University of Alberta

Dialectical Constructivism: The Integration of Emotion, Autobiographical Memory, and Narrative Identity in Anorexia Nervosa

by

Michelle Elise Emmerling

A thesis submitted to the Faculty of Graduate Studies and Research
in partial fulfillment of the requirements for the degree of

Doctor of Philosophy
in
Counselling Psychology

Department of Educational Psychology

Spring 2013
Edmonton, Alberta

Your file Votre référence
ISBN: 978-0-494-92564-5

Our file Notre référence
ISBN: 978-0-494-92564-5

Abstract

The main purpose of this research project was to use the Dialectical Constructivist Theory as a guiding framework for investigating development difficulties in the construction of self in Anorexia Nervosa (AN). The Dialectical Constructivist Theory suggests that humans construct views of the self and their world in a moment-by-moment fashion through a dialectical relationship between sensory/perceptual and symbolic/logical information.

The dissertation is organized into three papers, preceded by a general introduction and followed by a conclusion. The first paper is a systematic review of the psychological treatments for AN. The second and the third papers report on aspects of a study that investigated emotional processing, autobiographical memory, and construction of identity in AN using the Dialectical Constructivist Theory as a guiding framework. A total of 90 adult women participated in the study. There were three equal groups of women who self-identified as being in-recovery from AN, recovered from AN, or never having suffered from an eating disorder. In the second paper, group differences were examined on measures of interoceptive awareness, alexithymia, emotional awareness, and emotional suppression. Women in-recovery from AN were found to have poor interoceptive and emotional awareness, have higher alexithymia scores, and were more likely to suppress their negative emotions. Emotional awareness and alexithymia were the best predictors of group membership using multinomial logistic regression. The goal of the third paper was to investigate autobiographical and self-defining memories (SDMs) in the three groups. Women in-recovery from AN had more

over-general emotionally and neutrally cued autographical memories than women in the recovered and control groups. Women in-recovery from AN were also found to have SDMs that were not as integrated into their sense of identity, associated with more negative emotions, and focused more on life-threatening events and guilt/shame themes than women recovered from AN and healthy controls. Overall, the Dialectical Constructivist Theory appears to offer an empirically supported and useful framework for understanding the construction of self in AN.

Acknowledgement

The process of writing and completing this dissertation was a long journey and one that I could not have completed without the guidance, support, and encouragement of many amazing people. I would like to thank my committee members Dr. William Whelton, Dr. Robin Everall, Dr. Jacqueline Pei, Dr. Thomas Spalding, Dr. Lara Ostolosky, and Dr. Anita Federici for their support, guidance, and invaluable feedback throughout this process. A huge heart felt thank you also goes out to Dr. Don Sharpe, for the generous gift of his time and talents in helping with the statistical and editing aspects of this project. I would like to extend my gratitude to the University of Alberta, the Department of Educational Psychology, and the Social Sciences and Humanities Research Council of Canada (SSHRC), all of which provided support for this research through funding. I would also like to thank the participants who took their time to share their experiences and memories with me. Your courage to share your experiences in such an open and honest way has made such an important contribution to helping others who suffer with eating disorders. To my husband Ryan, my parents Cheryl and Dennis, and my brother Chris: you have given me not only love and guidance, but also provided me with unconditional encouragement and support throughout my education. There are no words to express how blessed I feel to have you all in my life. I also would like to thank all my good friends and colleagues who have supported me through their love, never-ending confidence, and encouragement. Finally, I would like to personally thank my supervisor and mentor Dr. William Whelton. Dr. Whelton's unwavering

support and insightful feedback throughout my graduate career has not only played a major role in my development as a researcher and professional, but has also played a significant part in my personal development.

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CHAPTER 1

INTRODUCTION

"I feel completely empty. I know not what is at my core that issues my actions. I am only aware of the multiple people that continually dictate conflicting thoughts into my head. I want to pull out my heart and decipher its message so that I can see myself in an honest light. When I look in the mirror I see a shadow of a person who no longer exists. For I have no identity, unless it can be found in my illness. But how do I cast off that identity, when I have lost sight of any other? I could abandon it if I knew what would replace it".

~ de Groot & Rodin, 1994, pg. 299

Anorexia Nervosa (AN) is a psychological disorder that negatively impacts emotional, social, and physical health (Brownell & Fairburn, 1995). Known to be one of the most treatment resistant chronic illnesses, AN can lead to grave even deadly physical and psychological difficulties including an increased susceptibility to substance dependence, anxiety, depression, and suicide (Gucciardi, Celasun, Ahmad, & Stewart, 2004). In fact, individuals with AN have a higher suicide rate than those suffering with major depression (Agras et al., 2004; Beumont, Hay, & Beumont, 2003). If weight loss is not adequately reversed within a reasonable amount of time, medical complications associated with starvation can occur and include: bradycardia, peripheral edema, osteoporosis, heart arrhythmias, bowel paralysis, metabolic alkalosis, disturbances in immune functioning, and anaemia (Katzman, 2003; Winston & Stafford, 2000). Developing AN in adolescence can also lead to an interference with physical development, growth, breast development, and fertility (Zipfel, Lowe, & Herzog, 2003). Although many of the physical effects do normalize with weight gain, the

psychological complications are often not resolved and require psychological treatment in order to reach full recovery.

Unfortunately the stigma associated with having an eating disorder is a major concern, leaving those that suffer, alone and misunderstood. Often sufferers report that they have nowhere to turn as others incorrectly view the disorder as simply a fad or as an attempt to look more like the images portrayed in the media. It is important that researcher and clinicians gain a better understanding of AN as it is devastating to mental and physical health and it is also the most deadly psychological disorder in North America (Farber, Jackson, Tabin, & Bachar, 2007). While some studies have reported mortality rates between 2 to 8% (Herzog et al., 2000), others have reported rates as high as 20% in chronically ill adults with AN (Ratnasuriya, Eisler, Szmukler, & Russell, 1991; Sullivan, 1995).

Although there is some agreement on the severity of AN and the substantial risk of mortality, there have only been limited efforts made into investigating the effectiveness of psychological treatments. Having a clear understanding of the factors that contribute to the development of this disorder and what type of treatments are the most effective is crucial, as the economic and emotional costs are extremely high. These high costs are bourn by the individuals who are suffering and also by the families, friends, and health care providers that struggle to support those who suffer from this complex and life-threatening disorder.

Anorexia Nervosa

Diagnostic Criteria and Subtypes

Overruling the medieval belief that fasting by females was a sign of religious devotion, AN emerged in the 19th century as a disease category (Brumberg, 2000). Since the 1970's it has received increasing attention as practitioners have become more aware of the frequency of this disorder and the many difficulties associated with its treatment. Recent findings have shown that prevalence rates in both the adolescent and young adult population have been increasing over time (Bulik et al., 2006; Eagles, Johnston, Hunter, Lobban, & Millar, 1995; Lucas, Beard, O'Fallon, & Kurland, 1991). According to The Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR, American Psychological Association [APA], 2000) diagnostic criteria include: (a) a morbid fear of fatness or gaining weight even though underweight, (b) a distorted body perception, (c) a refusal to maintain a body weight that is at or above a minimally normal weight for age and height (85% of ideal normal body weight), and (d) an absence of at least three consecutive menstrual cycles.

In addition to the general diagnosis of AN, there are also subtypes that must be distinguished. In the restricting type (AN-R), the individual accomplishes weight loss primarily through dieting, fasting, or excessive exercise and has not regularly engaged in binge eating or purging behaviour. In the binge eating/purging type (AN-BE), the individual has regularly engaged in binge eating and/or purging during the current episode. Purging can be achieved either through self-induced vomiting or through the misuse of laxatives, diuretics, or enemas.

Prevalence and Etiology

AN is primarily a disorder that affects females in their adolescent and young adult years. Although it was once thought that the occurrence of the disorder was uncommon before age 10, the number of new cases is increasing in younger age groups with girls as young as 7 being diagnosed (Milos et al., 2004). Furthermore, although it was once considered a disorder primarily affecting upper and middle class Caucasian females, it is now thought to impact individuals from all socioeconomic classes and cultures (Becker, 2004; Crago, Shisslak, & Estes, 1996). Although there is considerable variability in the course, duration, and outcome of AN, even with treatment most individuals continue to struggle with this disorder for more than a decade (Keel, 2010).

Although the current consensus on the etiology of AN is that it involves biological and social causal factors, how these factors interact to produce the disorder is very poorly understood (Strober, 2004). Sociocultural factors, specifically the idealization of thinness as a symbol of beauty (Anderson-Fye & Becker, 2004), have long been implicated in the onset and maintenance of AN, however there is no empirical evidence to support the claim that they cause AN. Some common factors identified as contributing to AN include: dieting to lose weight, stress in numerous areas of life, interpersonal problems, and psychosocial problems (Nevonen & Broberg, 2000; Tozzi, Sullivan, Fear, McKenzie, & Bulik, 2003). Other researchers believe that AN offers a temporary solution to emotional and identity problems and develops as a way to cope with overwhelming emotions or lack of a sense of self (Dolhanty & Greenberg, 2009;

Serpell & Troop, 2003). The extent to which any one of these factors influences the development of the disorder is a subject of ongoing inquiry.

Rationale for this Research

Concerns with Psychological Treatments

Most researchers and practitioners in this field would agree that there is a striking paucity of empirical evidence supporting any of the methods of treatment for AN (Bulik, Berkman, Brownley, Sedway, & Lohr, 2007; le Grange & Lock, 2005; Guarda, 2007; Kaplan, 2002; Woodside, 2005). Not only have pharmacological treatments been found to be ineffective (Halmi et al., 2005; Zhu & Walsh, 2002), there is also limited support for psychological therapies (Gowers et al., 2007; Halmi et al., 2005; Kotler et al., 2003). For example, over the long-term Cognitive Behavior Therapy (CBT) appears to be successful for only about 45-50% of individuals with Bulimia Nervosa (BN) and there is very limited data on individuals with AN (Gowers et al., 2007; Kotler, Boudreau, & Devlin, 2003; McIntosh et al., 2005). Despite limited research regarding CBT's efficacy, it is still the treatment of choice for 90% of clinicians when treating AN (Shafran & de Silva, 2003). The main criticism against the CBT models is that they are far too simplistic, leaving many unanswered questions in regards to the origins and maintenance of this disorder (Shafran & de Silva, 2003). Although results have been more promising with family therapies the positive outcomes obtained are limited to adolescent populations, as the same results have not been achieved with adults (Dare, Eisler, Russell, Treasure, & Dodge, 2001; Lock, Agras, Bryson, & Kraemer, 2005).

The Relapse Problem

Due to the multitude of problems encountered when attempting to treat AN, it is not surprising to learn that it has a shockingly high relapse rate. In fact, only a third of individuals are in remission one year after treatment (Hay, Bacaltchuk, Claudino, Ben-Tovim, & Yong, 2003; Treasure & Schmidt, 2005). One possible reason for this high rate is that most treatments focus solely on the physical symptoms during the weight restoration phase. The strict focus on physical symptoms leads to individuals being labelled as *recovered* as soon as they have reached a suitable weight, without any attempts being made to alter the deeper psychological impairments that are the real source of this disorder (Gore, Vanderwal, & Thelen, 2001; Rastam, Gillberg, & Wentz, 2003).

Both individuals suffering with AN and clinicians agree that most of the treatment approaches have paid insufficient attention to many of the distinctive features that may play a critical role in poor treatment outcomes (Button & Warren, 2001; Federici & Kaplan, 2008; Tierney, 2008). Treatments that primarily focus on regaining weight and restoring healthy eating habits appear to place too much emphasis on the behavioral aspects of the disorder and not enough attention on the emotional and psychological aspects. Paying greater attention to areas of psychological concern may prove quite helpful in increasing our understanding of the factors that underlie AN, leading to improvements in treatment efficacy.

Lack of Theoretical Understanding

Another plausible reason for such poor outcomes and high rates of relapse is that we do not have an adequate theoretical framework to conceptualize the phenomenon of AN and thus, to develop effective treatments (Bjorck, Clinton, Sohlberg, Hallstrom, & Norring, 2003; Wilson, Grilo, & Vitousek, 2007). Even though there is a history of research evidence indicating that afflicted individuals struggle with emotional processing (Geller, Cockell, Hewitt, Goldner, & Flett, 2000; Reiff & Lampson-Reiff, 1992; Sohlberg & Strober, 1994; Strober, 1981) and developing a sense of identity (Bruch, 1982; Strauman, Vookles, Berenstein, Chaiken, & Higgins, 1991; Vitousek & Ewald, 1993), there have been no clear or convincing theoretical frameworks that have emerged to explain how these underlying factors interact to produce the disorder (Polivy & Herman, 2002). In fact, Zucker, Marcus, and Bulik (2006) have argued that the predominant psychological theories are bankrupt, as they do not reflect the complexity of the disorder. The lack of theoretical understanding has led to the conclusion that if future treatments are to be effective in the long-term they will need to be based on more clearly articulated theoretical foundations (Agras et al., 2004; Wilson et al., 2007).

In order to adequately conceptualize AN, it has been argued that it is crucial to understand the role of emotion and how it contributes to the development and maintenance of the disorder (Dolhanty & Greenberg, 2007). The shift in focus from cognitive to affective factors as the primary concern underlying AN has lead to a growing interest in developing treatments that deal specifically with affect.

One form of treatment that has been recently proposed is Emotion-Focused Therapy (EFT; Greenberg, Rice, & Elliott, 1993), which proposes that emotion schemes rather than cognitive ones are what lie at the center of people's personal meanings. EFT is thought to be highly suited to the treatment of AN, as it involves processing one's emotional experiences in order to learn to deal effectively with emotional regulation concerns (Dolhanty & Greenberg, 2007). In addition, it is also thought to be a good fit as it is based on a theoretical framework known as the Dialectical Constructivist Theory (Greenberg & Pascual-Leone, 1995, 2001; Greenberg et al., 1993; Guidano, 1991, 1995; Mahoney, 1991; Pascual-Leone, 1987, 1990, 1991; Watson & Greenberg, 1996; Watson & Rennie, 1994). This theory has potential to be helpful in guiding our understanding and treatment as it integrates the emotion and cognitive difficulties that are present in this disorder under one comprehensive framework.

Dialectical Constructivist Theory

An Affectively Based Sense of Self

According to the Dialectical Constructivist Theory, right from birth babies are able to experience emotions. It is not long after they are born that they begin to construct complex emotional schemes which are the foundational building blocks of a conscious and personal sense of self (Greenberg & Pascual-Leone, 2001; Pascual-Leone, 1991, 2000; Pascual-Leone & Irwin, 1994; Pascual-Leone & Johnson, 1999). Although affect regulation develops with maturation, it also develops through the way the primary caretakers respond to the infant's emotions, forming the core experiences that determine the child's affectively based sense of

self (Greenberg & Pascual-Leone, 2001). Therefore, it is the tacit emotional meaning of an event, not the individual's thoughts and feelings or the expectations of others' responses, which determines functioning (Greenberg & Safran, 1987; Greenberg & Watson, 2006). These pre-verbal emotional meaning structures that result from the interaction between individuals and their environments are known as emotional schemes (Greenberg & Safran, 1989; Greenberg, 2002).

Emotion schemes are unique in that they are not directly available to awareness and can only be accessed through the experiences or memories that they evoke. The importance of emotional schemes cannot be overlooked, as these are the core structures that determine how one responds to current situations. More importantly, emotion schemes have a critical role in the development and overall organization of the self and play a vital role in guiding one's future growth (Greenberg & Safran, 1989).

Creating Personal Meaning: Integrating Emotion and Cognition

Emotion holds a central position in the Dialectical Constructivist Theory as it plays a key-organizing role in our experience and is critical for the development of personal meaning. In a dialectical view, human beings construct meaning through accessing and integrating many levels and sources of information from their internal and external environments. There are two opposing, yet complementary dialectical sources of information in the theory and it is the constant interaction between these two forms of information that helps us to make sense of our everyday experiences (Paivio & Pascual-Leone, 2010). The first source of information is our emotional experience, which operates on a bodily felt

sense or sensorimotor level (Greenberg & Pascual-Leone, 2001). At this level, our immediate emotional experience is organized by numerous and sometimes conflicting emotion schemes synthesizing together.

The second source of information is our cognitive/thinking processes, which help us to reflect on and then explain or verbally symbolize emotional experiences to create personal meaning. How individuals make meaning of their past emotional experiences is critical to understanding how they construct a coherent identity. In other words, it is only when individuals reflect on their experience that they begin to make sense of what they are feeling and it is not until they go through a dialectical process of explaining it that they create meaning. Therefore, we can only make meaning in an integrated and effective way if we are able to be open and sensitive to our internal signals, have a willingness to attend to them, and have the capacity to symbolize them in words.

Dysfunctions in the Construction of Self

One aspect of the Dialectical Constructivist Theory that is different than some of the previous theories of self is that it conceptualizes the self as a process, not a structure (Elliott, Watson, Goldman, & Greenberg, 2004; Greenberg & Pascual-Leone, 1995; Whelton & Greenberg, 2001). Individuals are thought to be dynamic self-organizing systems, with the self arising in the moment and consisting of a synthesis of inside and outside influences. As a result of this continual constructive process, there is no permanent hierarchical organization headed by a single ruling "self" or "I" (Greenberg & Watson, 2006). Instead the self-organizations are based on emotion schemes and are perceived as *voices* that are

housed within the person. Although these voices sometimes speak alone, they are more often speaking along with other voices, either in unison or in contradiction. The ideal situation involves the internal voices functioning both interdependently and collaboratively to construct a sense of unity by integrating the various aspects of emotional experience in a given situation and across time.

Due to the complexity of interactions between multiple and often contradictory emotions, the affectively based self can become dysfunctional in a multitude of ways. One way is through blocks or rigidities developing in the emotional meaning construction process. When blocks develop individuals are unable to maintain a flexible and coherent sense of self (Greenberg & Safran, 1989). These blocks often form when individuals feel easily overwhelmed or threatened by their emotional experiences. As the self is a synthesis of different aspects it can also be problematic when conflicting or hostile relationships develop between different self-aspects or voices (Elliott et al., 2004). It is quite common for the active hostility between opposing parts to cause emotional pain or to leave individuals feeling numb to important issues in their lives. When there is suppression or silencing of one part of the self, problems can arise as it stops individuals from being able to access the emotion schemes that are associated with the ignored self-aspects. Ultimately this leads to a restriction in the range of adaptive actions available and to a sense of incompleteness or fragmentation of the self.

EFT therapists help individuals who are experiencing a fragmented sense of self by increasing their awareness and access to innate and adaptive emotional

experiences. Helping clients to more fully process their previous emotional experiences by assisting them to attend to new self-aspects or emotion schemes, leads to the emergence of new personal meanings. More fully processing previous experiences means that individuals are also able to access important information about their needs that was previously blocked from their awareness. Ultimately, growth and healing occur as individuals learn to access, regulate, and use emotions to guide their actions. The accessing and processing of emotions is thought to be an initial and crucial step in developing greater self-acceptance and a more coherent sense of self.

Investigating Identity Construction: Self-Defining Memories

One way to study how individuals make sense of past emotional experiences and how they integrate these experiences into their identity is by investigating self-defining memories (SDMs; Singer & Moffitt, 1991-1992). SDMs are an effective way to understand individuals on a deeper level, as it is the initial step toward capturing the multifaceted interaction between affect, cognition, and motivation in one's personality (Singer & Salovey, 1993). They also provide a unique way to gain access to what individuals have learned about themselves in the past, what is currently important to them, and the type of future that they are trying to achieve. By studying the SDMs of individuals in-recovery and recovered from AN, the construction and maintenance of identity in women with the disorder can be better understood. Furthermore, having a better understanding of how individuals with AN construct their identity during recovery is important, as it will assist in developing more effective treatments for this disorder.

Dissertation Format

The aim of this dissertation is to explore the Dialectical Constructivist Theory as a plausible guiding framework for understanding the emotional processing and identity concerns that are prevalent in AN. A key factor in this theory with implications for treatment is a shift in focus away from immediate cognitive or behavioral change toward a focus on early maladaptive emotional schemes (Greenberg et al., 1993). The shift in focus onto emotional schemes is important as it changes both the type and course of therapy that should be offered as these core affective structures not only have different neural processes, but also are subject to different change principles (Samoilov & Goldfried, 2000). By moving beyond symptoms at the cognitive level toward a focus on deeper implicit emotional meanings it is thought that long-term effectiveness of psychological treatments can be enhanced.

Written in a paper format, this dissertation consists of five chapters. Chapter 1 consists of a general introduction to the content explored within the dissertation. A brief review of the essential features of AN, the concern with current psychological treatments, and the applicability of a Dialectical Constructivist framework to this disorder were presented, as well as the purpose and goals of the dissertation. Chapter 2 is a comprehensive review of the type, form, and setting of psychological treatments for AN in order to evaluate the effectiveness of current treatments and to determine what elements are not being addressed that may improve future treatment outcomes.

Based on the recommendations from Chapter 2, Chapters 3 (Part I) and 4 (Part II) contain one empirical study that is divided into two separate, but complementary papers. This is the first study to investigate the Dialectical Constructivist Theory as an integrative framework for understanding and treating AN. In order to explore the use of the theory as a guiding framework, the contributions of both sides of the dialectic (emotion and cognitive processing) will need to be fully addressed. The third chapter (Part I) will explore the emotional processing side of the dialectic. As such, it will investigate whether differences in interoceptive awareness, emotional awareness, alexithymia, and emotional suppression can predict whether individuals are in-recovery from AN, recovered from AN, or have never had an eating disorder. Investigating emotional processing in women who are in-recovery and recovered will help in determining whether difficulties in emotional processing remain problematic after recovery. The fourth chapter will explore the cognitive aspect of the dialectic; how individuals make sense of their past emotional experiences when constructing a sense of identity. In order to investigate how difficulties in emotion processing may impact the construction of identity, self-defining memories and their specific characteristics, themes, and the emotions will be explored in women in-recovery and recovered from AN and in a healthy control group.

Chapter 5 consists of a summary of the findings from the previous chapters in order to understand how the Dialectical Constructivist Theory can inform clinical work with individuals suffering from this disorder.

References

Agras, W. S., Brandt, H. A., Bulik, C. M., Dolan-Sewell, R., Fairburn, C. G., Halmi, K. A., et al. (2004). Report of the National Institutes of Health workshop on overcoming barriers to treatment research in anorexia nervosa. *International Journal of Eating Disorders, 35,* 509 – 521. doi: 10.1002/eat.10261

American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders fourth edition – text revision (DSM-IV-TR*). Washington, DC: American Psychiatric Publishing Inc.

Anderson-Fye, E. P., & Becker, A. E. (2004). Socio-cultural aspects of eating disorders. In J. K. Thompson (Ed.), *Handbook of eating disorders and obesity* (pp. 565–589). NY: Wiley.

Becker, A. E. (2004). Television, disordered eating, and young women in Fiji: Negotiating body image and identity during rapid social change. *Culture, Medicine, and Psychiatry, 28,* 533 – 559. doi: 10.1007/s11013-004-1067-5

Beumont, P., Hay, P., & Beumont, R. (2003). Summary Australian and New Zealand clinical practice guideline for the management of anorexia nervosa. *Australasian Psychiatry, 11,* 129-133. doi: 10.1046/j.1039-8562.2003.00534x

Bjorck, C., Clinton, D., Sohlberg, S., Hallstrom, T., & Norring, C. (2003). Interpersonal profiles in eating disorders: Ratings of SASB self-image. *Psychology and Psychotherapy: Theory, Research and Practice, 76,* 337-349. doi: 10.1348/147608303770584719

Brownell, K. D., & Fairburn, C. G. (Eds.). (1995). *Eating disorders and obesity: A comprehensive handbook*. New York: Guilford Press.

