AN EXAMINATION OF CLIENTS’ ATTACHMENT STYLES, AFFECT REGULATION, AND OUTCOME IN THE TREATMENT OF DEPRESSION

by

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ABSTRACT
This study investigated the relationships among attachment styles, affect regulation, and outcome in a clinical sample receiving treatment for depression. Sixty-six clients completed questionnaire measures of adult attachment, dysfunctional attitudes, interpersonal problems, self-esteem, and depression. Clients’ levels of affect regulation were assessed with an observer-rated measure of affect regulation. The study’s purpose was to extend previous research by examining the relationship between adult attachment and affect regulation within a clinical context. Results indicated significant and positive associations between clients’ attachment security and their levels of affect regulation at early and late stages of psychotherapy. Late modulation of expression and arousal were found to mediate the relationship between pre-treatment attachment insecurity and outcome. Pre-treatment attachment avoidance, characterized by high discomfort with closeness, had a direct relationship with depressive symptoms not mediated by the cognitive-affective processes of affect regulation. Implications of present findings for the treatment of depression are discussed.
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CHAPTER 1:

Introduction

Affect regulation has been defined as “the ability to tolerate, be aware of, put into words, and use emotions adaptively, to regulate distress and promote needs and goals” (Elliot, Watson, Goldman, & Greenberg, 2004, p. 32). In recent years, professional literature regarding affect regulation has proliferated, partly in response to a renewed interest in affective processes (Greenberg, 2007; Mennin & Farach, 2007) and partly in response to increasing evidence relating difficulties in affect regulation to psychological dysfunction (Bradley, 2000; Fonagy, Gergely, Jurist, & Target, 2002; Mennin, Holaway, Fresco, Moore & Heimberg, 2007; Schore, 2003). Ineffective modulation of affective experiences has been found to relate to maladaptive coping, ineffective problem solving, poor social functioning, and poor overall mental health and well-being (Aldao, Nolen-Hoeksema, & Schweizer, 2010; Gross & Munoz, 1995; Haga, Kraft, & Corby, 2009; Kennedy-Moore & Watson, 1999; Mikulincer, Shaver, & Pereg, 2003; Lecce & Watson, 2007). In addition, the inability to adequately contain and regulate emotion has been postulated as one of the leading factors in the development and maintenance of psychological disturbances as well as anxiety and depressive disorders (Bradley, 2000; Fonagy et al., 2002; Mennin et al., 2007; Keenan, 2000; Kennedy-Moore & Watson, 1999; Slee, Garnefski, Spinhoven, & Arensman, 2008; Rude & McCarthy, 2003; Taylor & Liberzon, 2007).

If affect regulation difficulties are an important form of psychological dysfunction, then it is important that they be understood and examined in greater depth. Indeed, over the last two decades increased attention has been paid to the development and functioning of affect regulation. Current theorizing on the phenomenon has hypothesized that one’s ability to regulate affect derives primarily from early attachment experiences and is, in turn, tightly intertwined
with one’s attachment style (Cassidy, 1994; Mikulincer et al., 2003; Schore & Schore, 2008). Recent empirical work has confirmed this hypothesis. A large number of studies suggest that people with different attachment styles regulate affective experiences differently (Mikulincer & Shaver, 2007; Lopez & Brennan, 2000; Fuendeling, 1998). Securely attached people tend to display flexible affect regulation skills whereas insecurely attached people tend to display habits of either heightening or suppressing affective states. One goal of the current study is to further elucidate these differences in affect regulation of people with different attachment styles. However, unlike most of the studies conducted so far which tested normative (i.e., non-clinical) samples, the current study aims to investigate the relationship between affect regulation and adult attachment with an actual clinical population receiving psychotherapy for depression.

Another goal of the current study is to investigate the potential role of affect regulation in linking adult attachment styles and psychotherapy outcome. To date, the vast majority of studies on attachment and psychotherapy have dealt with the ways in which clients’ attachment styles impact therapy outcome through the formation of the working alliance and clients’ in-session behaviours (e.g., clients’ compliance to treatment). However, missing from this body of empirical work is an examination of whether clients’ attachment styles impact therapy outcome due to clients’ level of affect regulation. Given the strong theoretical link between attachment and affect regulation, it would seem that affect regulation would mediate the relationship between attachment classification and therapy outcome. Clinical work on the role of attachment-related differences in clients’ affect and affect regulation strategies in the outcome of therapy already points toward that conclusion (Slade, 2008; Wallin, 2007; Watson, Goldman, & Greenberg, 2007). More empirical work, however, is needed.
The central purpose of the current study is to empirically examine the relationships between adult attachment styles, affect regulation, and therapy outcome. The first two research questions in this study involve the relationship between affect regulation and adult attachment: 1) does affect regulation distinguish clients in therapy in terms of different adult attachment styles?; and 2) are there differences in the internal cognitive-affective mechanisms of clients’ affect regulation with respect to clients’ different attachment styles? The third research question involves the extent to which affect regulation mediates the relationship between adult attachment and therapy outcome: does clients’ affect regulation account for the association between adult attachment styles and therapy outcome?

To answer these questions, the current study will make use of an archival data set from a larger research project that compared Cognitive Behavioural Therapy (CBT) and Process-Experiential Therapy (PET) in the treatment of depression (Watson, Gordon, Stermac, Kalogerakos, & Steckley, 2003). This project provided psychotherapy to a total of sixty-six clients for sixteen weeks. Sessions were recorded on video and several pre and post therapy measures were collected. For the current study, the Attachment Style Questionnaire (ASQ; Feeney, Noller, & Hanrahan, 1994) will be of special importance, as well as the battery of outcome measures described in detail in Watson et al. (2003). To measure clients’ affect regulation, an observer-rated measure will be used (Observer-rated Measure of Affect Regulation [O-MAR]; Watson & Prosser, 2004). Ratings on the O-MAR were completed prior to the current study and were based on how clients presented their current functioning as well as cognitive-affective processes during therapy sessions.

By investigating the relationships between attachment styles, affect regulation, and therapy outcome, the goal of this study is to fill in critical gaps in knowledge that have important
implications for the discipline and practice of psychology. Firstly, findings from this study could provide empirical evidence to support theoretical views regarding the development of affect regulation within early attachment interactions. Secondly, results from the current study could illuminate the role of affect regulation and attachment styles on people’s depressive symptoms, self-esteem, dysfunctional attitudes, and interpersonal problems. Thirdly, the current study can provide us with important information regarding the different ways clients with different attachment styles behave in psychotherapy. If we know what these clients look like in terms of affect regulation, then we can begin to specify how broad therapeutic interventions can be tailored to benefit them individually. Overall, findings from the current study can help us to understand and identify the challenges of treating clients with different attachment styles and thus help us to formulate more individualized interventions for helping them to tolerate, differentiate, and modulate their affective experiences during treatment.

The following literature review will begin with a definition of affect regulation and an outline of the processes and components involved in the modulation of affect. A theoretical discussion of the emergence of affect regulation skills from early attachment experiences will be offered next, followed by a review of the empirical literature that details the association between affect regulation and adult attachment styles. Discussion will then turn to the relevance of affect regulation and adult attachment to psychotherapy, in particular, psychotherapy outcome. The study’s research questions will be presented thereafter.
Literature Review:

Affect Regulation

Defining Affect Regulation

Researchers have had much to say about affect regulation in the past two decades. However, due to the different research traditions and the multifaceted nature of the construct, they have not always emphasized the same types of mechanisms, components of emotion, and external and contextual influences involved in affect regulation. For example, developmental researcher Ross Thompson (1994) identifies interactions with and influences from other people as one key process in the regulation of affect. He defines the construct as the “extrinsic and intrinsic processes responsible for monitoring, evaluating, and modifying emotional reactions” (p. 27-28). Social researcher James Gross (1998), on the other hand, locates affect regulation within the individual and refers to it as “the processes by which individuals influence which emotions they have, when they have them, and how they experience and express these emotions” (p. 275). More recently, attempts have been made to elucidate some of the definitional ambiguities surrounding the construct (e.g., Gross & Thompson, 2007). However, conceptual clarity and integration remain issues for further development. In addition, there are a number of constructs in the psychological literature today whose meanings overlap with that of affect regulation (e.g., emotional intelligence, coping, and defence mechanisms), making it difficult to set apart the core conceptual features involved in the modulation of affect.

One recurring definitional problem associated with the concept of affect regulation is whether to use the term affect or emotion. Affect regulation is often interchangeably referred to in the literature as emotion regulation. However, distinctions can be made between the two terms. Generally speaking, the term affect involves undifferentiated feeling states, whereas
emotion involves more specific responses that arise from the appraisal of significant objects, persons, and/or situations (Feldman Barrett & Russell, 1998; Kennedy-Moore & Watson, 1999; Rottenberg & Gross, 2007). In this sense, the term affect regulation is thought to be the process of regulating affect which is yet undifferentiated and encompasses the whole array of feeling states, while the term emotion regulation is thought to refer to the regulation of specific emotions (Prosser, 2006). The current paper uses primarily the term affect regulation. However, for the sake of consistency with the literature, both terms should be understood throughout this paper to refer to the management (of arousal, experience, and expression) of subjective feeling states.

Another area of confusion surrounding the concept of affect regulation is the term’s own semantic ambiguity which can be meant to refer to the regulation of something by emotion, as in when emotions regulate aspects of human functioning (e.g., attention or physiological reactions), or it can be meant to refer to the regulation of emotions, as in when emotions are themselves regulated (e.g., through reappraisal or social support). Although both definitions are valid and merit investigation, researchers have found it worthwhile to concentrate on the study of the latter notion, that is, the regulation of emotions. Gross and Thompson (2007) explains that this is because much of the study on the regulation of other human processes by emotion is already covered by research of emotion itself. Based on this notion, the current paper focuses primarily on the regulation of emotions rather than the regulation of other processes by emotion.

Despite the definitional ambiguities described above, researchers have been able to agree on a few key aspects. Nearly all definitions of affect regulation today describe it as a process of tolerating, differentiating, and modulating affective states in the service of accomplishing one’s needs and goals (Cole, Michel, & Teti, 1994; Gross, 1998; Kennedy-Moore & Watson, 1999; Paivio & Greenberg, 1998; Thompson, 1994). Drawing a parallel with affect, researchers agree
that affect regulation is adaptive and serves important intrapersonal and interpersonal functions (Kennedy-Moore, 1999; Gross & Thompson, 2007). There is also fairly good consensus that affect regulation involves both the upward and downward regulation of both negative and positive emotions (Kennedy-Moore & Watson, 1999; Gross & Thompson, 2007). This is an important aspect of the conception of affect regulation because it expands on the typical view that modulation includes only the down-regulation of negative emotions. It alerts us to the fact that modulation can unfold in many directions, such as when we enhance the expression of negative emotions or decrease the experience of positive emotions.

Competing definitions of affect regulation also converge on the notion that modulation can operate on both conscious and unconscious levels of awareness. On the conscious level, affect regulation can involve the use of cognitive, behavioural, and interpersonal strategies such as reflection, reappraisal, and social support seeking. The unconscious aspect of affect regulation, on the other hand, can involve processes such as selective attention and classical defences (e.g., repression).

Several researchers also add the relevance of context/situation in the definition of affect regulation (Cole et al., 1994; Gross & Thompson, 2007; Thompson, 1994). Developmental researchers, in particular, emphasize the key role of external processes in the modulation of affect. However, following the predominant focus of the adult literature, the current paper concentrates on the self-regulation of affect. Nevertheless, other-regulation of affect and regulation by situational factors should be highlighted. It allows us to make no a priori assumptions as to whether different forms of modulation are adaptive or maladaptive. It points out that adaptive affect regulation is best characterized by individuals’ ability to modulate their
emotional experiences in ways that meets their needs and goals and are also congruent with their context/situation.

A Process Model of Affect Regulation for Use in Psychotherapy

Currently, there exists no consensual model of affect regulation in the adult literature. Across different psychological disciplines, researchers have offered different approaches to the classification of affective regulatory processes (e.g., Gross 1998, 2001; Parkinson & Totterdell, 1999; Thompson, 1994). Perhaps one of the most clinically relevant and integrative models of affect regulation was proposed by Watson and colleagues (Elliot, Watson, Goldman, & Greenberg, 2004; Kennedy-Moore & Watson, 1999; Watson & Prosser, 2004). Watson and colleagues proposed a model that involves a series of affective and cognitive processes by which affective experiences are expressed and modulated. Several of the mechanisms which Watson and colleagues describe are especially relevant for evaluating how clients present their emotional experiences in psychotherapy.

Figure 1 illustrates in schematic, simplified form the sequential series of cognitive-affective processes that comprise Watson and colleagues’ affect regulation process model. For adaptive affect regulation to occur, individuals are required to: (a) become aware of affective arousal, (b) label their affective experience accurately, (c) consider their affective experience valued and acceptable, (d) modulate their level arousal and expression in ways that enhance their functioning to meet their needs and goals, and (e) reflect on their affective experience to integrate it into other aspects of their selves and environment. The key idea within this model is that the ability to engage in each of these processes is thought to lead to functional/adaptive affect regulation. Conversely, skills deficits in emotional processing and/or motivated efforts
aimed at altering or suppressing one’s level of engagement in these cognitive-affective processes are expected to lead to disruptions and strains in the regulation of affect.

![Figure 1. The process model of affect regulation](image)

It is important to keep in mind that although this model specifies a sequence of regulatory processes that influence and are influenced by affective experiences, regulation does not necessarily occur in a sequential way (Kennedy-Moore & Watson, 1999). Affect regulation often involves repetitive, recursive and/or multiple processes occurring at the same time. Nonetheless, this model provides a practical conceptual framework for understanding the mechanisms underlying various forms of affect regulation strategies. The following is a brief outline of Watson and colleagues’ model with a selective review of research relevant to each of its five stages.

**Awareness of bodily and affective experiencing.** The first mechanism considered is the awareness of emotionally arousing stimuli. Watson and colleagues (Elliot et al., 2004; Kennedy-Moore & Watson, 1999; Watson & Prosser, 2004) viewed affect regulation as involving both a pre-conscious and conscious reaction to an emotional stimulus. At this stage, the individual
rapidly and automatically appraises the significance of an emotional stimulus and then consciously perceives it. If the stimulus is not first perceived with some level of bodily arousal, then regular behaviour continues and no regulation is necessary. However, if the stimulus is perceived, the affect regulation process is initiated. Awareness is the first step in affect regulation because it signals that something important is happening within the individual that warrants attention and/or action. According to the authors, this is a crucial step in effective affect regulation because in order to manage (i.e., heighten, tolerate, contain, or distance) emotions, one has to first become aware of them. Without awareness, one is unable to gain access to emotions and, thus, unable to manage them adaptively.

