, as rated by the clinician (Dozier, 1990). Though fearful-avoidance was not conceptualized, dismissing attachment was, representing the “avoidance” of Ainsworth et al.’s (1978) three pattern model of attachment. These patients were often resistant to treatment, had
difficulty asking for help (Lopez et al., 1998), and retreated from help when it was offered (Dozier, 1990).

Following these conceptualizations of attachment, a meta-analysis of fourteen studies was performed. Attachment security was positively correlated with post-therapy outcome, with a medium to large effect size \( (d = .37) \). Further, attachment anxiety, measured as preoccupied attachment, was negatively correlated with post-therapy outcome with a medium to large effect size \( (d = -.46) \). Attachment avoidance, measured as dismissing attachment, was uncorrelated with outcome. Other studies have shown, however, that fearful-avoidance predicts worse treatment outcomes. In a sample of individuals with major depressive disorder, a high proportion of patients were characterized by fearful-avoidant attachment pre-treatment, which subsequently predicted more negative outcomes (Reis & Grenyer, 2004). An unpublished study by Berant, Mikulincer, and Loebel (2008) found that patients high in avoidance were more likely to leave a psychodynamic therapy before reaching the 10\(^{th}\) session. Further, attachment-related avoidance was associated with dropping out of CBT (Tasca, Ritchie, Conrad, Balfour, Gayton, Lybanon, 2006). Fearful-avoidance was found to predict only some aspects and outcomes of psychotherapy (Cyranowski, Bookwala, Feske, Houck, Pilkonis, Kostelnik, Frank, 2002; Muller & Rosenkranz, 2009), which is a way in which this discrepancy may have taken place. Due to the inconsistency of these findings, avoidant attachment should still be pursued as a predictor of psychotherapy outcome.

Differences in attachment have been shown to predict psychotherapy outcome, but what is the mechanism through which this happens? The most studied process variable in the clinical literature on adult attachment is the therapeutic alliance (Berant & Ogebi, 2010). It may be that a positive (or negative) therapeutic alliance, driven by attachment, is what contributes to
differences in treatment outcomes. Further, of the fourteen studies included in Levy et al.’s (2011) meta-analysis, none included patients with SAD as the primary diagnosis. Due to the importance of interpersonal processes in SAD and the relationship between attachment and social anxiety, it may be useful to examine how attachment predicts treatment outcomes in a clinical sample of socially anxious individuals. Examining this proposed relationship has implications for how attachment processes function in CBT.

*Attachment and the Therapeutic Alliance*

It was previously stated that one of the key principles of CBT is a sound therapeutic alliance (Beck, 1995). Changing the thoughts and beliefs that drive and maintain the patient’s anxiety can be a long and strenuous process. The role of the therapist in this process should not be taken lightly, as they play a central part in treatment. In fact, Bodin (1979) states, “the working alliance between the person who seeks change and the one who offers to be a change agent is one of the keys, if not *the* key, to the change process” (p. 252). This alliance is defined by three components: agreement on goals, tasks, and bonds (Bordin, 1979). Successfully managing and achieving a mutual understanding among these three components is an important part of psychotherapy. From an attachment perspective, however, the bond between patient and therapist may be most the most essential component. When the conversation is focused on one’s deepest experiences of anxious thoughts and behaviors, deeper bonds of trust and attachment are required and developed (Bodin, 1979). One’s ability to form this bond may be shaped by one’s early attachment experiences, and so attachment and the therapeutic alliance could be intricately linked.

There are many similarities between relationships that have historically been considered primary attachment relationships and the therapeutic relationship (Ogebi, 2008). Attachment
behaviors are activated within the context of close, caring relationships, comparable to a patient’s relationship with their therapist. Much like attachment to a caregiver persists over time, patients continue to value the relationship with their therapist beyond termination and may turn to mental representations of the therapist for comfort. There is also a desire to maintain contact with the attachment figure through proximity seeking, much like a patient discloses personal information and seeks advice. Therefore, the therapeutic bond may be usefully viewed as an in-progress development of attachment to therapists (Ogebi, 2008).

This developmental template for understanding the bond yields questions as to how differences in attachment security may facilitate or hinder the ability to form a reliable and durable bond with one’s therapist. Ogebi (2008) notes the multiple phases of attachment that occur during treatment: preattachment, attachment-in-the-making, clear-cut attachment, and goal-corrected partnership. For the purposes of the current study, the “preattachment” phase is of particular interest. As its name suggests, this is the attachment style with which a patient identifies before treatment has begun. At this stage, the patient is relying on established internal working models (Pietromonaco et al., 2000) to understand the therapist’s behavior and garner expectations of the therapist for subsequent treatment of their disorder. They may ask questions such as, “How available and dependable might this person be?” (p. 436). Someone who is securely attached may be quick to establish the therapist as a source of security and comfort, simply based on previous experiences with attachment figures. They may have more positive expectations for others, the capacity to trust others, and stronger interpersonal skills (Mikulincer & Shaver, 2007). Inversely, someone with an insecure attachment style, particularly an individual who is avoidant, may hesitate to view the therapist in this way. The deactivating strategies of these individuals may slow the development of attachment (Ogebi, 2008). Ignoring
individual differences in attachment security may jeopardize the quality of the alliance which is so crucial to promoting change in therapy (Beck, 1995; Berant & Ogebi, 2010; Martin, Garske, & Davis, 2000). There is a wide array of literature supporting these theoretical statements.

The association between attachment and the therapeutic alliance in psychotherapy has been extensively reported on in recent clinical literature (Eames & Roth, 2000, Diener & Monroe, 2011; Bernecker, Levy, & Ellison, 2013; Mallinckrodt & Jeong, 2015; Seifert & Hilsenroth, 2015). The findings are fairly consistent. Diener and Monroe (2011) found that individuals with more secure attachment styles demonstrated stronger alliances, consistent with the theoretical approach proposed by Ogebi (2008). Siefert and Hilsenworth (2015) examined this relationship with regard to changes in therapeutic alliance early in treatment. Patients high in attachment security were more likely to develop strong bonds with their therapists during the early portion of treatment, a crucial stage in determining whether a particular therapist is the right choice (Ogebi, 2008). These meta-analyses relied on the patient’s attachment style coming into therapy, or the “preattachment” stage of therapy (Ogebi, 2008). Interestingly, one meta-analysis examined patient attachment to therapist while taking into consideration the working alliance and patient pretherapy attachment (Malinckrodt & Jeong, 2015). Results confirmed that secure attachment to therapist was positively correlated with total working alliance, unlike pretherapy avoidant and anxious adult attachment styles, which were negatively associated. These results are not surprising, given the ability of securely attached individuals to develop a close relationship quicker than their insecure counterparts (Bowlby, 1979, Hazan & Shaver, 1994).