Bruch, H. (1982). Anorexia nervosa: Therapy and theory. *American Journal of Psychiatry, 139,* 187–194.

Brumberg, J. J. (2000). *Fasting girls: The history of anorexia nervosa*. New York: Vintage.

Bulik, C. M., Berkman, N. D., Brownley, K. A., Sedway, J. A., & Lohr, K. N. (2007). Anorexia nervosa treatment: A systematic review of randomized controlled trials. *International Journal of Eating Disorders, 40,* 310-320. doi: 0.1002/eat.20367

Bulik, C. M., Sullivan, P. F., Tozzi, F., Furberg, H., Lichenstein, P., & Pedersen, N. L. (2006). Prevalence, heritability, and prospective risk factors for anorexia nervosa. *Archives of General Psychiatry, 63,* 305–312. doi: 10.1001/archpsyc.63.3.305

Button, E. J., & Warren, R. L. (2001). Living with anorexia nervosa: the experience of a cohort of sufferers from anorexia nervosa 7.5 years after initial presentation to a specialized eating disorders service. *European Eating Disorder Review, 9,* 72-96. doi: 10.1002/erv.400

Crago, M., Shisslak, C. M., & Estes, L. S. (1996). Eating disturbances among American minority groups: A review. *International Journal of Eating Disorders, 19,* 239 – 248. doi: 10.1002/(SICI)1098-108X(199604)19:3<239::AID-EAT2>3.0.CO;2-N

Christie, D. (2007). Using cognitive-behavioral approaches for children and adolescents with eating disorders. In L. Bryan & R. Bryant-Waugh (Eds.), *Eating disorders in childhood and adolescence* (pp. 229-255). Hove, UK: Routledge.

Dare, C., Eisler, I., Russell, G., Treasure, J., & Dodge, L. (2001). Psychological therapies for adults with anorexia nervosa: Randomized controlled trial of outpatient treatments. *The British Journal of Psychiatry, 178,* 216-221. doi: 10.1192/bjp.178.3.216

Dolhanty, J., & Greenberg, L. S. (2007). Emotion-focused therapy in the treatment of eating disorders. *European Psychotherapy, 7,* 97-116. Retrieved from http://cip-medien.com/media/download_gallery/EP/2007/06_EP_Vol7_2007-Eating_DolhantyK2.pdf

De Groot, J. M., & Rodin, G. (1994). Eating disorders, female psychology, and the self. *Journal of American Academy of Psychoanalysis, 22,* 299-317. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/7961044

Dolhanty, J., & Greenberg, L. S. (2009). Emotion-focused therapy in a case of anorexia nervosa. *Clinical Psychology and Psychotherapy, 16,* 366-382. doi: 10.1002/cpp.624

Eagles, J. M., Johnston, M. I., Hunter, D., Lobban, M., & Millar, H. R. (1995). Increasing incidence of anorexia nervosa in the female population of northeast Scotland. *American Journal of Psychiatry, 152,* 1266–1271. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/7653679

Elliott, R., Watson, J. C., Goldman, R., & Greenberg, L. S. (2004). *Learning emotion-focused therapy: The process-experiential approach to change.* Washington, DC: American Psychological Association. doi: 10.1037/10725-000

Farber, S. K., Jackson, C. C., Tabin, J. K., & Bachar, E. (2007). Death and annihilation anxieties in anorexia nervosa, bulimia, and self-mutilation. *Psychoanalytic Psychology, 24,* 289-305. doi: 10.1037/0736-9735.24.2.289

Federici, A., & Kaplan, A. S. (2008). The patient's account of relapse and recovery in anorexia nervosa: A qualitative study. *European Eating Disorders Review, 16,* 1–10. doi: 10.1002/erv.813

Geller, J., Cockell, S. J., Hewitt, P. L., Goldner, E. M., & Flett, G. L. (2000). Inhibited expression of negative emotions and interpersonal orientation in anorexia nervosa. *The international Journal of Eating Disorders, 28,* 8–19. doi: 10.1002/1098-108X(200012)28:4<481::AID-EAT20>3.0.CO;2-K

Gore, S. A., Vander Wal, I. S., & Thelen, M. H. (2001). Treatment of eating disorders in children and adolescents. In J.K. Thompson & L. Smolak (Eds.), *Body image, eating disorders, and obesity in youth: Assessment, prevention, and treatment* (pp. 293-311). Washington, DC: American Psychological Association. doi: 10.1037/10404-012

Gowers, S., Clark, A., Roberts, C., Griffiths, A., Edwards, V., Bryan, C., et al. (2007). Clinical effectiveness of treatments for anorexia nervosa in adolescents: Randomised controlled trial. *The British Journal of Psychiatry, 191,* 427–435. doi: 10.1192/bjp.bp.107.036764

Greenberg, L. S. (2002). *Emotion-focused therapy: Coaching clients to work through their feelings.* Washington, DC: American Psychological Association. doi: 10.1037/10447-000

Greenberg, L. S., & Pascual-Leone, J. (1995). A dialectical constructivist approach to experiential change. In R. A. Neimeyer & M. J. Mahoney (Eds.), *Constructivism in psychotherapy* (pp. 169–194). Washington, DC: American Psychological Association.

Greenberg, L. S., & Pascual-Leone, J. (2001). A dialectical constructivist view of the creation of personal meaning. *Journal of Constructivist Psychology, 14,* 165–186.

Greenberg, L. S., Rice, L. N., & Elliott, R. (1993). *Facilitating emotional change: The moment-by-moment process.* New York: Guilford Press.

Greenberg, L. S., & Safran, J. D. (1987). *Emotion in psychotherapy: Affect, cognition, and the process of change.* New York: Guilford Press.

Greenberg, L. S., & Safran, J. D. (1989). Emotion in psychotherapy. *American Psychologist, 44,* 19–29. doi: 10.1037/0003-066X.44.1.19

Greenberg, L. S., & Watson, J. C. (2006). *Emotion-focused therapy for depression*. Washington, DC: American Psychological Association. doi: 10.1037/11286-000

Guarda, A. S. (2008). Treatment of anorexia nervosa: Insights and obstacles. *Physiology & Behavior, 94,* 113–120. doi: 10.1016/j.physbeh.2007.11.020

Gucciardi, E., Celasun, N., Ahmad, F., & Stewart, D. E. (2004). Eating Disorders. *BMC Women's Health, 25,* 1-6. Retrieved from http://www.biomedcentral.com/1472-6874/4/S1/S21

Guidano, V. F. (1991*). The self in process.* NY: Guilford.

Guidano, V. F. (1995). Self-observation in constructivist therapy. In R. A. Neimeyer & M. J. Mahoney (Eds.), *Constructivism in psychotherapy* (pp. 155–168). Washington, DC: American Psychological Association.

Halmi, K. A., Agras, W. S., Crow, S., Mitchell, J., Wilson, G. T., & Bryson, S. W. (2005). Predictors of treatment acceptance and completion in anorexia nervosa: Implications for future study designs. *Archives of General Psychiatry, 62,* 776 – 781. doi: 10.1001/archpsyc.62.7.776

Hay, P., Bacaltchuk, J., Claudino, A., Ben-Tovim, D., & Yong, Y. P. (2003). Individual psychotherapy in the outpatient treatment of adults with anorexia nervosa*. Cochrane Database of Systematic Reviews, 4,* CD003909. doi: 10.1002/14651858.CD003909

Herzog, D. B., Greenwood, D. N., Dorer, D. J., Flores, A. T., Ekeblad, E. R., Richards, A. et al., (2000). Mortality in eating disorders: A descriptive study. *International Journal of Eating Disorders, 28,* 20-26. doi: 10.1002/(SICI)1098-108X(200007)28:1<20::AID-EAT3>3.0.CO;2-X

Kaplan, A. S. (2002). Psychological treatment for anorexia nervosa: A review of published studies and promising new directions. *Canadian Journal of Psychiatry, 47,* 235–242. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/11987474

Katzman, D. L. (2003). Osteoporosis in anorexia nervosa: A brittle future? Current *Drug Targets – CNS & Neurological Disorders, 2,* 11–15. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/12769808

Keel, P. K. (2010). Epidemiology and course of eating disorders. In W. S. Agras (Ed.), *The Oxford handbook of eating disorders* (pp. 25-32). NY: Oxford Library Press.

Kotler, L. A., Boudreau, G. S., & Devlin, M. J. (2003). Emerging psychotherapies for eating disorders. *Journal of Psychiatric Practice, 9,* 431-441. doi: 10.1097/00131746-200311000-0000

Le Grange, D., & Lock, J. (2005). The dearth of psychological treatment studies for anorexia nervosa. *International Journal of Eating Disorders, 37,* 79–91. doi: 10.1002/eat.20085

Lock, J., Agras, W. S., Bryson, S., & Kraemer, H. C. (2005). A comparison of short- and long-term family therapy for adolescent anorexia nervosa. *Journal of the American Academy of Child and Adolescent Psychiatry, 44,* 632-639. doi: 10.1097/01.chi.0000161647.82775.0a

Lucas, A. R., Beard, C. M., O'Fallon, W. M., & Kurland, L. T. (1991). 50-year trends in the incidence of anorexia nervosa in Rochester, Minnesota: A population-based study. *American Journal of Psychiatry, 148*, 917–922. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/2053633

Mahoney, M. (1991). *Human change processes.* NY: Basic Books.

McIntosh, V. W., Jordan, J., Carter, F. A., Luty, S. E., McKenzie, J. M., Bulik, C. M. et al. (2005). Three psychotherapies for anorexia nervosa: A randomized,

controlled trial. *American Journal of Psychiatry, 162,* 741-747. doi: 10.1176/appi.ajp.162.4.741

Milos, G., Spindler, A., Schnyder, U., Mortz, J., Wijbrand Hoek, H., & Willi, J. (2004). Incidence of severe anorexia nervosa in Switzerland: 40 years of development. *International Journal of Eating Disorders, 35,* 250–258. doi: 10.1002/eat.20052

Nevonen, L., & Broberg, A. G. (2000). The emergence of eating disorders: An exploratory study. *European Eating Disorders Review, 8,* 279–292. doi: 10.1002/1099-0968(200008)8:4<279::AID-ERV348>3.0.CO;2-J

Paivio, S. C. & Pascual-Leone, A. (2010). *Emotion-focused therapy for complex trauma: An integrative approach.* Washington, DC: American Psychological Association. doi: 10.1037/12077-000

Pascual-Leone, J. (1987). Organismic processes for neo-Piagetian theories: A dialectical causal account of cognitive development. *International Journal of Psychology, 22,* 531–570.

Pascual-Leone, J. (1990). Reflections on life-span intelligence, consciousness, and ego development. In C. Alexander & E. Langer (Eds.), *Higher states of human development: Perspectives on adult growth* (pp. 258–285). NY: Oxford University Press.

Pascual-Leone, J. (1991). Emotions, development, and psychotherapy: A dialectical-constructivist perspective. In J. D. Safran & L. S. Greenberg (Eds.), *Emotion, psychotherapy, and change* (pp. 302–335). NY: Guilford.

Pascual-Leone, J. (2000). Reflections on working memory: Are the two models complementary? *Journal of Experimental Child Psychology, 77,* 138–154. doi: 10.1006/jecp.2000.2593

Pascual-Leone, J., & Irwin, R. R. (1994). Abstraction, the will, the self, and modes of learning in adulthood. In M. C. Smith & T. Pourchot (Eds.), *Adult learning and development: Perspectives from educational psychology* (pp. 35–66). Mahwah, NJ: Erlbaum.

Pascual-Leone, J., & Johnson, J. (1999). A dialectical constructivist view of representation: Role of mental attention, executives, and symbols. In I. Sigel (Ed.), *Developmental of metal representation: Theories and applications* (pp. 169–200). Mahwah, NJ: Erlbaum.

Polivy, J., & Herman, C. P. (2002). Causes of eating-disorders. *Annual Review of Psychology, 53,* 187–213. doi: 10.1146/annurev.psych.53.100901.135103

Rastam, M., Gillberg, C., & Wentz, E. (2003). Outcome of teenage-onset anorexia nervosa in a Swedish community –based sample. *European Child and Adolescent Psychiatry, 12,* 78–90. doi: 10.1007/s00787-003-1111-y

Ratnasuriya, R. H., Eisler, I., Szmukler, G. I., & Russell, G. F. (1991). Anorexia nervosa: Outcome and prognostic factors after 20 years. *The British Journal of Psychiatry, 158,* 495-502. doi: 10.1192/bjp.158.4.495

Reiff, D. W., & Lampson-Reiff, K. K. (1992). *Eating disorders: Nutrition therapy in the recovery process.* Gaithersburg, MD: Aspen.

Samoilov, A., & Goldfried, M. R. (2000). Role of emotion in cognitive-behavioral therapy. *Clinical Psychology: Science and Practice, 7,* 373–385. doi: 10.1093/clipsy.7.4.373

Serpell, L., & Troop, N. (2003). Psychological factors. In J. Treasure, U. Schmidt, & E. Van Furth (Eds.), *Handbook of eating disorders* (2nd ed., pp. 151-168). Southern Gate, Chichester: John Wiley. doi: 10.1002/0470013443.fmatter

Shafran, R., & de Silva, P. (2003). Cognitive behavioral models. In J. Treasure, U. Schmidt, & E. Van Furth (Eds.), *Handbook of eating disorders* (2nd ed., pp. 121-138). Southern Gate, Chichester: John Wiley. doi: 10.1002/0470013443.fmatter

Singer, J. A., & Moffitt, K. H. (1991 - 1992). An experimental investigation of specificity and generality in memory narratives. *Imagination, Cognition, & Personality, 11,* 233-257.

Singer, J. A., & Salovey, P. (1993). *The remembered self: Emotion and memory in personality.* NY: Free Press. doi: 10.1037/10391-004

Sohlberg, S., & Strober, M. (1994). Personality in anorexia nervosa: An update and a theoretical integration. *Acta Psychiatrica Scandinavica, 89,* 1–15. doi: 10.1111/j.1600-0447.1994.tb05809.x

Strauman, T. J., Vookles, J., Berenstein, V., Chaiken, S., & Higgins, E. T. (1991). Self discrepancies and vulnerability to body dissatisfaction and disordered eating. *Journal of Personality and Social Psychology, 61,* 946–956. Retrieved from

http://persweb.wabash.edu/facstaff/hortonr/articles%20for%20class/strauman ndisc.pdf

Strober, M. (1981). The significance of bulimia in juvenile anorexia nervosa: An exploration of possible etiologic factors. *International Journal of Eating Disorders, 1,* 28–34.

Strober, M. (2004). Clinical and research forum pathological fear conditioning and anorexia: On the search for novel paradigms. *International Journal of Eating Disorders, 35,* 504–508. doi: 10.1002/eat.20508

Sullivan, P. F. (1995). Mortality in anorexia nervosa. *The American Journal of Psychiatry, 152,* 1073-1074. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/7793446

Tierney, S. (2008). The individual within a condition: A qualitative study of young people's reflections on being treated for anorexia nervosa. *Journal of the American Psychiatric Nurses Association, 13,* 368–375. doi: 10.1177/1078390307309215

Tozzi, F., Sullivan, P. F., Fear, J. L., McKenzie, J., & Bulik, C. M. (2003). Causes and recovery in anorexia nervosa: The patient's perspective. *International Journal of Eating Disorders, 33,* 143–154. doi: 10.1002/eat.10120

Treasure, J., & Schmidt, U. (2005). Anorexia nervosa. *Clinical Evidence, 14,* 1140-1148.

Vitousek, K. B., & Ewald, L. S. (1993). Self-representation in eating disorders: A cognitive perspective. In Z. V. Segal & S. J. Blatt (Eds.), *The self in*

emotional distress: Cognitive & psychodynamic perspectives (pp. 221–257). NY: Guilford.

Watson, J., & Greenberg, L. (1996). Emotion and cognition in experiential therapy: A dialectical-constructivist position. In H. Rosen & K. Kuelwein (Eds.), *Constructing realities: Meaning making perspectives for psychotherapists* (pp. 253–276). San Francisco: Jossey-Bass.

Watson, J., & Rennie, D. (1994). Qualitative analysis of clients' subjective experience of significant moments during exploration of problematic reactions. *Journal of Counselling Psychology, 41,* 500–509. doi: 10.1037/0022-0167.41.4.500

Whelton, W. J., & Greenberg, L. S. (2001). The self as a singular multiplicity: A process-experiential perspective. In J.C. Muran (Ed.), *Self-relations in the psychotherapy process* (pp. 87-106). Washington, D.C.: APA Press. doi: 10.1037/10391-004

Wilson, G. T., Grilo, C. M., & Vitousek, K. M. (2007). Psychological treatment of eating disorders. *The American Psychologist, 62,* 199–216. doi: 10.1037/0003-066X.62.3.199

Winston, A. P., & Stafford, P. J. (2000). Cardiovascular effects of anorexia nervosa. *European Eating Disorders Review, 8,* 117–125. doi: http://dx.doi.org/10.1002/(SICI)1099-0968(200003)8:2<117::AID-ERV335>3.0.CO;2-S

Woodside, B. (2005). Treatment of anorexia nervosa: More questions than answers. *International Journal of Eating Disorders, 37,* S41-S42. doi: 10.1002/eat.20115

Zhu, A. J., & Walsh, B. T. (2002). Pharmacologic treatment of eating disorders. *Canadian Journal of Psychiatry, 47,* 227–234.

Zipfel, S., Lowe, B., & Herzog, W. (2003). Medical complications. In J. Treasure, U. Schmidt, & E. Furth (Eds.), *Handbook of eating disorders* (pp. 191–206). Southern Gate, Chichester: Wiley.

Zucker, N. L., Marcus, M., & Bulik, C. M. (2006). A group parent-training program: A novel approach to eating disorder management. *Eating & Weight Disorders, 11,* 78-83.

CHAPTER 2

SEARCHING FOR THE KEY TO RECOVERY: A SYSTEMATIC REVIEW OF PSYCHOLOGICAL TREATMENTS FOR ANOREXIA NERVOSA

Introduction

Anorexia nervosa (AN) poses an immense challenge to healthcare practitioners as relatively little is known about its prevention, management, and treatment (Lena, Fiocco, & Leyenaar, 2004). Not only is it one of the most deadly psychological disorders for young women in North America (Crow et al., 2009; Farber, Jackson, Tabin, & Bachar, 2007), with mortality rates estimated at between 1.2% to 12.82% (Agras et al., 2003; Herzog et al., 2000), AN is also associated with several physical complications such as gastrointestinal problems, menstrual problems, shortness of breath, chest pain, anxiety, depression, and substance abuse (Johnson, Cohen, Kasen, & Brook, 2001). Due to the multitude of physical and psychological concerns, it has been characterized as one of the most challenging psychological disorders to treat (Crow et al., 2009).

Although there has been substantial research into the effectiveness of psychological treatments for eating disorders, these studies have mainly focused on Bulimia Nervosa (BN) or to a lesser degree, Binge Eating Disorder (BED), leaving little understanding of how to best treat AN (Hay & Claudino, 2010). In fact, most researchers and practitioners in the eating disorder field would agree that there is a striking paucity of empirical evidence supporting any of the methods of treatment (Bulik, Berkman, Brownley, Sedway, & Lohr, 2007; Guarda,

2007; Kaplan, 2002; Le Grange & Lock, 2005; Wilson, Grilo, & Vitousek, 2007; Woodside, 2005). Not only have pharmacological treatments been found to be ineffective (Bell, 2003; Halmi et al., 2005; Zhu & Walsh, 2002), but there is also limited support for individual therapies (Gowers et al., 2007; Halmi et al., 2005; Kotler, Boudreau, & Devlin, 2003). Although the results have been more promising with family therapies, the positive outcomes are limited to adolescent populations as the same results have not been achieved in adults with AN (Dare, Eisler, Russell, Treasure, & Dodge, 2001; Lock, Agras, Bryson, & Kraemer, 2005).

Aggregate results of long-term follow-up studies has shown that only 50% of individuals with AN eventually make a full recovery, 20-30% maintain some residual symptoms, 10-20% remain severely ill, while 5-10% die of related causes (Steinhausen, 2002). Even as little as one year after discharge from inpatient programs, it has been found that 50% of individuals suffering from AN require re-hospitalisation (Eckert, Halmi, Marchi, Grove, & Crosby, 1995; Walsh et al., 2006). In order to further evaluate the long-term outcomes, Berkman, Lohr, and Bulik (2007) conducted a systematic review of the outcome literature on eating disorders. When looking specifically at AN they reviewed 46 articles and found that at follow-up individuals suffering from the disorder were more likely than comparisons to be depressed, have Asperger's syndrome and autism spectrum disorders, and suffer from anxiety disorders including obsessive-compulsive disorder. They also found that the mortality risk and the risk of suicide were significantly higher than what would be expected in the population. These

findings seem to suggest that the current long-term outcome for individuals diagnosed with AN is not optimistic.

What is most surprising is the lack of randomized controlled trials (RCTs) evaluating the effectiveness of psychological treatments that have been conducted since the first published account of the disorder 125 years ago (Hartmann et al., 2011). Unfortunately, many of these past research studies have not been uniform in their design methods, had varying treatment conditions, or biased/failed experimental conditions, which makes it impossible to complete a standard meta-analysis of treatment efficacy. What has been concluded based on the current research is that there is no evidence that one specialized treatment is superior (National Institute of Clinical Excellence [NICE], 2004).

There have been several reasons suggested for the lack of treatment efficacy studies in AN. Some of the concerns identified include the relatively low incidence and prevalence, the variable presentation of the disorder based on age and illness factors, and the complex interaction of both psychiatric and medical problems associated with the disorder (Agras et al., 2003). Individuals with AN also quite commonly fail to accept that they have a life-threatening illness and that treatment is needed, leading many of them to sabotage any attempts to help them (Chisholm, 2002; Fathallah, 2006; Tierney, 2008). The struggle to see the disorder as a serious problem also leads to premature termination from therapy and quite often to confusion and frustration in mental health professionals.

Although previous research has helped to highlight the risk factors, there have been no comprehensive theories that have emerged to explain the commonalities

or interactions between the key factors that underlie AN (Polivy & Hennan, 2002). Due to the lack of a coherent theoretical model, the disorder remains poorly understood disorder despite numerous attempts over the past several decades to investigate its aetiology and treatment. Given the high co-morbidity and mortality rates, it is critical to investigate the underlying mechanisms and how they interact. Gaining further insight into how these factors work together will assist in developing more comprehensive theories that can guide the development of effective therapies for this disorder.

Although there has been limited research into psychological treatments, what has been determined is that psychological treatment and change are crucial elements in the process of recovery from AN (Federici & Kaplan, 2008). Based on this understanding, the goal of this paper is to systematically review the psychological treatments for AN, in addition to consolidating the relatively few published randomized controlled trials using the various forms of treatments in both adolescents and adults. Focus will be given to highlighting gaps in the research on psychological treatments in order to identify areas that have not been addressed that may help in developing more effective therapies for this disorder.