Empirical evidence for the relationship between emotional awareness and affect regulation comes from studies by Lane and colleagues (Lane, Quinlan, Schwartz, Walker, & Zeitlin, 1990; Lane & Schwartz, 1987, 1992; cited in Lane, 2000). These authors were some of the first to operationalize emotional awareness. They developed the Levels of Emotional Awareness Scale (LEAS) in which five levels of emotional awareness are assessed. These levels include physical sensations, action tendencies, single emotions, combinations of emotions, and combinations of emotions of self and others (i.e., the capacity to appreciate complexity of emotions in oneself and others). Scores on the LEAS have been shown to correlate positively with self-restraint and impulse control, indicating that greater emotional awareness is associated with greater self-reported impulse control (see Lane, 2000). Drawing on an emotional intelligence framework, Salovey and colleagues (Salovey, Mayer, Goldman, Turvey, and Palfai, 1995) have shown that individual differences in emotional awareness can predict recovery of positive mood and decreases in ruminative thoughts after a distressing stimulus. More recent work has demonstrated that heightened self-awareness (as measured by a scale other than the
LEAS) may have a regulating effect on emotional experience (Silvia, 2002). Additionally, Herwig and colleagues (Herwig, Kaffenberger, Jancke, & Bruhl, 2010) have shown, with the use of functional magnetic resonance imaging, that emotion-introspection (i.e., making oneself aware of and focusing on one’s current emotions and bodily feelings) is associated with decreased amygdalar activation, which is widely known to have a role in emotional processing such as emotional arousal and emotion intensity. This finding indicates that emotional awareness is capable of attenuating emotional arousal.

Other sources of empirical evidence come from research on repressive coping style. There is a long line of evidence on the association between repressive coping and long-term adverse health outcomes. Results from a variety of studies indicate that repressive coping is linked to increased risk of physical illness and health problems (see Myers, 2000 for review). Not surprisingly, “repressors” have been shown to possess lesser insight into their emotional states than their “non-repressor” counterparts (Lane, Schrest, Riedel, Shapiro, & Kaszniak, 2000). The same has been seen with chronic overeaters who engage in stress-induced eating as a strategy for down regulating emotional distress (Greeno & Wing, 1994). Resembling “repressors”, chronic overeaters have been shown to possess greater difficulty identifying and making sense of their emotional states (Whiteside, Chen, Neighbors, Hunter, Lo, & Larimer, 2007). Taken together, these findings indicate that lack of emotional awareness is associated with poor attempts at regulating distress.

An exception to the positive relationship between emotional awareness and affect regulation has been observed in individuals with generalized anxiety disorder (GAD). Current thinking on GAD suggests that it may be classified as a disorder of affect regulation (Mennin, Heimberg, Turk, & Fresco, 2005; Turk, Heimberg, Luterek, Mennin, & Fresco, 2005). However,
Novick-Kline and colleagues (Novick-Kline, Turk, Mennin, Hoyt, & Gallagher, 2005) recently demonstrated that individuals diagnosed with GAD showed higher levels of emotion awareness, as measured by the LEAS, than controls. Novick-Kline and colleagues suggest that the inability to soothe emotions experienced by individuals with GAD may be related to poor confidence in identifying emotions rather than actual deficits in emotional processing. However, as suggested by Watson and colleagues’ model, emotion awareness is just one component of effective affect regulation. According to the authors, emotional awareness is necessary but not sufficient for effective modulation of affect. This is because effective affect regulation further requires that the individual give their bodily and affective experiencing some kind of meaning, as discussed next.

**Labelling and symbolization of affective experiencing.** Affect regulation also involves the construal of emotionally arousing information. At this stage, the individual begins to process affective experiences cognitively in order to flesh out their meaning. This ability to label and symbolize emotion is considered an important skill in effective affect regulation. Given that different emotions require different regulatory and coping strategies, the ability to label emotions is essential. Watson and colleagues (Elliot et al., 2004; Kennedy-Moore & Watson, 1999; Watson & Prosser, 2004; Watson & Rennie, 1994) argue that the more differentiated the labelling and the symbolization of one’s emotional experiences, the more information the individual has to focus and explore, and therefore to use emotions adaptively to act on their needs. Individuals who are able to distinguish one emotion from another and to label emotions precisely are more aware of the potential means for regulating their affective experiences than individuals who lack this type of knowledge (Kennedy-Moore & Watson, 1999).
The role of labelling in affect regulation has received much support in the literature (e.g., Mayer & Salovey, 2004; Paivio & Laurent, 2001; Stein, Ives-Deliperi, & Thomas, 2008). In a study by Swinkels and Giuliano (1995), it was found that individuals identified as “mood labellers” (those more able to precisely define their moods) differed significantly from “mood monitors” (those more likely to monitor the intensity of their moods) on a number of personality, affect, and mood regulation measures. The authors found that “mood labellers” tended to seek and like social support, were more likely to be extraverts, were more likely to experience positive affect, had higher levels of self-esteem, experienced diminished social anxiety, and reported more life satisfaction than “mood monitors”. In contrast, “mood monitors” reported more intense affective states than “mood labellers”. The authors also found that “mood monitors” had their behaviours more adversely impacted by their moods than “mood labellers” and that they had poorer success regulating their moods when compared to their counterparts.

Barrett, Gross, Christensen, and Benvenuto (2001) also examined the relationship between emotion differentiation and affect regulation. They evaluated participants’ emotion journals for levels of emotion differentiation and compared these levels to self-reports of emotion regulation. Results indicated that emotion differentiation was correlated with increased regulation of negative emotions using a range of regulatory strategies. This finding, however, was not significant for positive emotions, suggesting that negative emotions are more subject to regulation than are positive emotions. Notwithstanding, the results from this study are consistent with the concept of emotion differentiation being positively related to the ability to modulate affect.
Acceptance of affective experiencing. Positive attitudes (e.g., acceptance and nurturance) toward emotions make up another important part of effective affect regulation. At this stage, individuals consider their affective experiences in light of their beliefs and goals and determine whether their feelings are acceptable. According to Watson and colleagues (Elliot et al., 2004; Kennedy-Moore, 1999; Watson & Prosser, 2004), high acceptance and avowal of affective experiences are important in effective affect regulation because they allow for integration (i.e., awareness and understanding) of affective experiences.

Numerous findings in the literature suggest that embracing one’s emotional experiences, rather than fighting, avoiding, or fearing these experiences, can directly change them and bring about positive emotional outcomes (see Elliot et al., 2004; Linehan, 1993; Roemer & Orsillo, 2009). In fact, in the past two decades emotional acceptance has become a central component in several psychological treatments, including Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, & Wilson, 1999) and mindfulness based therapies (e.g., Segal, Williams, & Teasdale, 2002). Recent findings now support the efficacy of ACT and mindfulness-based treatments for improving functioning in individuals with several psychological disorders, including depression (e.g., Bach & Hayes, 2002; Ma & Teasdale, 2004). Conversely, researchers now suggest that apprehension about the experience of emotion (e.g., “fear of emotion”) may be a shared component across psychological disorders (Barlow, Allen, & Choate, 2004; Leahy, 2002; Mennin et al., 2005; Taylor & Rachman, 1991). Although relatively modest in number, these findings point to emotional acceptance as an adaptive strategy of affect regulation.

The antipode of emotional acceptance, i.e., emotional suppression, has also been increasingly linked to affect regulation. Recent studies suggest that emotional suppression is associated with increased sympathetic activity in the cardiovascular system (Demaree,
It must be noted that emotional acceptance is contingent on social contexts, cultural norms, and personal belief systems related to the experience and expression of emotions. For this reason, the implications for well-being of this component of affect regulation are not always straightforward. For example, whereas the down-regulation of positive affect would be viewed unfavourably by members of Western cultures, in East Asian cultures over-modulation of positive affect would be desired. That is because in East Asian cultures, strong positive emotions are believed to interfere with role obligations and to disrupt social harmony (Suh, Diener, Oishi, & Triandis, 1998; cited in Mesquita & Albert, 2007). Thus, affect regulation processes, and in particular emotional acceptance, need to be interpreted within a contextual framework that includes situational contexts, personal beliefs and values, and social and cultural norms of self and relating.

**Modulation of arousal and expression of affective experiencing.** A crucial aspect of affect regulation involves varying and adjusting the level of arousal and expression of one’s affective experiences. At this stage, the individual uses different regulatory strategies to arrive at an optimal level of emotional arousal and expression that is adaptive both to the individual and to the situation. Watson and colleagues (Elliot et al., 2004; Kennedy-Moore & Watson, 1999; Watson & Prosser, 2004) view the ability to modulate emotional arousal and expression as the essence of effective affect regulation. The several regulatory strategies described by the authors
are listed in Figure 2. These strategies are grouped into generally positive strategies versus generally negative strategies, based on psychological research and theory. However, given the danger in declaring a particular strategy either positive or negative, these groupings are to be considered only as maps to customary regulatory strategies.

**Figure 2. Customary regulatory strategies**

Several researchers have attempted to classify affect regulation strategies, using a range of different theoretical and empirical methods. For instance, Thayer, Newman, and McCain (1994) classified 32 affect regulation strategies using exploratory factor analyses. They came up with a six-factor solution that distinguished among active mood management, seeking pleasurable activities and distraction, passive mood management, social support/ventilation/gratification, direct tension reduction, and withdrawal/avoidance strategies. Parkinson and Totterdell (1999) categorised 162 affect regulation strategies using card sorting and hierarchical cluster analyses. In their classification scheme, regulatory strategies were
divided into either “cognitive engagement strategies” or “behavioural engagement strategies”, both of which could be further divided into either “affect-directed strategies” (i.e., strategies that address the feelings themselves) or “situation-directed strategies” (i.e., strategies that address the situation surrounding the feelings). Recently, researchers have also suggested the distinction between automatic versus controlled affect regulation strategies (Bargh & Williams, 2007; Fitzsimons & Bargh, 2004; Mauss, Bunge, & Gross, 2007). To this date, however, no affect regulation model has been based on the concept of automaticity and effortful emotional control.

One influential approach to the classification of affect regulation strategies has been offered by Gross (1998, 2001). He proposed that strategies may be classified by the time at which they occur in the emotion-generation process. According to him, regulatory strategies can be divided into two broad categories: “antecedent-focused strategies” or “response-focused strategies”. Antecedent-focused strategies involve attempts to modify the production of emotion before the emotion arises, e.g., by selecting the emotion-eliciting situation, modifying the situation, redirecting attention from the situation or oneself, and by changing one’s cognitions. Conversely, response-focused strategies involve attempts to alter emotional responding after it has been initiated, e.g., by modulating one’s experiential, behavioural, or physiological responses. Each of these higher-order categories embodies a number of other different affect-regulation strategies.

Regardless of classification systems, however, researchers call attention to the importance of the flexible use of regulatory strategies for healthy adjustment (Bonanno, Papa, Lalande, Westphal, & Coifman, 2004; Carryer & Greenberg, 2010; Garnefski, Kraaij, & Spinhoven, 2001). Bonanno et al. (2004) argue that successful adjustment does not result from the use of one affect regulation strategy, but rather from the ability to manage affective
experiences flexibly. Therefore, as mentioned earlier, caution should be exercised when naming a specific regulatory strategy as adaptive or maladaptive. In addition, and more importantly, this perspective raises the notion that there is more to affect regulation than just the application of a particular regulatory strategy. As it will be discussed next, effective affect regulation also requires that the individual reflect on their emotional responses and regulatory processes.

**Reflection on affective experiencing and regulatory process.** The ability to reflect on emotional experiences and to reflect back on the previous processes of affect regulation makes up the final component of affect regulation in Watson and colleagues’ model (Elliot et al., 2004; Kennedy-Moore & Watson, 1999; Watson & Prosser, 2004). Reflection is important in the effective modulation of affect because it helps individuals to pose and solve questions about their affective experiences, to clarify the meaning of their affective experiences, and ultimately, to gain further insight of their wants, needs, and goals, and how to best act to meet them (Elliot et al., 2004; Greenberg & Watson, 2006; Watson, 1996; Watson & Rennie, 1994). Through reflexive examination individuals are able to explore their feelings and emotional behaviours, and thereby to gain new perceptions of and new responses to themselves, other people, and stressful situations (Kennedy-Moore & Watson, 1999; Watson & Rennie, 1994). One key point about the role of reflection in the affect regulation process is that reflection fosters deep experiential self-knowledge. Specifically, reflection allows for emotional experiences to be assimilated more easily into one’s views of self and the world, thus assisting in affective regulatory efforts (Watson, 1996).

Two additional points should be made about reflection in affect regulation. First, reflection always occurs after the evocation of arousal, experience, and/or expression of emotion.
This is why reflection is the last process in the sequence of processes involved in affect regulation. In order for reflection to occur, emotions must first be symbolized in awareness. Only when emotions are brought into people’s consciousness and organized into coherent narratives, can people reflect on their feelings and evaluate their emotional experiences (Greenberg, 2008; Greenberg & Angus, 2004). Second, reflection has a recursive characteristic, in that it can change the way and/or which emotions were evoked in the first place (Kennedy-Moore & Watson, 1999). For example, reflecting on one’s sadness as understandable and tolerable can diminish its intensity whereas interpreting it as a weakness can evoke shame (Kennedy-Moore & Watson, 1999).

A variety of studies have addressed the importance of reflection in the modulation of affect. In one study on the resolution of problematic reactions in psychotherapy, Watson (1996) found that when emotionally charged events are put into vivid narratives and re-experienced in the context of therapy, reflection follows and this promotes the integration between the self and the individual’s experiences. She suggests that reflection helped clients to understand their agency in their problematic reactions and this understanding allowed them to evaluate the validity of their perceptions, needs, and behaviours. The result of this reflection on aroused experience contributed to clients’ in-session resolution of problematic reactions and clients’ increased positive mood. Several other studies on expressive writing have shown similar findings. The ability to organize, structure, and ultimately, reflect on emotional experiences has been found to down-regulate emotional distress and improve both physical and psychological health (Pennebaker, 1995, 1997; Pennebaker & Chung, 2007). Cumulatively, these findings point to reflection as an essential and crystallizing process in the adaptive/functional modulation of affect.
Summary of Affect Regulation

A mutual definition of affect regulation that spans all psychological disciplines has yet to emerge in the literature. In its broadest sense, affect regulation refers to the management of affective states which can involve both the upward as well as downward modulation of affect. Perhaps one of the most comprehensive and clinically relevant models of affect regulation in the adult literature is the process model developed by Watson and colleagues’ (Elliot et al., 2004; Kennedy-Moore & Watson, 1999; Watson & Prosser, 2004). In it, affect regulation is described as consisting of five distinct cognitive-affective processes: (a) awareness, (b) labelling, (c) acceptance, (d) modulation of arousal and expression, and (e) reflection of affective experiencing. Engagement in each of these five processes is thought to lead to functional/adaptive modulation of affect whereas emotional processing skills deficits and/or motivated efforts aimed at interrupting engagement in these processes is thought to lead to affect regulation problems. Building on the theoretical background of affect regulation, the next section will look at how affect regulation strategies develop from early attachment experiences with primary caregivers.