When it comes to how specific insecure attachment styles affect the therapeutic bond, results are less consistent. Bernecker et al. (2013) in a meta-analysis found that both attachment
avoidance and anxiety were negatively correlated with alliance. However, Earnes and Roth (2000) found that fearful attachment, in contrast with secure attachment, was associated with lower attachment ratings early in treatment by both the patient and therapist. Though preoccupied and dismissing attachment were associated with improvement in alliance ratings over time, individuals with these styles still formed weaker alliances than their secure counterparts. Siefert and Hilsenroth (2015) found similar results in the early phases of treatment. Patients high in fearful insecurity were at greater risk for developing weaker alliances than those low in fearful insecurity early in treatment. They were also more likely than those low in fearful insecurity to experience declines in the three major components of the therapeutic alliance (Bodin, 1979). Preoccupied insecurity was unrelated to the therapeutic alliance at any point. When incorporating patient attachment to therapist, only avoidance was negatively correlated with total working alliance (Malinckrodt & Jeong, 2015).

These differences are compatible with theoretical perspectives surrounding how individuals with different insecure attachment styles respond and react in therapy (Ogebi, 2008). From these perspectives and empirical findings, it may be deduced that the intimate bond central to the therapeutic alliance is inconsistent with the goals avoidant individuals have to deactivate the attachment system. This is evidenced by their help-seeking behaviors (or lack thereof) and general avoidance of others (Lopez et al., 1998; Mikulincer & Shaver, 2007). After concluding that attachment has some relationship with both treatment outcomes and the therapeutic alliance, the other logical association left to examine is the one between the therapeutic alliance and treatment outcomes.

*Therapeutic Alliance and Treatment Outcomes*
It has been previously stated that the therapist plays a central role in CBT, and the culmination of this role is the therapeutic alliance a patient forms with one’s therapist. The literature supports the notion that this alliance influences treatment outcomes. In fact, a strong alliance makes positive contributions in behavioral therapy, cognitive therapy, and psychodynamic therapy (Horvath & Symonds, 1991). There are many factors that could potentially influence outcome, relating to both the patient’s and therapist’s disposition, and so finding a process variable associated with outcome across different types of therapy is crucial to improving the therapeutic process. Safran and Muran (1995) even postulated that the quality of the alliance is more important than the type of treatment in predicting outcomes. In an early attempt to review the relation between alliance and outcome, Horvath and Symonds (1991) found the quality of the therapeutic alliance accounts for 26% of the difference in the rate of therapeutic success, inspiring additional studies examining this association.

Martin, Garske, and Davis (2000) conducted a meta-analysis of 79 studies to examine this association. The therapeutic alliance was measured through various means, all of which were reliable. Results indicated alliance was positively correlated ($r = .22$) with outcomes, revealing a moderate effect size. This study also found the relation of alliance and outcome does not appear to be influenced by other moderator variables, such as the type of outcome measure and rater used.

These previous studies, however, fail to examine how weaker therapeutic alliances influence drop out. This is especially relevant in the context of attachment, as attachment insecurities have been shown to hinder the formation of a positive alliance (Earnes & Roth, 2000; Bernecker et al., 2013). Sharf, Primavera, and Diener (2010) conducted a meta-analytic review examining the relationship between psychotherapy dropout and therapeutic alliance.
Unlike the moderate effect size found in the previous studies, this review revealed a strong relationship between dropout and alliance ($d = .55$). Thus, patients with weaker therapeutic alliances are more likely to drop out of psychotherapy.

**Current Study**

After reviewing the literature on attachment, the therapeutic alliance, and treatment outcomes, it is evident that they are connected in some way. We speculated that the therapeutic alliance may explain how attachment security (or insecurity) leads to differences in treatment outcome given its strong relationship to both attachment style and to treatment outcomes.

Only one study to date has examined the working alliance as a mediator of patient attachment and psychotherapy outcome (Byrd, Patterson, Turchik, 2010). Attachment dimensions were used, however, instead of attachment styles. These dimensions include: comfort with closeness, comfort depending on others, and rejection anxiety. The intention was to closely resemble the three categories of attachment: security, avoidance, and anxiety. It has been shown that these dimensions of attachment predict the working alliance (Goldman & Anderson, 2007), much like attachment styles do. Byrd et al. (2010) found that comfort with closeness and comfort with depending on others was significantly associated with the therapeutic alliance and termination of treatment. Further, the therapeutic alliance partially mediated, or explained, the relationship between these attachment dimensions and treatment outcomes. Thus, the ability to form emotional bonds allowed patients to develop a positive relationship with one’s therapist, which subsequently facilitated positive treatment outcome. The present study hopes to expand on these findings by involving specific attachment styles as predictor variables. Further, unlike the Byrd et al. (2010) study, the present study will focus on a clinical sample of individuals suffering with social anxiety disorder specifically.
In the spirit of incorporating and understanding the different factors that influence this mediational model, one must consider the role of emotional expression and its contribution to attachment processes and the formation of close relationships.

*Emotional Expressiveness*

Feeling and expressing emotions at appropriate times enables us to maneuver complex social interactions and novel situations. Paul Eckman (1992) describes how emotions such as anger, sadness, and curiosity have unique features in the domains of signal, physiology, and antecedent events. What binds them are their rapid onset, short duration, automatic appraisal, and coherence. James Gross (1998) expands on this notion, conceptualizing emotion as a response tendency involving behavioral, experiential, and physiological cues. Emotion regulation, then, is the processes by which individuals influence what emotions they have, when they have them, and how they are experienced and expressed (Gross, 1998). Emotion regulation processes are closely tied to mental health, as the inability to properly express one’s emotions detrimentally affects many aspects of one’s life (Gross & Munoz, 1995). Thus, emotion *dysregulation* is tied to many health problems, including anxiety disorders (Barlow, 1986). With regards to the present study, individuals with SAD have been shown to have ineffective emotion regulation strategies, as well as cognitive distortions related to emotional expression in social interactions (Goldin, Manber, Hakimi, Canli, & Gross, 2009). They tend to be less accepting of their emotions and more likely to feel expressing emotions is dangerous (Mennin, McLaughlin, & Flanagan, 2009). How does emotional expression, with its clear relationship to interpersonal processes and social anxiety, relate to issues of attachment and therapeutic alliance?