Psychotherapy: The Treatment of Choice in Anorexia?

Due to the lack of psychotherapy research that has been conducted in the AN population, the evidence base for effective treatment choices remains sparse (Bulik et al., 2007; Fairburn, 2005). The lack of research also is problematic in terms of completing systematic reviews of psychological treatments. There has only been a few systematic reviews completed and only one that has specifically

focused on RCTs for AN. This review spanned six major databases in all languages using a time period from 1980 to September 2005 (Bulik et al., 2007). The authors identified only 32 studies published in 35 articles and overall the results indicated that the evidence for the treatment of AN was relatively weak.

The most recent systematic review of psychological treatment for AN looked at 57 studies containing 84 treatment arms and 2,273 participants (Hartmann et al., 2011). The review evaluated all available clinical trials that had been conducted and statistically integrated amount of weight gain, which was transformed into standard mean change scores. Overall, it was found that there are no significant differences between effect sizes for treatment setting, technique, or patient characteristics. When time was taken into account, it was determined that inpatient treatment produced a faster weight gain than outpatient treatment. One major limitation of this review is that it used weight as the primary indicator of treatment success. Although this may have been the only way to have a standardized outcome measure as secondary outcomes (i.e. reduction in psychological symptoms) can vary widely across studies, weight gain is just one component of the recovery process.

Despite the lack of treatment evidence, what has been concluded from the previous studies that have been conducted is that weight restoration alone will not significantly change the course of AN. When specifically looking at adults, the consensus is that treatment should involve not only nutritional support and weight restoration, but also psychotherapy (Hay & Claudino, 2010). In fact, it has been stated that psychotherapy is the treatment of choice if there are no other

immediate physical concerns (NICE, 2004; American Psychological Association [APA], 2006). The finding that it is crucial to treat both the physical and psychological symptoms of AN is not a new idea. One of the key figures in the expansion of psychotherapy into the treatment was Hilde Bruch (1973). She believed that the core therapeutic elements to change were helping individuals to understand the underlying meaning of food and also to find a sense of self outside of the eating disorder.

Support for the importance of including secondary outcomes in treatment efficacy studies was recently provided by a qualitative study that explored individuals' experience of relapse and recovery (Federici & Kaplan, 2008). The researchers found that participants who were dissatisfied with their treatment experience reported that the behavioural goals of treatment (e.g. such as weight gain) overshadowed processing their core emotional and psychological concerns. As such, these participants found that they were not prepared to cope with their lives after treatment and found themselves unable to manage many of the emotional and interpersonal stressors that they encountered.

Individual Psychotherapies in the Treatment of Anorexia

Behavioral and Cognitive-Behavioral Therapies

When behavioral therapy for women with AN was initially conceived it involved the application of the principles of operant conditioning to restore weight within an inpatient setting (Agras & Kraemer, 1984). A strict behavioral approach to the treatment involves positively reinforcing eating and weight gain

with rewards and punishing non-weight gain behaviors with the loss of an enjoyable activity.

The effectiveness of behavioral therapy for the treatment of AN was reviewed in a comprehensive meta-analysis of 21 published treatment studies investigating individuals who had been hospitalized (Agras & Kraemer, 1984). The trials were classified into three groups: drug therapy, behavior therapy, or medical therapy. The results indicated that the amount of weight gain for both medical and behavioral therapies was equivalent, with the rate of weight gain for behavioral therapy occurring more quickly and leading to shorter hospitalization periods. Although behavioral interventions appear to be initially effective in restoring weight, long-term studies have found that a significant number of individuals receiving this form of treatment relapse after discharge (Wilson, 2004). Overall, it has been suggested that behavioral techniques have a role to play in changing the concrete and overt aspects of anorexic behaviors. However, if this is the only form of treatment used there will be few changes to the individual's thoughts, beliefs, and feelings that form the basis of the disorder and as such the likelihood of relapse is much higher (Christie, 2007).

Presently, pure forms of behavioral therapy are almost nonexistent in the treatment of AN. This is due to the development of Cognitive-Behavioral Therapy (CBT; Garner & Bemis, 1982, 1985; Garner, Vitousek, & Pike, 1997) for AN, which was introduced to supplement the behavioral methods by also addressing the dysfunctional thought processes that play a major role in the development and maintenance of the disorder. The CBT model involves focusing

on the cognitions and behaviors that are exceedingly focused on food, weight, and body shape (Waller & Kennerley, 2003) and the combination of positive and negative reinforcers that operate to maintain dysfunctional eating behaviors (Touyz, Polivy, & Hay, 2008). Proponents of the CBT model believe that it is necessary for afflicted individuals to first see the links between their eating behavior and their thoughts and feelings, and then to help them to become aware of the often unconscious beliefs that are driving their eating behaviors (Gilbert, 2000). Therefore, the first stages of CBT therapy are focused on the topics of eating and weight and only shift to general psychological functioning (e.g. themes of self-esteem, confidence, and interpersonal/family concerns) once the individual is at a stable weight. There is also a strong focus on enhancing clients' motivation to change and in building a collaborative relationship (Vitousek, Watson, & Wilson, 1998). Although there have been several expansions and alternative perspectives developed on the standard CBT model over the years (e.g. Fairburn, Cooper, & Shafran, 2003; Fairburn, Safran, & Cooper, 1999; Kleinfield, Wagner, & Halmi, 1996; Wolff & Serpell, 1998), most are congruent with the original proposal.

The effectiveness of cognitive behavioral therapy. CBT is the most commonly investigated individual treatment for AN, however the results of the limited number of studies that have been conducted are challenging to interpret due to various methodological concerns such as the use of abbreviated forms of CBT or high levels of attrition (Wilson et al., 2007). Another methodological concern that has plagued CBT studies is that they often compare CBT with a non-

psychological intervention such as psycho-education or nutritional counselling. Comparing an active psychotherapy to a non-psychological intervention is problematic as the statistical differences found in these studies may be primarily due to the extremely high attrition rates often found in non-psychological interventions, making comparison across groups impossible (Kaplan, 2002).

There have been two studies conducted in which CBT was compared with nutritional counselling. In the first study 35 individuals with AN were randomly assigned to either 20 sessions of individual CBT (n = 25) or to dietary counselling (n = 10), which included nutritional advice and supportive therapy (Serfaty, Turkington, Heap, Ledsham, & Jolley, 1999). It was found that the attrition rate was substantially more pronounced in the dietary counselling condition, as all the participants in this condition discontinued treatment compared to only 2 participants from the CBT group. At a 6-month follow-up, 70% of the individuals treated with CBT no longer met the diagnostic criteria for AN and had improvements in the severity of their depressive symptoms. Despite the positive changes that were observed, it is important to note that the average BMI of individuals in the CBT group was still not in the normal range by the end of treatment.

The second study conducted by Pike, Walsh, Vitousek, Wilson, and Bauer (2003) investigated relapse prevention in 33 participants who were randomly assigned to either 50 sessions of CBT or to nutritional counselling. There were two important aspects to this study that set it apart from all previous adult trials. One was that both the treatments that were investigated in this study were

manualized. The second was that treatment intensity was far greater in this study than in previous studies as participants received 50 sessions over 12 months. Outcome was measured according to the Morgan-Russell Outcome Assessment Schedule (Morgan & Hayward, 1988). The Morgan-Russell scales define good outcome as a return to normal weight and menses, intermediate outcome as a return to normal weight or menses, and poor outcome as remaining below normal weight with no return of menses. Similar to the study conducted by Serfaty et al. (1999), it was found that a larger number of individuals in the CBT condition (44.4%) met the Morgan-Russell criteria for "good outcome" when compared to the nutritional counselling condition (6.7%). In addition, relapse rate for those treated with CBT (22%) was lower than for those that had received nutritional counselling (53%). The results also indicated that there was a significant difference in the amount of time it took before a relapse occurred with individuals who had received nutritional counselling relapsing earlier in treatment than those in the CBT condition. These results need to be interpreted carefully though, as there was a significant design flaw in this study that may have impacted the results. Of the individuals who had received CBT, a large percentage of those showing good outcomes had also been taking anti-depressant medication outside of the study protocol. It is also interesting to note that when different criteria such as the Eating Disorder Examination (EDE; Fairburn & Cooper, 1993) was used to define good outcomes (e.g. weight restored, no binge eating or purging, change in eating attitudes and weight concerns), only 17% of individuals in the CBT group and none in the nutrition counselling group were considered to be fully recovered.

Not only have researchers investigated the efficacy of CBT in comparison to nutritional counselling, but they have also compared it to standard follow-up care. For example, Carter et al. (2009) used a nonrandomized clinical trial to investigate two maintenance treatment conditions, CBT and maintenance treatment as usual (MTAU), in 88 individuals with AN who were considered weight-restored. Forty-six individuals received 1 year of manualized individual CBT and 42 were in an assessment only control condition that mirrored follow-up care as usual. Participants were assessed at 3 month intervals during the 1 year study with the main outcome variable being time to relapse. Relapse was defined as a BMI of 17.5 for 3 consecutive months or the return of regular binge eating and/or purging for 3 months. It was found that time to relapse was significantly longer in the CBT condition when compared to MTAU. The results suggested that CBT may be more helpful in improving outcome and preventing relapse in weight-restored AN. It is important to interpret these findings cautiously though as participants were not randomly assigned to the treatment conditions and the type of treatment in the MTAU condition was not controlled.

In order to address the concerns in the research literature about only evaluating the outcome of CBT in comparison to non-psychological treatments, several studies set out to investigate the effectiveness of CBT when compared to other individual psychotherapies. Studies comparing different treatments to CBT are crucial if we are to determine which of the psychological treatments are the most beneficial when treating AN. As both CBT and Interpersonal Psychotherapy (IPT) are widely used treatments for AN, McIntosh et al. (2005) compared these two

forms of therapy with Specialist Supportive Clinical Management (SSCM). In IPT the focus of treatment is centered on interpersonal problem areas, interpersonal disputes, role transitions, grief, and interpersonal deficits. The SSCM treatment in this study involved psycho-education, supportive psychotherapy, and strategies for weight maintenance, and re-learning to eat normally. Fifty-six adult women with AN were randomized to one of the three treatment groups. Treatment consisted of 20 sessions over no less than 20 weeks. The results found that the CBT group had a higher percentage of participants that were rated as significantly improved when compared to the IPT group, but there were no statistically significant differences found for amount of weight gain, Global Assessment of Function (GAF; APA, 2000), or the Hamilton Depression Rating Scale (HDRS; Hamilton, 1960). A surprising finding was that SSCM was associated with a greater percentage of participants rated as significantly improved when compared to the CBT group on all of the outcome measures. In addition, SSCM was significantly favoured over IPT in terms of global outcome and GAF scores. Although there was no significant difference found in the number of participants who did not complete treatment in the three groups, the overall attrition rates were high (38%). The authors concluded that their unexpected results challenged current assumptions about the effective ingredients in successful treatment of AN and that further research was needed.

A follow-up study (Carter et al., 2011) was conducted to investigate the long-term efficacy of the three treatment groups (CBT, IPT, and SSCM) that were used by McIntosh et al. (2005). Of the 56 original participants 43 participated in the

follow-up assessment, which was on average 6.7 years later. First, outcome at long-term follow-up was assessed. No significant differences were found between the three treatment groups on any of the pre-selected primary, secondary, or tertiary outcome measures. Then outcome at post-treatment from the McIntosh et al. study was compared with outcome at long-term follow-up in the present study. Different patterns of recovery on the primary outcome measure (global outcome) were found over time. At long-term follow-up, participants randomized to the SSCM group had deteriorated to a poor global outcome compared to those in the IPT group. The opposite was true for those in the IPT group who shifted from the poorest global outcome scores at post-treatment to the best outcome scores at follow-up. Participants randomized to the CBT group saw the most stable results over time as they continued to show intermediate global outcomes. The findings of this study suggest that one of the most effective ways to treat AN might involve using a stepped approach. Having a form of treatment such as SSCM in the initial stages might be the most helpful to address immediate concerns such as weight gain and food intake. After the initial physical concerns have been alleviated, integrating treatments that focus on the psychological symptoms may help in addressing the concerns underlying the eating disorder (Carter et al., 2011).

Channon, De Silva, Hemsley, and Perkins (1989) also investigated the efficacy of CBT by comparing it to Behavior Therapy (BT; diary keeping and exposure) and a control "eclectic" therapy in a small randomized trial of 24 individuals with AN. Each treatment group was provided 18 sessions over a 6 month period, with

a follow-up of 6 booster sessions over 6 months. CBT was not superior to BT or to the minimal intervention control group. However, these results should be interpreted carefully as with most studies of AN, the sample size was relatively small with only 8 subjects being assigned to each treatment group. This makes the interpretation of outcome differences in the three groups rather problematic.

Over the long-term CBT appears to be successful for only about 45-50% of individuals with BN and there is very limited data on individuals with AN (Gowers et al., 2007; Kotler et al., 2003; McIntosh et al., 2005). Despite limited research regarding CBT's efficacy, it is still the treatment of choice for 90% of clinicians when treating AN (Shafran & de Silva, 2003). The main criticism against the CBT models is that they are too simplistic, leaving many unanswered questions with regards to the origin and maintenance the disorder (Shafran & de Silva, 2003). In addition, many of the current CBT approaches have been developed for use with individuals that have suffered from AN for only a brief period of time and who present with a greater motivation for entering the recovery process. Congruent with this more short-term model, most of the studies that have investigated the effectiveness of CBT have recruited participants who had brief eating disorder histories, few prior treatment experiences, and were at a more stable weight (e.g. McIntosh et al., 2005; Pike et al., 2003). This makes the findings of these studies not very generalizable as the majority of individuals with AN have suffered from the illness for an extended period of time, have elaborate treatment histories, and are often not ready to work towards recovery.

Psychodynamic Therapies

As AN was the first type of the eating disorders to be identified, early attempts to treat it were rooted in the psychoanalytic/psychodynamic framework. Psychoanalytic theory assumes that verbalized reflections and associations provide information regarding individuals' conscious and unconscious representations of their world (Bers, Blatt, & Dolinsky, 2004). In terms of eating disorders, psychodynamic therapy has the longest treatment history moving from earlier open-ended formats to the more recent time-limited and structured approaches (Touyz et al., 2008). The earliest psychoanalytic theories were of a drive-conflict type (Moulton, 1942; Waller, Kaufman, & Deutsch, 1940) and argued that starvation is a defense against sexual fantasies of an oral nature. In the late 1970's, the Object-Relations model became more prominent in AN treatment. For example, Palazzoli (1978) saw the individual with AN as having unsolved issues from the oral incorporative stage which prevented the separation-individuation process from the individual's mother. Starvation was therefore thought to be an attempt to stop the feminization of the body and to reduce the confused and ambivalent identification with the mother (Goodsitt, 1997). In the 1970's another hugely influential figure in the application of psychodynamic therapies to the treatment of eating disorders was Hilde Bruch (1973). According to Bruch there were two core elements of change needed in treating individuals with AN: (a) developing an understanding of the meaning of food for the person, and (b) developing a sense of identity through finding alternatives to the anorexic self-experience and self-expression.

During the 1980's and 1990's self-psychology prominently contributed to the psychodynamic conceptualization of AN. According to the self psychologists, certain individuals experience a developmental failure in the provision of mirroring, idealizing, and validating needs, which then leads to deficits in the ability to maintain self-esteem, cohesion, and self-regulating functions. The result is an increased vulnerability to developing an eating disorder (Goodsitt, 1997). Although there is a great deal of literature on the theories behind the psychoanalytic /psychodynamic approaches, these therapies are by their nature long-term which has made them hard to empirically investigate.

New directions in the psychodynamic treatment of anorexia. There have been modifications made to the original forms of psychodynamic therapy for AN in order to develop more user-friendly models. One such adaptation is Focal Psychoanalytic Therapy (FPT), a standardized form of time-limited psychoanalytic therapy that can be empirically tested (Dare & Crowther, 1995). In FPT the therapist takes a non-directive stance by giving no advice about the eating behaviors or other problems of symptom management. Instead, the therapist focuses on the conscious and unconscious meanings of the symptoms in regards to the individual's history and family experiences and their influence on current interpersonal relationships. Treatment also includes an exploration of those influences in the individual's relationship with the therapist (Touyz et al., 2008).

In addition to FPT, there is also another form of psychodynamic treatment that has been developed in recent years known as Cognitive Analytic Therapy (CAT).

In CAT, there is an integration of psychodynamic factors with behavioral ones and a direct focus on interpersonal and transference issues (Wilson, 2004). During treatment, individuals are assisted in creating a formal and mapped-out structure of the place that AN has in their experience of self and in their previous and current interpersonal relationships (Touyz et al., 2008). Treatment is provided over 20 weekly sessions with monthly booster sessions and therapists require specific training and supervision to provide this complex form of treatment.

The effectiveness of psychodynamic treatments. Despite their long treatment history in AN and their continued use worldwide, there is unfortunately very little evidence to support the use of psychodynamic approaches (Treasure & Schmidt, 2005), especially with adolescents (Eisler, 2005). There has been one randomized controlled trial of FPT and the results indicated that it was as effective as other psychotherapies in the outpatient treatment of individuals with the disorder (Wild et al., 2012). However, it should also be noted that the outcomes were found to be poor for the majority of participants in all of the treatment groups.

There have been only two studies that have investigated CAT in the treatment of AN. Treasure et al. (1995) conducted a pilot study that compared an educational behavioral outpatient treatment (EBT) with CAT in 30 adults with the disorder. The results indicated that after 1 year of treatment both groups had gained weight (M = 6.8 kg) and 63% had obtained a good or moderate recovery when looking solely at nutritional outcomes. Although the results of this study

sound promising, when evaluating them more closely the amount of weight gain was modest with only 40% of those in the EBT group and 50% in the CAT group reaching 85% of their average body weight. At a one-year follow-up only 37% of the total number of individuals had fully recovered and there was no difference in outcome between the two treatment groups.

The second study found similar results and involved comparing Focal Psychoanalytic Therapy (FPT), Cognitive Analytic Therapy (CAT), and family therapy with a treatment that involved low contact routine care from a psychiatry trainee (Dare et al., 2001). Eighty-four adults with AN were randomly allocated to one of the four groups. Each of the therapies was conducted over the course of a year except for CAT, which consists of 20 weekly sessions followed by 3 months of booster sessions. Of the 84 participants that started the study, 64% of them completed, 14% required admission to a hospital, 62% were found to have a poor outcome, and one died. The results revealed that there were significantly more participants in FPT and family therapy groups found to be recovered or significantly improved. In addition, a secondary analysis of relative risk (RR) was found to be in favour of FPT over the routine condition (RR = 0.70, 95% CI = [0.51-0.97]).

Taking the findings of both of these studies together, the results suggest that there is no advantage of CAT over standard routine care in either physical or psychological outcomes. There does seem to be some indication that using FPT for the treatment of AN may be advantageous, however more research is needed

that compares it to other individual psychotherapies before any conclusions can be made about its effectiveness.

Dialectical Behavior Therapy

Dialectical Behavior Therapy (DBT; Linehan, Armstrong, Suarez, Allmon, & Heard, 1991) was developed with the aim of reducing life-threatening behaviors in individuals with Borderline Personality Disorder. According to the DBT, behaviors such as self-harming and outbursts of anger are conceptualized as maladaptive coping strategies that develop to help with emotion regulation. Therefore, treatment involves developing more functional ways to cope with emotional experiences so that clients are better able to modulate their emotions. These coping skills include: mindfulness, distress tolerance, emotion regulation, and interpersonal effectiveness. Due to the demonstrated utility of DBT with individuals with Borderline Personality Disorder, it has now been extended to other clinical populations both with and without Axis II symptoms. One of the populations that it was applied to recently is individuals suffering from chronic AN.

The application of DBT to individuals with eating disorders seemed to be highly relevant as it is well known that these individuals struggle with emotion regulation (Lena, Fiocco, & Leyenaar, 2004; Zonnevijlle-Bender, Van Goozen, Cohen-Kettenis, Van Elburg, & Van Engeland, 2004). Wisniewski and Kelly (2003) presented a case for applying DBT to the treatment of eating disorders. They suggested that individuals who developed eating disorders have a biological deficit in regulating emotions or in their hunger and satiety system or both. They

argued that if the biological deficit was combined with an invalidating environment then the individual was at a higher risk for developing an eating disorder. Based on this understanding, it is thought that behaviors such as restriction, purging, and over-exercise are ways that individuals with AN numb, soothe, or avoid their negative emotional experiences (McCabe & Marcus, 2002).

Most of the studies investigating the application of DBT to an eating disorder population have explored it in BN and Binge Eating Disorder (BED) (Telch, Agras, & Linehan, 2001; Safer, Lock, & Couturier, 2007; Safer, Telch, & Agras, 2001). Taken together, the findings of these studies suggest that DBT is a promising alternative to the more traditional therapies (CBT or IPT) for both BN and BED. DBT is also thought to be an effective treatment for eating disorder clients with a history of chronic treatment failure that present with comorbid diagnoses such as borderline personality disorder (Federici, Wisniewski, & Ben-Porath, 2012). There have been two recent studies that have investigated DBT in individuals suffering from AN. The first was a pilot study investigating the effectiveness of DBT in 31 adolescent inpatients with AN and BN (Salbach, Klinkowski, Pfeiffer, Lehmkuhl, & Korte, 2007). Overall, DBT was found to be a promising treatment for this population.

In order to investigate whether the results of this initial pilot study would extend to outpatients with eating disorders, a case series was conducted investigating adolescents (*Mean age* = 16.5 years, *SD* = 1.0) with both AN and BN who received DBT as part of their treatment (Salbach-Andrae, Bohnekamp, Pfeiffer, Lehmkuhl, & Miller, 2008). Twelve participants took part in bi-weekly

sessions of individual therapy and a DBT skills group for 25 weeks during their outpatient treatment. The results at post-treatment suggested that significant improvements in eating disorder behaviours and psychopathological symptoms had occurred. Despite these promising results, half the participants still met the DSM criteria for AN, BN, or EDNOS and one participant had dropped out prematurely. Important limitations of this study are the small sample size used and the lack of a control group which makes it impossible to determine whether DBT is more effective than other individual psychotherapies for AN.

A similar study conducted by Kroger et al. (2010) investigated the effectiveness of DBT with an added CBT treatment module in 24 women with Borderline Personality Disorder and co-morbid AN or BN. Overall, it was found that self-rated eating disorder complaints, general psychopathology, and ratings on global psychosocial functioning had significantly improved at post-treatment and at a 15-month follow-up. In addition, although the mean weight of women with AN had not significantly increased at post-treatment, it had reached significance by follow-up. Despite the significant changes that occurred pre- to post-treatment, the remission rate at the follow-up was 54% for women with BN and 33% for women in AN. In addition, 44% of women that had entered treatment with AN had shifted into a BN diagnosis.

The effectiveness of dialectical behaviour therapy. The initial quantitative studies investigating the effectiveness of DBT with individuals with AN have suggested that it is a promising treatment. In order to investigate the lived experience of replacing restrictive behaviors with DBT skills, Hailey (2009)

conducted a qualitative study with 4 individuals recovering from AN. Ultimately it was revealed that it was highly challenging, yet possible for these participants to replace their restrictive behaviors with DBT skills. By the end of their DBT treatment, the participants reported that they were better able to assert themselves, were more accepting of their emotions, could better tolerate distress, and had experienced a shift in how they saw themselves and the world.