Affect Regulation Development

Current thinking on affect regulation identifies attachment theory as the most important framework for understanding the development of affect regulation (Calkins & Hill, 2007; Cassidy, 1994; Fuendeling, 1998; Mikulincer, Shaver, & Pereg, 2003; Schore & Schore, 2008). According to Bowlby’s theory (1969/1982, 1973), the protective and soothing functions of responsive caregiving lead infants to construe positive expectancies around emotional functioning which provides them with a sense of safety and, in turn, promotes the development
of adaptive affect regulation skills (e.g., support seeking, attention shifting, evocation of positive emotions, etc.).

Specifically, Bowlby described infants as having a repertoire of innate, affect-driven behaviours that motivates them to seek and maintain proximity with caregivers. These behaviours, known as proximity seeking behaviours, are intended to elicit support and provision from caregivers in times of stress, threat, or novelty. Bowlby (1969/1982) suggested that proximity seeking behaviours were affect regulation mechanisms. According to him, if bids for proximity and comfort are answered sensibly and consistently, the infant feels protected and soothed. More importantly, the infant gains confidence in the availability of his/her caregiver to regulate his/her emotional needs, and confidence in his/her ability to manage distress through the attachment relationship (Cassidy, 1994). Bowlby proposed that the internalization of positive interactions with attachment figures, with its respective positive expectancies around caregiving, forms a “working model” of secure attachment that provides the child with a secure base from which to explore (i.e., experience, express, and reflect on) affective experiences freely.

Unfortunately, however, not all children receive sensible and consistent care. If the attachment figure is unavailable or insensitive to the infant’s bids for proximity, distressing emotions are not alleviated and the infant is required to learn affect regulation strategies other than proximity seeking (Bowlby, 1969/1982; Main & Solomon, 1990; Mikulincer et al., 2003). Given that in insecure attachment relationships infants are made to feel that their distress is unwarranted or unmanageable, alternative affect regulation strategies involve denying emotional distress and developing a distorted sense of self-reliance, or overreacting to internal cues and hyperactivating the attachment relationship (Cassidy, 1994).
Numerous studies have found an association between differences in the quality of early attachment relationships, and differences in internal working models and display of emotion in infants (Ainsworth, Blehar, Waters, & Wall, 1978; Cassidy, 1994; Kobak & Sceery, 1988; Main, 1990; Main, Kaplan, and Cassidy, 1985; Sroufe, 2000). Noteworthy among these is the “strange situation” procedure devised by Ainsworth and colleagues (1978). The strange situation procedure was comprised of several episodes of interaction involving infants, mothers, and a stranger in a toy-filled room. Of special relevance were two instances when the mother left the infant alone with the stranger and then returned to be with the infant. By observing infants throughout this procedure, Ainsworth and colleagues (1978) identified three styles of attachment that reflected three different strategies infants used to seek and maintain proximity to their caregivers. These styles included a secure attachment style, an ambivalent attachment style, and an avoidant attachment style.

Ainsworth and colleagues (1978) observed that the expression of these three styles of attachment behaviours was significantly linked to differences in the interactional patterns of the infant-mother dyads. Affect regulation was a determining factor in the differences between the attachment styles. Infants with a secure attachment were found to engage easily in exploratory play while in their mothers’ presence and became distressed when separated from them. They sought proximity and were easily soothed upon their mothers’ return. These infants were thought to have mothers who were responsive to their behavioural cues, such that they openly expressed negative and positive affect when it occurred (Cassidy, 1994; Sroufe, 2000). Conversely, infants with an ambivalent attachment style became unusually distressed with their mothers’ absence and were not easily soothed upon their return. Their response to their caregivers’ return was one of proximity mixed with rejection and anger. These infants were found to heighten affective
experiencing in order to gain their mothers’ attention. This hyperactivating strategy reflected an attempt to maximize care and protection in the context of inconsistent and unpredictable caregiving (Cassidy, 1994; Sroufe, 2000).

Infants with avoidant attachment were found to be unaffected by their caregivers’ presence or absence during the strange situation. Contrary to secure and ambivalent infants, they displayed no distress in the absence of their caregivers and made no attempt at proximity upon reunion. These infants were thought to have insensitive mothers who responded to distress or vulnerability with punishment and rejection. Thus, it appeared these infants learned to use deactivating strategies to suppress emotional arousal. In this way, these infants ensured sufficient proximity to caregivers while also preventing caregivers from becoming alienated by the infants’ emotional responding (Cassidy, 1994; Sroufe, 2000). Interestingly, both ambivalent and avoidant children (i.e., insecure children) showed inhibition in their exploratory play, suggesting that the inflexible use of either hyperactivating or deactivating affect regulation strategies not only resulted in dysfunctional emotions, but also interfered with other important developmental activity (Cassidy, 1994).

Ainsworth and colleagues’ (1978) study became the cornerstone of research on the link between affect regulation development and attachment. Along with later work, the study supports the view that affect regulation develops primarily as a result of expectancies of caregiver interactions. More recently, however, research in the area of neuroscience has indicated that attachment experiences can influence the development of affect regulation in additional ways. Shore (2003) has proposed that the interactive experiences between caregiver and infant can directly alter the development of specific areas of the infant’s brain responsible for affect regulation. Specifically, he argues that early attachment experiences can impact the
development of the infant’s right orbitofrontal cortex which controls the activation of the sympathetic and parasympathetic branches of the infant’s autonomic nervous system. Given the implications of these branches on one’s capacity for decreasing or increasing stress responses, Schore argues that early attachment experiences can configure the infant’s neurobiological trajectory for regulating affect. Similarly, Siegel (1999) has argued that adverse early experiences, such as insecure attachment interactions, can restrict infants’ ability to respond flexibly, that is, to inhibit learned responses so that higher-order cognitive processes can influence behaviours as appropriate for the given environmental context.

There has been a great debate as to whether attachment styles remain stable over the lifespan. Schore (2003) defends the plasticity of the orbitofrontal system throughout one’s life, but also admits that it is during the first three years of life that the basic structure for regulation is formed. Given that new experiences are more easily assimilated into one’s existent working models and that attachment styles give rise to self-fulfilling behaviours, attachment is usually thought to remain relatively stable over time (Collins & Read, 1994; Hazan & Shaver, 1994). Bowlby (1988) argued that one’s attachment system continues to be active throughout the individual’s lifespan and that it manifests itself in behaviours aimed at seeking support and connection to others. Recently, Fraley (2002) found some support for this position. He concluded from a review of studies that a prototype for close relationships arises in infancy and it remains moderately stable through adolescence and adulthood. Thus, the ways in which people learn to regulate affect early in life likely continue through adulthood, unless circumstances change or other experiences (e.g., psychotherapy) intervene (Sable, 2000; Wallin, 2007; Waters, Hamilton, & Weinfield, 2000). Perhaps regulatory strategies become more sophisticated with age, but the habits of suppressing or heightening affect responses remains.
It must be noted that the review on affect regulation development is necessarily brief and it focuses on the underlying concept of attachment interactions. However, attachment is not the only influence on the development of affect regulation. Temperament, biological maturation and cultural expectations should also have an impact on children’s ability and the ways they learn to regulate their emotions (Cassidy, 1994; Eisenberg & Morris, 2002). Therefore, although not thoroughly discussed here, affect regulation should be thought of as the result of a complex interaction among biological, psychological and social factors, out of which attachment is theorized to exert the greatest influence.

**Summary of Affect Regulation Development**

The ability to regulate one’s emotions emerges largely from early attachment experiences. In fact, attachment theory is now considered the main framework for understanding the development of affect regulation. Bowlby (1969/1982, 1973) theorized that different patterns of interaction within the attachment relationship led to different strategies of affect regulation. Later work by Ainsworth et al.’s (1978) confirmed this theory. Ainsworth et al.’s study led to the proposal that secure attachment fosters the development of flexible regulation of affective responses. Alternatively, insecure attachment leads to habits of either heightening or suppressing affective states. Given that attachment patterns are thought to remain relatively stable over time, it would seem that they would continue to guide emotional responding later in adulthood. Indeed, the literature on adult attachment shows that individuals with different attachment styles experience and deal with emotions differently. The next section reviews this literature and discusses in further detail the ways in which attachment styles might influence affect regulation in adulthood.
Affect Regulation in Adult Attachment

Over the past years, the literature on adult attachment has developed to show consistent patterns in the emotional experiences of individuals with different attachment styles. However, it is only recently that studies have begun to organize these findings in terms of affect regulation. Given the recency of conceptual approaches to affect regulation (e.g., Elliot et al., 2004; Kennedy-Moore & Watson, 1999; Watson & Prosser, 2004), much still remains to be understood about the mechanisms by which adult attachment are thought to shape affect regulation. One of the goals of the current study is to examine more specifically the relationship between attachment and the cognitive-affective processes involved in the regulation of affect. As a step towards this goal, this section reviews findings in the adult attachment literature that relate to the processes of affect regulation.

Because studies in this review use a variety of methods to measure and report adult attachment, a brief introduction of the attachment classification system in adults is presented first. For more extensive reviews on the existing measures of adult attachment, see Crowel, Fraley, and Shaver (2008) and Mikulincer and Shaver (2007).

Adult Attachment Categories and Dimensions

Research on adult attachment behaviour grew out of Ainsworth et al.’s (1978) findings. It began with the idea that attachment relationships developed in early childhood are carried into adulthood and exert great influence on adults’ close relationships, in particular, romantic relationships. Hazan and Shaver (1987) were the first to develop a self-report measure of adult attachment. Paralleling Ainsworth et al.’s (1978) typology of infant attachment patterns, they described three prominent styles of adult attachment: secure, preoccupied (or ambivalent), and
avoidant. Secure adults were shown to be comfortable with intimacy in relationship. They were more likely than avoidant and preoccupied adults to view their partners as trustworthy and less likely to worry about abandonment (Mikulincer & Shaver, 2007). Preoccupied (or ambivalent) adults tended to be anxious about relationships and desired greater intimacy than secure and avoidant adults. They were more likely to fall in love at first sight and also to long intensely for their partners’ reciprocation (Mikulincer & Shaver, 2007). In contrast, avoidant adults showed difficulty trusting romantic partners and felt unease with intimacy. They felt uncomfortable depending on their partners to provide care and were less likely than secure and preoccupied adults to accept their partners’ faults (Mikulincer & Shaver, 2007). Notably, these findings have been replicated and extended by several investigators (e.g., Brennan & Shaver, 1995; Carver, 1997; Feeney & Noller, 1990; Kirkpatrick & Davis, 1994; Simpson, Rholes, & Nelligan, 1992).

As research in adult attachment progressed, researchers have devised various ways to measure adult attachment patterns. Going beyond Hazan and Shaver’s (1987) initial method of measuring adult romantic attachment patterns, researchers have proposed additional and more general categories of adult attachment (see Mikulincer & Shaver, 2007 for comprehensive review). For instance, Feeney, Noller and Hanrahan (1994) found evidence to divide the preoccupied (or ambivalent) attachment pattern into two categories: those who primarily demonstrate need for approval and those who are preoccupied with relationships. They also found support for breaking down the avoidant attachment pattern into two subgroups: those who primarily show discomfort with closeness and those who regard relationships as secondary to achievement (Feeney et al., 1994).

Conversely, Bartholomew and Horowitz, (1991) proposed a four-category model of adult attachment (secure, fearful, preoccupied, and dismissing) located in a two-dimensional space
defined by model of self and model of other. Specifically, Bartholomew and Horowitz extended Hazan and Shaver’s (1978) classic styles of attachment by further dividing the avoidant category into two categories: fearful-avoidant type (i.e., those who avoid relationships due to fear of rejection) and dismissing-avoidant type (i.e., those who avoid relationships due to discomfort with intimacy). Bartholomew and Horowitz also conceptualized adult attachment following Bowlby’s (1973, 1988) ideas of internal working models of self and other. Individuals form either a positive or negative view of self and other. Those with positive models of self and other have a sense that they are worthy of care and expect others to be there for them in times of need. These individuals with positive models of self and other tend to favour closeness in relationships while those with negative models of self and others tend to avoid intimacy. Each of Bartholomew and Horowitz’s (1991) adult attachment categories can be located within these positive and negative regions of models of self and other.

Alternative to self-report measures, a separate avenue of research on adult attachment was developed through use of narrative and interview methods. At about the same time Hazan and Shaver (1987) began their work on adult romantic attachment, Main and colleagues (Main, Kaplan, & Cassidy, 1985) devised the Adult Attachment Interview (AAI). In the AAI, adults were interviewed about their early experiences with their attachment figures and asked to reflect on childhood memories. The resulting narratives were analysed and adult attachment categories were defined along certain dimensions. The adult categories corresponded to the infant attachment classifications described by Ainsworth et al. (1978), including autonomous (similar to secure), detached or dismissive (similar to avoidant), and enmeshed or preoccupied (similar to anxious/ambivalent). Adults classified as autonomous are those able to speak freely and coherently about their early attachment relationships. In contrast, adults classified as dismissing
are those who typically minimize the impact of early relationships on their current functioning. Dismissing adults often speak vaguely or in idealizing ways about their parents and have difficulty recalling childhood memories. Enmeshed adults, on the other hand, tend to become easily overwhelmed by the task of reflecting upon their childhood experiences. Their narratives are often long and are characterized by incoherencies and confusion. Like Hazan and Shaver’s (1987) work, the AAI has been extended by several investigators (e.g., Fonagy, Steele, Steele, Moran, & Higgitt, 1991).