*Emotional Expressiveness and Attachment*
Attachment processes and emotion function as a means to achieve a desired goal in interpersonal relationships (Shaver, Schwartz, Kirson, & O’Connor, 1987). The process begins with the appraisal of external or internal events in relation to a person’s goals and concerns, followed by emotion-specific thoughts and the expression of thoughts, behaviors, and subjective feelings (Shaver et al, 1987). Depending on the degree of attachment security, different levels of emotional expression and emotion regulation strategies are employed.

Unsurprisingly, attachment security facilitates the constructive regulation of emotions (Shaver & Mikulincer, 2007). Securely attached individuals use emotion as a means of alleviating distress, maintaining supportive intimate relationships, and increasing personal adjustment through constructive coping methods (Shaver & Mikulincer, 2002). Even when attachment figures are absent or social support is unavailable, securely attached individuals are able to react to external stimuli with an authentic sense of personal efficacy and optimism (Mikulincer & Shaver, 2004). Due to early childhood experiences, secure individuals learned that they are able to alleviate distress through their own actions, including going to others for support. Thus, effective problem-solving strategies are used for securely attached individuals, including: inhibiting interfering thoughts or actions, generating instrumental problem-solving strategies, and the appropriate adjustment of emotions (Shaver & Mikulincer, 2007). Emotion regulation does not require avoidance or denial of emotion for securely attached individuals, and so they experience and express the full spectrum of emotions.

Avoidant attachment, however, warrants the inhibition of emotional experience (Shaver & Mikulincer, 2007). Those who fit this prototype attempt to block any emotional state that is incongruent with the goal of keeping their attachment system deactivated (Mikulincer & Shaver, 2003). Due to prior negative experiences with their caregiver, or possibly an interaction between
temperament and caregiving style, any emotion that generates vulnerability tends not to be expressed. Thus, fear, anxiety, sadness, shame, and guilt are suppressed, all of which may be interpreted as signs of personal weakness. This approach to emotion regulation interferes with problem-solving during times of emotional distress. Avoidant people are reluctant to acknowledge their behaviors as misguided because it brings into question their competency (Shaver & Mikulincer, 2007). Further, these deactivating strategies cause avoidant people to avoid noticing their own emotional reactions. Emotion-related thoughts and memories are denied or suppressed and attention is diverted from emotion-related material (Miklinicer & Shaver, 2003). This undoubtedly harms the ability to develop close relationships, which is better understood when discussing affect and internal working models.

Pietromonaco and Barrett (2000) propose that emotion serves to promote conceptual coherence, as affect binds information within mental representations. For example, a fearful-avoidant individual who believes they cannot rely on others will suppress emotions eliciting vulnerability to confirm their self-reliance. Likewise, a secure individual who positively views themselves and others will actively engage in expressing emotions and partake in effective problem-solving to enhance their interpersonal experiences. Emotion, then, may be another mechanism through which close relationships and the therapeutic alliance are formed.

Emotional Expressiveness in Therapy

The ability to express one’s emotions has been implicated in the desire and ability to develop close relationships (Gross & John, 2003). Gross and John (2003) state, “…if suppressors are indeed reluctant to share their emotions, they should be uncomfortable with and actively avoid close relationships” (p. 357). This emotional tendency is most characteristic of avoidant individuals, and the avoidance of close relationships is consistent in the attachment literature. In
a specific study, those that effectively expressed emotions could maintain good relations with significant others (Gross & John, 2003).

The goal of therapy is to change the dysfunctional schemas and beliefs that drive one’s anxiety (Beck, 1995). This often requires the patient to reveal personal information about themselves and what they are feeling. It seems reasonable, then, that attachment, emotions, and the disclosure of information in therapy would be related. Withholding some information may protect individuals with insecure attachment styles from appearing weak and vulnerable, which, in turn, hinders their ability to develop a positive alliance with their therapist. Saypol and Farber (2010) were interested in the relationship between attachment style, patient disclosure in therapy, and emotions following disclosure. They found attachment security was significantly related to their overall level of self-disclosure and their level of positive feelings and emotions following disclosure. Security of attachment was inversely correlated with unpleasant feelings following disclosure. Further, a significant association was found between the extent of patients’ fearful attachment and unpleasant feelings experienced both before and after disclosure. Attachment security, it seems, may attenuate the distress associated with disclosure and increase positive emotions afterward. It appears likely that this would enhance the therapeutic bond between patient and therapist.

This review identifies how key constructs relevant to the current study interact in the clinical literature. Differences in attachment security have been shown to predict differences in psychotherapy outcome and the formation of the therapeutic alliance. Likewise, the therapeutic alliance has also been shown to predict treatment outcomes. Emotional expressiveness, with its relationship to social anxiety, attachment, and the formation of close relationships, may also play
a crucial part in this framework. The exact roles of these constructs in the context of an empirical model can now be thoroughly examined.

**Moderational-Mediational Model**

The current study sought to examine the relationship between emotional expressiveness, the therapeutic alliance, attachment style, and treatment outcomes. The basis of the study is to determine how differences in attachment style predict treatment outcomes in a clinical sample of socially anxious individuals. Treatment outcomes were operationalized as: treatment length, social anxiety severity and difference from baseline, change in symptomatology, overall symptom severity, and depression. Further, we hoped to examine the roles of the therapeutic alliance and emotional expressiveness on this association. First, we hypothesized that different attachment styles at baseline would predict differences in treatment outcomes. Further, we hypothesized that attachment security would predict (a) better treatment outcomes and (b) a stronger therapeutic alliance during treatment. Inversely, we hypothesized that attachment avoidance will predict (a) worse treatment outcomes and (b) a weaker therapeutic alliance. The therapeutic alliance will also predict treatment outcomes. Further, the therapeutic alliance will mediate the relationship between attachment and treatment outcomes. Finally, emotional expressiveness at baseline will moderate the relationship between attachment and therapeutic alliance, such that less suppression and reappraisal strengthen this association. Together, these constructs provide a narrative in the context of CBT treatment of SAD (**Figure 1**).