Based on the findings of the previous studies, DBT could be considered a potentially efficacious treatment for AN, however not all of the findings have been congruent suggesting that further work is needed in adapting DBT to an AN population. The elements of DBT that do appear to be helpful and require further research and development are helping clients to be more aware of and better able to tolerate their emotional experiences so they can replace their maladaptive eating behaviors with healthier emotion regulation skills.

Motivational Approaches

Over the past decade there has been increased attention given to motivational approaches in the treatment of AN (Lask, Geller, & Srikameswaran, 2007). The focus on motivational approaches developed out of the recognition that previous treatments focused mainly on behavioral symptoms and have been relatively unsuccessful. Although motivational levels are an important factor to consider when treating all clients, they are especially important when working with individuals with AN as the most common reported challenge in treating these individuals is their denial of illness and resistance to change (Kaplan, 2002). The increased interest in motivational approaches has arisen because with anorexic

clients the therapist must first deal with problems of treatment refusal, resistance, drop out, and relapse. The premise of the motivational model is that the client is the one that has the power to change and that resistance is not a trait within a person, but in instead a characteristic of the interpersonal process (Miller & Rollnick, 2002). Furthermore, practitioners who work within the motivational model believe that directly attempting to change behavior in individuals who lack motivation to change will actually contribute to resistance.

The motivational approaches have developed out of the transtheoretical model of change (Prochaska & DiClemente, 1983). There are five stages that describe an individuals motivation/readiness to change: (1) Precontemplation (unaware of the problem or unwilling to change), (2) Contemplation (being aware of problem but unwilling to change), (3) Preparation (intention of changing in the near future), (4) Action (actively working to change), and (5) Maintenance (working to prevent relapse). Although these stages are presented in a series, it is quite often the case that individuals move between these stages as they attempt to work on solving their problem.

The effectiveness of motivational approaches. There have been two forms of psychotherapy treatment that are included under the motivational approaches: Motivational Interviewing (MI; Millner & Rollnick, 2002) and Motivational Enhancement Therapy (MET; Ward, Troop, Todd, & Treasure, 1996; Vitousek et al., 1998). MI is a person-centered clinical method for assisting clients in resolving their ambivalence with the change process. It is a collaborative approach that sees clients as experts in relation to their experience. The role of

the therapist in MI is to foster a trusting and collaborative relationship with the client so that exploration around the change process can occur in a safe environment.

There have been two groups of individuals that have contributed to the development of MET for eating disorders (Ward et al., 1996; Vitousek et al., 1998). MET was developed as a brief treatment based on the principles of MI with the addition of clinical feedback being provided to the clients during treatment (Miller & Rollnick, 2002). There are currently many different forms of MET in different contexts. If MET is practiced in its original form there are four sessions that focus solely on developing a trusting relationship with the client, providing detailed clinical feedback or assessment results, understanding the function of the client's problem, and reviewing the pros and cons of changing (Lask et al., 2007). MET focuses on the ego-syntonic nature of AN with the goal being to assist the individual to move from the lower stages of change into the higher stages using both cognitive and emotional strategies (Miller & Rollnick, 2002).

MET has been widely used in the mental health field and has applicability to AN, especially when there is a strong resistance to change (Touyz et al., 2008). Unfortunately, there have been very few studies investigating the effectiveness of MET in the treatment of AN. One study that investigated the effectiveness of MET was completed in a group setting (Feld, Woodside, Kaplan, Olmsted, & Carter, 2001). The study involved 4 group sessions of MET over four weeks in 19 eating disordered individuals, 12 with full syndrome AN and 3 with sub-

syndromal AN. The results indicated that there was a statistically significant increase in motivation to change in the sample on all three of the motivational scales used. Unfortunately, the question that was not answered by this study was whether increases in motivation also led to better treatment outcomes.

Despite the limited empirical support for motivational approaches, the need for motivational enhancement in individuals with AN cannot be dismissed as a recent study found that approximately 80% of those in inpatient eating disorder units were not actively engaged in treatment (Rieger, Touyz, & Beumont, 2002). Even more disturbing was the finding that 66% of these individuals were still not motivated to actively engage in treatment after an average of 3 months. It is important to note that motivational approaches to treatment should not be used as the only form of therapy, but instead are a complement to other approaches. Although it has yet to be empirically evaluated in the AN population, the results in other populations seem to suggest that it is of considerable value and should be a routine part of the early stages of treatment (Lask et al., 2007).

Interpersonal Therapy

Rather than focusing on the individual's eating behaviors, Interpersonal Therapy (IPT) views AN symptomatology within an interpersonal context and focuses on triggers encountered in relationships (Gore, VanderWal, & Thelen, 2001). According to this theory, interpersonal events that often trigger symptoms include interpersonal role disputes, grief, role transitions, and interpersonal deficits. Based on this understanding, the IPT approach involves exploring individuals' experiences, defining their expectations, designing different ways of

managing problems, and practicing new and more adaptive behaviors. Also included in the IPT approach is an exploration of the developmental changes that the individual has experienced. It is thought that this form of treatment is particularly effective with anorexic adolescents due to its focus on peer relationships, which are a core component of adolescent development (Gore et al., 2001).

Despite the description and promotion of the approach by Gore et al. (2001), there is currently very little literature on the utility of this approach. What has been concluded is that IPT is empirically identified as an effective treatment for BN (Fairburn, Jones, Peveler, Hope, & O-Connor, 1993). The only study investigating IPT in individuals with AN was the study discussed earlier in this paper by McIntosh et al. (2005). The results of that study suggested that IPT is a promising treatment approach for long-term change. It is thought that one of the reasons that IPT has shown success in an eating disorder population is that it does not focus directly on eating disorder symptoms and instead focuses on interpersonal problems and how they are associated with difficulties in affect regulation (Apple, 1999). Therefore, it is thought that the development of skills in how to manage emotional distress, particularly in interpersonal relationships, is the key to successful outcomes.

Eye Movement Desensitization and Reprocessing

A form of psychotherapeutic treatment called eye movement desensitization and reprocessing (EMDR) was developed in the 1980's to treat post-traumatic stress disorder and other trauma experiences (Shapiro, 1989a; 1989b). During

EMDR the client focuses on a traumatic personal experience and is asked to rate their subjective level of distress. The therapist then moves an object or a finger back and forth in front of the client and instructs the client to follow the movement with his or her eyes while simultaneously thinking about the experience. The process is stopped when the level of distress is reduced or the client requests that they stop. Although there has been controversy surrounding the use of this type of therapy, it is thought to be a promising and helpful form of treatment for trauma (Chambless et al., 1998; Chemtob, Tolin, van der Kolk, & Pitman, 2000) and numerous other psychological conditions including phobias, anxiety disorders, mood disorders, substance abuse, and sexual dysfunctions (Acierno, Tremont, Last, & Montogomery, 1994; Goldstein & Feske, 1994; Marquis, 1991; Sanderson & Carpenter, 1992; Shapiro, 1995; Wermik, 1993). EMDR is widely used in the treatment of eating disorders, despite the fact that there has been surprisingly little research into its effectiveness with this population (Hudson, Chase, & Pope, 1998).

There has been one case study on the use of EMDR in treating eating disorders and there is initial evidence that it helps with concerns around body image and self-esteem (Dziegielewski & Wolfe, 2000). There has also only been one randomized study conducted which investigated 43 women receiving standardized residential eating disorder treatment and 43 women receiving standardized treatment and EMDR (Bloomgarden & Calogero, 2008). As there were unexpected discharges over the 18-month study period, a minimum number of EMDR sessions were not required and the number of sessions received by each

participant varied. Researchers chose to have participants focus on their earliest, most recent, and worst negative body image memories during treatment. Results revealed that participants in the EMDR condition reported less distress about negative body image memories and lower body dissatisfaction at post-treatment, 3-month, and 12-month follow-up. However, the effects of the earliest and most recent memory faded over the 12 months with effect sizes close to zero. Although four sessions of EMDR was found to be sufficient for reducing distress up to 3 months and up to 12 months for the worst memory, it was not sufficient to sustain a lasting reduction in distress for all of the memories or to generalize to other body image outcomes.

Overall, it appears that what can be tentatively concluded at this point is that EMDR is useful in reducing distress in specifically targeted negative body image memories and for improving self-esteem and body image. However, more research is needed to determine its effectiveness in treating the broader range of eating disorder pathology that is found in this population.

Feminist Therapies

Feminist therapy in the context of eating disorders is based on the premise that cultural constructions of gender are central to the understanding and treatment of AN. Feminist cultural theorists often criticize medical, psychiatric, and psychoanalytical models for privileging individual over sociocultural factors (Bordo, 1993; Malson, 1998). The feminist therapeutic approach places emphasis on the importance of topics such as role conflicts, identity confusion, sexual abuse, and other forms of victimization in the development and treatment of AN (Garner

& Needleman, 1997). More specifically, they seek to put the self back into the body, which they view as situated within the gendered power relations of western consumer capitalism. Feminist theories are also non-pathologizing, which is considered to be very beneficial to women struggling with eating disorders that are already experiencing shame, blame, and isolation.

There is a new generation of feminist therapists that are shifting away from traditional views. These newer generation movements are building on the growing literature on the psychology of women and shifting into dynamic formulations regarding the treatment of AN. Many of the key figures that have been involved in combining feminist and transcultural approaches to eating disorders are Katzman and Lee (1997), Striegel-Moore (1995), and Wooley (1995). These theorists have emphasized the socio-political themes that should be taken into account when working with individuals with AN, as well as the importance of considering the influence of the therapist's gender (Perlick & Silverstein, 1994). There has also been a shift towards the central role of language as meaning-making and action-oriented.

In addition to the importance of gender in treating eating disorders, feminist theorists also address the context in which treatments are provided. They argue that health care interventions are based on objective knowledge and evidence-based approaches. By drawing attention to the treatment context, feminist theorists demonstrate that medical interventions are socially constructed and culturally situated. In particular, these theorists focus on the inherently gendered nature of eating disorders and reflect on the way that many current interventions

uncritically harness and reproduce the same discourses in treatment. They argue that there is something wrong with our treatments when traditional models of treatment endure despite their limited effectiveness and continuing focus on psychopathology (Moulding, 2009).

Feminist forms of treatment for AN are often discussed in interactive terms, emphasizing the importance of women's interpersonal relations. Many researchers and practitioners agree that discussing feminist issues in therapy has face validity as AN is a disorder that impacts mainly females who are constantly facing societal pressures around body image. Along with discussing the role of power differentials, gender inequality, and the socio-political and cultural influences, treating eating disorders from a feminist framework involves creating a new discourse through externalizing conversations or empowering a new sense of voice. Feminist therapists also look at de-constructing notions and practices associated with healthy weight, assisting clients to consider new perspectives on size and embodiment (Moulding, 2009). Despite the strong relevance of feminist issues in the treatment of eating disorders, there have been no randomized controlled trials to date that have evaluated the effectiveness of feminist therapy (Garner & Needleman, 1997; Touyz et al., 2008).

Narrative Therapy

Narrative Therapy emerged in the 1980's out of a longstanding friendship and collaboration between Michael White and David Epston. They explored the idea of narrative metaphor as they argued that it provided a map for therapy that emphasized the socially constructed and fluid character of identity (White &

Epston, 1990). They envisioned therapy as a process of re-authoring one's story. Similar to the Feminist treatment approach for AN narrative therapy focuses on externalizing AN, which involves referring to AN as an entity that is separate from the self. Externalizing allows for a change in discourse as these conversations subvert the often taken-for-granted understandings of problems as residing in the disordered self. The goal then is to reduce the tendency for others to place blame on the individual for the development of the eating disorder (Manley, Smye, & Srikameswaran, 2001). By externalizing the eating disorder, the individual is also assisted in developing a willingness and ability to act against it (Manley et al., 2001). Unfortunately, the effectiveness of narrative treatment for AN is unknown as there has been no research that has investigated a strictly narrative approach with this population.

Experiential Therapies

As one of the core features of AN is an extreme body-image disturbance, many experiential non-verbal therapies have been used to address this concern. Some of these methods include dance-movement therapies and expressive art therapy. Although they have been widely applied in the treatment of eating disorders, there are no published control trials investigating the effectiveness of these approaches in individuals with AN (Kaplan, 2002). It is surprising that these experiential methods have not been investigated further due to the extreme challenges these young women face when labelling and discussing internal states. After all, the purpose of experiential therapies is to allow greater access to the unconscious processes and to the internal experiences of the embodied self. It is clear that

further research is needed into the potential applicability of this type of therapy in treating anorexic individuals.

Family Therapies in the Treatment of Anorexia

Family therapy is the most studied psychological treatment for AN (Dare & Eisler, 2002). For many practitioners it has become the treatment of choice when working with adolescents with AN as the family environment is considered to be a major contributing factor to both the development and maintenance of the disorder (Levitt, 2001; Murray, 2003). Family therapy for eating disorders involves including in the treatment process the parents, siblings, and any other significant others with whom the client has a close relationship. Involving significant others is thought to be especially important when treating individuals that still live at home as the therapist is better able to establish how the family may be better able to support the client (Honig, 2007). It is through family therapy that unresolved issues within the family are uncovered and addressed with special attention being paid to how the underlying concerns associated with the eating disorder are manifest in the family system (Murray, 2003).

There have been competing viewpoints on family therapy in the treatment of AN. Some researchers have argued that it is the psychological intervention that produces the best outcomes for young females (NICE, 2004). This is based on the belief that current family therapy practices are resulting in the emergence of families that are resources of both recovery and understanding, while also supplying new knowledge and solutions for treatment (Kingsley & Kingsley, 2005; Maisel, Epston, & Borden, 2004; Rhodes, Baillee, Brown, & Madden,

2005). Thus, there has been a shift away from seeing the family as the cause of AN, to seeing it more as a source of support and recovery (Honig, 2007). This shift occurred as practitioners realized that the adolescent and young adult population despite seeking to gain autonomy continue to rely on their parents to guide them into adulthood (Lock & Le Grange, 2005). However, there are others who feel there is meagre evidence base supporting the use of family therapy in AN treatment, especially when compared to the research results in relation to BN (Fairburn, 2005). This is particularly the case with adults as there has been very little research exploring the effectiveness of family therapy in adults with AN.

Structural Family Therapy

There is relatively little systemic research regarding the efficacy of family therapy in the treatment of AN (Lock & Le Grange, 2005). This is unfortunate as research into the effectiveness of family therapy in eating disorder treatment began at the Child Guidance Clinic in Philadelphia in the 1970's (Minuchin et al., 1975; Minuchin, Rosman, & Baker, 1978). Known as Structural Family Therapy, it has been very influential in the treatment of eating disorders. One of the main reasons it has had such a significant impact is due to its foundation in a clear theoretical framework. According to this model a psychosomatic family context is required for an eating disorder to develop. This type of family context is characterized by strict rigidity, enmeshment, over involvement, and conflict avoidance (Minuchin et al., 1975). The goal of the Structural Approach was to directly challenge the structural problems within the psychosomatic family in order to bring about a shift or change. Overall, the outcome of the initial testing

of the model indicated an 86% success rate at follow-up, which was a much more optimistic outcome for these young women than had been found in any previous research (Minuchin et al., 1978). However, it is also important to keep in mind that the vast majority of individuals in this study were adolescents and suffered from a very short duration of the illness (*M* = > 8 months).

Although the Minuchin trials were never supposed to be treated as clinical trials, they have been the framework for many theoretical and clinical application principles in numerous subsequent family-based treatments for eating disorders (Le Grange & Lock, 2005). The use of these trials to inform family-based treatment is a concern as they displayed many methodological weaknesses, such as evaluations being carried out by individuals that were part of the treatment team, no comparison treatment groups, and the variable length of time before follow-ups were completed. Furthermore, family therapy was not offered in a pure form during these trials as it was often the case that adolescents received individual or inpatient treatment at the same time as family therapy (Le Grange & Lock, 2005). The Structural Family Therapy approach has yet to be investigated with controlled trials and therefore its true effectiveness has yet to be determined (Lock & Gowers, 2005).

Maudsley Model

Investigating family therapy as a form of treatment for eating disorders continued on with the Maudsley hospital group in London in the 1980's and 1990's. This is a systemic approach that considers genetic, sociocultural, and family influences in the development and maintenance of AN (Dare & Eisler,

1997). The Maudsley form of family therapy has been found to be particularly effective in treating adolescents with AN and was manualized to assist in treatment effectiveness studies (Lock, Le Grange, Agras, & Dare, 2001). Although the Maudsley model of family therapy retained several aspects of the Minuchin approach, it also has several differences. One of the biggest differences is that parents are not distanced from being involved in their child's eating problems; instead they are put in charge of the re-feeding process. Support is provided to parents as they attempt this task, as well as for the individuals suffering from AN as they begin to regain control over their lives (Dare & Eisler, 2002). As weight is gained and the eating behaviors normalize, the responsibility of re-feeding is then shifted to the adolescent. Along with the shift in responsibility, the focus for treatment also shifts into the deeper psychological concerns that have lead to the development of the eating disorder.

The only randomized control comparison of family therapy to individual therapy in adolescents and young adults (M = 21.8 years) was performed by the Maudsley group (Russell, Szmukler, Dare, & Eisler, 1987). The study was exploring relapse prevention in 80 weight-restored inpatients who were randomly assigned to either outpatient individual or family therapy for a period of one year. Fifty-seven of the participants had AN and 23 had BN with a past history of AN. The participants were divided into four prognostically homogenous groups and two of these were found to be the most important: (1) patients with an early onset and short history of AN, and (2) patients with late-onset AN. The individual therapy was a non-specific supportive therapy designed to replicate routine

treatment and involved encouraging participants to consider weight gain in order to improve their chances of recovery. The results indicated that family therapy was superior to individual treatment in preventing weight loss, regaining menstrual functioning, and in decreasing eating disorder cognitions in participants with less than a three-year history of illness. The difference in treatments did not hold up for participants with chronic AN. A 5-year follow-up study found significant improvements in all the participants and the changes continued to be the most evident in patients with an early onset and short history of AN (Eisler et al., 1997). One of the areas of greatest concern with this study was that family therapy was compared to a generalized supportive therapy and not to any of the more specific individual psychotherapies that would allow for a better determination of which form of therapy is more effective.

Family Therapy Studies with Adolescents

Due to the fact that a majority of cases of AN develop in adolescence, there have been considerably more studies conducted in the family therapy field. In order to determine which format of family therapy is the most effective, several studies have compared the efficacy of Conjoint Family Therapy (CFT), which involves the whole family being treated together, with Separated Family Therapy (SFT) where parents are treated separately from their child. Le Grange, Eisler, Dare, and Russell (1992) were the first to investigate whether there were differences in CFT and SFT. The participants were 18 adolescents ranging in age from 12 to 17 years and their families. The results at a 32-week follow-up found

that there was no difference in weight between the two groups, which was found to be in the normal range.

A more recent study that also compared CFT with SFT in 40 randomized adolescent participants confirmed the earlier findings (Eisler, Dare, Hodes, Russell, Dodge, & Le Grange, 2000). Measures of physical and psychological symptoms were taken at admission to the study, at 3 and 6 months, and at the end of treatment. Results indicated that there was considerable improvement in both the nutritional and psychological state of both treatment groups. When looking into global measures of outcome both CFT and SFT had equivalent results. However, investigating specific measures revealed that there were greater changes on individual and family functioning measures for the participants in the CFT group.

Overall, the results of both of the Le Grange et al. (1992) and Eisler et al. (2000) studies indicated that approximately 70% of the adolescents were classified as having good or intermediate outcomes by the end of treatment. In a five-year follow-up study it was found that regardless of type of family therapy treatment, 75% of adolescents had good outcomes, 15% had intermediate outcomes, and 10% had poor outcomes (Eisler, Simic, Russell, & Dare, 2007). Similar results were found in a randomized study of 86 adolescents conducted by Lock, Agras, Bryson, and Kraemer (2005) where it was found that a 6-month long, 10-session course of family therapy was as effective as the Maudsley 20 session family format. In a follow-up study it was found that there continued to be no differences between those who received short-term family therapy and those who

received long-term family therapy up to four years post-treatment (Lock, Couturier, & Agras, 2006).

There have also been several studies that have investigated the effectiveness of two additional formats of family therapy, one a conjoined format known as Behavioral Family Systems Therapy (BFST), and the other a separated family format known as Ego-Oriented Individuals Therapy (EOIT) (Robin et al., 1999; Robin, Siegel, Koepke, Moye, & Tice, 1994; Robin, Siegel, & Moye, 1995). BFST is similar to the Maudsley model in that they both focus on assisting parents to assume direct responsibility for initially modifying the adolescent's eating patterns. However, they also differ in subtle ways with BFST working towards changing cognitions and problems in the family's structure before weight is fully restored. EOIT is a psychodynamic individual treatment that emphasizes enhancing autonomy, self-efficacy, individuation and assertiveness while also completing collateral sessions with the parents to help support the individual treatment. Thirty-seven adolescents and their families participated in a study comparing the effectiveness of BFST and EOIT (Robin et al., 1999). Looking at the overall outcomes, there was a significant increase in BMI as more than 67% of the adolescents reached their target weight and 80% regained menses. Participants continued to improve over time as approximately 75% had reached their target weight and 85% had regained menses at a one-year follow-up. However, there were significant differences noted between the two forms of treatment on physical outcomes. For example, the BFST group achieved greater weight gain both at the end of treatment and at follow-up. At post-treatment 55%

of the BFST group and only 46% of the EOIT group had achieved their target weights set out prior to starting treatment. By follow-up these numbers had increased to 82% and 50% respectively, although this difference did not reach statistical significance. Participants in the BFST group were also significantly more likely to have returned to normal menstrual functioning by the end of treatment. Unfortunately, neither of these treatments were superior in modifying eating attitudes or mood outcomes, however BFST did produce a more rapid treatment response. What cannot be determined by this study is whether the improvements in the physical components of AN that were shown for the BFST treatment were due to its CBT approach or to a more general advantage of family therapy over individual psychotherapy (Wilson, 2004).

There was also a recent study conducted by Lock, Le Grange, Agras, and Dare (2001) that investigated the optimal duration of family therapy in an adolescent population with AN. Adolescents were randomized to family therapy for either short duration (10 sessions over a period of 6 months) or a long duration (20 sessions over a period of 12 months). The therapy used was a manual-based model that focused on having the parents take control of the re-feeding process. The results indicated that there were no significant differences on the eating, psychiatric, or biomarker outcomes. However, they did find that participants in the longer-term therapy group that had more severe eating-related obsessions and non-intact families did much better with having a longer duration of treatment.

Family Therapy Studies with Adults

There have been relatively fewer studies conducted investigating the effectiveness of family therapy with adults suffering from AN. The Russell et al. (1987) study that investigated adolescents and young adults was the first controlled trial involving adults with AN. Thirty-six young adults who were weight restored were randomly assigned to either family or individual therapy for one year after they had completed an average of 10 weeks on an inpatient unit. Family therapy involved encouraging parents to help with the re-feeding process and delayed dealing with family issues until the eating disorder behaviors were under control. The comparison treatment was a non-specific supportive therapy designed to replicate routine treatment. Results indicated that family therapy had no benefits over individual therapy and that there was a trend in a sub-group of the participants with adult onset to favour individual over family therapy. Although this trend did not continue at a five-year follow-up, there were some indications that participants who received individual treatment had better long-term psychological adjustment (Eisler et al., 1997).