Although research on adult attachment has often referred back to the different categories of infant attachment, recent studies have revealed that adult attachment might be best conceptualized in terms of two dimensions: avoidance and anxiety (Brennan, Clark, & Shaver, 1998; Fraley & Waller, 1998). The dimension of avoidance is characterized by a discomfort with intimacy and interpersonal closeness, while the dimension of anxiety is characterized by a chronic fear of interpersonal rejection and abandonment (Brennan et al., 1998). The idea behind this dimensional model of adult attachment is that combinations of high and low scores on the avoidance and anxiety dimensions contribute to an overall picture of attachment which removes the need for categorization. For example, secure attachment is defined by low attachment avoidance and low attachment anxiety. For the sake of consistency with the literature, however, the review of adult attachment studies in the following sections focuses on the three attachment styles most often cited in psychology studies: secure, anxious, and avoidant attachment styles (Crowel, Fraley, & Shaver, 2008; Lopez, 1995; Mikulincer & Shaver, 2007).
Empirical Findings of Affect Regulation in Adult Attachment

Empirical studies on the link between affect regulation and adult attachment have dealt with the ways in which attachment styles influence one or multiple cognitive-affective processes of affect regulation. With these processes in mind (i.e., awareness, labelling, acceptance, modulation, and reflection), the following sections review evidence concerning attachment-related differences in affect regulation. It should be noted that because recent empirical reviews have been offered elsewhere (Fuendeling, 1998; Lopez & Brennan, 2000; Mikulincer & Shaver, 2007), studies discussed here are selective and limited.

Awareness of affective experiencing and attachment. Several studies have shown differences in affective arousal and awareness between the different attachment classifications (Fuendeling, 1998; Lopez & Brennan, 2000; Mikulincer & Shaver, 2007). In general, the findings indicate that securely attached individuals tend to acknowledge positive and negative affect and to experience them fully without distortions and/or fear of becoming overwhelmed. In contrast, anxiously attached individuals tend to be easily triggered by negative affect and to attend closely to emotions, in particular emotions that call for attention and/or emphasize vulnerability, such as anger, jealousy, fear, shame, and sadness. Avoidant attachment, on the other hand, tends to be related to high arousal, yet low awareness of both negative and positive affect. Avoidant individuals tend to deny their affective experiences and to divert attention away from emotions.

These results are consistent across the empirical literature (see Fuendeling, 1998; Lopez & Brennan, 2000; Mikulincer & Shaver, 2007). For example, Searle and Meara (1999) examined emotional expression and intentness (i.e., attention to and intensity of emotions) in college students. They found that securely attached individuals had low scores on intentness and high
scores on expression, whereas individuals with preoccupied attachment had high scores on expression and intentness. Those with dismissive attachment showed low scores on intentness and expression, while those with fearful attachment had high scores on intentness and low scores on expressiveness.

Using a diary methodology, Pietromonaco and Feldman Barrett (1997) asked college students to report immediate and global (i.e., retrospective) perceptions (including emotional reactions) of everyday interpersonal interactions. They found that preoccupied adults showed higher levels of emotional intensity and emotionality in their global reports than secure, dismissing-avoidant, and fearful-avoidant adults. Conversely, dismissing-avoidant adults showed lesser emotional intensity and emotionality in their global reports than adults in the other attachment groups. Notably, dismissing-avoidant adults reported more negative emotions in their immediate reports than secure adults, indicating that they experienced negative emotions at least as intensely as preoccupied adults. However, they denied emotional distress in their global reports.

Along similar lines, Mikulincer and Orbach (1995) found that securely versus insecurely attached individuals differ in terms of intensity of, attention given to and accessibility to affective information. In their study, Israeli students were asked to recall early experiences of anger, anxiety, sadness, and happiness while retrieval times were recorded. After recalling emotional memories, subjects were then asked to rate the intensity of emotions felt in each recalled event. Mikulincer and Orbach found that students with attachment avoidance were the least efficient at recalling sad and anxious memories (i.e., they had the longest retrieval times), while students with preoccupied attachment showed the highest accessibility for negative memories (i.e., they had the shortest retrieval times). Securely attached students fell in between
the two insecure attachment groups in terms of accessibility of sad and anxious memories. Securely attached students also took longer to recall negative rather than positive emotional memories, whereas anxiously attached students took longer to recall positive rather than negative emotional memories. Moreover, avoidant students rated emotional memories as less intense than did secure individuals, whereas anxious students reported having experienced stronger emotions than secure students. Memories of securely attached students fell in between the two insecure attachment groups.

In a separate study, Mikulincer (1998) exposed college students to hypothetical anger-eliciting events and asked them to rate themselves as to how well statements on an anger inventory represented their behaviour. He found that securely attached students, as opposed to insecurely attached students, manifested more constructive regulation of anger. They experienced more positive affect during the hypothetical situation and did not react with anger unless contextual cues directly related to anger were presented by the experimenter. In contrast, anxiously attached students reported intense anger and tended to make more undifferentiated and hostile attributions of others even when ambiguous cues concerning others’ intentions were presented by the experimenter. Avoidant students did not report intense anger in response of hypothetical events, but they nevertheless displayed strong physiological signs of the experience of anger (i.e., increased heart rate). In addition, they reported intense hostility towards others even when clear indications of others’ non-hostile intentions were provided by the experimenter.

**Symbolization of affective experiencing and attachment.** Theoretically, attachment styles should also influence the way individuals label and construe their affective experiences. Indeed, research shows that secure individuals’ openness and easy access to emotions facilitate
cognitive understanding of affective experiences (see Fuendeling, 1998; Lopez & Brennan, 2000; Mikulincer & Shaver, 2007). Secure individuals have been found to be better at acknowledging affective experiencing, differentiating positive and negative affect, and also articulating affective experiences than insecurely attached individuals. In contrast, anxious individuals’ heightened arousal to distress and easy access to threat-relating emotions are associated to disruptions and strains in emotional processing. Anxiously attached individuals have been found to display greater difficulty differentiating and identifying feelings, and also, to experience higher levels of ruminative thoughts on threat-related concerns than individuals with secure and avoidant attachment patterns.

Research on attachment avoidance has yielded less consistent findings. Whereas some studies have found that avoidant individuals’ inattention to feelings and lack of access to affective experiencing are related to difficulties identifying and describing emotions (e.g., Mikulincer & Orbach, 1995; Malinckrodt & Wei, 2005; Wearden, Lamberton, Crook, & Walsh, 2005), few other studies have shown that avoidant individuals actually score high on the ability to label emotions (e.g., Kafetsios, 2004; Troisi, D’Argenio, Peracchio, & Petti, 2001).

Clearer evidence of attachment style differences in the way people symbolize affective experiences is seen in studies examining the link between adult attachment and alexithymia. Alexithymia is defined as involving (a) difficulty identifying feelings, (b) difficulty discriminating between feelings and bodily sensations, (c) difficulty describing feelings to others, (d) impoverished imagination and lack of fantasy, and (e) an externally focused cognitive style (Bagby, Taylor, & Parker, 1994; Taylor, Bagby, & Parker, 1997). Several studies have found associations between attachment insecurity and higher levels of alexithymia (Hexel, 2003; Meins, Harris-Waller, & Loyd, 2008; Montebarocci, Codispoti, Baldaro, & Rossi, 2004). In one
study, Montebonacci et al., (2004) had college students complete Feeney et al.’s (1994) Attachment Style Questionnaire (ASQ) and the 20-Item Toronto Alexithymia Scale (TAS-20). They found positive associations between the TAS-20 total score and the subscale scores for Difficulty Identifying Feelings and Difficulty Describing Feelings with the ASQ subscale scores for Discomfort with Closeness, Relationship as Secondary, and Need for Approval, all indicative of insecure attachment. Conversely, they found a negative correlation for TAS-20 total score and the ASQ subscale score for Confidence, indicative of secure attachment.

In a similar study, Troisi, D’Argenio, Peracchio, and Petti (2001) examined the relationships between adult attachment patterns, childhood memories of separation anxiety, and alexithymia in one hundred young men suffering from mood disorders. Controlling for current depression and anxiety, they found that alexithymia was more pronounced in individuals with insecure attachment styles and who reported more severe symptoms of separation anxiety during childhood. Furthermore, they found that a higher prevalence of alexithymia occurred among individuals with preoccupied and fearful attachment styles than those with a dismissing-avoidant attachment style, suggesting that attachment anxiety is more strongly related to alexithymia than is attachment avoidance. Using a measure of emotional intelligence, Kafetsios (2004) also found that dismissing attachment is positively related to the ability to label and understand emotions. He explains that avoidant individuals’ documented lack of access to emotions can reduce the experience of emotions which, in turn, might facilitate emotional processing (Kafetsios, 2004). Mikulincer and Shaver (2007) add to this reasoning by highlighting the possibility that avoidant individuals’ suppression of emotions is a result of a defensive strategy, rather than a form of deficit in symbolizing emotions.
Acceptance of affective experiencing and attachment. Although acceptance of affective experiencing has not been specifically accounted for in studies of adult attachment, it would seem that attachment styles would have a differential impact on people’s attitudes toward emotions. Theoretically, securely attached individuals learned at an early age that affect, both negative and positive, can be fully experienced and flexibly expressed (Cassidy, 1994; Mikulincer & Shaver, 2007; Sroufe, 2000). Having had successful interactions with caregivers, securely attached individuals have learned not to be afraid of distressing emotions, but rather to view them in functional, adaptive terms (Cassidy, 1994; Mikulincer & Shaver, 2007; Sroufe, 2000). In contrast, individuals with an avoidant attachment pattern learned that emotional experiences are best hidden or suppressed (Cassidy, 1994; Mikulincer & Shaver, 2007; Sroufe, 2000). Unlike secure adults, avoidant adults learned that the experience of emotions and the expression of emotions are subject to rejection and punishment, and thus should be inhibited (Cassidy, 1994; Mikulincer & Shaver, 2007; Sroufe, 2000). Anxiously attached individuals, on the other hand, viewed the experience of emotions, in particular negative emotions, as overwhelming and unmanageable. Having experienced inconsistent and unpredictable caregiving, anxiously avoidant individuals have associated the experience of negative emotions to further feelings of anxiety, worry, and confusion (Cassidy, 1994; Mikulincer & Shaver, 2007; Sroufe, 2000). Notably, both anxious and avoidant individuals have learned to view emotions in terms of their dysfunctional and interfering aspects, instead of their adaptive and informative qualities (Mikulincer & Shaver, 2007).

According to attachment theory, thus, it seems that attachment security is related to positive attitudes toward emotions, whereas attachment avoidance and anxiety are related to non-acceptance of emotions, in particular negative emotions. Though specific research on emotional
acceptance is missing, the previously mentioned findings on emotional expressivity (Searle & Meara, 1999), emotionality (Pietromanaco & Feldman Barrett, 1997), and emotional accessibility (Mikulincer & Orbach, 1995) support this hypothesis.

**Modulation of affective experiencing and attachment.** Attachment styles are also linked to differential use of affect regulation strategies for modulating the arousal and expression of affective experiences. The empirical literature shows that different attachment styles are associated with different patterns of coping with emotions (see Fuendeling, 1998; Lopez & Brennan, 2000; Mikulincer & Shaver, 2007). Attachment security is associated with constructive/positive regulatory strategies. Secure adults are more likely than insecure ones to engage in cognitive and behavioural problem-solving (e.g., planning and taking action to address concerns), develop constructive self-soothing strategies, place negative experiences into perspective, mobilize social support, and reappraise negative events in more optimistic and hopeful terms. Conversely, avoidant individuals are more likely than secure and anxious adults to rely on distancing regulatory strategies, such as denial, cognitive and emotional avoidance, and behavioural withdrawal. Anxiously attached individuals have been shown to rely especially on emotion-focused strategies, including self-blame and rumination.

Attachment-related regulatory strategies have been examined by several investigators. In one study, Mikulincer, Florian, and Weller (1993) investigated Israeli college students’ reactions to missile attacks during the Gulf War. They found that securely attached students sought more support and experienced less post-traumatic stress symptoms than did insecurely attached students. Anxiously attached students coped with the missile attacks by using more emotion-focused strategies. In addition, they reported more post-traumatic stress than securely attached
students. They had higher levels of anxiety, depression, hostility, and somatisation when compared with secure students. Avoidant students, on the other hand, coped with the missile attacks by using more distancing coping strategies. They were found to suppress distress during the attacks, but to express it afterwards through a greater degree of hostility and somatisation. Mikulincer (1998b) found similar results in a study investigating the relationship between attachment styles and coping with a violation of trust by a partner. Using a diary methodology, he found that secure students were more likely than insecure students to deal with a violation of trust by talking with their partners. In contrast, anxious individuals tended to react with ruminative worry. Avoidant individuals tended to distance themselves from their partners.

In still another study, Ognibene and Collins (1998) had college students’ report their coping strategies regarding both a recent stressful incident, and hypothetical vignettes describing social and achievement-related stressors. Ognibene and Collins found that securely attached students were more likely to seek social support than insecurely attached students. Preoccupied students also sought social support but, unlike secure students, they tended to use escape-avoidance coping strategies. Students with fearful and dismissing attachment styles were less likely to seek social support and more likely to use distancing as a coping mechanism than individuals from other attachment groups. Similarly, Brennan and Shaver (1995) found that dismissing and anxious students are more likely to use food, sex, or alcohol to cope with negative emotions than students identified with a secure attachment. Taken together with the above-mentioned studies (e.g., Mikulincer & Orbach, 1995; Pietromanaco & Barrett Feldman, 1997), findings on adult attachment and coping demonstrate that attachment security is more closely associated with adaptive affect regulatory strategies than is attachment insecurity.
Reflection on affective experiencing and attachment. According to attachment theory, attachment patterns should also influence the way individuals process and reflect on their affective experiencing. The empirical literature shows that different attachment patterns are associated with different rules for processing and organizing information (see Fuendeling, 1998; Lopez & Brennan, 2000; Mikulincer & Shaver, 2007). As indicated in the previous sections, secure attachment is associated with cognitive exploration, flexibility, and accessibility of emotion-related information while insecure attachment is associated with cognitive rigidity and selective and/or distorted accessibility of emotion-related information.

In addition to the studies already mentioned, Buchheim and Mergenthaler (2000) found that dismissing individuals were less likely to reflect on emotional themes during the AAI when compared to secure and preoccupied individuals. In contrast, preoccupied individuals were found to score high on the ability to reflect on early emotional experiences. However, unlike secure individuals, preoccupied ones tended to use more emotionally negative words, suggesting that the experience of negative emotions juxtaposed their reflective abilities. According to the authors, preoccupied individuals gave the impression that they were reflecting adaptively on emotional experiences (due to their use of vivid and specific expressions), but in fact they were unable to integrate positive and negative emotional memories and had highly incoherent narratives. Moreover, preoccupied individuals’ heightened use of emotionally negative words signalled their potential vulnerability to the interfering and pervasive aspects of negative emotions on their cognitive abilities. Alternatively, secure individuals showed flexibility and balance in their responses to the AAI.