**Exploratory Analyses**

To ground our results in a non-clinical sample, we recruited participants through Amazon’s Mechanical Turk (M-Turk), a popular micro-task market. This provides a convenient labor pool for conducting experiments. Measures on social anxiety, attachment, and emotional
expressiveness were employed to assess how these constructs relate to one another for individuals who do not endorse clinical levels of social anxiety or sought treatment for SAD.

**Method**

**Participants**

The participants were a clinical sample of socially anxious individuals receiving CBT treatment at the Adult Anxiety Clinic based in Temple University. The sample consisted of 38 adults ranging from 19 to 52 years old ($M = 28.3, SD = 9.1$). There were slightly more individuals who identified as male ($N = 22$) than female ($N = 16$). With regard to marital status, 29 adults were single and 9 were married or living with their partner. The sample consisted of 81.1% White participants, 10.8% Asian/Pacific Islander, 2.6% Black participants, and 5.3% identifying as other, with 9% reporting Hispanic ethnicity. The sample’s socioeconomic status was quite diverse ($M = $50,000) with a range of income from below $10,000 to above $100,000. Approximately one-third of the sample had at least a high school diploma or equivalent, with the remaining two-thirds completing some form of higher education.

**Design**

Participants completed a battery of self-report measures prior to entering treatment, including measures of attachment, social anxiety, and emotional expressiveness. As treatment progressed, participants assessed ratings of the therapist-client bond while clinicians assessed patients’ functioning.

The present study employs a linear regression framework to test hypotheses. It followed Baron and Kenny’s (1986) recommended steps involving a series of regressions to determine the presence or absence of a mediational effect. There was temporal separation between the three variables involved, in accordance with the pre-requisites for running mediational analyses. We
were prepared to supplement our analyses with Bootstrapping (Preacher & Hayes, 2008) to
determine the overall significance of indirect effects if applicable. Moderation will be tested
using a linear regression model, and an interaction term will be created between the independent
variables of interest to determine their combined effect on the dependent variable.

Materials

**Attachment.** To assess attachment style, the Relationships Questionnaire (RQ) was used
(Bartholomew & Horowitz, 1991). The RQ is a 4-item questionnaire measuring adult attachment
style both categorically and dimensionally. The 4 styles include: secure, preoccupied, fearful-
avoidant, and dismissing-avoidant. The categorical measurement will be used to assess whether
different attachment styles predict treatment outcomes. The dimensional measurement will
assess the extent to which one is secure or fearful-avoidant. This measure is high in both
reliability and construct validity, with a Cronbach’s alpha as high as .79 (Bartholomew &

**Social Anxiety.** To diagnose social anxiety, the Anxiety Disorders Interview Schedule
(ADIS-IV; ADIS-V) was used. The ADIS is a semi-structured clinical interview administered to
patients assessing anxiety disorders and common co-morbid mood disorders.

To measure *level* of social anxiety, the Social Interaction Anxiety Scale (SIAS) was used
(Mattick & Clarke, 1998). Severity of social anxiety at week 20 and difference score from
baseline were both used for treatment outcomes. The SIAS is a widely used self-report 20-item
measure of anxiety in dyads and groups scored on a 5-point Likert-type scale. Thus, responses
are on a scale of 0-4, and a higher score reflects greater social anxiety. It assesses fear of more
generalized social anxiety. These scores are summed and compared to the threshold. A score of
43 or more indicates traditional social anxiety, while a score from 34-42 resembles social phobia,
or fear of specific situations. Sample items include: “I have difficulty talking with other people” and “I find myself worrying that I won’t know what to say in social situations.” The psychometric adequacy of this measure is well established, as this scale is useful in screening, designing individualized treatments, and evaluating the outcomes of treatments for SAD (Brown, Turovsky, Heimberg, Juster, Brown, & Barlow, 1997).

**Therapeutic Alliance.** To measure the therapeutic alliance, the Working Alliance Inventory (WAI), short form, was used (Horvath, 1981). It follows Bodin’s (1979) model of the alliance, assessing the key aspects of: agreement on tasks of therapy, agreement on goals of therapy, and development of an affective bond. This is a self-report 12 item-measure assessing alliance on a 7-point Likert-type scale. A higher score indicates a stronger alliance, and the alliance will be assessed at different time points during treatment. Sample items include: “I find what I was doing in therapy confusing,” and “The goals of the sessions were important to me.” The WAI has adequate reliability and is reliably correlated with a variety of counselor and patient self-reported outcome measures (Horvath & Greenberg, 1989).

**Emotional Expression.** To measure emotional expression, the Emotion Regulation Questionnaire (ERQ) was used (Gross & John, 2003). The ERQ is a self-report 10-item measure assessing an individual’s tendency to regulate their emotions in two ways: cognitive reappraisal and expressive suppression. It is scored on a 7-point Likert type scale, with a higher score indicating higher emotion dysregulation and therefore deficits in proper emotion regulation strategies. Sample items include: “I keep my emotions to myself,” and “I control my emotions by not expressing them.” Alpha reliabilities and test-retest reliability for both scales are consistent and high, and the measure was validated in a community sample (Spaapen, Waters, Brummer, Stopa, & Bucks, 2014).
Treatment Outcomes. Treatment outcomes are operationalized as: treatment length, social anxiety severity and difference from baseline, change in symptomatology, overall symptom severity, and depression. Change in symptomatology and overall symptom severity are clinician-rated variables assessed through the Clinical Global Impressions (CGI) scale (Guy, 1976). The CGI comprises of two companion one-item measures evaluating severity of psychopathology and change from the initiation of treatment on a 7-point Likert type scale. A higher score is indicative of greater severity of the clinical condition. The CGI is consistently used by practicing clinicians.