The only other published family therapy trial for adults with AN was conducted by Dare et al. (2001). In contrast to Russell et al. (1987), this trial was administered only on an outpatient basis and was designed to assess the effectiveness of three specific psychotherapies compared to routine care. Eighty-four adults with AN were randomized to one of four groups: one year of family therapy, one year of FPT, seven months of CAT, or one year of routine treatment (non-specific supportive psychotherapy). Of the 54 subjects that completed the

full course of treatment, family therapy and FPT were superior in producing weight gain when compared to routine treatment. However, the difference between CAT and routine treatment in producing weight gain was not statistically significant (Dare et al., 2001). Although there were some significant improvements, the amount of weight gained was not substantial considering it was a year long intervention. Furthermore, recovery rates were only around 15%, significantly below the 60 to 70% recovery rates that have been observed in adolescent trials. Overall, many of the participants were still significantly underweight at the end of treatment and continued to meet the diagnostic criteria for AN.

Two additional family therapy studies were conducted using an adult population; however these studies were not investigating the efficacy of different forms of family therapy. Instead, they compared outpatient individual and family therapy to referral to a family physician (Crisp et al., 1991; Gowers, Norton, Halek, & Crisp, 1994). In both studies the individual and family therapy groups had more weight gain and better psychological and social adjustment at one- and two-year follow-ups when compared to the family physician group. It is important to mention that the small number of participants in both of the studies and the non-blinding of the groups placed limitations on the conclusions that could be drawn from these studies.

Effectiveness of Family Therapy for Adolescents and Adults

Across a variety of inpatient and outpatient treatments, adolescents with AN appear to have a much better prognosis than adults (Guarda, 2008). Currently, the

most empirically supported treatment for adolescents is family therapy. In particular, the Maudsley model of family therapy is the most effective form for both weight gain and changes in psychological health. Despite these initial hopeful results we must keep in mind that these promising findings are limited to specific sub-groups of adolescents; those with an earlier onset and a shorter duration of the disorder. Furthermore, many of the trials that support family therapy for adolescents can only be considered as having provisional conclusions as they were uncontrolled studies with relatively small sample sizes (Dare, 1983; Herscovici & Bay, 1996; Le Grange & Gelman, 1998; Martin, 1985; Mayer, 1994; Stierlin & Weber, 1987, 1989; Wallin & Kronwall, 2002).

The majority of research to date has indicated that family therapy for adults with AN is not an effective form of treatment and that they might actually prefer individual psychotherapy. Concerns around the overuse of family therapy in eating disorder treatment was supported by a comprehensive analysis of research evidence completed by NICE (2004). As one of the main bodies responsible for producing evidence-based treatment guidelines for eating disorders, it has recommended that family interventions that directly assess the eating disorder should be offered to children and adolescents, however it is not recommended as the first or best treatment option for adults no longer living at home.

More research is needed that compares family therapy with alternative treatments that control for non-specific treatment influences. In other words, family-based therapy needs to be carefully considered and additional research is needed in regards to whether the effects of the treatment are related to family

involvement or some other aspect of the treatment. For example, studies that investigate family therapy approaches without the component of family involvement in the re-feeding process would be especially beneficial to decipher whether improvements are due to parental control or due to another factor such as changes in the family dynamics (Lock & Le Grange, 2005).

Treatment Settings for Anorexia

Inpatient and Outpatient Care

There have been only a few systematic reviews completed comparing inpatient and outpatient care in AN (Meads, Gold, and Burls, 2001). Based on the high costs that can be associated with inpatient treatments, the lack of treatment setting studies is surprising as it would be assumed that determining the most efficient and cost-effective setting for treatment would be desirable. One of the first studies conducted allocated 90 adults to one of four treatment groups for 10 months: inpatient treatment, outpatient individual/family psychotherapy, outpatient groups, or no further treatment (Crisp et al., 1991). Using the Morgan-Russell criteria it was found that participants in all three of the treatment groups had significant improvements, whereas there were no improvements found for the group that received no further treatment. At a two-year follow-up of only those individuals who had been in the outpatient individual/family psychotherapy group, 12 of the 20 participants were found to be recovered or nearly recovered (Gowers et al., 1994). The researchers concluded that for individuals with AN that are serious enough to consider entering into inpatient care, but not yet severe enough to make it essential, outpatient treatment is just as effective as inpatient treatment.

More recently, a large RCT (n = 170) was conducted investigating individuals receiving inpatient care, specialist outpatient care (manualized CBT and parental counselling), or general psychiatric outpatient care (non-manualized family and supportive care) (Gowers et al., 2007). Unfortunately, the attrition rates were high with 35% of all participants prematurely dropping out of treatment. There was a particularly high attrition rate for the inpatient group, which had 51% of its participants prematurely leave treatment. At a one-year follow-up there was no statistically significant differences between the groups and only 18% of participants were found to have a good outcome.

There have been many methodological concerns that have plagued the majority of inpatient care studies, preventing even the most basic questions about inpatient treatment from being adequately formulated or addressed (Vandereycken, 2003). Studies looking specifically at inpatient care for AN have been relatively small, non-randomized, and often involve the addition of a new treatment to standard care (Guarda, 2008). The addition of a new treatment to standard care is problematic as the type of standard care that is offered varies greatly between programs. High attrition rates are another concern with inpatient programs that makes them hard to empirically study. One way to address these methodological concerns is to conduct qualitative research of individuals' experiences participating in inpatient AN programs. Qualitative studies that have investigated personal experiences of inpatient programs have found that participants find many of the elements of inpatient treatment demeaning, while at the same time reporting that having someone else take over and enforce their treatment can be both

necessary and beneficial (Colton & Pistrang, 2004; Tan, Hope, Stewart, & Fitzpatrick, 2003).

Day Treatment Programs: A Solution to the Treatment Setting Debate?

In order to address the gap between studies that have focused solely on outpatient treatments and studies that have focused on highly structured intensive inpatient treatment, researchers are also investigating day hospitalization programs as alternative treatments options. Day programs were developed to help with rising costs in the treatment as they provide the support and structure of an inpatient program, but do not completely remove individuals from their everyday lives as they leave the program to go home at the end of the day. Unfortunately there have been a limited number of studies that have reported outcomes for their day treatment programs.

One of these programs is the Toronto Day Hospital Program (DHP), which is built primarily around a CBT focus (Kaplan & Olmsted, 1997). The results indicated that there was an average weight gain of 6 kilograms for patients with AN, along with a decrease in disturbed attitudes in weight/shape and depression. In addition, 50% of participants reported an absence of binge/purge behaviours by the end of treatment. Another day treatment program that has shown promising results is offered at the Therapy Center for Eating Disorders (TCE) at the Max Plank Institute (Becker-Stoll & Gerlinghoff, 2004; Gerlinghoff, Backmund, & Franzen, 1998). Similar to the results of the previous program weight gain was obtained, along with a decrease in alexithymia and improved psychological, sexual, and social adjustment.

There have also been day programs that have been investigated that have less of a CBT focus. A psychodynamic day treatment program built around supportive therapy interventions did not show promising findings (Thornton, Beumont, & Touyz, 2002). Results found that for all but one participant, weight loss occurred over the course of treatment with the mean BMI falling from 17.2 at intake to 16.4 at discharge. As a result of the treatment failure, the program introduced a CBT model with a focus on behavioural change. With the new program there was a significant increase in patients' BMI and a reduction in excessive exercise. Despite changes in physical symptoms, there was not a significant change on attitudes or beliefs about eating disordered behaviors.

Zeeck, Herzog, and Hartmann (2004) conducted a study to investigate the effectiveness of a day treatment program that incorporated psychodynamic, educational, and CBT elements. Outcome data indicated that there was a significant reduction in participants' eating disorder symptoms and 27.8% of those studied were found to be in remission. However, it is important to note that the definition of remission used in the study was quite liberal, as it did not include an absence of restriction and/or purging behaviors. Lastly, outcome data has also been reported for a day treatment program in Korea that was based on the Toronto Day Hospital Program with some unique additions such as dance therapy, recreational two-day camp, family group meetings, make-up technique education, and an image consultation program (Kong, 2005). It was found that there were reductions in the number of bingeing and purging behaviors per week along with increases in BMI scores over the course of treatment.

One of the main concerns with the majority of the day treatment program research is that it has used traditional significance testing and behavioural outcomes which does not allow for meaningful comparisons across data sets and treatment approaches (LaGreca, 2005). To address the concern with previous outcome data in day treatment programs, Ben-Porath, Wisniewski, and Warren (2010) evaluated a day treatment program investigating both the statistical and clinical significance of the outcomes. Fifty-five participants were assessed and allocated to either an intensive outpatient program (IOP) which ran for three hours, three times a week or a partial hospitalization program (PHP) consisting of 6 hours of treatment, 5 days a week. Both treatments combined elements of standard CBT with DBT for eating disorders. Patients remained in treatment until they met the APA criteria for treatment once per week, at which time they were transferred to an individual therapist that was working in the community. Participants in both the IOP and PHP groups made clinical and statistically significant improvements over the course of their treatment. In terms of clinical significance, the majority of participants made significant and reliable changes on all the eating disorder measures. However, very few participants improved to the point that they could be considered recovered.

What is the Most Effective Treatment Setting?

Overall, the results of day treatment program studies are mixed. With respect to BMI, studies evaluating day patient programs have found that there is a statistically significant weight gain (Ben-Porath et al., 2010; Kong, 2005; Thornton et al., 2002), however long-term weight maintenance is not as consistent.

In addition, there is still uncertainty about the long-term efficacy of treatments that focus primarily on abstaining from eating disorder behaviors as it appears that attitudes about weight and eating are not fully changed after completion of these programs (Attia & Walsh, 2009).

The lack of studies comparing treatment settings is concerning as there is a high financial expense of prolonged inpatient care, in addition to the significant emotional toll that hospital treatment can have on individuals and their families. What we do know is that taken together the results of previous systematic reviews and RCTs suggest that a continuum of care is needed. Programs such as inpatient hospitalization or day treatment appear to be an effective intervention for individuals that are presenting with moderate to severe eating disorder symptoms. The results suggest that an effective treatment course starts with a comprehensive and multidisciplinary inpatient or partial hospital program based on individual need and as recovery progresses, transitions into less structured outpatient therapies (APA, 2006; NICE; 2004; Royal Australian and New Zealand College of Psychiatrists Clinical Practice [RANZCP], 2004). Although there is agreement on the need for specialist care that includes weight restoration and psychotherapy, there is currently no single approach that has been found to offer a distinct advantage over the others (Hay & Claudino, 2010).

Discussion

Compared to other psychiatric disorders, there has been relatively little research conducted looking at the effectiveness of psychological treatments for AN. Overall, consistent evidence is lacking for the efficacy of any treatment

(Bulik et al., 2007; Wilson, 2004). Even in those studies that have been conducted, the majority of RCTs investigating psychological treatments have yielded insufficient power to determine clinical significance (Treasure & Kordy, 1998). As a result, little advancement has been made in developing effective treatments for this serious and often fatal disorder (Kaplan, 2002).

Methodological Concerns

Unfortunately, the studies that have investigated psychological treatments for AN have been plagued by many methodological problems (Guarda, 2008). For example, the majority of these studies have used small sample sizes and had extremely high attrition rates. Although small sample sizes and high attrition rates are common problems when investigating AN (Halmi et al., 2005), these methodological limitations are highly problematic. Left with underpowered studies researchers are unable to draw conclusions in terms of differential efficacy across groups (Bulik et al., 2007). Another concern is the wide range of conflicting findings often using similar techniques and populations. Conflicting findings in the research literature may be due to the considerable variability in assessment protocols and outcome measures used when investigating the effectiveness and adherence to treatment. The conflicting findings may also be due to the various points in treatment that outcomes have been investigated as it can range from the acute phase of the disorder to after weight restoration.

There is also controversy around how researchers are determining which treatments are more effective. A common concern is that when treatment effects are discovered, it is often the case that the more *effective* therapy was found to be

better than a comparison treatment with no theoretical or clinical rationale (Agras et al., 2003). Furthermore, many of these *effective* therapies are only successful for a specific sub-group of the AN population. The lack of well-defined and properly designed research makes it extremely challenging to offer any evidence-based treatment recommendations. Therefore, future research is needed that investigates the effectiveness of current psychological treatments in larger samples and with measures that can be replicated and that cover both the physical and psychological treatment outcomes.

Summary of the Treatment Evidence

There is almost no comparative data indicating that any one of the psychotherapeutic interventions is superior to another (Guarda, 2008; Hay & Bacaltchuk, 2002; Treasure & Schmidt, 2002). The paucity of research in this field suggests that significantly more empirical studies are needed investigating psychological treatments for AN, as there is little empirical evidence on which to base treatment decisions (Kaplan, 2002; Wilson, 2004). However, there are reasons to be optimistic concerning the success of psychotherapy research in this field (Agras et al., 2003). A review of qualitative and consumer studies has found that psychological treatments are considered by individuals with AN to be the most helpful, with interventions that address deeper issues than food and weight being rated as the most effective (Bell, 2003).

Overall, the NICE (2004) guidelines recommend that AN should be managed on an outpatient basis using psychological treatments. Furthermore, any form of hospitalization should only be considered when there is a substantial physical risk

or there is a failure to improve despite an adequate course of psychotherapy (Wilson et al., 2007). The limited use of hospital programs is based on the need to balance the benefits of rapid weight gain and medical stabilization against the disadvantages of disruptions in the continuity of care, the removal of individuals from their daily life, and the tendency for those in inpatient treatment to over-identify with their eating disorder (Gowers, Weetman, Shore, Hossain, & Elvins, 2000). Therefore, it can be concluded that although inpatient treatment may make an important contribution to treatment in some cases, outpatient therapy should be the cornerstone of treatment for AN (Fairburn, 2005).

Knowing the importance of outpatient treatments, it is alarming that there is very little evidence for the superiority of any of the treatments (Agras et al., 2003; Hay & Claudino, 2010). Although CBT is thought to be the treatment of choice for BN, most of the studies that have been conducted in the AN field using CBT have investigated relapse prevention in individuals who are weight restored. Although CBT has been proven to be a more effective form of treatment than nutritional counselling, it does not lead to successful outcomes in all cases (Kotler et al., 2003). In terms of family therapy, the results of previous research suggest that it is not recommended for adults or individuals with a long illness duration. It appears then that more studies are needed looking into novel and more effective forms of psychotherapy (Whitney, Easter, & Tchanturia, 2008). However, in order for the search for more effective forms of psychotherapy to be beneficial, a closer look into the factors that make AN particularly challenging to study and treat are needed (Wilson et al., 2007).

More Than Cognitions: What Are We Missing?

The need for a better understanding of the factors that continue to make AN difficult to treat is important so that future treatment models can address the areas that are currently being neglected. Those who suffer from the disorder and clinicians agree that current treatment approaches do not take into account the multifaceted nature of this disorder. Treatment approaches also have paid insufficient attention to many of the distinctive features of AN that may play a critical role in poor treatment outcomes. For example, the lack of treatment response to traditional CBT approaches may not be due to treatment resistance. Instead it may be due to the fact that these approaches do not adequately address some of the key underlying concerns, such as the pervasive emotional processing deficits, that are found in this population (Becker-Stoll & Gerlinghoff, 2004; Zeeck et al., 2004). In fact it has been found that learning to identify and tolerate negative emotions so that they are not translated into maladaptive behaviors is fundamentally important to the recovery process (Federici & Kaplan, 2008).

One way of increasing the long-term effectiveness of CBT approaches is to go beyond cognitive symptoms and to focus more on implicit emotional meanings (Vanderlinden, 2008; Waller, Ohanian, Meyer, & Osman, 2000). Although the addition of emotional processing could add to the efficacy of CBT, if the eating disorder field is ever to improve treatment efficacy the development of psychological treatments needs to be based on a clearly articulated theoretical foundation (Agras et al., 2003; Wilson et al., 2007). Up to this point there has been no clear and convincing theoretical framework that has emerged to explain

how factors interact to produce AN (Polivy & Herman, 2002). In fact, Zucker et al. (2006) have argued that the predominant psychological theories are bankrupt, as they do not reflect the complexity of the disorder.

Addressing Treatment Gaps and Expanding on What Works: Emotion Focused Therapy

Emotion-Focused Therapy (EFT; Greenberg, Rice, & Elliott, 1993) may offer the treatment interventions and a comprehensive theoretical framework that has been missing in the treatment of AN. EFT explores the distinction and interconnectedness between implicit emotional schemes and cognitive/narrative levels of processing. According to the EFT approach, in order for lasting change to occur there needs to be a shift from focusing on cognitive schemas to viewing emotional schemes as being at the core of personal meaning. Emotional schemes are crucial to the treatment process as they develop primarily during one's formative years. Depending on how emotions are responded to by caregivers, emotional schemes can develop in either adaptive or maladaptive ways (Dolhanty & Greenberg, 2007).

There are a number of features that make EFT a promising treatment for AN. What is even more interesting and encouraging is that it expands on many of the helpful aspects in current psychotherapies for the disorder. One of the most important elements of EFT is that it offers techniques for coping effectively and precisely with the harsh internal critic voice (*anorexic voice*) that is often reported by individuals suffering with eating disorders. Similar to the externalization technique that is used in narrative therapy, feminist approaches, and CBT, EFT

uses two chair work that allows the client and therapist to move past the vicious cycle of body image disparagement that develops in AN (Dolhanty & Greenberg, 2009). Being able to put the anorexic voice outside of the self allows individuals to verbalize a conversation that is ongoing internally. More importantly, it helps to access the painful emotions that are associated with this anorexic voice so that clients can experience the emotional impact that this type of self-loathing can have on them. As it is a process-experiential approach, it is crucial to evoke emotion and process it in the session as this leads to a greater acceptance of one's internal experiences and of the self as clients come to re-integrate previously disowned aspects of themselves. Being able to work through these self-splits helps in bringing awareness to their agency in the creation of their internal experience, shifting from being a helpless victim to their emotions to a place of feeling mastery over their emotional world.

Similar to the psychodynamic, IPT, and family-based approaches, EFT is also thought to be a good fit as it considers the role of family history and other interpersonal contexts. However, what EFT expands on is how these interpersonal contexts have impacted how individuals cope with their emotional experiences. More specifically, EFT hypothesizes that the sense of self develops throughout life and that in this process we need attunement, recognition, and validation from others (Greenberg & Goldman, 2008). The invalidation of any of one's feelings during childhood or later in life results in a core injury to identity. Without proper mirroring and validation of affect, individuals are not able to develop confident identities. EFT works to heal the attachment and/or identity

injuries through experiencing validation of their emotional experience from the therapist and also through empty chair work to process unfinished business with a significant other. It is through expressing the core painful emotions that are connected to these injuries and having them validated by another, that clients are able to move from the rigid AN identity to developing a more flexible and confident sense of self.

As both DBT and EFT focus on processing emotional experiences in order to work through challenges with emotion regulation, both are thought to be highly suited to working with individuals who tend to view emotions as aversive, overwhelming, or as something to be avoided all together (Wonderlich, Joiner, Keel, & Williamson, 2007). Although DBT and EFT both share a focus on learning to tolerate and regulate emotional experiences, it is thought that EFT moves beyond helping clients to learn ways to be aware of and tolerate their emotions. EFT expands on the emotion regulation work as it helps clients reflect on their experiences in order to symbolize and make meaning of them and to access their needs, goals, and action tendencies. One of the goals of EFT is to help clients re-own avoided aspects of their emotional experience that are contributing to their eating disorder behaviors. In doing so, clients are able to reclaim the healthy needs and action tendencies that are underlying these maladaptive emotions (Greenberg, 2002; Greenberg & Watson, 2006). With the help of the therapist the client gains mastery over their emotional world as they learn to accept, understand, soothe, regulate, and transform emotions as necessary.

EFT also incorporates elements of the motivational approaches as it allows both client and therapist to move beyond the tautological trap that can occur when working with individuals with AN when the therapist starts to view the client as *not ready to change* (Vitousek et al., 1998). Under the EFT approach the therapist is always working within clients' zone of proximal development, which helps to enhance their motivation to change. Staying within this zone allows the therapist to honor the client's stage of readiness to change, while at the same time providing ways to move forward with the work that the client will perceive as tolerable.

There has been only one study to date investigating the use of EFT for AN (Dolhanty & Greenberg, 2009). The single participant was a 24-year old woman with AN-R who had just checked herself out of an inpatient program against medical advice. The treatment lasted for 18 months and involved weekly outpatient individual psychotherapy. By the 18-month mark the client had maintained all of the weight she had gained while attending the hospital program. She also had improvements on self-report measures of mood and emotional awareness. Specifically, her scores by the end of treatment on interoceptive awareness and alexithymia measures were within the normal range. The authors concluded that having access to a new strategy for tolerating and managing her internal experience helped this client to gain a sense of agency in navigating her world. It also assisted her in letting go of the need to have the disorder as a way to help manage her emotional experience.

Conclusion

AN is thought to be one of the most challenging psychological disorders to treat (Halmi et al., 2005). Challenges in treatment arise as there little consensus among researchers in the AN field on which psychotherapeutic interventions are superior (Guarda, 2008; Wilson, 2004). There is also no substantial empirical support for the use of one treatment setting over another (Fairburn, 2005). There has been ample evidence provided by recent studies suggesting that it is time for new psychotherapeutic approaches when treating AN. It appears that what is missing from the previous psychological treatments is a focus on the emotional deficits that are so pervasive in the disorder, along with a way to make meaning of these emotional experiences. EFT offers a unique and promising way to treat anorexic clients and is able to address many of the gaps that have been noted in previous psychotherapeutic approaches. There has been evidence of the efficacy of EFT when compared to CBT in treating both depression and interpersonal issues (Watson, Gordon, Stermac, Kalogerakos, & Steckley, 2003) and it appears to be a good fit for working with anorexic individuals (Dolhanty & Greenberg, 2009). The fact that this treatment also explores the interaction between the emotional and cognitive aspects of the individual's experience is also encouraging.

It is important to understand that what was once perceived as resistance to treatment may actually be a fear of giving up the safety provided by the eating disorder. Many of the previous treatments have offered few alternatives to help these individuals cope with their overwhelming emotions as the main focus has been on the physical or behavioural aspects of AN. As was put so eloquently by

one young women with AN, “How can I fix something when I don’t even know what the cause of it is?” (Federici & Kaplan, 2008, p. 5). It is time that mental health practitioners took this message to heart when considering treatment interventions, as EFT may be the answer to helping those with AN live more satisfying and empowering lives.

References

Acierno, R., Hersen, M., Van Hasselt, V., & Tremont, G. (1994). Review of the validation and dissemination of eye-movement desensitization and reprocessing: A scientific and ethical dilemma. *Journal of Behavior Therapy and Experimental Psychiatry, 14,* 287-299. doi: http://dx.doi.org/10.1016/0272-7358(94)90026-4

Agras, W. S., Brandt, H. A., Bulik, C. M., Dolan-Sewell, R., Fairburn, C. G., Halmi, K. A., et al. (2004). Report of the National Institutes of Health workshop on overcoming barriers to treatment research in anorexia nervosa. *International Journal of Eating Disorders, 35,* 509 – 521. doi: 10.1002/eat.10261

Agras, W. S. & Kraemer, H. C. (1984). The treatment of anorexia nervosa: Do different treatments have different outcomes? In A. J. Stunkard E. Stellar (Eds.), *Eating and its disorders* (pp. 193-208). New York: Raven Press.