In a series of studies with college students, Mikulincer (1997) found that secure individuals were more tolerant of ambiguity, more curious, and more open to new information
when making social judgments than individuals with insecure attachment styles. In contrast, insecurely attached individuals tended to be uncomfortable with uncertainty and to rely on prior knowledge (to the exclusion of new information) when making social judgments. Mikulincer and Arad (1999) extended these findings by examining attachment style differences in cognitive openness within the context of close relationships. They found that when the participants’ descriptions of their partners’ behaviours were congruent with their expectations, both secure and insecure individuals did not differ in cognitive openness. However, when information regarding their partners’ behaviours was novel and incongruent with their expectations, secure individuals displayed more cognitive openness than insecure individuals. Specifically, when their partners’ behaviours were incongruent, secure individuals were more likely to revise and change their descriptions of their partners than their insecure counterparts. Altogether, insecurely attached individuals appeared to have more difficulty reflecting, processing and integrating incongruent information about themselves and their environments than securely attached individuals.

**Summary of Affect Regulation in Adult Attachment**

Despite of the different ways of measuring and reporting adult attachment, the empirical literature shows that there are consistent patterns of association between affect regulation and adult attachment styles. For the most part, securely attached individuals display predominantly adaptive affect regulation skills based upon their ability to experience, symbolize, acknowledge, and express their affective experiences openly and flexibly. Anxiously attached individuals, on the other hand, modulate their affective experiences from a perspective of vigilance and fear, limiting their affect regulation skills to heightened negative affectivity, selective and/or distorted
accessibility to affect-related information, and dysfunctional rumination. Individuals with avoidant attachment style modulate their affective experiences from a position of mistrust and self-reliance. They miss the adaptive aspects of affect regulation by blocking affective experiences from awareness, denying affective experiencing, repressing or suppressing negative emotional memories, and distancing themselves from distressing cues. One goal of the current study is to further elucidate these differences in affect regulation of individuals with different attachment styles. However, unlike most of the studies mentioned above, this study aims to investigate the relationship between affect regulation and adult attachment styles within the context of psychotherapy. Specifically, this study will use a clinical population and that population’s expressed affective experiences. The central purpose of the current study is to examine the relationships between attachment styles, affect regulation, and psychotherapy outcome. So far, this paper has only discussed affect regulation and adult attachment. In the next section, their connections to psychotherapy outcome will be considered.

Adult Attachment, Affect Regulation, and Therapy Outcome

Perhaps owing to the lack of interdisciplinary collaboration among social and clinical researchers, the link between affect regulation and adult attachment has rarely been examined in relation to psychotherapy, and in particular, psychotherapy outcome. As it will be discussed in the following sections, empirical studies have investigated associations of either affect regulation or adult attachment with therapy outcome. However, there appears to be an absence of empirical research that explicitly examines the relationships among all three variables. Recently, theoretical work has begun to extend the link between affect regulation and adult attachment to the field of psychotherapy (e.g., Johnson & Whiffen, 1999; Schore & Schore, 2008; Watson,
Goldman, Greenberg, 2007; Wallin, 2007). However, empirical work has not kept the same pace. The first goal of the current study is to address this gap by examining how attachment-related differences in affect regulation manifest in a clinical sample with depressive diagnoses. The second goal of this study is to examine whether affect regulation mediates the relationship between adult attachment and therapy outcome.

**Affect Regulation and Therapy Outcome**

Given that many forms of psychopathology are now strongly associated with deficits in affect regulation, it is not surprising that the focus on affect regulation in psychotherapy has become an essential ingredient for its success. The awareness, experience, symbolization, expression, and reflection of affective experiences are now thought to be essential for successful outcomes across many types of psychotherapy. Even psychotherapy orientations with contrasting theoretical views on the origin and importance of affect now agree that “emotional work”, including affect regulation, is a main requirement for successful therapy outcomes (Castonguay, Goldfried, Wiser, Raue, & Hayes, 1996; Coombs, Coleman, & Jones, 2002; Elliot et al., 2004; Greenberg & Pascual-Leone, 2006; Jones & Pulos, 1993; McMain, Korman, & Dimeff, 2001; Samoilov & Goldfried, 2000; Watson & Prosser, 2007; Whelton, 2004).

Empirical investigations on the cognitive-affective processes of affect regulation in therapy confirm that a robust positive relationship exists between clients’ level of affect regulation and therapy outcome. In a review of research on emotion, Whelton (2004) indicated that higher levels of affect regulation are associated with clients’ improvement in therapy. In another recent review of process and outcome research on emotion, Greenberg and Pascual-Leone (2006) concluded that the cognitive-affective processes of affect regulation are, in fact,
“predicative of positive outcomes in therapy over and above the contributions to outcome of the therapeutic alliance” (p.624). More recently, Watson and colleagues (Watson, McMullen, Prosser, & Bedard, 2009) found that clients’ level of affect regulation predicted outcome over and above the therapeutic alliance in the late stage of therapy for depression.

Several other studies have also pointed toward affect regulation as predicative of positive therapy outcome. For example, in a study which compared cognitive-behavioural and interpersonal clinicians doing brief psychotherapy, Coombs and colleagues (Coombs et al., 2002) identified two main factors that accounted for the most variance in the treatment process. These factors included collaborative emotional exploration and educative/directive therapist behaviour. They found that collaborative emotional exploration, which reflected elements of the arousal and expression component of affect regulation, was positively correlated to treatment outcome. Conversely, educative/directive therapist behaviour was not correlated to outcome. This finding was true for both interpersonal and cognitive-behavioural therapies. Coombs and colleagues also found that clients with higher levels of painful or negative affectivity were more likely to have poorer outcomes, whether in interpersonal or cognitive-behavioural therapy, than other clients. They noted that non-optimal levels of emotional exploration in therapy, or more specifically, under-modulated levels of negative affect arousal and expression in therapy was associated with worsened treatment outcome.

In another study which examined vocabulary use in psychotherapy, Holzer, Pokorny, Kachele, and Luborsky (1997) found that in more successful therapies both clients and therapists use more emotion words than in less successful therapies, demonstrating that the component of labelling in affect regulation is also correlated positively with therapy outcome. In yet another study of group therapy for clients with complicated grief, Piper and colleagues (Piper,
Ogrodniczuk, McCallum, Joyce, & Rosie, 2003) found that the balance of positive and negative affect expressed in therapy predicted successful treatment outcome. In other words, flexible affect modulation of affect expression in therapy led to clients’ improvement. Recently, Watson and Bedard (2006) compared the emotional experiencing of good and bad outcome cases in cognitive-behavioural and process-experiential psychotherapies. They found that good outcome clients in both forms of therapy engaged in deeper exploration of their feelings, referred to their emotions more frequently and reflected more on their emotions than poor outcome clients.

Taken together, these findings indicate that the cognitive-affective processes of affect regulation are crucial to successful therapy, regardless of theoretical orientation. However, given the theoretical link between affect regulation and adult attachment, the means for promoting affect regulation in therapy might depend upon its association with clients’ attachment styles. It is one goal of the current study to examine if and how the proposed theoretical link between affect regulation and adult attachment manifests in a clinical sample receiving psychotherapy for depression. To date, there is little research in terms of affect regulation and therapy outcome regarding clients receiving psychotherapy (e.g., Watson et al., 2009; Watson & Prosser, 2007). The current study seeks to address this gap.

**Adult Attachment and Therapy Outcome**

Empirical studies on the impact of adult attachment styles on therapy outcome are relatively small in number and have yielded contradictory findings (Daniel, 2006; Meyer & Pilkonis, 2001; Shorey, 2006; Slade, 2008). For example, Meyer and Colleagues (Meyer, Pilkonis, Proietti, Heape, & Egan, 2001) examined the link between attachment styles and treatment outcome in a sample of 149 patients at a psychiatric hospital. They found that secure
attachment was associated with higher levels of psychosocial functioning, whereas insecure attachment patterns were unrelated to treatment improvement. In contrast, Fonagy and colleagues (Fonagy, Leigh, Steele, Steele, Kennedy, Mattoon, et al. 1996) found among eighty-two inpatients receiving individual and group psychoanalytic therapy, that those classified as dismissive had the greatest treatment improvement compared to secure and preoccupied patients. More recently, Saatsi, Hardy, and Cahill (2007) examined the relationship between adult attachment and outcome in ninety-four clients receiving cognitive-behavioural therapy for depression. They found that secure clients had better therapy outcome than insecure clients, in particular avoidant ones. This finding was consistent with a study by Horowitz, Rosenberg, and Bartholomew (1993; cited in Saatsi, Hardy, & Cahill, 2007) which found that dismissive clients had the poorest outcome in brief dynamic psychotherapy.

The differences in treatment response reported above have been explained by the fact that different studies have used different measures of adult attachment, different measures of therapy outcome, and different client populations (Daniel, 2006; Slade, 2008). However, it has also been suggested that clients with different attachment patterns might benefit differently from different types of psychotherapy (Daniel, 2006). Indeed, some researchers have found that matching therapy modality with clients’ attachment styles might improve treatment outcome (Addis & Jacobson, 1991; McBride, Atkinson, Quilty, & Bagby, 2006; Shoham-Salomon & Hannah, 1991). For example, McBride and colleagues (2006) examined the association between the attachment dimensions of anxiety and avoidance and treatment outcome in a sample of depressed individuals receiving either interpersonal therapy or cognitive therapy for depression. They found that depressed individuals with high attachment avoidance did better with cognitive-behavioural therapy than with interpersonal therapy, suggesting that avoidant individuals might
respond more favourably to treatments that value cognition than to treatments that emphasize affective and interpersonal issues (McBride et al., 2006). This assumption, however, must be interpreted with caution because some of the above-mentioned, earlier studies (e.g., Fonagy et al., 1996) have also found support for the opposite hypothesis: That treatment types non-complimentary to the client’s attachment style lead to improved outcomes. Clearly more research is needed to elucidate these points. Nonetheless, these studies raise interesting questions concerning the connection between adult attachment styles and treatment response.

Clearer evidence regarding the effects of clients’ attachment styles on therapy outcome is seen in studies examining the associations between adult attachment styles and the therapeutic process. The vast majority of studies on attachment and psychotherapy have examined the relationship between clients’ attachment styles and the formation of the therapeutic alliance (e.g., Eames & Roth, 2000; Mallinckrodt, Coble, et al., 1995; Mallinckrodt, Porter, & Kivlighan, 2005; Parish & Eagle, 2003; Satterfield & Lydond, 1995, 1998), which in itself is one of the most potent predictors of therapy outcome (Horvath & Bedi, 2002). For the most part, these studies have demonstrated that clients with insecure attachment styles tend to report weaker alliances and more problems establishing a bond with their therapists than securely attached clients. Conversely, other studies have examined the connection between clients’ attachment styles and clients’ in-session behaviours (e.g., Dozier, 1990; Lopez, Melendez, Sauer, Berger, & Wyssmann, 1998). Findings from these studies have shown that clients with avoidant attachment style are more likely to reject treatment, less likely to self-disclose and less likely to seek help than anxiously attached and securely attached clients.

Overall, these studies indicate that clients’ attachment styles play an important role in the outcome of psychotherapy, either directly, or through the formation of the therapeutic alliance
and clients’ in-treatment behaviours. However, missing from this body of empirical work is an examination of whether clients’ attachment styles impact therapy outcome through clients’ level of affect regulation. It is thus another purpose of this study to examine whether affect regulation mediates the relationship between adult attachment and therapy outcome.

**Summary of Adult Attachment, Affect Regulation, and Therapy Outcome**

Research on affective-cognitive processes in psychotherapy has developed to show that higher levels of affect regulation in therapy are associated with better outcomes across different therapeutic modalities. Alternatively, research on adult attachment and psychotherapy has demonstrated that insecure attachment patterns are associated with poorer therapy outcomes. Despite the strong importance of both affect regulation and adult attachment in psychotherapy, there appears to be an absence of empirical research that explicitly examines the relationships between adult attachment, affect regulation, and therapy outcome. The current study seeks to address this gap by: (a) empirically examining how attachment-related differences in affect regulation manifest in a clinical sample receiving psychotherapy for depression and (b) by examining whether clients’ affect regulation mediates the relationship between adult attachment and therapy outcome.

**The Current Study**

**Purpose and Research questions**

The purpose of this study is to examine the relationships among adult attachment styles, affect regulation, and therapy outcome in a clinical sample receiving treatment for depression. The first research question in this study involves the relationship between affect regulation and
attachment styles: do clients’ attachment styles accompany their level of affect regulation at different stages of therapy? The second research question involves the relationship between the cognitive-affective processes of affect regulation and attachment styles: are there differences in the cognitive-affective processes of affect regulation with respect to different attachment styles? Finally, the third research question involves the extent to which clients’ affect regulation mediates the relationship between attachment and therapy outcome: do clients’ levels of affect regulation late in therapy account for the association between their attachment style at the beginning of therapy and outcome?

**Hypotheses**

**Hypothesis for Research Question 1**: Securely attached clients will exhibit higher levels of affect regulation as compared to insecurely attached clients. This association will hold true both at early and late stages of treatment.

**Hypothesis for Research Question 2**: Exploratory analysis; no hypotheses are specified.

**Hypothesis for Research Question 3**: Clients’ level of affect regulation late in therapy will partially mediate the relationship between their pre-treatment attachment style and outcome.
CHAPTER 2:

Method

Clients

The sample consisted of 66 clients, 44 women and 22 men, who participated in a 16-week treatment study for depression (Watson, Gordon, Stermac, Kalogerakos & Steckley, 2003). Clients ranged in age between 21 and 65 years ($M = 41.52, SD = 10.82$) and were predominantly Caucasian (91%). Twenty-eight (42.5%) clients were married or living common law, another 28 (42.5%) were single, 9 (13.6%) were separated or divorced, and 1 (1.5%) was widowed. With respect to education levels, 16 (24.2%) had completed secondary school, 37 (56.1%) had completed postsecondary schooling or college, and 13 (19.7%) had completed graduate school. All clients were diagnosed with major depression according to the Diagnostic and Statistical Manual of Mental Disorders (fourth edition [DSM-IV]; American Psychiatric Association, 1994) criteria. Clients were excluded from the study if they were currently on medication or in another form of treatment; not fluent in English; at high risk for suicide; or if they were currently or previously diagnosed with an Axis I disorder of substance abuse, schizophrenia, bipolar depression, or eating disorder, or an Axis II disorder of borderline, antisocial, or schizotypal personality disorder (Watson et al., 2003).