To measure depressive symptoms, the Beck Depression Inventory (BDI) was used (Beck, 1961). The BDI is a widely used self-report 21-item questionnaire that measures depressive symptoms across a range of topics. Participants answer the questions based on their feelings towards these topics, and responses are summed to get a total score. The responses are on a scale of 0-3, indicating the extent to which the action or feeling takes place in one’s life. The clinical thresholds of these scores for the BDI are 0-13 (minimal), 14-19 (mild), 20-28 (moderate), and 29-63 (severe). Thus, a greater sum indicates more depressive symptoms. The BDI reports a coefficient alpha of .92 for outpatients and .93 for college students (Beck, Steer, & Garbin, 1988).

Results

Descriptive Statistics of Key Study Variables

Social anxiety at baseline ranged significantly from a minimum of 18 to a maximum of 65 ($M = 46.1$, $SD = 10.3$). This average surpasses the clinical threshold for generalized social anxiety given by the SIAS. However, the average level of social anxiety is lower at week 20 ($M = 35.6$, $SD = 14.2$). Attachment style at baseline, as predicted, models that of a clinical
population, as only 10% of individuals endorse a secure style, with the other 90% endorsing some form of insecure attachment as the primary style they identify with. To provide a reference for related analyses, social anxiety at baseline was correlated with a secure style $r(38) = -.424, p = .008$ and a fearful-avoidant style $r(38) = .329, p = .044$. Social anxiety was uncorrelated with a preoccupied style $r(38) = .202, p = .223$ and a dismissing-avoidant style $r(38) = .189, p = .255$ (Table 1.)

Expressive suppression, one of the subscales of the ERQ, ranged from a minimum of 7 to a maximum of 28 ($M = 16.7, SD = 5.59$). Cognitive reappraisal, on the other hand, ranged from a minimum of 6 to a maximum of 40 ($M = 25.6, SD = 6.53$). This is indicative of severe deficits in emotion regulation strategies. Expressive suppression was correlated with a secure style $r(38) = -.367, p = .024$ and a dismissing-avoidant style $r(38) = .374, p = .021$. There was a trend for expressive suppression to predict a fearful-avoidant style $r(38) = .309, p = .059$, but it was uncorrelated with a preoccupied style $r(38) = -.133, p = .426$ (Table 2.) Cognitive reappraisal was correlated with a fearful-avoidant style $r(38) = -.436, p = .006$ and a dismissing-avoidant style $r(38) = -.336, p = .039$. Cognitive reappraisal was uncorrelated with a secure style $r(38) = .236, p = .382$ and a preoccupied style $r(38) = .004, p = .982$ (Table 3.) Self-reported depressive symptoms at week 20 ranged from a minimum of 0 to a maximum of 45 ($M = 12.1, SD = 10.0$). At this point in time, 13 patients had completed treatment at week 20, whereas 25 had not. On average, clinicians rated the overall severity of illness as moderately ill, with the patient showing moderately improved change in symptomatology. Finally, the working alliance showed patients generally viewed their relationship with their therapist as positive ($M = 69.6, SD = 9.70$).

*Attachment and Treatment Outcomes (ANOVA)*
A one-way analysis of variance (ANOVA) was conducted to determine if a categorical measurement of attachment significantly predicted treatment outcomes. Treatment outcomes were operationalized as self-reported social anxiety and depression, as well as clinician reported symptom severity, symptom change, and treatment completion, all collected at week 20. There was a statistically significant difference between groups on self-reported social anxiety as determined by one-way ANOVA \( (F(3,35) = 3.130, p = 0.039) \). A Tukey post hoc test revealed that self-reported social anxiety score was significantly higher for the dismissing-avoidant attachment style \((53.0 \pm 10.4, p = .035)\) compared to the secure attachment style \((26.3 \pm 10.6)\). There was a marginally significant difference between the dismissing-avoidant attachment style and the preoccupied \((p = .085)\) and fearful-avoidant \((p = .064)\) attachment styles. When controlling for baseline social anxiety using an analysis of covariance (ANCOVA) the model became marginally significant \( (F(4,35) = 2.71, p = 0.062) \).

Attachment style did not significantly predict self-reported depressive symptoms \( (F(3,33) = 1.112, p = 0.360) \), treatment completion at week 20 \( (F(3,33) = 0.922, p = 0.442) \), overall severity of illness at week 20 \( (F(3,30) = 1.601, p = 0.212) \), and overall change of symptomatology at week 20 \( (F(3,26) = 1.422, p = 0.262) \).

**Attachment and Treatment Outcomes (Linear Regressions)**

Linear regressions were conducted to determine if dimensional measures of attachment style significantly predicted treatment outcomes. Treatment outcomes were operationalized as self-reported social anxiety and depression, difference in social anxiety from baseline, as well as clinician reported symptom severity, symptom change, and treatment completion, all collected at week 20. A secure attachment style did not predict self-reported social anxiety \( \beta = -0.193, t(38) = -1.179, p = .246 \), difference in social anxiety from baseline \( \beta = 0.105, t(38) = 0.635, p = .529 \), self-
reported depressive symptoms $\beta = -.194$, $t(36) = -1.150$, $p = .258$, treatment completion at week 20 $\beta = -.009$, $t(34) = -.050$, $p = .960$, overall severity of illness at week 20 $\beta = .045$, $t(31) = .241$, $p = .811$, and overall change in symptomatology at week 20 $\beta = -.043$, $t(27) = -.217$, $p = .830$.

A fearful-avoidant attachment style did not predict self-reported social anxiety $\beta = .189$, $t(38) = 1.157$, $p = .255$, difference in social anxiety from baseline $\beta = -.045$, $t(38) = -.269$, $p = .789$, self-reported depressive symptoms $\beta = .096$, $t(36) = .565$, $p = .576$, treatment completion at week 20 $\beta = -.019$, $t(34) = -.106$, $p = .916$, overall severity of illness at week 20 $\beta = .161$, $t(31) = .881$, $p = .385$, and overall change in symptomatology at week 20 $\beta = .138$, $t(27) = .697$, $p = .492$.

A preoccupied attachment style did not predict self-reported social anxiety $\beta = -.171$, $t(38) = -1.041$, $p = .305$, difference in social anxiety from baseline $\beta = -.294$, $t(38) = -1.842$, $p = .074$, self-reported depressive symptoms $\beta = -.065$, $t(36) = -.379$, $p = .707$, treatment completion at week 20 $\beta = .203$, $t(34) = 1.170$, $p = .251$, overall severity of illness at week 20 $\beta = -.066$, $t(31) = -.358$, $p = .723$, and overall change in symptomatology at week 20 $\beta = .018$, $t(27) = .090$, $p = .929$.