American Psychological Association. (2000). *Diagnostic and statistical manual of mental disorders fourth edition – text revision (DSM-IV-TR*). Washington, DC: Author.

American Psychological Association. (2006). Practice guidelines for the treatment of patients with eating disorders. In *Practice guidelines for the treatment of psychiatric disorders* (3rd ed., pp. 1097-1222). Arlington, VA: Author.

Anderson-Fye, E. P., & Becker, A. E. (2004). Socio-cultural aspects of eating disorders. In J. K. Thompson (Ed.), *Handbook of eating disorders and obesity* (pp. 565–589). NY: Wiley.

Apple, R. F. (1999). Interpersonal therapy for bulimia nervosa. *Journal of Clinical Psychology, 55,* 715-725. doi: 10.1002/(SICI)1097-4679(199906)55:6<715::AID-JCLP5>3.0.CO;2-B

Attia, E., & Walsh, B. T. (2009). Behavioral management for anorexia nervosa. *New England Journal of Medicine, 360,* 500-506. doi: 10.1037/a0026216

Becker, A. E. (2004). Television, disordered eating, and young women in Fiji: Negotiating body image and identity during rapid social change. *Culture, Medicine, and Psychiatry, 28,* 533 – 559. doi: 10.1007/s11013-004-1067-5

Becker-Stoll, F., & Gerlinghoff, M. (2004). The impact of a four-month day treatment program on alexithymia in eating disorders. *European Eating Disorders Review, 12,* 159-163. doi: 10.1002/erv.566

Bell, L. (2003). What can we learn from consumer studies and qualitative research in the treatment of eating disorders? *Eating and Weight Disorders, 8,* 181-187. Retrieved from http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0020613/

Ben-Porath, D., Wisniewski, L., & Warren, M. (2010). Outcomes of a day treatment program for eating disorders using clinical and statistical significance. *Journal of Contemporary Psychotherapy, 40,* 115-123. doi: 10.1007/s10879-009-9125-5

Berkman, N. D., Lohr, K. N., & Bulik, C. M. (2007). Outcomes of eating disorders: A systematic review of the literature. *The International Journal of Eating Disorders, 40,* 293-309. doi: 10.1002/eat.20369

Bers, S. A., Blatt, S. J., & Dolinsky, A. (2004). The sense of self in anorexia – nervosa patients: A psychoanalytically informed method for studying self-

representation. *The Psychoanalytic Study of the Child, 59,* 294–315. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/16240616

Beumont, P., Hay, P., & Beumont, R. (2003). Summary Australian and New Zealand clinical practice guideline for the management of anorexia nervosa. *Australasian Psychiatry, 11,* 129-133. doi: 10.1046/j.1039-8562.2003.00534x

Bjorck, C., Clinton, D., Sohlberg, S., Hallstrom, T., & Norring, C. (2003). Interpersonal profiles in eating disorders: Ratings of SASB self-image. *Psychology and Psychotherapy: Theory, Research and Practice, 76,* 337-349. doi: 10.1348/147608303770584719

Bloomgarden, A., & Calogero, R. M. (2008). A randomized experimental test of the efficacy of EMDR treatment on negative body image in eating disorder inpatients. *Eating Disorders, 16,* 418-427. doi: 10.1080/10640260802370598

Bordo, S. (1993). *Unbearable weight: Feminism, Western cultures and the body.* Berkeley: University of California Press.

Brownell, K. D. & Fairburn, C. G. (Eds.). (1995). *Eating disorders and obesity: A comprehensive handbook*. New York: Guilford Press.

Bruch, H. (1973) *Eating Disorders: Obesity, Anorexia Nervosa and the Person Within.* Basic Books: New York**.**

Bruch, H. (1982). Anorexia nervosa: Therapy and theory. *American Journal of Psychiatry, 139,* 187–194.

Brumberg, J. J. (2000). *Fasting girls: The history of anorexia nervosa*. New York: Vintage.

Bulik, C. M., Berkman, N. D., Brownley, K. A., Sedway, J. A., & Lohr, K. N. (2007). Anorexia nervosa treatment: A systematic review of randomized

controlled trials. *International Journal of Eating Disorders, 40,* 310-320. doi: 0.1002/eat.20367

Bulik, C. M., Sullivan, P. F., Tozzi, F., Furberg, H., Lichenstein, P., & Pedersen, N. L. (2006). Prevalence, heritability, and prospective risk factors for anorexia nervosa. *Archives of General Psychiatry, 63,* 305–312. doi: 10.1001/archpsyc.63.3.305

Button, E. J., & Warren, R. L. (2001). Living with anorexia nervosa: the experience of a cohort of sufferers from anorexia nervosa 7.5 years after initial presentation to a specialized eating disorders service. *European Eating Disorder Review, 9,* 72-96. doi: 10.1002/erv.400

Carter, F. A., Jordan, J., McIntosh, V. V., Luty, S. E., McKenzie, J. M., Frampton, C. M. et al. (2011). The long-term efficacy of three psychotherapies for anorexia nervosa: A randomized, controlled trial. *International Journal of Eating Disorders, 44,* 647-654. doi: 10.1002/eat.20879

Carter, C., McFarlane, T. L., Bewell, C., Olmsted, M. P., Woodside, D. B., Kaplan, A. S., et al. (2009). Maintenance treatment for anorexia nervosa: A comparison of cognitive behavioural therapy and treatment as usual. *International Journal of Eating Disorder, 42,* 202-207. doi: 10.1002/eat/20591

Chambless, D. L., Baker, M. J., Baucom, D. H., Beutler, L. E. Calhoun, K. S., Crits-Christoph, P., et al. (1998). Update on empirically validated therapies, II. *The Clinical Psychologist, 51,* 3-16. doi: http://iacp.asu.edu/~horan/ced522readings/div12/chambless98.pdf

Channon, A. M., de Silva, Hemsley, D., & Perkins, R. (1989). A controlled trial of cognitive-behavioral and behavioural treatment of anorexia nervosa. *Behavioral Research and Therapy, 27,* 529-535.

Chemtob, C. M., Tolin, D. F., van der Kolk, B. A., & Pitman, R. K. (2000). Eye movement desensitization and reprocessing. In E. A. Foa, T. M. Keane, & M. J. Friedman (Eds.), *Effective treatments for PTSD: Practice guidelines from the International Society for Traumatic Stress Studies* (pp. 139-154, 333-335). NY: Guilford Press.

Chisholm, K. (2002). *Hungry hell: What it's really like to be anorexic: A personal story*. London: Short Books.

Colton, C., & Pistrang, N. (2004). Adolescents' experiences of inpatient treatment for anorexia nervosa. *European Eating Disorders Review, 12,* 307-316. doi:10.1002/erv.587

Crago, M., Shisslak, C. M., & Estes, L. S. (1996). Eating disturbances among American minority groups: A review. *International Journal of Eating Disorders, 19,* 239 – 248. doi: 10.1002/(SICI)1098-108X(199604)19:3<239::AID-EAT2>3.0.CO;2-N

Crisp, A. H., Norton, K., Gowers, S., Halek, C., Bowyer, C., Veldham, D., et al. (1991) A controlled study of the effect of therapies aimed at adolescent and family psychopathology in anorexia nervosa. *British Journal of Psychiatry, 159,* 325 -333. doi: 10.1192/bjp.159.3.325

Crow, S. J., Peterson, C. B., Swanson, S. A., Raymond, N. C., Specker, S., Eckert, E. D., et al. (2009). Increased mortality in bulimia nervosa and other eating

disorders. *The American Journal of Psychiatry, 166* (12), 1342-1346. doi: 10.1176/appi.ajp.2009.09101424

Dare, C. (1983). *Family therapy for families containing an anorexic youngster.* Columbus, OH, IVth Ross Conference on Medical Research, Ross Laboratories: 28-37.

Dare, C. & Crowther, C. (1995). Living dangerously: psychoanalytic psychotherapy of anorexia nervosa. In G. Szmukler, C. Dare & J. Treasure (Eds.), *Eating disorders: Handbook of theory, treatment and research*. Chichester: John Wiley & Sons.

Dare, C. & Eisler, I. (1997). Family therapy for anorexia nervosa. In O. M. Garner & P. E. Gerfinkel (Eds.), *Handbook of treatment for eating disorders* (pp. 307-324). New York: The Guilford Press.

Dare, C. & Eisler, I. (2002). Family therapy and eating disorders. In C. G. Fairburn & K. D. Brownell (Eds.), *Eating disorders and obesity: A comprehensive handbook.* (2nd ed., pp. 314–319). New York: Guilford Press.

Dare, C., Eisler, I., Russell, G., Treasure, J., & Dodge, L. (2001). Psychological therapies for adults with anorexia nervosa: Randomized controlled trial of outpatient treatments. *The British Journal of Psychiatry, 178,* 216-221. doi: 10.1192/bjp.178.3.216

Dolhanty, J., & Greenberg, L. S. (2007). Emotion-focused therapy in the treatment of eating disorders. *European Psychotherapy, 7,* 97-116. Retrieved from http://cip-

medien.com/media/download_gallery/EP/2007/06_EP_Vol7_2007-Eating_DolhantyK2.pdf

Dolhanty, J., & Greenberg, L. S. (2009). Emotion-focused therapy in a case of anorexia nervosa. *Clinical Psychology and Psychotherapy, 16,* 366-382. doi: 10.1002/cpp.624

Dziegielewski, S. F., & Wolfe, P. (2000). Eye movement desensitization and reprocessing (EMDR) as a time-limited treatment intervention for body image disturbance and self-esteem: A single subject case study design. *Journal of Psychotherapy in Independent Practice, 1,* 1-16. doi: 10.1300/J288v01n03_01

Eagles, J. M., Johnston, M. I., Hunter, D., Lobban, M., & Millar, H. R. (1995). Increasing incidence of anorexia nervosa in the female population of northeast Scotland. *American Journal of Psychiatry, 152,* 1266–1271. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/7653679

Eckert, E. D., Halmi, K. A., Marchi, P., Grove, W., & Crosby, R. (1995). Ten-year follow-up of anorexia nervosa: clinical course and outcome. *Psychological Medicine, 25,* 143-156. doi: http://dx.doi.org/10.1017/S0033291700028166

Eisler, I. (2005). The empirical and theoretical base of family therapy and multiple family day therapy for adolescent anorexia nervosa. *Journal of Family Therapy. 27,*104-131.

Eisler, I., Dare, C., Hodes, M., Russell, G., Dodge, E., & Le Grange, D. (2000). Family therapy for adolescent anorexia nervosa: The results of a controlled comparison of two family interventions. *Journal of Child Psychology and Psychiatry, 41,* 727-736. doi: 10.1111/1469-7610.00660

Eisler, I., Dare, C., Russell, G., Szmukler, G., Le Grange, D., & Dodge, E. (1997). Family and individual therapy for anorexia nervosa: A 5-year follow-up. Archives of General Psychiatry, 54, 1025-1030. doi:10.1001/archpsyc.1997.01830230063008

Eisler, I., Simic, M., Russell, G. F., & Dare, C. (2007). A randomized controlled treatment trial of two forms of family therapy in adolescent anorexia nervosa: A five-year follow-up. *Journal of Child Psychology and Psychiatry, 48,* 552-560. doi: 10.1111/j.1469-7610.2007.01726.x

Elliott, R., Watson, J. C., Goldman, R., & Greenberg, L. S. (2004). *Learning emotion-focused therapy: The process-experiential approach to change.* Washington, DC: American Psychological Association. doi: 10.1037/10725-000

Fairburn, C. G. (2005). Evidence-based treatment of anorexia nervosa. *International Journal of Eating Disorders, 37,* S26–S30. doi: 10.1002/eat.20112

Fairburn C. G., & Cooper, Z. (1993). The eating disorder examination (twelfth edition). In C. G. Fairburn & G. T. Wilson (Eds.), *Binge eating: Nature, assessment and treatment*. (pp. 317-360). New York: Guilford Press.

Fairburn, C. G., Cooper, Z., & Shafran, R. (2003). Cognitive behaviour therapy for eating disorders: A "transdiagnostic" theory and treatment. *Behavior Research and Therapy, 41,* 509-28. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/12711261

Fairburn, C. G., Shafran, R., & Cooper, Z. (1999). A cognitive behavioural theory of anorexia nervosa. *Behaviour Research and Therapy, 37,* 1-13. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/9922553

Fairburn, C. G., Jones, R., Peveler, R. C., Hope, R. A., & O'Connor, M. (1993). Psychotherapy and bulimia nervosa: The longer-term effects of interpersonal psychotherapy, behaviour therapy and cognitive behaviour therapy. *Archives of General Psychiatry, 50*, 419-428. doi: 10.1001/archpsyc.1993.01820180009001

Farber, S. K., Jackson, C. C., Tabin, J. K., & Bachar, E. (2007). Death and annihilation anxieties in anorexia nervosa, bulimia, and self-mutilation. *Psychoanalytic Psychology, 24,* 289-305. doi: 10.1037/0736-9735.24.2.289

Fathallah, J. (2006). *Monkey taming*. London: Definitions.

Federici, A., & Kaplan, A. S. (2008). The patient's account of relapse and recovery in anorexia nervosa: A qualitative study. *European Eating Disorders Review, 16,* 1 – 10. doi: 10.1002/erv.813

Federici, A., Wisniewski, L., & Ben-Porath, D. (2012). Description of an intensive dialectical behavior therapy program for multidiagnostic clients with eating disorders. *Journal of Counseling and Development, 90,* 330-338. doi: 10.1002/j.1556-6676.2012.00041.x

Feld, R., Woodside, D. B., Kaplan, A. S., Olmsted, M. P., & Carter, J. C. (2001). Pretreatment motivational enhancement therapy for eating disorders: A pilot study. *International Journal of Eating Disorders, 29*, 393-400. Retrieved from

http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=11285576

Garner, D. M. & Bemis, K. M. (1985). A cognitive-behavioral approach to anorexia nervosa. *Cognitive Therapy & Research, 6,* 123-150. doi: 10.1007/BP01183887

Garner, D. M., & Needleman, L. D. (1997). Sequencing and integration of treatments. In D. M. Garner & P. E. Garfinkel (Eds.), *Handbook of treatment for eating disorders* (2nd ed., pp. 50–66). New York: Guilford Press.

Garner, D., Vitousek, K., & Pike, K. (1997). Cognitive-behavioural therapy for anorexia nervosa. In Garner, D. & Garfinkel, P. (Eds.), *Handbook of treatment for eating disorders* (2nd ed., pp. 199-216). The Guilford Press: New York.

Geller, J., Cockell, S. J., Hewitt, P. L., Goldner, E. M., & Flett, G. L. (2000). Inhibited expression of negative emotions and interpersonal orientation in anorexia nervosa. *The international Journal of Eating Disorders, 28,* 8 – 19. doi: 10.1002/1098-108X(200012)28:4<481::AID-EAT20>3.0.CO;2-K

Gerlinghoff, M., Backmund, H., & Franzen, U. (1998). Evaluation of a day treatment programme for eating disorders. *European Eating Disorders Review, 6,* 96-106. doi: 10.1002/(SICI)1099-0968(199806)6:2<96::AID-ERV236>3.0.CO;2-P

Gilbert, S. (2000). *Counselling for eating disorders*. London: Sage Publications.

Goldstein, A., & Feske, U. (1994). Eye movement desensitization and reprocessing for panic disorder: A case series. *Journal of Anxiety Disorders, 8,* 351-362. doi: http://dx.doi.org/10.1016/0887-6185(94)00023-9

Goodsitt, A. (1997). Eating disorders: A self-psychological perspective. In D. M. Garner & P. E. Garfinkel (Eds.), *Handbook of treatment for eating disorders* (2nd ed., pp. 205-228). New York: Guilford Press.

Gore, S. A., VanderWal, I. S., & Thelen, M. H. (2001). Treatment of eating disorders in children and adolescents. In J.K. Thompson & L. Smolak (Eds.), *Body image, eating disorders, and obesity in youth: Assessment, prevention, and treatment* (pp. 293-311). Washington, DC: American Psychological Association. doi: 10.1037/10404-012

Gowers, S., Clark, A., Roberts, C., Griffiths, A., Edwards, V., Bryan, C., et al. (2007). Clinical effectiveness of treatments for anorexia nervosa in adolescents: Randomised controlled trial. *The British Journal of Psychiatry, 191,* 427–435. doi: 10.1192/bjp.bp.107.036764

Gowers, S., Norton, K., Halek, C., & Crisp, A. H. (1994). Outcome of outpatient psychotherapies in a random allocation treatment study of anorexia nervosa. *International Journal of Eating Disorders, 15,* 165-177. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/8173562

Gowers, S. G., Weetman, J., Shore, A., Hossain, F., & Elvins, R. (2000). The impact of hospitalization on the outcome of adolescent anorexia nervosa. *British Journal of Psychiatry, 176,* 138-141. doi: 10.1192/bjp.176.2.138

Greenberg, L. S. (2002). *Emotion-focused therapy: Coaching clients to work through their feelings.* Washington, DC: American Psychological Association. doi: 10.1037/10447-000

Greenberg, L. S., & Goldman, R. (2008). *Emotion-focused couples therapy: The dynamics of emotion, love, and power.* Washington, DC: American Psychological Association.

Greenberg, L. S., & Pascual-Leone, J. (1995). A dialectical constructivist approach to experiential change. In R. A. Neimeyer & M. J. Mahoney (Eds.), *Constructivism in psychotherapy* (pp. 169–194). Washington, DC: American Psychological Association.

Greenberg, L. S., & Pascual-Leone, J. (2001). A dialectical constructivist view of the creation of personal meaning. *Journal of Constructivist Psychology, 14,* 165–186.

Greenberg, L. S., Rice, L. N., & Elliott, R. (1993). *Facilitating emotional change: The moment-by-moment process.* New York: Guilford Press.

Greenberg, L. S., & Safran, J. D. (1987). *Emotion in psychotherapy: Affect, cognition, and the process of change.* New York: Guilford Press.

Greenberg, L. S., & Safran, J. D. (1989). Emotion in psychotherapy. *American Psychologist, 44,* 19–29. doi: 10.1037/0003-066X.44.1.19

Greenberg, L. S. & Watson, J. C. (2006). *Emotion-focused therapy for depression*. Washington, DC: American Psychological Association. doi: 10.1037/11286-000

Guarda, A. S. (2008). Treatment of anorexia nervosa: Insights and obstacles. *Physiology & Behavior, 94,* 113–120. doi: 10.1016/j.physbeh.2007.11.020

Gucciardi, E., Celasun, N., Ahmad, F., & Stewart, D. E. (2004). Eating Disorders. *BMC Women's Health, 25,* 1-6. Retrieved from http://www.biomedcentral.com/1472-6874/4/S1/S21

Guidano, V. F. (1991*). The self in process.* NY: Guilford.

Guidano, V. F. (1995). Self-observation in constructivist therapy. In R. A. Neimeyer & M. J. Mahoney (Eds.), *Constructivism in psychotherapy* (pp. 155–168). Washington, DC: American Psychological Association.

Hailey, B. (2009). Dialectical behavior therapy in the treatment of anorexia nervosa: What is the anorexic's experience of replacing restrictive behavior with dialectical behavior therapy skills? (Doctoral dissertation, Pacifica Graduate Institute, 2009). *Dissertation Abstracts International, 69,* 6412.

Halmi, K. A., Agras, W. S., Crow, S., Mitchell, J., Wilson, G. T., & Bryson, S. W. (2005). Predictors of treatment acceptance and completion in anorexia nervosa: Implications for future study designs. *Archives of General Psychiatry, 62,* 776–781. doi: 10.1001/archpsyc.62.7.776

Halse, C., Honey, A., & Boughtwood, D. (2008). *Inside anorexia: The experience of girls and their families.* London: Jessica Kingsley.

Hamilton, M. (1960). A rating scale for depression. *Journal of Neurology, Neurosurgery and Psychiatry.* 23, 56-62. doi:10.1136/jnnp.23.1.56

Hartmann, A., Weber, S., Herpertz, S., Zeeck, A., & The German Treatment Guidelines Group for Anorexia Nervosa. (2011). Psychological treatment for anorexia nervosa: a meta-analysis of standardized mean change. *Psychotherapy and Psychosomatics, 80*, 216-226. doi: 10.1159/000322360

Hay, P., Bacaltchuk, J., Claudino, A., Ben-Tovim, D., & Yong, Y. P. (2003). Individual psychotherapy in the outpatient treatment of adults with anorexia nervosa. *Cochrane Database of Systematic Reviews, 4,* CD003909. doi: 10.1002/14651858.CD003909

Hay, P. and de M. Claudino, A. (2010), Evidence-based treatment for the eating disorders. In W. S. Agras (Ed.), *The oxford handbook of eating disorders* (pp. 452-479). New York: Oxford University Press

Herscovici, C, R., & Bay, L. (1996). Favorable outcome of anorexia nervosa patients treated with a family systems approach. *Eating Disorders: The Journal of Treatment and Prevention, 4*, 59-66. doi: 10.1080/10640269608250076

Herzog, D. B., Greenwood, D. N., Dorer, D. J., Flores, A. T., Ekeblad, E. R., Richards, A. et al., (2000). Mortality in eating disorders: A descriptive study. *International Journal of Eating Disorders, 28,* 20-26. doi: 10.1002/(SICI)1098-108X(200007)28:1<20::AID-EAT3>3.0.CO;2-X

Honig, P. (2007). Working collaboratively with families. In B. Lask & R. Bryant-Waugh (Eds.). *Anorexia nervosa and related eating disorders in adolescence and childhood (3rd ed.).* Hove: Psychology Press.

Hudson, J., Chase, E., & Pope, H. (1998). Eye movement desensitization and reprocessing in eating disorders: Caution against premature acceptance. *International Journal of Eating Disorders, 23,* 1-5. doi: 10.1002/(SICI)1098-108X(199801)23:1<1::AID-EAT1>3.0.CO;2-Q

Johnson, J. G., Cohen, P., Kasen, S., & Brook, J. S. (2002) Eating disorders during adolescence and the risk for physical and mental disorders during adulthood. *Archives of General Psychiatry, 59,* 545-552. doi: 0.1001/archpsyc.59.6.545

Kaplan, A. S. (2002). Psychological treatment for anorexia nervosa: A review of published studies and promising new directions. *Canadian Journal of Psychiatry, 47,* 235–242. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/11987474

Kaplan, A. S., & Olmsted, M. P. (1997). Partial hospitalization. In D. M. Garner & P. E. Garfinkel (Eds.), *Handbook of treatment for eating disorders* (2nd ed., pp. 354-360). New York: Guilford Press.

Katzman, M. A., & Lee, S. (1997). Beyond body image: The integration of feminist and transcultural theories in the understanding of self-starvation. *International Journal of Eating Disorders, 22,* 385-394. Retrieved from http://www.btinternet.com/~negativecharisma/bodies/katzman.pdf

Katzman, D. L. (2003). Osteoporosis in anorexia nervosa: A brittle future? Current *Drug Targets – CNS & Neurological Disorders, 2,* 11–15. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/12769808

Kingsley, J., & Kingsley, A. (2005). *Alice in the looking glass: A mother and daughter's experience of anorexia*. London: Pictkus Books.

Kleinfield, E. I., Wagner, S., & Halmi, K. A. (1996). Cognitive-behavioral treatment of anorexia nervosa. *Psychiatric Clinics of North America, 19,* 715-737.