Therapists

There were 15 therapists in the study, 12 women and 3 men (Watson et al., 2003). Eight of these therapists practiced cognitive-behavioural therapy (CBT) and seven practiced process-experiential therapy (PET). Therapists ranged in age from 26 to 43 years ($M = 32.73, SD = 6.08$). All therapists had previous clinical experience ranging from 1 to 15 years ($M = 5.23, SD = 4.74$).
Two were psychologists and the other 13 were doctoral candidates in counselling psychology (Watson et al., 2003). The therapists were trained by an expert in each modality according to the manuals for CBT (Beck, Shaw, & Emery, 1979) and PET (Greenberg, Rice, & Elliot, 1993; Greenberg & Watson, 1998).

**Treatment**

**Cognitive-Behavioural Therapy (CBT)**

The CBT protocol was conducted according to the cognitive therapy treatment outlined by Beck et al. (1979) for the treatment of depression. The treatment was primarily a cognitive therapy with some behavioural components, such as the recording of daily activities and behavioural experiments. Treatment involved the identification and changing of maladaptive thoughts, processes, and schemata through the use of Socratic questioning, the generation of alternative and balanced thoughts, and the reevaluation of thoughts and beliefs in light of new experiences.

**Process-Experiential Therapy (PET)**

The PET protocol was conducted in accordance with the guidelines specified by Greenberg, Rice, and Elliot (1993) and Greenberg and Watson (1998). The treatment integrated the client-centered elements of empathy, warmth, unconditional positive regard, and genuineness with gestalt techniques, including, two-chair dialogues for self-evaluative and self-interruptive splits, empty chair work for unfinished business, experiential focusing for an unclear felt sense, and systematic evocative unfolding at a marker of a problematic reaction point.
Measures

Attachment Measure

Attachment Style Questionnaire (ASQ; Feeney, Noller, & Hanrahan, 1994). The ASQ is a 40-item self-report questionnaire that assesses current attachment styles using a 6-point Likert scale ranging from 1 (totally disagree) to 6 (totally agree). The ASQ is scored as five subscales, one of which measures secure attachment, Confidence in Relationships; two of which measure aspects of avoidant attachment, Discomfort with Closeness and Relationship as Secondary; and two of which measure aspects of anxious attachment, Preoccupation in Relationships and Need for Approval. This instrument offers a multidimensional view of attachment in that each individual is given a score for each of the five attachment dimensions rather than being categorized into one attachment style (Brennan, Clark, & Shaver, 1998). The five scales of the ASQ have been shown to have adequate internal consistency, with alpha coefficients ranging from .76 to .84, and 10-week test-retest reliability coefficients ranging from .67 to .78 (Feeney et al., 1994).

Affect Regulation Measure

Observer-rated Measure of Affect Regulation (O-MAR; Watson & Prosser, 2004). The O-MAR is an observer-rated measure that assesses clients on a number of dimensions of affect regulation. It was based on the theoretical and empirical literature related to affect regulation and emotional processing. The measure consists of five subscales rated on a 7-point Likert scale, with “1” corresponding to the lowest level of functioning on that particular scale, and “7” corresponding to the highest level of functioning. The five subscales are: Awareness/Labelling, Modulation of Arousal, Modulation of Expression, Acceptance (of
experience), and Reflective (of experience). Using the same data set as described for the current study, but for only 50 of the 66 clients, Prosser and Watson (2007) report high internal consistency for both early O-MAR \((r = .86)\) and late O-MAR \((r = .93)\). Preliminary evidence of this measure’s construct validity has been demonstrated through its correlations with the Problem-Focused Styles of Coping (PF-SOC) subscales (Prosser & Watson, 2007). Preliminary evidence for predictive validity has also been shown through its correlations with outcome measures (Prosser & Watson, 2007).

**Outcome Measures**

**Beck Depression Inventory** (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961). The BDI is a 21-item inventory that assesses symptoms of depression. Studies have reported high internal consistency and test-retest reliability, with alpha coefficients ranging from .73 to .95 and test-retest reliability coefficients ranging from .48 to .86 (Beck, Steer, & Garbin, 1988).

**Dysfunctional Attitude Scale** (DAS; Weissman & Beck, 1978). The DAS is a 40-item inventory of dysfunctional attitudes used to measure vulnerability to depression. Internal consistency for the DAS is high, with coefficients ranging from .79 to .93 (Oliver & Boumgart, 1985). High test-retest reliability has also been reported, with coefficients ranging from .73 and .84 across 6 to 8 weeks (Oliver & Boumbargt, 1985).

**Inventory of Interpersonal Problems** (IIP; Horowitz, Rosenberg, Baer, Ureño, & Villaseñor, 1988). The IIP is a 127-item self-report instrument designed to measure distress
arising from interpersonal sources. Internal consistency for the IIP has been reported to be in the range of .82 to .94, and 10-week test–retest reliability in the range of .80 to .90 (Horowitz et al., 1988).

**Rosenberg Self-Esteem Inventory (RSE; Rosenberg, 1965).** A 10-item version of the RSE scale (Bachman, & O’Malley, 1977) was used to assess clients’ levels of self-esteem. This instrument has shown good internal consistency and validity. Excellent internal reliability (.89 - .94) and test–retest reliability (.80 - .90) and adequate sensitivity to change have been reported.

**Procedures**

The procedure followed with regard to participants’ consent, assessment, and assignment to therapy groups is outlined in Watson et al. (2003). Clients filled out the measure for adult attachment (i.e., ASQ) and measures for outcome (i.e., BDI, DAS, IIP, and RSE) at pre-treatment and post-treatment. Ratings on the O-MAR were completed prior to the current study and were based on clients’ descriptions of their current functioning as well as in-session cognitive-affective processes. Videotaped segments for one early therapy session (session 1 or 2) and one late therapy session (session 15 or 16) were selected to measure clients’ affect regulation. These segments consisted of the middle 20 minutes of each session. If a significant portion of the session (i.e., greater than 5 minutes) was spent discussing the therapy model, an alternative segment of the session or an alternative session was rated. The sequence in which these segments were rated was randomized. Pairs of raters were trained to a high level of reliability; $r = .87, p < .01$ (Prosser & Watson, 2007).
CHAPTER 3:

Results

Preliminary Data Analyses

Prior to analyses, SPSS 18.0 was used to screen all variables for accuracy of data entry, missing values, and to test for univariate normality. No outliers, defined as scores more than three standard deviations above the mean, were detected among any of the variables. However, distributions for the Early O-MAR variable, Late O-MAR Acceptance subscale, and the post-BDI variable significantly differed from normal ($p < .05$). These variables were transformed using square root transformations and analyses were conducted on both the original and the transformed scores. Parametric and nonparametric analyses were also performed. These results did not differ in any meaningful way. Therefore, for ease of interpretation, original data and results of parametric analyses using original data are reported. The missing data across all variables ranged from 3% to 11% and these missing cases were excluded from the analyses.

Reliability of the Affect Regulation Measure

To determine the reliability of the Observer-rated Measure of Affect Regulation (O-MAR) with the 66 clients included in the current study, analysis of the internal consistency of the measure was performed through the computation of the Cronbach’s alpha coefficients. Results indicate that the O-MAR had high internal consistency (Early O-MAR = .85; Late O-MAR = .92). Inter-item correlations for the subscales of the O-MAR ranged from $r = .36$ to $r = .86$ and are summarized in Table 1.
Table 1

*Internal Consistency Reliability Analyses for O-MAR Subscales*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Inter-total Correlations Early O-MAR</th>
<th>Inter-total Correlations Late O-MAR</th>
<th>Range of Inter-item Correlations Early O-MAR</th>
<th>Range of Inter-item Correlations Late O-MAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Awareness/Labelling</td>
<td>.68</td>
<td>.60</td>
<td>.37 - .78</td>
<td>.36 - .70</td>
</tr>
<tr>
<td>Modulation of Arousal</td>
<td>.61</td>
<td>.75</td>
<td>.38 - .61</td>
<td>.36 - .82</td>
</tr>
<tr>
<td>Modulation of Expression</td>
<td>.56</td>
<td>.86</td>
<td>.37 - .58</td>
<td>.51 - .82</td>
</tr>
<tr>
<td>Acceptance of Experience</td>
<td>.76</td>
<td>.92</td>
<td>.57 - .65</td>
<td>.63 - .86</td>
</tr>
<tr>
<td>Reflective of Experience</td>
<td>.76</td>
<td>.85</td>
<td>.40 - .78</td>
<td>.66 - .82</td>
</tr>
</tbody>
</table>

**Analysis Addressing Research Question 1**

The first research question examined the relationships between clients’ scores on measures of attachment style and affect regulation. It was hypothesized that attachment security would be correlated with higher levels of affect regulation whereas attachment insecurity would be associated with lower levels of affect regulation, both at early and late stages of psychotherapy for depression.

**Attachment Style and Affect Regulation Early in Therapy.** Pearson’s correlations were calculated to examine the relationships between clients’ attachment styles and their levels of affect regulation early in therapy. Table 2 presents the means, standard deviations, and correlations between the different attachment subscales and Early O-MAR total score. Contrary to expectation, no significant correlations were found between pre-treatment attachment scores and early affect regulation. This lack of correlations is likely due to the restricted range of the Early O-MAR variable (see descriptive statistics below) which attenuated the correlation coefficients between Early O-MAR total score and pre-treatment attachment styles.
Table 2

Means, Standard Deviations, and Correlations Between Attachment Styles at the Beginning of Therapy and Early Affect Regulation

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
<th>SD</th>
<th>Early O-MAR Total Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early O-MAR</td>
<td>3.01</td>
<td>.98</td>
<td>-</td>
</tr>
<tr>
<td>Pre-ASQ Confidence</td>
<td>3.42</td>
<td>.98</td>
<td>.08</td>
</tr>
<tr>
<td>Pre-ASQ Discomfort with Closeness</td>
<td>4.23</td>
<td>.83</td>
<td>-.01</td>
</tr>
<tr>
<td>Pre-ASQ Relationship as Secondary</td>
<td>2.67</td>
<td>.71</td>
<td>-.15</td>
</tr>
<tr>
<td>Pre-ASQ Need for Approval</td>
<td>3.90</td>
<td>1.08</td>
<td>-.07</td>
</tr>
<tr>
<td>Pre-ASQ Preoccupation with Relationships</td>
<td>3.89</td>
<td>.77</td>
<td>.21</td>
</tr>
</tbody>
</table>

Note. Early O-MAR = Observer-rated Measure of Affect Regulation measured early in therapy; Pre-ASQ = Attachment Style Questionnaire measured at pre-treatment.

* $p < .05$

Attachment Style and Affect Regulation Late in Therapy. Pearson’s correlations were also computed to examine the relationships between clients’ attachment styles and their levels of affect regulation late in therapy. Table 3 presents the means, standard deviations, and correlations between the different attachment subscales and Late O-MAR total score. As expected, Late O-MAR was moderately and positively correlated with Post-ASQ Confidence ($r = .44, p < .01$). Conversely, Late O-MAR was moderately and negatively correlated with Post-ASQ Relationship as Secondary ($r = -.30, p < .05$) and Post-ASQ Need for Approval ($r = -.43, p < .01$). No significant correlations were found between Late O-MAR total score and Post-ASQ Discomfort with Closeness and Post-ASQ Preoccupation with Relationships.
Table 3

Means, Standard Deviations, and Correlations Between Late Affect Regulation and Attachment Styles at the End of Therapy

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
<th>SD</th>
<th>Late O-MAR Total Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Late O-MAR</td>
<td>4.26</td>
<td>1.25</td>
<td></td>
</tr>
<tr>
<td>Post-ASQ Confidence</td>
<td>3.92</td>
<td>.93</td>
<td>.44**</td>
</tr>
<tr>
<td>Post-ASQ Discomfort with Closeness</td>
<td>3.96</td>
<td>.90</td>
<td>-.19</td>
</tr>
<tr>
<td>Post-ASQ Relationship as Secondary</td>
<td>2.37</td>
<td>.66</td>
<td>-.30*</td>
</tr>
<tr>
<td>Post-ASQ Need for Approval</td>
<td>3.46</td>
<td>1.04</td>
<td>-.43**</td>
</tr>
<tr>
<td>Post-ASQ Preoccupation with Relationships</td>
<td>3.56</td>
<td>.87</td>
<td>-.19</td>
</tr>
</tbody>
</table>

Note. Late O-MAR = Observer-rated Measure of Affect Regulation measured late in therapy; Post-ASQ = Attachment Style Questionnaire measured at post-treatment.
*p < .05
**p < .01

Analysis Addressing Research Question 2

The second research question investigated the differences between the different attachment subscales in terms of the different processes involved in affect regulation. It was intended to examine whether the internal cognitive-affective mechanisms of affect regulation could differentiate clients in therapy in terms of their attachment style, both at early and late stages of therapy.

Attachment Style and Cognitive-affective Processes of Affect Regulation Early in Therapy. Pearson’s correlations were computed among clients’ pre-treatment attachment scores and the five subscales of early affect regulation (i.e., Early Awareness/Labelling, Early Modulation of Arousal, Early Modulation of Expression, Early Acceptance, and Early Reflective). The results of the correlational analysis, along with means and standard deviations of the Early O-MAR subscales can be found in Table 4.
Table 4
Means, Standard Deviations, and Correlations Among Attachment Styles at the Beginning of Therapy and Early Affect Regulation Processes

<table>
<thead>
<tr>
<th>Variable</th>
<th>Early Awareness/Labelling</th>
<th>Early Modulation of Arousal</th>
<th>Early Modulation of Expression</th>
<th>Early Acceptance</th>
<th>Early Reflective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-ASQ Confidence</td>
<td>-.15</td>
<td>.31*</td>
<td>.33**</td>
<td>.01</td>
<td>-.11</td>
</tr>
<tr>
<td>Pre-ASQ Discomfort with Closeness</td>
<td>.21</td>
<td>-.24</td>
<td>-.33**</td>
<td>.00</td>
<td>.20</td>
</tr>
<tr>
<td>Pre-ASQ Relationship as Secondary</td>
<td>-.18</td>
<td>-.10</td>
<td>-.07</td>
<td>-.05</td>
<td>-.23</td>
</tr>
<tr>
<td>Pre-ASQ Need for Approval</td>
<td>.18</td>
<td>-.23</td>
<td>-.17</td>
<td>-.08</td>
<td>.09</td>
</tr>
<tr>
<td>Pre-ASQ Preoccupation with Relationships</td>
<td>.29*</td>
<td>.15</td>
<td>-.04</td>
<td>.21</td>
<td>.29*</td>
</tr>
<tr>
<td>M</td>
<td>4.05</td>
<td>2.44</td>
<td>2.64</td>
<td>2.72</td>
<td>3.04</td>
</tr>
<tr>
<td>SD</td>
<td>1.31</td>
<td>.88</td>
<td>.84</td>
<td>1.03</td>
<td>1.11</td>
</tr>
</tbody>
</table>

*p < .05  
**p < .01

The Pre-ASQ Confidence attachment subscale was moderately and positively related to Early Modulation of Arousal \((r = .31, p < .05)\) and to Early Modulation of Expression \((r = .33, p = .01)\). Pre-ASQ Discomfort with Closeness was moderately and negatively correlated with Early Modulation of Expression \((r = -.33, p = .01)\) and a trend was observed between this attachment subscale and Early Modulation of Arousal \((r = -.24, p = .07)\). Pre-ASQ Preoccupation with Relationships was moderately and positively related to Early Awareness/Labelling \((r = .29, p < .05)\) and Early Reflective \((r = .29, p < .05)\). There was also a trend for Pre-ASQ Need for Approval to correlate negatively with scores on Early Modulation of Arousal \((r = -.23, p = .08)\).