A dismissing-avoidant attachment style, however, significantly predicted self-reported social anxiety $\beta = .446$, $t(38) = 2.993$, $p = .005$, and self-reported depressive symptoms $\beta = .428$, $t(36) = 2.761$, $p = .009$. It did not predict difference in social anxiety from baseline $\beta = .286$, $t(38) = 1.794$, $p = .081$, treatment completion at week 20 $\beta = .072$, $t(34) = .411$, $p = .684$, overall severity of illness at week 20 $\beta = -.058$, $t(31) = -.312$, $p = .757$, and overall change in symptomatology at week 20 $\beta = -.151$, $t(27) = -.765$, $p = .452$.

Attachment and Therapeutic Alliance
The next leg of the mediational model involved attachment style predicting therapeutic alliance, measured through the working alliance inventory (WAI) administered after the first session. This relationship was examined using linear regressions. A secure attachment style $\beta = .101$, $t(14) = .350$, $p = .732$, a fearful-avoidant attachment style $\beta = -.055$, $t(14) = -.191$, $p = .851$, a preoccupied attachment style $\beta = -.089$, $t(14) = .311$, $p = .761$, and a dismissing-avoidant attachment style $\beta = -.078$, $t(24) = -.271$, $p = .791$ did not significantly predict the working alliance.

**Therapeutic Alliance and Treatment Outcomes**

The final leg of the mediational model involved therapeutic alliance predicting treatment outcomes. Treatment outcomes were operationalized as self-reported social anxiety and depression, difference in social anxiety at baseline, as well as clinician reported symptom severity, symptom change, and treatment completion, all collected at week 20. Working alliance did not predict self-reported social anxiety $\beta = -.169$, $t(14) = -.594$, $p = .564$, difference in social anxiety at baseline $\beta = -.182$, $t(14) = -.643$, $p = .532$, self-reported depressive symptoms $\beta = .160$, $t(13) = .539$, $p = .601$, treatment completion at week 20 $\beta = -.014$, $t(8) = -.034$, $p = .974$, overall severity of illness at week 20 $\beta = -.129$, $t(7) = -.291$, $p = .783$, and overall change in symptomatology at week 20 $\beta = -.538$, $t(6) = -1.278$, $p = .270$.

**Mediational Model**

To test mediation, a linear regression framework was proposed, such that therapeutic alliance would mediate, or explain, the relationship between attachment and treatment outcomes. Baron and Kenny’s (1986) model recommends that certain prerequisites be met before any indirect effects are examined. One such requirement is temporal separation between constructs, which the present study satisfies. The other requirement is significant regressions between the
constructs of interest. Unfortunately, this prerequisite was not met, as attachment style did not predict the therapeutic alliance, and the therapeutic alliance did not predict treatment outcomes. Thus, mediation was not tested.

*Moderation*

A linear regression analysis was conducted to examine if the level of emotional expressiveness influenced the strength of the relationship between attachment and therapeutic alliance. An interaction term was created with each attachment style and the two subscales of the ERQ: expressive suppression and cognitive reappraisal. The interaction between secure attachment and expressive suppression was insignificant on therapeutic alliance $F(1, 12) = .107, p = .716, \Delta R^2 = .011$, as was the interaction between secure attachment and cognitive reappraisal on therapeutic alliance $F(1, 12) = .209, p = .474, \Delta R^2 = .044$. The interaction between fearful-avoidant attachment and expressive suppression was insignificant on therapeutic alliance $F(1, 12) = -.082, p = .782, \Delta R^2 = .007$, as was the interaction between fearful-avoidant attachment and cognitive reappraisal on therapeutic alliance $F(1, 12) = .009, p = .976, \Delta R^2 = .000$. The interaction between preoccupied attachment and expressive suppression was insignificant on therapeutic alliance $F(1, 12) = .004, p = .989, \Delta R^2 = .000$, as was the interaction between preoccupied attachment and cognitive reappraisal on therapeutic alliance $F(1, 12) = .210, p = .471, \Delta R^2 = .044$. The interaction between dismissing-avoidant attachment and expressive suppression was insignificant on therapeutic alliance $F(1, 12) = -.095, p = .746, \Delta R^2 = .009$, as was the interaction between dismissing-avoidant attachment and cognitive reappraisal on therapeutic alliance $F(1, 12) = -.030, p = .919, \Delta R^2 = .001$. Thus, none of the moderation analyses proved significant.

*Exploratory Analyses*
The M-Turk sample originally consisted of 546 participants compensated $1.00 for completion of the survey. Respondents who said it was 'not characteristic' that they often have 10 eyes, at least said 'somewhat agree - strongly agree' on the grass is green sky is blue question, and stated they answered generally honestly were included, bringing the total down to 381 participants. After applying a time constraint of 15 minutes, the sample consisted of 278 participants. The final sample contained 229 participants after excluding those currently in treatment for SAD. The sample included more females ($N = 139$) than males ($N = 89$), with one respondent identifying as neither. The age of respondents ranged from 19 to 77 years old ($M = 40.7$, $SD = 12.5$).

All analyses focused on descriptive statistics meant to provide a non-clinical comparison to the clinical sample. Self-reported social anxiety scores were relatively high ($M = 32.6$, $SD = 20.0$), with the average almost reaching the clinical threshold of social phobia, or fear of specific situations or irrational social fears with avoidance and impairment. With regard to attachment style, approximately one-third (36%) endorsed a secure style, with two-thirds endorsing some type of insecure attachment. Expressive suppression ranged from a minimum of 3 to a maximum of 28 ($M = 14.9$, $SD = 5.41$). Cognitive reappraisal, on the other hand, ranged from a minimum of 6 to a maximum of 42 ($M = 30.6$, $SD = 7.11$). This is indicative of severe deficits in emotion regulation strategies.