Kong, S. (2005). Day treatment programme for patients with eating disorders: Randomized controlled trial. *Journal of Advanced Nursing, 51,* 5-14. doi: 0.1111/j.1365-2648.2005.03454.x

Kotler, L. A., Boudreau, G. S., & Devlin, M. J. (2003). Emerging psychotherapies for eating disorders. *Journal of Psychiatric Practice, 9,* 431-441. doi: 10.1097/00131746-200311000-0000

Kroger, C., Schweiger, U., Sipos, V., Kliem, S., Arnold, R., Schunert, T., et al. (2010). Dialectical behaviour therapy and an added cognitive behavioural treatment module for eating disorders in women with borderline personality disorder and anorexia nervosa or bulimia nervosa who failed to respond to previous treatments: An open trial with a 15-month follow-up. *Journal of Behavior Therapy & Experimental Psychiatry, 41,* 381-388. doi: 10.1016/j.jbtep.2010.04.001

LaGreca, A. M. (2005). Editorial. *Journal of Consulting and Clinical Psychology, 73,* 3-5.

Lask, B., Geller, J., & Srikameswaran, S. (2007). Motivational approaches. In B. Lask & R. Bryant-Waugh (Eds.), *Eating disorders in childhood and adolescence* (3rd ed.; pp. 177-198). Sussex, UK: Routledge.

Le Grange, D., Eisler, I., Dare, C., & Russell, G. F. (1992). Evaluation of family treatments in adolescent anorexia nervosa: A pilot study. *International Journal of Eating Disorders, 12,* 347-357.

Le Grange, D., & Gelman, T. (1998). The patient's perspective of treatment in eating disorders: A preliminary study. *South African Journal of Psychology, 28,* 182-186.

Le Grange, D., & Lock, J. (2005). The dearth of psychological treatment studies for anorexia nervosa. *International Journal of Eating Disorders, 37,* 79–91. doi: 10.1002/eat.20085

Lena, S. M., Fiocco, A. J., & Leyenaar, J. A. K. (2004). The role of cognitive deficits in the development of eating disorders. *Neuropsychology Review, 14,* 99-113. doi: 10.1023/B:NERV.0000028081.40907.de

Levitt, D. H. (2001). Anorexia nervosa treatment in the family context. *The Family Journal, 9,* 159-163. doi: 10.1177/1066480701092010

Linehan, M. M., Armstrong, H. E., Suarez, A., Allmon, D., & Heard, H. (1991). Cognitive-behavioral treatment of chronically parasuicidal borderline patients. *Archives of General Psychiatry, 48,* 1060-1064. Retrieved from http://www.personal.kent.edu/~dfresco/CBT_Readings/Linehan_Archives.pdf

Lock, J., Agras, W. S., Bryson, S., & Kraemer, H. C. (2005). A comparison of short- and long-term family therapy for adolescent anorexia nervosa. *Journal of the American Academy of Child and Adolescent Psychiatry, 44,* 632-639. doi: 10.1097/01.chi.0000161647.82775.0a

Lock, J., Couturier, J., & Agras, W. S. (2006). Comparison of long-term outcomes in adolescents with anorexia nervosa treated with family therapy. *Journal of the American Academy of Child & Adolescent Psychiatry, 45,* 666-672. doi:10.1097/01.chi.0000215152.61400.ca

Lock, J., & Gowers, S. (2005). Effective interventions for adolescents with anorexia nervosa. *Journal of Mental Health, 14,* 599-610. doi:10.1080/09638230500400324

Lock, J., & Le Grange, D. (2005). *Help your teenager beat an eating disorder*. New York: Guilford Press.

Lock, J., Le Grange, D., Agras, W. S., & Dare, C. (2001). *Treatment manual for anorexia nervosa: A family-based approach.* New York: Guilford Press.

Lucas, A. R., Beard, C. M., O'Fallon, W. M., & Kurland, L. T. (1991). 50-year trends in the incidence of anorexia nervosa in Rochester, Minnesota: A population-based study. *American Journal of Psychiatry, 148*, 917–922. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/2053633

Mahoney, M. (1991). *Human change processes.* NY: Basic Books.

Maisel, R. L., Epston, D., & Borden, A. (2004). *Biting the hand that starves you: Inspiring resistance to anorexia/bulimia.* New York: Norton.

Malson, H. (1998). *The thin women: Feminism, post-structuralism and the social psychology of anorexia nervosa.* London: Routledge.

Manley, R. S., Smye, V., & Srikameswaran, S. (2001). Addressing complex ethical issues in the treatment of children and adolescents with eating disorders: Application of a framework for ethical decision making. *European Eating Disorder Review, 9,* 144-166. doi: 10.1002/erv.413

Marquis, J. (1991). A report on seventy-eight cases treated by eye movement desensitization. *Journal of Behavior Therapy and Experimental Psychiatry, 22,* 187-192. doi: http://www.ncbi.nlm.nih.gov/pubmed/1687145

Mayer, R. (1994). *Family therapy in the treatment of eating disorders in general practice.* London: Birkbeck College, University of London.

McCabe, E. B. & Marcus, M. D. (2002). Question: Is dialectical behaviour therapy useful in the management of anorexia nervosa? *Eating Disorders, 10,* 335-337. doi: 10.1080/10640260290081722

McIntosh, V. W., Jordan, J., Carter, F. A., Luty, S. E., McKenzie, J. M., Bulik, C. M. et al. (2005). Three psychotherapies for anorexia nervosa: A randomized, controlled trial. *American Journal of Psychiatry, 162,* 741-747. doi: 10.1176/appi.ajp.162.4.741

Meads, C., Gold, L., & Burls, A. (2001). How effective is outpatient care compared to inpatient care for the treatment of anorexia nervosa? A systematic review. *European Eating Disorders Review, 9,* 229-241. doi: 10.1002/erv.406

Miller, W. R., & Rollnick, S. (2002). *Motivational interviewing: Preparing people for change.* New York: Guilford Press.

Milos, G., Spindler, A., Schnyder, U., Mortz, J., Wijbrand Hoek, H., & Willi, J. (2004). Incidence of severe anorexia nervosa in Switzerland: 40 years of development. *International Journal of Eating Disorders, 35,* 250–258. doi: 10.1002/eat.20052

Minuchin, S., Baker L., Rosman, B. L., Liebman, R., Milman, L., & Todd, T. C. (1975). A conceptual model of psychosomatic illness in childhood. *Archives of General Psychiatry, 32,* 1031–1038. doi:10.1001/archpsyc.1975.01760260095008

Minuchin, S., Roseman, B. L., & Baker, B. L. (1978). *Psychosomatic families: Anorexia nervosa in context.* Cambridge, MA: Harvard University Press.

Morgan, H. G. & Hayward, A. E. (1988). Clinical assessment of anorexia nervosa: The Morgan-Russell Outcome Assessment Schedule. *British Journal of Psychiatry, 152,* 367-371. doi: 10.1192/bjp.152.3.367

Moulding, N. (2009). The anorexic as femme fatale: Reproducing gender through the father/psychiatrist-daughter/patient relationship. In H. Malson & M. Burns (Eds.), *Critical feminist approaches to eating dis/orders* (pp. 172-184). New York: Routledge.

Moulton, R. (1942). A psychosomatic study of anorexia nervosa including the use of vaginal smears. *Psychosomatic Medicine, 4,* 62-74.

Murray, T. (2003). Wait not, want not: Factors contributing to the development of anorexia nervosa and bulimia nervosa. *Family Journal: Counseling and Therapy for Couples and Families, 11*, 276-280. Retrieved from http://askdrpalmer.com/wp-content/uploads/2012/04/Crossing-the-Color-Line-JFFT-Article.pdf

National Institute for Clinical Excellence. (2004). *Eating disorders: Core interventions in the treatment and management of anorexia nervosa, bulimia nervosa, and related eating disorders*. London: NICE.

Nevonen, L., & Broberg, A. G. (2000). The emergence of eating disorders: An exploratory study. *European Eating Disorders Review, 8,* 279–292. doi: 10.1002/1099-0968(200008)8:4<279::AID-ERV348>3.0.CO;2-J

Paivio, S. C. & Pascual-Leone, A. (2010). *Emotion-focused therapy for complex trauma: An integrative approach.* Washington, DC: American Psychological Association. doi: 10.1037/12077-000

Palazzoli, M. S. (1978). *Self-starvation: From individual to family therapy in the treatment of anorexia nervosa*. New York: Jason Aronson.

Pascual-Leone, J. (1987). Organismic processes for neo-Piagetian theories: A dialectical causal account of cognitive development. *International Journal of Psychology, 22,* 531–570.

Pascual-Leone, J. (1990). Reflections on life-span intelligence, consciousness, and ego development. In C. Alexander & E. Langer (Eds.), *Higher states of human development: Perspectives on adult growth* (pp. 258–285). NY: Oxford University Press.

Pascual-Leone, J. (1991). Emotions, development, and psychotherapy: A dialectical-constructivist perspective. In J. D. Safran & L. S. Greenberg (Eds.), *Emotion, psychotherapy, and change* (pp. 302–335). NY: Guilford.

Pascual-Leone, J. (2000). Reflections on working memory: Are the two models complementary? *Journal of Experimental Child Psychology, 77,* 138–154. doi: 10.1006/jecp.2000.2593

Pascual-Leone, J., & Irwin, R. R. (1994). Abstraction, the will, the self, and modes of learning in adulthood. In M. C. Smith & T. Pourchot (Eds.), *Adult learning and development: Perspectives from educational psychology* (pp. 35–66). Mahwah, NJ: Erlbaum.

Pascual-Leone, J., & Johnson, J. (1999). A dialectical constructivist view of representation: Role of mental attention, executives, and symbols. In I. Sigel (Ed.), *Developmental of metal representation: Theories and applications* (pp. 169–200). Mahwah, NJ: Erlbaum.

Perlick, D., & Silverstein, B. (1994). Faces of female discontent: Depression, disordered eating and changing gender roles. In P. Fallon, M. Katzman, & S. Wooley (Eds.), *Feminist perspectives on eating disorders* (pp. 77–93). New York: Guilford Press.

Pike, K. M., Walsh, B. T., Vitousek, K., Wilson, G. T., & Bauer, J. (2003). Cognitive behavioural therapy in the posthospitalization treatment of anorexia nervosa. *American Journal of Psychiatry, 160,* 2046-2049. doi: 10.1176/appi.ajp.160.11.2046

Polivy, J., & Herman, C. P. (2002). Causes of eating-disorders. *Annual Review of Psychology, 53,* 187–213. doi: 10.1146/annurev.psych.53.100901.135103

Prochaska, J. O., & DiClemente, C. C. (1983). Stages and processes of self-change of smoking: Toward an integrative model of change. *Journal of Consulting and Clinical Psychology, 51,* 390-395. doi: 10.1037/0022-006X.51.3.390

Rastam, M., Gillberg, C., & Wentz, E. (2003). Outcome of teenage-onset anorexia nervosa in a Swedish community –based sample. *European Child and Adolescent Psychiatry, 12,* 78–90. doi: 10.1007/s00787-003-1111-y

Ratnasuriya, R. H., Eisler, I., Szmukler, G. I., & Russell, G. F. (1991). Anorexia nervosa: Outcome and prognostic factors after 20 years. *The British Journal of Psychiatry, 158,* 495-502. doi: 10.1192/bjp.158.4.495

Reiff, D. W., & Lampson-Reiff, K. K. (1992). *Eating disorders: Nutrition therapy in the recovery process.* Gaithersburg, MD: Aspen.

Rhodes P, Baillie A, Brown J, & Madden S (2008). Can parent to parent consultation improve the effectiveness of the maudsley model of family-based treatment for anorexia nervosa? A randomized control trial. *Journal of Family Therapy, 30,* 96-108. doi: 10.1111/j.1467-6427.2008.00418.x

Rieger, E., Touyz, S. W., & Beumont, P. J. V. (2002). The Anorexia Nervosa Stages of Change Questionnaire (ANSOCQ): Information regarding its psychometric properties. *International Journal of Eating Disorders, 32,* 24-38. doi: 10.1002/eat.10056

Robin, A. L., Siegel, P. T., Koepke, T., & Moye, A. W., & Tice, S. Family therapy versus individual therapy for adolescent females with anorexia nervosa. *Developmental and Behavioral Pediatrics, 15,* 111-116.

Robin, A. L., Siegel, P. T., & Moye, A. (1995). Family versus individual therapy for anorexia: impact on family conflict. *International Journal of Eating Disorders,* 17, 313-322. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/7620470

Robin, A. L., Siegel, P. T., Moye, A. W., Gilroy, M., Dennis., A B., & Sikand, A. (1999). A controlled comparison of family versus individual therapy for adolescents with anorexia nervosa. *Journal of American Academy of Child &*

Adolescent Psychiatry, 38, 1482-1489. doi:10.1097/00004583-199912000-00008

Royal Australian and New Zealand College of Psychiatrists Clinical Practice (RANZCP) Guidelines for Anorexia Nervosa. (2004). Australian and New Zealand clinical practice guidelines for the treatment of anorexia nervosa. *Australian and New Zealand Journal of Psychiatry, 38,* 659-670.

Russell, G. F., Szmukler, G. I., Dare, C., & Eisler, I. (1987). An evaluation of family therapy in anorexia nervosa and bulimia nervosa. *Archives of General Psychiatry, 44,* 1047-1056. doi:10.1001/archpsyc.1987.01800240021004

Safer, D. L., Lock, J., & Couturier, J. L. (2007). Dialectical behaviour therapy modified for adolescent binge eating disorder: A case report. *Cognitive and Behavioral Practice, 14,* 157-167. doi: 10.1016/j.cbpra.2006.06.001

Safer, D. L., Telch, C. F., & Agras, W. S. (2001). Dialectical behaviour therapy for bulimia nervosa. *American Journal of Psychiatry, 158,* 632-634. doi: 10.1176/appi.ajp.158.4.632

Salbach-Andrae, H., Bohnekamp, I., Pfeiffer, E., Lehmkuhl, U., & Miller, A. L. (2008). Dialectical behaviour therapy of anorexia and bulimia nervosa among adolescents: A case series. *Cognitive and Behavioral Practice, 15,* 415-425. doi: http://dx.doi.org.login.ezproxy.library.ualberta.ca/10.1016/j.cbpra.2008.04.001

Salbach, H., Klinkowski, N., Pfeiffer, E., Lehmkuhl, U., & Korte, A. (2007). Dialectical behaviour therapy for adolescents with anorexia and bulimia

nervosa – A pilot study. *Praxis der Kinderpsychologie und Kinderpsychiatrie, 56,* 91-108.

Samoilov, A., & Goldfried, M. R. (2000). Role of emotion in cognitive-behavioral therapy. *Clinical Psychology: Science and Practice, 7,* 373–385. doi: 10.1093/clipsy.7.4.373

Sanderson, A., & Carpenter, R. (1992). Eye movement desensitization versus image confrontation: A single session crossover study of 58 phobic subjects. *Journal of Behavior Therapy and Experimental Psychiatry, 23,* 269-275. doi: http://www.ncbi.nlm.nih.gov/pubmed/1363819

Serfaty, M. A., Turkington, D., Heap, M., Ledsham, L. & Jolley, E. (1999). Cognitive therapy versus dietary counselling in the outpatient treatment of anorexia nervosa: Effects of the treatment phase. *European Eating Disorder Review, 7,* 334-350. doi: 10.1002/(SICI)1099-0968(199911)7:5<334::AID-ERV311>3.0.CO;2-H

Serpell, L., & Troop, N. (2003). Psychological factors. In J. Treasure, U. Schmidt, & E. Van Furth (Eds.), *Handbook of eating disorders* (2nd ed., pp. 151-168). Southern Gate, Chichester: John Wiley. doi: 10.1002/0470013443.fmatter

Shafran, R. & de Silva, P. (2003). Cognitive behavioral models. In J. Treasure, U. Schmidt, & E. Van Furth (Eds.), *Handbook of eating disorders* (2nd ed., pp. 121-138). Southern Gate, Chichester: John Wiley.
doi: 10.1002/0470013443.fmatter

Shapiro, F. (1989a). Efficacy of the eye movement desensitization procedure in the treatment of traumatic memories. *Journal of Traumatic Stress, 2,* 199-223.

Shapiro, F. (1989b). Eye movement desensitization: A new treatment for post-traumatic stress disorder. *Journal of Behavior Therapy and Experimental Psychiatry, 26,* 121-122.

Shapiro, F. (1995). *Eye movement desensitization and reprocessing: Basic principles, protocols, and procedures.* NY: Guilford Press.

Singer, J. A., & Moffitt, K. H. (1991 - 1992). An experimental investigation of specificity and generality in memory narratives. *Imagination, Cognition, & Personality, 11,* 233-257.

Singer, J. A., & Salovey, P. (1993). *The remembered self: Emotion and memory in personality.* NY: Free Press. doi: 10.1037/10391-004

Sohlberg, S., & Strober, M. (1994). Personality in anorexia nervosa: An update and a theoretical integration. *Acta Psychiatrica Scandinavica, 89,* 1–15. doi: 10.1111/j.1600-0447.1994.tb05809.x

Steinhausen, H. C. (2002). The outcome of anorexia nervosa in the 20th century. The American *Journal of Psychiatry, 159,* 1284-1293. doi: 10.1176/appi.ajp.159.8.1284

Stierlin, H. & Weber, G. (1987). *Anorexia nervosa: Lessons from a follow-up study. Family Systems Medicine, 7,* 120-157. doi:10.1037/h0089770

Stierlin, H. & Weber, G. (1989). *Unlocking the family door: A systemic approach to the understanding and treatment of anorexia nervosa.* NY: Brunner/Mazel.

Strauman, T. J., Vookles, J., Berenstein, V., Chaiken, S., & Higgins, E. T. (1991). Self discrepancies and vulnerability to body dissatisfaction and disordered eating. *Journal of Personality and Social Psychology, 61,* 946–956. Retrieved

from http://persweb.wabash.edu/facstaff/hortonr/articles%20for%20class/straumann disc.pdf

Striegel-Moore, R.H. (1994). A feminist agenda for psychological research on eating disorders. In P. Fallon, M.A. Katzman, & S.C. Wooley (Eds.), *Feminist perspectives on eating disorders.* NY: Guilford Press: 438-454.

Strober, M. (1981). The significance of bulimia in juvenile anorexia nervosa: An exploration of possible etiologic factors. *International Journal of Eating Disorders, 1,* 28–34.

Strober, M. (2004). Clinical and research forum pathological fear conditioning and anorexia: On the search for novel paradigms. *International Journal of Eating Disorders, 35,* 504–508. doi: 10.1002/eat.20508

Sullivan, P. F. (1995). *Mortality in anorexia nervosa*. *The American Journal of Psychiatry, 152,* 1073-1074. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/7793446

Tan, J., Hope, R.A., Stewart, A., & Fitzpatrick, R. (2003). Control and compulsory treatment in anorexia nervosa: The views of patients and parents. *International Journal of Law and Psychiatry, 26,* 627-645. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/14637206

Telch, C. F., Agras, W. S., & Linehan, M. A. (2001). Dialectical behaviour therapy for binge eating disorder. *Journal of Counselling and Clinical Psychology, 69,* 1061-1065.

Thornton, C., Beumont, P., & Touyz, S. (2002). The Australian experience of day programs for patients with eating disorders. *International Journal of Eating Disorders, 25,* 227-231. doi: 10.1002/eat.10059

Tierney, S. (2008). The individual within a condition: A qualitative study of young people's reflections on being treated for anorexia nervosa. *Journal of the American Psychiatric Nurses Association, 13,* 368–375. doi: 10.1177/1078390307309215

Touyz, S., Polivy, J., & Hay, P. (2008). *Eating disorders: Advances in psychotherapy, evidence-based practice.* Cambridge, MA: Hogrefe and Huber.

Tozzi, F., Sullivan, P. F., Fear, J. L., McKenzie, J., & Bulik, C. M. (2003). Causes and recovery in anorexia nervosa: The patient's perspective. *International Journal of Eating Disorders, 33,* 143–154. doi: 10.1002/eat.10120

Treasure, J., & Kordy, H. (1998). Evidence based care of eating disorders: Beware the glitter of the randomized controlled trial. *European Eating Disorders Review, 62,* 85-95. doi: 10.1192/apt.6.2.135

Treasure, J., & Schmidt, U. (2002). In S. Barton (Ed.), *Clinical evidence mental health* (pp. 13-22). Williston, VT: BMJ Books.

Treasure, J., & Schmidt, U. (2005). Anorexia nervosa. *Clinical Evidence, 14,* 1140-1148.

Treasure, J., Todd, G., Brolly, M., Tiller, J., Nehmed, A., Denman, F. et al. (1995). A pilot study of a randomized trial of cognitive analytic therapy vs

educational behaviour therapy for adult anorexia nervosa. *Behavioral Research and Therapy, 33,* 363-367. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/7755523

Vandereycken, W. (2003). The place of inpatient care in the treatment of anorexia nervosa: Questions to be answered. *International Journal of Eating Disorders, 34,* 409-422. doi: 10.1002/eat.10223

Vanderlinden, J. (2008). Many roads lead to Rome: Why does cognitive behavioural therapy remain unsuccessful for many eating disorder patients? *European Eating Disorder Review, 16,* 329-333. doi: 10.1002/erv.889

Vitousek, K. B., & Ewald, L. S. (1993). Self-representation in eating disorders: A cognitive perspective. In Z. V. Segal & S. J. Blatt (Eds.), *The Self in emotional distress: Cognitive & psychodynamic perspectives* (pp. 221–257). NY: Guilford.

Vitousek, K. B., Watson, S., & Wilson, G. (1998). Enhancing motivation for change in treatment-resistant eating disorders. *Clinical Psychology Review, 18,* 391-420. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed?term=9638355

Waller, G., & Kennerley, H. (2003). Cognitive-behavioral treatments. In J. Treasure, U. Schmidt, & E. Van Furth (Eds.), *Handbook of eating disorders* (pp. 233–252). Southern Gate, Chichester: John Wiley. doi: 10.1002/0470013443.fmatter

Waller, G., Ohanian, V., Meyer, C., & Osman, S. (2000). Cognitive content among bulimic women: The role of core beliefs. *International Journal of*

Eating Disorders, 28, 235-241. doi: 10.1002/1098-108X(200009)28:2<235::AID-EAT15>3.0.CO;2-1

Waller, J. V., Kaufman, M. R., & Deutsch, F. (1940). Anorexia nervosa: A psychosomatic entity. *Psychosomatic Medicine, 2,* 3-16.

Wallin, U., & Kornwall, P. (2002). Anorexia nervosa in teenagers: Changes in family functioning after family therapy at 2 year follow-up. *Nordic Journal of Psychiatry, 56,* 363-369. doi: 10.1080/080394802760322132

Walsh, B., Kaplan A. S., Attia, E., Olmsted, M., Parides, M., Carter, J. C., et al. (2006). Fluoxetine after weight restoration in anorexia nervosa: A randomized controlled trial. *Journal of the American Medical Association, 295,* 2605-2612. doi:10.1001/jama.295.22.2605

Ward, A., Troop, N., Todd, G., & Treasure, J. (1996). To change or not to change – 'How' is the question? *British Journal of Medical Psychology, 69,* 139-146. doi: 10.1111/j.2044-8341.1996.tb01858.x

Watson, J., Gordon, L. B., Stermac, L., Kalogerakos, F., & Steckley, P. (2003). Comparing the effectiveness of process-experiential with cognitive-behavioral psychotherapy in the treatment of depression. *Journal of Consulting and Clinical Psychology, 71,* 772-781.