**Attachment Style and Cognitive-affective Processes of Affect Regulation Late in Therapy.** Correlation coefficients were also computed among clients’ post-treatment attachment scores and the five subscales of late affect regulation. Table 5 presents the correlations among these variables, in addition to the means and standard deviation of Late O-MAR subscales.
Table 5  
Means, Standard Deviations, and Correlations Among Late Affect Regulation Processes and Attachment Styles at the End of Therapy

<table>
<thead>
<tr>
<th>Variable</th>
<th>Late Awareness/Labelling</th>
<th>Late Modulation of Arousal</th>
<th>Late Modulation of Expression</th>
<th>Late Acceptance</th>
<th>Late Reflective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-ASQ Confidence</td>
<td>.26*</td>
<td>.45**</td>
<td>.48**</td>
<td>.41**</td>
<td>.25*</td>
</tr>
<tr>
<td>Post-ASQ Discomfort with Closeness</td>
<td>-.01</td>
<td>-.29*</td>
<td>-.25*</td>
<td>-.21</td>
<td>-.03</td>
</tr>
<tr>
<td>Post-ASQ Relationship as Secondary</td>
<td>-.29*</td>
<td>-.21</td>
<td>-.30*</td>
<td>-.30*</td>
<td>-.18</td>
</tr>
<tr>
<td>Post-ASQ Need for Approval</td>
<td>-.16</td>
<td>-.57**</td>
<td>-.39**</td>
<td>-.43**</td>
<td>-.28*</td>
</tr>
<tr>
<td>Post-ASQ Preoccupation with Relationships</td>
<td>-.01</td>
<td>-.25</td>
<td>-.24</td>
<td>-.16</td>
<td>-.17</td>
</tr>
<tr>
<td>M</td>
<td>4.55</td>
<td>4.21</td>
<td>3.93</td>
<td>4.05</td>
<td>4.66</td>
</tr>
<tr>
<td>SD</td>
<td>1.35</td>
<td>1.47</td>
<td>1.46</td>
<td>1.50</td>
<td>1.46</td>
</tr>
</tbody>
</table>

*p < .05  
**p < .01

The Post-ASQ Confidence attachment subscale was moderately and positively related to Late Awareness/Labelling ($r = .26, p < .05$), Late Modulation of Arousal ($r = .45, p < .01$), Late Modulation of Expression ($r = .48, p < .01$), Late Acceptance ($r = .41, p < .01$), and Late Reflective ($r = .25, p < .05$). Post-ASQ Discomfort with Closeness was moderately and negatively correlated with Late Modulation of Arousal ($r = -.29, p < .05$) and Late Modulation of Expression ($r = -.25, p < .05$). Post-ASQ Relationship as Secondary was moderately and negatively related to Late Awareness/Labelling ($r = -.29, p < .05$), Late Modulation of Expression ($r = -.30, p < .05$), and Late Acceptance ($r = -.30, p < .05$). Post-ASQ Need for Approval was strongly and negatively related to Late Modulation of Arousal ($r = -.57, p < .01$), Late Modulation of Expression ($r = -.39, p < .01$), Late Acceptance ($r = -.43, p < .01$), and Late Reflective ($r = -.28, p < .05$). Post-ASQ Preoccupation with Relationships did not correlate with any of the late O-MAR subscales. However, there was a trend for Post-ASQ Preoccupation with Relationships to correlate negatively with Late Modulation of Arousal ($r = -.25, p = .05$) and Late Modulation of Expression ($r = -.24, p = .06$).
Analysis Addressing Research Question 3

The third research question involved examining the relationship between attachment styles, affect regulation, and therapy outcome. It was intended to investigate whether late affect regulation could account, in part, for the relationship between pre-treatment attachment style and therapy outcome. To test for mediation, four conditions, as proposed by Baron and Kenny (1986), should be met: First, pre-treatment attachment style should be significantly associated with therapy outcome; second, pre-treatment attachment style should be associated with late affect regulation; third, late affect regulation should be significantly associated with therapy outcome; and fourth, controlling for late affect regulation, the association between pre-treatment attachment style and therapy outcome should be reduced or no longer significant. Sobel test (Sobel, 1990) was used to determine whether the indirect path from pre-treatment attachment style to therapy outcome via late affect regulation was significant. The conditions proposed by Baron and Kenny and the use of the Sobel test are well established and widely used. Furthermore, a series of linear regression analyses and Sobel tests were used to individually test the associations between pre-treatment attachment styles, late affect regulation, and outcome measures. Figure 3 illustrates Baron and Kenny’s approach using the current study’s variables.

Figure 3. Mediation Model.
The first condition for mediation states that the independent variable should predict the dependent variable. The independent variable was pre-treatment attachment style as measured by each of the five pre-treatment attachment styles. The dependent variable was therapy outcome as measured by each outcome measure. Results of regression analyses indicated that Pre-ASQ Confidence scores were significantly related to outcome using clients’ BDI scores, $\beta = -.27, p < .05$; DAS scores, $\beta = -.43, p < .01$; IIP scores, $\beta = -.44, p < .01$; and their RSE scores, $\beta = .55, p < .01$. Similarly, Pre-ASQ Discomfort with Closeness scores were significantly related to clients’ BDI scores, $\beta = .37, p < .01$; DAS scores, $\beta = .39, p < .01$; IIP scores, $\beta = .45, p < .01$; and their RSE scores, $\beta = -.44, p < .01$. Furthermore, Pre-ASQ Need for Approval was significantly related to clients’ BDI scores, $\beta = .38, p < .01$; DAS scores, $\beta = .50, p < .01$; IIP scores, $\beta = .50, p < .01$; and their RSE scores, $\beta = -.54, p < .01$. Pre-ASQ Relationship as Secondary and Preoccupation with Relationships scales did not predict therapy outcome, albeit the relationship between Pre-ASQ Preoccupation with Relationships and clients’ DAS scores approached significance, $\beta = .25, p = .06$. Overall, these results indicated that the first condition for establishing mediation was met for Pre-ASQ Confidence, Pre-ASQ Discomfort with Closeness, and Pre-ASQ Need for Approval attachment subscales. The other attachment styles were not found to be associated with therapy outcome and were therefore excluded from subsequent analyses. The correlations among pre-treatment attachment styles, late affect regulation total score, and the four outcome measures used in this study are presented in Table 6.
Table 6

Means, Standard Deviations, and Correlations Among Attachment Styles at the Beginning of Therapy, Late Affect Regulation, and Outcome Measures

<table>
<thead>
<tr>
<th>Variable</th>
<th>Post-BDI</th>
<th>Post-DAS</th>
<th>Post-IIP</th>
<th>Post-RSE</th>
<th>Late O-MAR Total Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-ASQ Confidence</td>
<td>-.27*</td>
<td>-.43**</td>
<td>-.44**</td>
<td>.55**</td>
<td>.24</td>
</tr>
<tr>
<td>Pre-ASQ Discomfort with Closeness</td>
<td>.37**</td>
<td>.39**</td>
<td>.45**</td>
<td>-.44**</td>
<td>-.11</td>
</tr>
<tr>
<td>Pre-ASQ Relationship as Secondary</td>
<td>-.08</td>
<td>.23</td>
<td>.13</td>
<td>-.13</td>
<td>.06</td>
</tr>
<tr>
<td>Pre-ASQ Need for Approval</td>
<td>.38**</td>
<td>.50**</td>
<td>.50**</td>
<td>-.54**</td>
<td>-.19</td>
</tr>
<tr>
<td>Pre-ASQ Preoccupation with Relationships</td>
<td>.14</td>
<td>.25</td>
<td>.21</td>
<td>-.11</td>
<td>-</td>
</tr>
<tr>
<td>Late O-MAR</td>
<td>-.50**</td>
<td>-.47**</td>
<td>-.39**</td>
<td>.54**</td>
<td>-</td>
</tr>
<tr>
<td>M</td>
<td>2.67</td>
<td>120.37</td>
<td>1.10</td>
<td>37.27</td>
<td>4.26</td>
</tr>
<tr>
<td>SD</td>
<td>1.59</td>
<td>35.30</td>
<td>.53</td>
<td>7.31</td>
<td>1.25</td>
</tr>
</tbody>
</table>

Note. Post-BDI = Beck Depression Inventory measured at post therapy; Post-DAS = Dysfunctional Attitudes Scales measured at post therapy; Post-IIP = Inventory of Interpersonal Problems measured at post therapy; Post-RSE = Rosenberg Self Esteem Scales measured at post therapy; Late O-MAR = Observer-rated Measure of Affect Regulation measured late in therapy.

The second condition for mediation requires that the independent variable predict the mediator. The mediator in this case was clients’ late affect regulation total score. Regression analysis indicated that none of the attachment styles retained from previous analyses were significantly related to Late O-MAR total score. In fact, no pre-treatment attachment style was significantly related to Late O-MAR total score. Only a positive trend was found for the relationship between Pre-ASQ Confidence and Late O-MAR, $\beta = .24, p = .07$. According to Baron and Kenny (1986) and as mentioned above, two conditions must hold to establish mediation: First, the independent variable must affect the dependent variable; second, the independent variable must affect the mediator. Given that no attachment scale was shown to be significantly related to both outcome and late affect regulation, the mediation model could not be tested with Late O-MAR total score. As such, subsequent analyses were performed using Late O-MAR subscales as mediator variables.
The results indicated that Pre-ASQ Discomfort with Closeness was not related to any of the Late O-MAR subscales. However, Pre-ASQ Confidence was significantly related to Late Modulation of Expression, $\beta = .30$, $p < .05$, and marginally related to Late Acceptance, $\beta = .23$, $p = .07$. In addition, Pre-ASQ Need for Approval was significantly related to Late Modulation of Arousal, $\beta = -.28$, $p < .05$, and marginally related to Late Acceptance, $\beta = -.23$, $p = .08$. The second condition for establishing mediation was thus met for Pre-ASQ Confidence and Pre-ASQ Need for Approval attachment subscales as well as Late Modulation of Expression and Late Modulation of Arousal affect regulation processes.

Next, in accordance with the third condition for establishing mediation, this study examined whether late affect regulation subscales were associated with outcome measures. The results, shown in Table 7, indicated that Late O-MAR subscales were related to nearly all outcome measures, with the exception of the Late Awareness/Labelling subscale, which was not related to BDI and IIP scores, and the Late Reflective subscale, which was not significantly related to IIP scores. Overall, the third condition for establishing mediation was also met.

<table>
<thead>
<tr>
<th>O-MAR Subscales</th>
<th>Post-BDI</th>
<th>Post-DAS</th>
<th>Post-IIP</th>
<th>Post-RSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Awareness/Labelling</td>
<td>-.16</td>
<td>-.29*</td>
<td>-.10</td>
<td>.25*</td>
</tr>
<tr>
<td>Modulation of Arousal</td>
<td>-.65**</td>
<td>-.51**</td>
<td>-.54**</td>
<td>.59**</td>
</tr>
<tr>
<td>Modulation of Expression</td>
<td>-.59**</td>
<td>-.43**</td>
<td>-.43**</td>
<td>.55**</td>
</tr>
<tr>
<td>Acceptance</td>
<td>-.53**</td>
<td>-.43**</td>
<td>-.38**</td>
<td>.52**</td>
</tr>
<tr>
<td>Reflective</td>
<td>-.39**</td>
<td>-.33**</td>
<td>-.21</td>
<td>.38**</td>
</tr>
</tbody>
</table>

*p < .05  
** p < .01
Following the fourth condition for establishing mediation, multiple regression analyses were performed in which the dependent variable was regressed on both the independent and mediator variables. For mediation to hold, the effect of the mediator variable should remain significant, with the effect of the independent variable weakening due to the presence of the mediator in the equation. The results indicated that this final step was also met. The strength of the association between Pre-ASQ Confidence and outcome measures decreased when Late Modulation of Expression was included as mediator in the equation (see Figure 4). Similarly, the beta coefficients of the associations between Pre-ASQ Need for Approval and outcome measures decreased when Late Modulation of Arousal was entered into the regression model (see Figure 5). Sobel tests confirmed these findings and indicated that indirect paths from Pre-ASQ Confidence to the outcome measures via Late Modulation of Expression, and from Pre-ASQ Need for Approval to the outcome measures via Late Modulation of Arousal were significant ($p < .05$; see Figures 4 and 5).