Bivariate correlations revealed a secure style $r(229) = -.430$, $p < .001$, a fearful-avoidant style $r(229) = .471$, $p < .001$, a preoccupied style $r(229) = .352$, $p < .001$, and a dismissing-avoidant style $r(229) = .175$, $p = .008$ were significantly correlated with self-reported social anxiety. Expressive suppression was correlated with a secure style $r(229) = -.292$, $p < .001$, a fearful-avoidant style $r(229) = .300$, $p < .001$, and a dismissing-avoidant style $r(229) = .327$, $p <
.001. Expressive suppression was uncorrelated with a preoccupied style $r(229) = .019, p = .776$. Cognitive reappraisal was correlated with a secure style $r(229) = .142, p = .031$ and a fearful-avoidant style $r(229) = -.150, p = .023$. Cognitive reappraisal was uncorrelated with a preoccupied style $r(229) = -.115, p = .082$ and a dismissing-avoidant style $r(229) = .002, p = .979$.

**Discussion**

The primary goal of the present study was to explain why individuals with SAD do not make clinically significant improvements in CBT. Due to the interpersonal nature of this disorder, we viewed this problem through the lens of attachment theory, which states that early ruptures in attachment relationships with one’s caregiver influence behavior in future close relationships. The quality of one’s relationship to their therapist may be dependent on this early attachment status, and this therapeutic alliance may be the deciding factor in influencing treatment success. Thus, we proposed a mediational model in which attachment style predicted treatment outcomes, and the therapeutic alliance was the mediator in this relationship.

**Attachment and Treatment Outcomes**

We first hypothesized that different attachment styles at baseline predict differences in treatment outcomes. Using a one-way ANOVA, we found support for this hypothesis. Specifically, individuals characterized by a dismissing-avoidant attachment style had significantly higher self-reported social anxiety at week 20 than those choosing a secure attachment style. Though attachment style was unrelated to the other variables associated with treatment outcomes, this finding confirms the notion that attachment influences some aspect of psychotherapy outcome. When controlling for baseline levels of social anxiety, the model only proved to be marginally significant. This trend, however, is generally consistent with our
findings, as the supplementary post-hoc analysis conducted with the one-way ANOVA suggested. Providing evidence for a categorical measurement of attachment predicting therapeutic outcome confirmed the logical progression towards examining how a dimensional measurement of the four attachment styles predicted the same outcome variables.

We further hypothesized that those endorsing a more secure attachment style would have better therapeutic outcomes. We did not find evidence for this prediction, as level of attachment security did not predict any variables associated with treatment outcomes. Inversely, the level of fearful-avoidance was hypothesized to predict worse therapeutic outcomes. We did not find evidence for this prediction for any aspect of therapeutic outcome. A preoccupied attachment style yielded similar results to these two styles, but interestingly, dismissing-avoidant attachment predicted both self-reported social anxiety and depressive symptomatology. In other words, the greater an individual endorsed a dismissing attachment style, the higher symptomatology they endorsed on these outcome measures.

These initial findings for the relationship between attachment and therapeutic outcomes, though inconsistent with our predictions, reveal the important role dismissing attachment plays. Though disregarded in our hypotheses, it seems to indicate that therapy may provide a context where those with negative self-models feel safe, and can experience a level of trust and comfort incompatible with their experiences in different interpersonal contexts. Initial correlations between attachment and self-reported social anxiety at baseline reveal a secure and preoccupied style being correlated with social anxiety, albeit in opposite directions. At week 20, only a dismissing style predicts the same outcome, strengthening this interpretation. The hallmark of a dismissing individual is their self-reliance, and so their level of insecurity with others may dissuade them from adopting certain techniques that help their insecure and secure counterparts.
Nevertheless, these findings warrant exploration of the other legs of the mediational model, particularly the association that incorporates the therapist.

**Attachment and Therapeutic Alliance**

Consistent with previous literature, we hypothesized that attachment security would strengthen the therapeutic alliance, whereas a fearful-avoidant style would weaken the relationship between patient and therapist. We did not find evidence for our hypothesis, as none of the attachment styles significantly predicted the therapeutic alliance. One explanation for this finding may be that the alliance was rated particularly early, with most ratings coming directly after the first session. The bond between patient and therapist is one that develops over an extended period of time, and so an early measurement may not reflect the potential this bond has as therapy continues.

**Therapeutic Alliance and Treatment Outcomes**

The strongest leg of the mediational model may be the association between the therapeutic alliance and treatment outcomes. In many instances, this is regarded as the most important factor in predicting treatment success. In line with previous research, it was hypothesized that the therapeutic alliance predicts treatment outcomes. We did not find evidence for this hypothesis, as the therapeutic alliance did not predict any of the variables associated with treatment outcomes. To reiterate, this may be due to the early assessment of the therapeutic alliance. The alliance may be strongest after the first anxiety-provoking situation or exposure is completed, as these experiences typically elicit a sense of vulnerability in the patient that the therapist appropriately responds to. With these results, it is impossible to test mediation, as direct effects between the constructs of interests were not significant.

**Moderation**
The final component of our model involved emotional expressiveness; a facilitator in the genesis and maintenance of close relationships. Due to its intrinsic ties to these interpersonal processes, it was hypothesized to influence the strength of the association between attachment and the therapeutic alliance. Initial bivariate correlations revealed emotional suppression was negatively correlated with secure attachment, demonstrating that a higher reporting of a secure style meant less expressive suppression. This is consistent with past findings as securely attached individuals are more likely to express their emotions. Expressive suppression was positively correlated with a fearful-avoidant and dismissing-avoidant style. These avoidantly attached individuals, with their self-reliance, may suppress these emotions to not seem vulnerable.

Analyses conducted with cognitive reappraisal constructed a similar narrative. Cognitive reappraisal was negatively correlated with a fearful-avoidant and dismissing-avoidant style. These individuals may not attempt to change how they feel, but do they do indeed suppress these feelings. Understanding their emotions, then, may be a means of recognizing what emotions to suppress in vulnerable situations. Unfortunately, the interaction between the four attachment styles and emotional expressiveness revealed no significant changes on the interaction between attachment and the therapeutic alliance.

*Exploratory Analyses*

The purpose of collecting M-Turk data on social anxiety, emotional expressiveness, and attachment was to examine key differences between a clinical and non-clinical sample on constructs of interest. With regard to attachment, previous research indicates most of the population (two-thirds) are securely attached, whereas this ratio is reversed for the clinically socially anxious individuals. Surprisingly, results indicate that the M-Turk sample reflected that of the clinical sample, as only one-third endorsed a secure attachment style. Comparable results
manifested when examining levels of self-reported social anxiety. Though the average level of social anxiety was not as high in the M-Turk sample as it was in the clinical sample, this average almost reached the clinical threshold for social phobia. Emotion regulation deficits were *higher* in the M-Turk sample than the socially anxious population. With the inherent emotion-related deficits in SAD, this finding was especially salient. Bivariate correlations between the variables of interest yielded comparable results to that of the clinical sample. Social anxiety was negatively correlated with a secure style, while being positively correlated with the remaining three insecure attachment styles. Expressive suppression produced nearly identical results to that of the clinical sample, as those who were more securely attached suppressed their emotions less, while those who were avoidantly attached suppressed their emotions more. Interestingly, cognitive reappraisal was positively correlated with a secure style, albeit with a small effect size.

These findings suggest that M-Turk could be a valuable tool for researchers interested in social anxiety and related deficits. The efficient and cost-effective manner through which a pool of participants can be recruited is especially enticing.

*Methodological Limitations*

Although we have some significant results validating previous research, there are several limitations we must take into account. Most importantly, the measures used to assess attachment, emotional expression, therapeutic alliance, and treatment outcomes are self-reported by the patient. A more robust approach would assess the most important predictor variables in a structured, clinician-driven interview. For example, the Adult Attachment Interview (AAI) assesses adults’ strategies for identifying and protecting the self from perceived dangers tied to intimate relationships, conducted by the clinician (George, Kaplan, & Main, 1986).
Further, most of the analyses performed had insufficient data to provide a reliable result. Increasing the sample size improves the statistical power for such analyses, or the probability that the test will reject the null hypothesis when the null hypothesis is false. This strengthens the interpretation of the subsequent findings, thereby improving confidence in the study’s implications.

*Future Directions*

To my knowledge, this is the first study to test this kind of mediational model. Given the rationale for the present study and the methodological limitations, this model should be replicated with some distinctions. The therapeutic alliance should be measured at multiple time points, especially after the first exposure. This may be a better predictor of treatment outcomes than an earlier measure of the alliance. Further, treatment outcomes should incorporate both the patient’s and therapist’s perspectives at multiple time points for a more robust measurement of this construct. As previous research indicates, attachment may influence the length of treatment, and so only incorporating only data from week 20 may not be entirely appropriate given the literature.

It is important to note that this model is not specific to SAD, and can be tailored to various clinical conditions. Those with an insecure attachment style are more likely to exhibit some form of psychopathology in the future compared to their secure counterparts, including anxiety disorders and depression. In the context of CBT, the therapist continues to play a crucial role in treatment success, and so replicating this model for different clinical populations has valuable implications for assessing attachment prior to treatment.

Finally, evidence-based psychotherapy like CBT may not be the most useful treatment depending on an individual’s style or personality. Thus, testing this model in other kinds of
psychotherapy, like acceptance and commitment therapy (ACT), may extend the notion that the therapeutic alliance is equally important in all forms of psychotherapy.

Conclusion

Although the relationships between attachment style, treatment outcomes, the therapeutic alliance, and emotional expressiveness have been well established in the literature, this is the first study to examine their interaction in a mediational-moderational model in the context of SAD. Dismissing-avoidant attachment had a surprising role in this model, indicating how therapy may provide a safe space for those with negative models of the self. Though no evidence was found for the other components in the model, there is great incentive to replicate these findings for those in some form of psychotherapy for a variety of conditions. The M-Turk sample had descriptives of key study variables comparable to the clinical sample, indicating a potential pool of participants that endorse high levels of interpersonal distress. Overall, this model attempted to explain why some individuals did not make clinically significant changes in CBT, and alleviating the distress socially anxious individuals feel should be the focal point of such studies and treatment.
Zero-Order Correlations Among Study Variables (N = 38)

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. SIAS</td>
<td>_</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Secure</td>
<td>-.42**</td>
<td>_</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Fearful</td>
<td>.33*</td>
<td>-.54**</td>
<td>_</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Preoccupied</td>
<td>.20</td>
<td>-.08</td>
<td>.02</td>
<td>_</td>
<td></td>
</tr>
<tr>
<td>5. Dismissing</td>
<td>.19</td>
<td>-.18</td>
<td>.08</td>
<td>-.26</td>
<td>_</td>
</tr>
</tbody>
</table>

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

Table 1.
**Zero-Order Correlations Among Study Variables (N = 38)**

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Emo Supp</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Secure</td>
<td>-.37*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Fearful</td>
<td>.31*</td>
<td>-.54**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Preoccupied</td>
<td>-.13</td>
<td>-.08</td>
<td>.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Dismissing</td>
<td>.37*</td>
<td>-.18</td>
<td>.08</td>
<td>-.26</td>
<td></td>
</tr>
</tbody>
</table>

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

Table 2.

**Zero-Order Correlations Among Study Variables (N = 38)**

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Cog Reapp</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Secure</td>
<td>.24</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Fearful</td>
<td>-.44**</td>
<td>-.54**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Preoccupied</td>
<td>.00</td>
<td>-.08</td>
<td>.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Dismissing</td>
<td>-.34*</td>
<td>-.18</td>
<td>.08</td>
<td>-.26</td>
<td></td>
</tr>
</tbody>
</table>

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

Table 3.
Acknowledgements

I would like to thank Elizabeth Gordon for her unwavering support in my ideas and valuable guidance in this process. I would also like to thank my thesis partner, Micah Davoren, for her critical input and assistance, as well as Christopher Wong, Averi Gaines, and Chris Hadad for keeping me sane in the latter stages of the year. A final thank you goes out to my family and friends who helped me realize my potential. I look forward to pursuing a career in clinical psychology to improve treatment and the lives of those I hope to one-day treat.
References


https://doi.org/10.1016/S0006-3223(01)01183-0


https://doi.org/10.1037/0022-0167.38.2.139


https://doi.org/10.1037/0022-0167.36.2.223


Social Anxiety Disorder and Treatment Outcomes


https://doi.org/10.1016/S0005-7967(97)00022-3


https://doi.org/10.1016/j.cpr.2004.07.007


Regulation Questionnaire: Validation of the ERQ-9 in two community samples. Psychological Assessment, 26(1), 46.