When controlling for Late Modulation of Expression, the beta coefficient of Pre-ASQ Confidence decreased, but remained significant for predicting clients’ DAS scores, $\beta = -.33, p < .01$; IIP scores, $\beta = -.36, p < .01$; and RSE scores, $\beta = .45, p < .01$. These findings suggest that the associations between Pre-ASQ Confidence and these three outcome measures were partially mediated by Late Modulation of Expression. In contrast, the beta coefficient of Pre-ASQ Confidence for predicting depression was no longer significant when Late Modulation of Expression was controlled for, $\beta = -.13, p = .29$. This finding suggests that the association between Pre-ASQ Confidence and clients’ BDI scores was fully mediated by Late Modulation of Expression. Both Pre-ASQ Confidence and Late Modulation of Expression explained 29%, 31%, 28%, and 46%, respectively, of the variance in clients’ BDI, DAS, IIP, and RSE scores.
Similarly, when Late Modulation of Arousal was entered into the regression models, the beta coefficients of Pre-ASQ Need for Approval decreased, but remained significant for predicting clients’ BDI scores, $\beta = .22, p < .05$; DAS scores, $\beta = .38, p < .01$; IIP scores, $\beta = .38, p < .01$; and their RSE scores, $\beta = -.42, p < .01$. As such, the relationship between Pre-ASQ Need for Approval and outcome scores were partially mediated by Late Modulation of Arousal. Both Pre-ASQ Need for Approval and Late Modulation of Arousal explained 44%, 42%, 43%, and 47%, respectively, of the variance in clients’ BDI, DAS, IIP, and RSE scores.
Figure 4. Mediation analyses for Pre-ASQ Confidence and outcomes measures

Sobel test: $z = -2.14, p < .05$

Sobel test: $z = -1.97, p < .05$

Sobel test: $z = -1.98, p < .05$

Sobel test: $z = 2.12, p < .05$

* $p < .05$

** $p < .01$
Figure 5. Mediation analyses for Pre-ASQ Need for Approval and outcomes measures

Sobel test: $z = 2.08, p < .05$

Sobel test: $z = 1.97, p < .05$

Sobel test: $z = 2.00, p < .05$

Sobel test: $z = -2.04, p < .05$

*p < .05
**p < .01
CHAPTER 4: Discussion

The central purpose of the current study was to empirically examine the relationships between attachment style, affect regulation, and psychotherapy outcome in a clinical sample with depressive diagnoses. Three research questions were posed. The first research question was concerned with the relationships between clients’ attachment styles and clients’ level of affect regulation at the early and late stages of psychotherapy. The second research question explored differences in the internal cognitive-affective mechanisms of clients’ affect regulation with respect to their different attachment styles. Lastly, the third research question examined the extent to which clients’ level of affect regulation late in therapy mediated the relationship between clients’ attachment styles at the beginning of therapy and psychotherapy outcome.

To answer these questions, an archival data set with sixty-six clients receiving psychotherapy for depression was used. Adult attachment style was assessed with a self-report attachment measure that emphasizes feelings and behaviours in. Clients’ level of affect regulation in early and late therapy sessions was assessed with an observer-rated measure of affect regulation based on an integrative and clinically relevant model of affect regulation (i.e., Watson and colleagues process model of affect regulation; Elliot, Watson, Goldman, & Greenberg, 2004; Kennedy-Moore & Watson, 1999; Watson & Prosser, 2004. Overall, the purpose of the current study was to increase knowledge about the relationship between attachment styles and affect regulation in a clinical sample as well as provide information for improving clinical interventions that bring about positive changes in therapy.
Interpretation of Results

The interpretation of findings is presented below according to each research question asked. Findings are discussed in relation to the current literature and the theoretical framework used in this study.

Research Question 1

Drawing from the extensive literature on the relationship between affect regulation and attachment, the current study hypothesized that clients’ levels of affect regulation would accompany their attachment styles, such that more securely attached clients’ would display higher levels of affect regulation and more insecurely attached clients’ would display lower levels of affect regulation. This corresponding pattern in the relationship between clients’ attachment styles and level of affect regulation was hypothesized to operate both at the early and late stages of psychotherapy.

Contrary to expectation, no significant associations were found between pre-treatment attachment styles and early affect regulation overall score. An interesting trend, however, was observed for Pre-ASQ Preoccupation with Relationships to be positively related to Early O-MAR. This finding is quite surprising given that the sample included only depressed clients and depression has been associated elsewhere with deficits in affect regulation (Aldao, Nolen-Hoeksema, & Schweizer, 2010; Berking et al., 2008; Gross & Munoz, 1995; Mennin, Holoway, Fresco, Moore, & Heimberg, 2007). It is possible that preoccupied clients’ strong need for closeness and fear of abandonment in relationships have prompted them to expend greater energy regulating their negative affective experiences in early therapy sessions, which gave the impression that they possessed higher levels of overall affect regulation at the beginning of
therapy. This association between Pre-ASQ Preoccupation with Relationships and early affect regulation is discussed in more detail in the next section as part of findings organized by the cognitive-affective processes involved in affect regulation (research question 2).

Expected associations among attachment styles and levels of affect regulation were found at post-treatment. Attachment security, as indicated by Post-ASQ Confidence, was related to higher levels of late affect regulation. In addition, Post-ASQ Relationship as Secondary and Post-ASQ Need for Approval (both indicative of insecure attachment) were significantly and negatively related to late affect regulation, demonstrating that attachment insecurity was associated with lower levels of affect regulation late in therapy.

With respect to attachment avoidance, it is noteworthy that low levels of late affect regulation were related to the Post-ASQ Relationship as Secondary scale but not to the Post-Discomfort with Closeness scale. This suggests that poor overall affect regulation late in therapy was related to clients’ disregard to relationships but not necessarily to their tendency toward self-reliance and discomfort with others. Similarly, when attachment anxiety is considered, it is noteworthy that low levels of late affect regulation were related to the Post-ASQ Need for Approval scale but not to the Post-ASQ Preoccupied with Relationships scale. It seems that poor overall affect regulation late in therapy was related to clients’ concerns about others’ evaluations and about one’s own deficiencies but not their concerns about losing relationships.

Research Question 2

Given the exploratory aim of the current study, no hypotheses were stated for the second research question concerning the relationships between attachment styles and the different cognitive-affective processes involved in affect regulation. The results revealed a number of
significant correlations between pre-treatment attachment styles and Early O-MAR subscales, nearly all in theoretically consistent directions. Pre-ASQ Confidence scale was related to higher levels of Early O-MAR Modulation of Arousal and Modulation of Expression, demonstrating that greater attachment security is associated with higher levels of the core processes comprising affect regulation. In contrast, Pre-ASQ Discomfort with Closeness was negatively associated with Early O-MAR Modulation of Expression subscale. This is in line with the theoretical perspective that individuals with high attachment avoidance have poor emotion expression skills (Fuendeling, 1998; Lopez & Brennan, 2000; Mikulincer & Shaver, 2007). Although not tested here, it is likely that these individuals tended to over-modulate the expression of emotions, displaying little animation, constrained responses, and habits of silencing self and needs during early therapy sessions.

Contrary to previous work, pre-treatment ASQ Preoccupation with Relationships was positively related to Early O-MAR Awareness/Labelling and Reflective subscales, suggesting that clients who worry about relationships and fear abandonment have higher ability to differentiate and reflect on their affective experiences than their secure counterparts. This finding was surprising, given that attachment anxiety has been linked to poor differentiation and identification of feelings as well as greater cognitive rigidity and ruminative thought patterns (Mikulincer & Shaver, 2007). As mentioned earlier, it is possible that preoccupied clients’ increased concerns for relationships made them more apt to talk about their feelings and describe their experiences to their therapists, which translated into higher ratings on the Early O-MAR Awareness/Labelling and Reflective subscales. These higher scores, however, may reflect a more intense negative emotionality and a greater engagement in communicating distress rather than an ability to label and reflect on emotions in general. For instance, Buccheim and Mergenthaler
(2000) found that preoccupied individuals use more vivid and specific expressions when talking about their affective experiences. They argue, however, that this communication pattern is more related to preoccupied individuals’ heightened experience of negative emotions rather than to their heightened awareness and reflective abilities.

The pattern of findings in the late stage of therapy matched almost entirely the pattern of associations between attachment and affect regulation found in the literature. Post-treatment attachment security, as represented by the Post-ASQ Confidence, was positively related to nearly all Late O-MAR subscales, such that higher attachment security was accompanied by higher levels of symbolization, modulation, acceptance, and reflection of affective experiences. Alternatively, insecure attachment was negatively related to nearly all Late O-MAR subscales, indicating that the more insecure clients (whether anxious or avoidant) displayed lower symbolization, modulation, acceptance, and reflection abilities. Overall, all of the post-treatment associations between attachment styles and the cognitive-affective processes involved in affect regulation followed the directions proposed by the literature and previous research.

**Research Question 3**

The hypothesis for the third research question stated that clients’ level of affect regulation late in therapy would partially mediate the relationship between clients’ pre-treatment attachment style and psychotherapy outcome, such that more securely attached clients would display higher levels of affect regulation late in therapy and this in turn would be related to positive treatment outcomes. The results provided only partial support for this hypothesis. Initial analyses indicated that late affect regulation total score was unrelated to pre-treatment attachment scales. When additional analyses were conducted using Late O-MAR subscales as mediators, however,
findings revealed that Late O-MAR Modulation of Expression subscale fully mediated the relationship between Pre-ASQ Confidence and depression, and partially mediated the relationships between Pre-ASQ Confidence and dysfunctional attitudes, interpersonal problems, and self-esteem. Similarly, Late O-MAR Modulation of Arousal was found to partially mediate the relationships between Pre-ASQ Need for Approval and the four outcome indices used in this study.

These findings suggest that late modulation of expression and late modulation of arousal are important mechanisms by which attachment security and attachment anxiety influence treatment outcome for depression. In addition, it may be the case that attachment insecurity, represented here by low confidence (in self and others) and high need for approval, may not directly lead to poor treatment outcomes. Rather, it seems that difficulties modulating arousal and expressing emotions significantly contributes to negative outcomes. These findings are in line with the current literature documenting the importance of adaptive modulation of arousal and expression for positive outcomes of psychotherapy (Carryer & Greenberg, 2010; Samoilov & Goldfried, 2000; Watson, Goldman, & Greenberg, 2007). In addition, they point to the crucial role of adaptive modulation of expression and arousal, respectively, in the treatment of individuals with insecure and anxious attachment styles.

Of note, the lack of associations between pre-treatment ASQ Discomfort with Closeness scale and Late O-MAR subscales suggests that this characteristic of attachment avoidance is directly associated with treatment outcome but not mediated by affect regulation skills. Although other mediators may play a role, it seems that discomfort with intimacy and trust may represent a more pressing treatment target for avoidant clients than affect dysregulation itself. Implications of these findings are discussed in more detail later in this chapter.
Limitations and Future Research

The current study has several limitations that warrant caution when interpreting its findings. One area of limitation involves the sample. Although the current study sought to examine the relationship between attachment styles and affect regulation in a clinical context, the results from this study may not be generalized to clinical populations other than those with depression. Preliminary analyses did indicate that pre-treatment depression was not related to any of the measures used in this study. However, this was likely due to the homogeneity of the sample with respect to pre-treatment depressive symptoms. It is reasonable to assume that depressive symptoms influenced clients’ affect regulation skills and perceptions of their attachment relationships in ways that were specific to the clinically depressed population and to the treatment of depression. Thus, the generalizability of the current results to the clinical context is limited until replication with similar and other diagnostic groups is undertaken by future research.

Another limitation of the current study is that it relies on self-report measures of attachment. Two points are important in considering this limitation. First, self-report measures are well known for their susceptibility to subject response bias. Second, although the ASQ measure has demonstrated sound statistical properties, researchers have argued that self-report attachment measures do not effectively assess aspects of attachment functioning which are less consciously available in awareness, such as states of mind and internal working models of attachment (Jacobvitz, Curran, & Moller, 2002 as cited in Mikulincer & Shaver, 2007). As such, replications of these results with other methods of attachment assessment (i.e., narrative and interview methods) would strengthen the validity of findings. It should also be noted that the associations between clients’ self-report data and observer-rated data might have led to an
underestimation of the strength of the associations between their attachment styles and affect regulation levels. Again, it will be important for future studies to incorporate data from multiple sources to strengthen the validity of findings.

Other limitations of the current study pertain to its design and statistical analyses. Although mediational results imply the possibility of causality, this study’s correlational design does not allow for firm conclusions to be made regarding causal relationships among attachment, affect regulation, and outcome. Additionally, the issue of multicollinearity among this study’s independent variables may also have hindered the interpretability of findings. The statistical approach used here treated attachment styles and O-MAR subscales as if they were independent. However, they are not. It would be beneficial for future studies to replicate the presented findings with a much larger sample that would allow for the utilization of structural equation modeling to adjust for intercorrelations among variables.

Clinical and Theoretical Implications

Provided that future studies replicate and extend the present findings, a number of implications emerge for clinical theory and treatment. First, clinicians would do well to recognize that although depressed clients are entering therapy with low overall levels of affect regulation skills, they do have different attachment styles and these influence the ways in which they modulate their affective experiences. Even within a depressed diagnostic category, there appears to be consistent patterns in the relationship between affect regulation and attachment, which manifests both at early and late stages of psychotherapy. Variations in these patterns may require different clinical interventions to help depressed clients improve their symptoms. For example, it seems that depressed individuals with attachment anxiety (characterized particularly
by high need for approval) may benefit most from interventions that emphasize the modulation of arousal of affective experiences, whereas depressed individuals with overall insecure attachment (i.e., those with low confidence in self and others) may benefit particularly from interventions that encourage the healthy expression of affective experiences.

For depressed individuals with attachment avoidance, characterized particularly by high discomfort with closeness, it may be important for clinicians to be especially attuned to the therapeutic alliance. Because poor affect regulation skills may not necessarily account for the negative effects of this characteristic of attachment avoidance on therapy outcome, it is possible that depressed individuals do poorly in therapy as a result of their discomfort with intimacy and lack of trust. Clinicians should thus seek to provide a therapeutic relationship that (a) encourages avoidant clients to become more connected and committed to their treatment, and (b) gradually encourages them to express their affective experiences.

Another important implication of the current study is that it supports the potential use of the O-MAR scale as (a) a theoretical model of affect regulation that could inform psychotherapy research and (b) a clinical tool that could be used for assessing clients’ affect regulation deficits and for guiding clinical decisions in psychotherapy. The significant associations between the O-MAR and the different attachment styles used in this study provide additional support for the construct validity of this measure, and advance its establishment as a useful affect regulation conceptual framework and assessment tool in psychotherapy research and practice.

From a theoretical perspective, the most important implication of the current study is that it illuminates the role of attachment within the clinical context. Up until recently, research on attachment and its relation to psychotherapy outcome focused primarily on the impact of clients’ attachment styles on the formation of the therapeutic alliance and clients’ in-treatment
behaviours. By demonstrating that affect regulation skills act as mediator variables between attachment styles and therapy outcome, the current study suggests an additional way as to how adult attachment impacts treatment outcome and, in addition, how attachment theory can be incorporated into clinical theory and research. This study provides preliminary support for the notion that attachment theory can be incorporated into psychotherapy models as a “regulation theory” (Schore & Schore, 2008), which is centered on affect and affect regulation. Clinicians would do well to understand that the role of attachment theory within psychotherapy is thus more than just providing clients with a context of safety and a secure base. Through the therapeutic alliance and use of specific clinical interventions, the clinician’s central task is to facilitate the regulation of clients’ affective experiences.
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