Watson, J., & Greenberg, L. (1996). Emotion and cognition in experiential therapy: A dialectical-constructivist position. In H. Rosen & K. Kuelwein (Eds.), *Constructing realities: Meaning making perspectives for psychotherapists* (pp. 253–276). San Francisco: Jossey-Bass.

Watson, J., & Rennie, D. (1994). Qualitative analysis of clients' subjective experience of significant moments during exploration of problematic reactions. *Journal of Counselling Psychology, 41,* 500–509. doi: 10.1037/0022-0167.41.4.500

Wernik, U. (1993). The role of the traumatic component in the etiology of sexual dysfunction and its treatment with eye movement desensitization procedure. *Journal of Sex Education and Therapy, 19,* 212-222.

Whelton, W. J., & Greenberg, L. S. (2001). The self as a singular multiplicity: A process-experiential perspective. In J.C. Muran (Ed.), *Self-relations in the psychotherapy process* (pp. 87-106). Washington, D.C.: APA Press. doi: 10.1037/10391-004

White, M., & Epston, D. (1990). *Narrative means to therapeutic ends.* New York: Norton.

Whitney, J., Easter, A., & Tchanturia, K. (2008). The patients' experiences in cognitive exercise intervention for anorexia nervosa: Qualitative findings. *International Journal of Eating Disorders*, 41,542-550. doi: 10.1002/eat.22032

Wild, B., Friederich, H. C., Gross, G., Teufel, M., Herzog, W. G., Giel, K. E., et al. (2009). The ANTOP study: focal psychodynamic psychotherapy, cognitive-behavioural therapy, and treatment-as-usual in outpatients with anorexia nervosa - a randomized controlled trial. *Trials, 10,* 23. doi: 10.1186/1745-6215-10-23

Wilson, G. T. (2004). Psychological interventions for eating disorders: A review. In M. Maj, K. Halmi, J. J. Lopez-Ibor, & N. Sartorius (Eds.), *Eating disorders* (pp. 315–338). Chichester, England: John Wiley & Sons.

Wilson, G. T., Grilo, C. M., & Vitousek, K. M. (2007). Psychological treatment of eating disorders. *The American Psychologist, 62,* 199–216. doi: 10.1037/0003-066X.62.3.199

Wisniewski, L. & Kelly, E. (2003). The application of dialectical behaviour therapy to the treatment of eating disorders. *Cognitive and Behavioral Practice, 10,* 131-138.

Winston, A. P., & Stafford, P. J. (2000). Cardiovascular effects of anorexia nervosa. *European Eating Disorders Review, 8,* 117–125. doi: http://dx.doi.org/10.1002/(SICI)1099-0968(200003)8:2<117::AID-ERV335>3.0.CO;2-S

Wolff, G. & Serpell, L. (1998). A cognitive model and treatment strategies for anorexia nervosa. In Hoek, H., Treasure, J. & Katzman, M. (Eds.), *Neurobiology in the treatment of eating disorders*. Chichester: Wiley.

Wonderlich, S. A., Joiner, T. E., Keel, P. K., & Williamson, D. A. (2007). Eating disorder diagnoses: Empirical approaches to classification. *The American Psychologist, 62,* 167-180. doi: 10.1192/bjp.187.6.573

Wooley, S. C. (1995). Feminist influences on the treatment of eating disorders. In K. D. Brownell & C. G. Fairburn (Eds.), *Eating disorders and obesity: A comprehensive handbook* (pp. 294-298). New York: Guilford.

Woodside, B. (2005). Treatment of anorexia nervosa: More questions than answers. *International Journal of Eating Disorders, 37,* S41-S42. doi: 10.1002/eat.20115

Zhu, A. J., & Walsh, B. T. (2002). Pharmacologic treatment of eating disorders. *Canadian Journal of Psychiatry, 47,* 227–234.

Zipfel, S., Lowe, B., & Herzog, W. (2003). Medical complications. In J. Treasure, U. Schmidt, & E. Furth (Eds.), *Handbook of eating disorders* (pp. 191–206). Southern Gate, Chichester: Wiley.

Zonnevijlle-Bender, M., Van Goozen, S., Cohen-Kettenis, P., Van Elburg, A., & Van Engeland, H. (2004). Emotional functioning in adolescent anorexia nervosa patients: A controlled study. *European Child and Adolescent Psychiatry, 13,* 28–34. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/11942427

Zeeck, A., Herzog, T., & Hartmann, A. (2004). Day clinic or inpatient care for severe bulimia nervosa? *European Eating Disorders Review, 12,* 79-86. doi: 10.1002/erv.535

Zucker, N. L., Marcus, M., & Bulik, C. M. (2006). A group parent-training program: A novel approach to eating disorder management. *Eating & Weight Disorders, 11,* 78-83.

CHAPTER 3

I'D RATHER DIE THAN FEEL: UNDERSTANDING EMOTIONAL PROCESSING DIFFICULTIES IN ANOREXIA NERVOSA

"When we stop seeing our feelings as the enemy, something that just gets in the way of doing what we think we should be doing, we can establish a different kind of relationship with them. As we make friends with our feelings, we can discover that they can be allies and guides in this journey we call life. They can lead us to a place of deep understanding about who we really are and what we truly want, a place we might not otherwise be able to reach"

~ Johnston, 1996, p. 58

Introduction

Recently there has been a movement away from Cognitive Behavioral Therapy (CBT) as the guiding theoretical framework in the treatment of individuals with Anorexia Nervosa (AN). Many of those theorists who once held strongly to cognitive approaches are beginning to shift their focus to early maladaptive emotional schemas as the source of many psychological disorders (Neimeyer, 1995). It is thought that the long-term effectiveness of psychological treatments could be enhanced by moving beyond symptoms at the cognitive level by shifting focus onto deeper implicit emotional meanings (Samoilov & Goldfried, 2000). This shift in treatment focus radically changes both the type and course of therapy that is offered as these core affective structures not only have different neural processes, but are also subject to different change principles (Samoilov & Goldfried, 2000).

Shifting towards an emotional framework seems critical as recent research suggests that a global deficit in emotional processing is a common feature of AN (Lena et al., 2004; Zonnevijlle-Bender, Van Goozen, Cohen-Kettenis, Van Elburg,

& Van Engeland, 2004). More specifically, these individuals been found to have an impaired ability to identify, interpret, and act upon their emotional experience (Dolhanty & Greenberg, 2009). It is now thought that one reason some individuals come to rely on the disorder is that it provides them with a set of behavioral strategies that work to reinforce emotional avoidance (Becker-Stoll & Gerlinghoff, 2004).

The use of avoidance as a coping mechanism to deal with overwhelming emotions not only helps to explain many symptoms, but also helps to better understand the chronic nature and high rate of relapse in AN. As eating disorder behaviors are eliminated during treatment, feelings that have been previously avoided are brought into awareness. The problem with many of the standard treatments is they do not address the overwhelming emotions that arise during this process as they are overly focused on weight restoration and behaviour reduction. Without an understanding of their emotional avoidance behaviors and how to cope with these behaviors, individuals often revert back to their eating disorder to escape the intolerable feelings that arise during treatment (Federici & Kaplan, 2008). It appears then that the desire to be recovered may be overridden by a desperate sense of "I'd rather die than feel" (Dolhanty & Greenberg, 2007, p. 98).

One recently proposed affectively based treatment is Emotion-Focused Therapy (EFT; Dolhanty & Greenberg, 2007, 2009; Greenberg, Rice, & Elliott, 1993). From the EFT perspective what lies at the center of people's personal meanings are not cognitive schemes, but emotional ones. EFT is thought to be highly suited to the treatment of AN as it involves processing one's emotional

experiences in order to learn to deal effectively with emotional regulation concerns (Dolhanty & Greenberg, 2007). Emotion processing interventions in EFT for eating disorders involve helping individuals to become more aware of how *feeling bad* becomes *feeling fat* and how they use their eating disorder symptoms to cope with the painful emotions they fear. By working directly with the painful emotions therapist and client can determine what needs healing, make meaning of overwhelming experiences, and start to uncover more basic and healthy emotions. Therefore, learning to be with painful emotions in a more adaptive way involves first helping clients become more aware of their internal experience and then developing skills that work towards acceptance, understanding, self-soothing, and emotional regulation.

What has not been investigated in relation to AN is the theoretical framework behind EFT and how it can help to better understand this disorder. Known as the Dialectical Constructivist View of Self (Greenberg & Pascual-Leone, 1995, 2001; Greenberg et al., 1993; Guidano, 1991, 1995; Mahoney, 1991; Pascual-Leone, 1987, 1990, 1991; Watson & Greenberg, 1996; Watson & Rennie, 1994), this theoretical framework offers an integrated and comprehensive understanding of how emotional difficulties can lead to the development of a fragmented or constricted sense of self. In order to fully understand the role of emotional processing difficulties in the development of self, this study investigated which components or combination of components in emotional processing are the most challenging for individuals in-recovery from AN. Furthermore, this study also

investigated if struggles with emotional processing continue to be a concern for individuals once they are recovered.

Review of the Literature

Dialectical Constructivist Theory

According to the Dialectical Constructivist view, human beings construct meaning through accessing and integrating many levels and sources of information from their internal and external environments. There are two opposing yet complementary dialectical poles in the theory and it is the constant interaction between these two parts that helps us to make sense of our everyday experiences (Paivio & Pascual-Leone, 2010). One pole of the dialectic is our emotional experience, which operates on a bodily felt sense or sensorimotor level (Greenberg & Pascual-Leone, 2001). Emotion has earned this central position as it plays a key-organizing role in our experience and is critical in the development of personal meaning. At this level, our immediate emotional experience is organized by numerous, and sometimes conflicting, emotion schemes synthesizing together.

According to the Dialectical Constructivist Theory, from birth babies are able to experience emotions. Not long after they are born they begin to construct emotional schemes of sufficient complexity that they use to build a conscious and personal sense of self (Greenberg & Pascual-Leone, 2001; Pascual-Leone, 1991, 2000; Pascual-Leone & Irwin, 1994; Pascual-Leone & Johnson, 1999). Although affect regulation develops with maturation, it also develops through the way the primary caretakers respond to the infant's emotions, forming the core experiences

that determine the child's affectively based sense of self (Greenberg & Pascual-Leone, 2001). Therefore, the tacit emotional meaning of an event determines functioning, not the individual's thoughts and feelings or the expectations of others' responses (Greenberg & Safran, 1987; Greenberg & Watson, 2006). The pre-verbal emotional meaning structures that result from the interaction between individuals and their environments are known as emotional schemes (Greenberg & Safran, 1989; Greenberg, 2002).

Emotion schemes are unique in that they are not directly available to awareness and can only be accessed through the experiences or memories they evoke. The importance of emotional schemes cannot be overlooked, as these are the core structures that determine how one responds to current situations. More importantly, emotion schemes have a critical role in the development and overall organization of the self and play a vital role in guiding one's future growth (Greenberg & Safran, 1989).

The second side of the dialectic is the linguistic or cognitive system and its role to reflect on and then explain or verbally symbolize the emotional experience. It is only when individuals reflect on their experience that they begin to make sense of what they are feeling and it is not until they go through a dialectical process of explaining it that they create meaning. Therefore, to make meaning in an integrated and effective way requires an openness and sensitivity to one's internal signals, a willingness to attend to them, and an ability to symbolize them in words. The Dialectical Constructivist Theory offers a new framework to help guide the understanding and treatment of AN. The theory is thought to be highly applicable

as it provides a means to study many of the identified key deficits in an integrated fashion instead of individually as has been done in the past.

Emotional Processing Deficits in Anorexia

Emotions play a very important role in AN. In fact, it is thought that eating disorders are far from simply about food and weight and instead develop as a desperate attempt to deal with overwhelming emotional pain (Reiff & Lampson-Reiff, 1992). Since Bruch's (1962) initial conceptualization, individuals with this disorder have been described as being dominated by their emotions and as having a very limited access to their emotional life. Numerous studies have provided support for this conceptualization showing that anorexic individuals are more prone to silencing negative emotions and often avoid communications that deal with negative affect (Geller, Cockell, Hewitt, Goldner, & Flett, 2000; Sohlberg & Strober, 1994; Strober, 1981). They have also been found to hold a distinct and pervasive attitude towards emotion, often viewing it as dangerous, intolerable, and as something to be avoided altogether (Dolhanty & Greenberg, 2007).

As a result of these findings, one hypothesis is that individuals with AN use regulatory strategies relating to eating and the body to diminish unpleasant affect (Taylor, Bagby, & Parker, 1997; Telch, 1997). In doing so, the emotional pain is hidden in the symptoms and removed from conscious awareness. In addition, the avoidance of emotional processing also allows the preservation of an image of perfection, which is often sought by these individuals (Geller et al., 2000). It appears then that gaining a clearer understanding of what components of emotional processing are problematic is important, as it may offer insight as to

why individuals with AN have difficulty responding in an adaptive way to their internal experience and forming an accurate sense of self.

Although the role of emotion has been discussed since the 1960's, there is relatively less research regarding emotional regulation and awareness in AN when compared to the number of studies that have investigated this relationship in BN (Gilboa-Schechtman, Avnon, Zubery, & Jeczmien, 2006). Interestingly, the majority of the studies that have been conducted in the eating disorder field have been concerned with the functional value of regulating momentary emotional states and the majority of this data has been collected from non-clinical samples (Overton, Selway, Strongman, & Houston, 2005). Therefore, what has been neglected in the research literature is the role that emotions play in both the relapse and maintenance of this potentially deadly disorder. Further research is needed into what aspects of emotional processing are challenging and if individuals who are recovered continue to have difficulties with emotional processing. Understanding what elements of the emotional experience change with recovery can help clinicians to target their treatments to the most pertinent aspects of the emotional processing experience.

Interoceptive awareness and emotion. The ability to recognize and discriminate between bodily sensations or internal cues such as hunger or satiety is known as interoceptive awareness. According to the Dialectical Constructivist Theory, one pole of the dialectic and the first step in emotional processing involves paying attention to the bodily felt sense that arises from our situational experiences (Angus & Greenberg, 2011). The importance of attending first to our

bodily felt sense developed from the finding that when people were asked how they felt, they often report strong bodily sensations that accompany their emotions (Craig, 2008; Pollatos, Gramann, & Schandry, 2007). It appears then our experience is first coded in a wordless narrative that has a sensory or kinaesthetic format (Angus & Greenberg, 2011).

Attending to this felt sense is crucial as it must be brought into awareness before it can be symbolized. Over a decade ago, Saarni (1999) argued that awareness and identification of internal emotional states is one of the most basic skills required for competent emotional functioning. The idea that the perception of bodily signals is a critical factor in emotional experience can now be found in many of the leading models of emotion, suggesting that one's sensitivity to bodily signals has been widely accepted as critical factor in emotional awareness (Barrett, Quigley, Bliss-Moreau, & Aronson, 2004; Craig, 2008; Damasio, 1994; James, 2007; Philippot & Chalelle, 2002; Pollatos, Kirsch, & Schandry, 2005; Wiens, 2005; Wiens, Mezzacappa, & Katkin, 2000).

Based on this understanding, further researching the role of interoceptive awareness is important as there has been initial evidence that individuals with AN may have a generalized disturbance in the integration of interoceptive stimuli (Wagner et al., 2008). It has also been suggested that poor interoceptive awareness predicts a greater likelihood of disordered eating in adolescent girls (Leon, Fulkerson, Perry, & Early-Zald, 1995). An important link between cognitive and affective processes and current body state has also been found suggesting that interoceptive awareness is critical for self-awareness (Paulus &

Stein, 2006), an awareness thought to be greatly compromised in individuals with AN.

Although there are some indications that interoceptive awareness is problematic, there is debate as to whether anorexic individuals primarily lack emotional clarity or if it is more about avoiding negative emotional states (Merwin, Zucker, Lacy, & Elliott, 2010). It is important to note that these two components of interoceptive awareness are not mutually exclusive; individuals may lack clarity and be non-accepting of affective arousal. However, determining which is the primary deficit is critical to increasing treatment effectiveness as each deficit points to distinctive mechanisms that would require different interventions.

One side of the debate argues that individuals with AN rely on food restriction as a maladaptive coping strategy to regulate aversive internal states they struggle to identify and understand (Leon et al., 1995). Not being able to identify internal states is concerning as these individuals not only struggle to identify specific emotions, but also have a difficult time choosing an effective and adaptive strategy to alleviate their painful emotions (Sim & Zeman, 2004). The other side of the debate argues that emotional avoidance does not involve a lack of interoceptive clarity and what really contributes to their dietary restraint are negative reactions to their emotional states (Merwin et al., 2010). Understanding whether individuals with this disorder struggle with identifying and understanding their internal states is important as effective treatment interventions can only be developed once there is a clear understanding of where the deficits in emotional processing begin.

Alexithymia: A cognitive-affective deficit. The second pole of the dialectical and the next step in emotional processing involves symbolizing and differentiating embodied feeling states that have been brought into awareness (Angus & Greenberg, 2011). This process involves symbolizing emotions in words. If emotions are not put into a verbal format, the individual is left with what are known as "unstoried emotions" (Angus & Greenberg, 2011, p. 21), which are almost always experienced by the individual as frightening, overwhelming, distressing, and disorganizing.

One way to explore the ability to symbolize emotions is by examining alexithymia. Individuals with alexithymia have difficulties in identifying and describing emotions, struggle with the interpersonal regulation of emotions, and suffer from impairments in the cognitive components of their emotional response systems (Espina Eizaguirre, Ortego Saenz de Cabezon, Ochoa de Alda, Joaristi Olariaga, & Juaniz, 2004). Numerous studies have shown alexithymia to be a predominant factor in eating disorders (e.g., Beales & Dolton, 2000; Bourke, Taylor, Parker, & Bagby, 1992; Guilbaud et al., 2000; Taylor, Parker, Bagby, & Bourke, 1996; Zonnevijlle-Bender et al., 2004). For example, Taylor et al. (1996) found that individuals with AN reported greater difficulties than controls in identifying their emotions and in describing their feelings to others. Since its initial conceptualization, alexithymia has been almost solely assessed using the Toronto Alexithymia Scale (TAS; Bagby, Parker, & Taylor, 1994). The exclusive reliance on a self-report measure like the TAS when investigating difficulties with identifying and describing emotions is quite concerning as it directly asks

participants to rate their emotional states. If individuals with this disorder are unable to identify their internal states then the TAS may not appropriately measure one's lack of emotional awareness (Bydlowski et al., 2005).

Another concern with previous studies that have investigated difficulties with identifying emotions in AN solely using the TAS is that there is a strong positive association in both the general and clinical populations between measures of depression and the TAS (De Groot, Rodin, & Olmsted, 1995). As there is a high prevalence of depression in the AN population, we do not know whether results from previous research studies that have found an association between alexithymia and AN (e.g. Bydlowski et al., 2005; Cochrane, Brewerton, Wilson, & Hodges, 1993; Guilbaud et al., 2000), are due to the eating disorder or due to struggles with the negative emotions that accompany depression. These methodological concerns have led researchers to develop alternative measures of emotional awareness that are not associated with negative affect and that more covertly detect any potential emotional deficits.

In addition to validity problems from using the TAS, what is also still not known is whether alexithymia continues to be a concern once individuals have recovered from AN. Having a clearer understanding of the role of alexithymia in individuals who are recovered is important for determining whether alexithymia may be a pre-disposing factor. More importantly, if alexithymia is no longer a concern once individuals are recovered, then targeting interventions towards helping to better identify and describe emotions may be beneficial for the recovery process.

Emotional awareness. An important distinction between identifying and describing emotion and emotional awareness is that emotional awareness does not involve thinking about feeling and instead is about "feeling the feeling in awareness" (Greenberg, 2008, p. 90). In other words, emotional awareness is not the expression of emotion or mere emotional experiencing. Instead, it involves recognizing that an emotion is present and then contemplating the emotion experience (Croyle & Waltz, 2002).

One part of the emotional symbolization process that is not addressed by only investigating alexithymia is the ability to use linguistic distinctions to express one's implicit bodily felt sense. One way to explore the capacity to differentiate between diverse emotional states is by investigating emotional awareness (Lane & Schwartz, 1987). The capacity to distinguish subtle, yet critical distinctions in emotions is crucial as it helps to capture the essence of an experience and is paramount in creating new personal meanings. Without a range of linguistic distinctions to draw from when making meaning of their experiences, individuals with AN may find that they become constrained to having only generic or vague understandings. Furthermore, the self is also relational and therefore understanding the level of emotional awareness these individuals have for judging others' emotional experience is also crucial.

In order to determine one's level of emotional awareness, Lane and Schwartz (1987) have developed an observer-rated measure known as the Levels of Emotional Awareness Scale (LEAS). There are five clearly differentiated levels of progressive differentiation and integration in the emotional awareness model that

determine one's level of emotional awareness. These levels from lowest to highest are: (a) cognitive responses, (b) awareness of physiological cues, (c) undifferentiated emotion or action tendencies, (d) differentiated emotion, and (e) two or more opposing or qualitatively distinct emotions. According to this model, alexithymia represents the pre-conceptual level of emotional organization and regulation; alexithymia is thought to be located at the lower end of the emotional awareness continuum.

Only one study to date has investigated emotional awareness in women with eating disorders using the LEAS (Bydlowski et al., 2005). Overall, these women were found to have a marked impairment in their ability to identify and describe their own and others' emotional experience. Specifically, it was found that women with AN had lower emotional awareness scores than women with BN. A surprising finding in this study was that despite having lower emotional awareness, women with AN were not found to be more alexithymic than women with BN. In addition, once the researchers had controlled for depression, alexithymia scores no longer differentiated women with eating disorders from the women in the control group (Bydlowski et al., 2005). The change in statistical significance for alexithymia once controlling for depression scores provides further support that the TAS is more likely measuring negative affect related features such as depression, while the LEAS appears to be capturing a personality trait that is not related to mood disorders or stressful life events. The authors highlighted the importance of this finding for future studies on emotional awareness as the results

suggested that alexithymia and emotional awareness appear to be two distinct yet complementary constructs for evaluating emotional processing.

Additional studies investigating emotional awareness using the LEAS are needed in order to determine if the previous findings are indeed reflective of all individuals suffering from AN as the Bydlowski et al. (2005) study only investigated individuals seeking hospital treatment. It is also important to gain an understanding of whether difficulties with emotional awareness in both self and others continue to be a concern once they have recovered.

Current Study

In order to explore the application of the Dialectical Constructivist Theory to the AN population, the contributions of both the emotional and the rational-linguistic systems need to be fully addressed. This paper (Part I) investigates the emotional processing side of the Dialectical Constructivist Theory, while Part II is a complementary paper that will address the rational and conceptual side of the theory by investigating autobiographical and self-defining memories. Although it has been determined that there are difficulties with emotion processing in AN, there is still debate on what components of the emotion processing deficit are causing the biggest challenges for these women. The purpose of this study is to investigate whether any of the emotional processing variables or combination of variables can differentiate between women who are in-recovery from AN, recovered from AN, or have no history of an eating disorder.

Of particular interest in this study is whether any emotional processing deficits remain after individuals have recovered. Having an understanding of the

emotional processing abilities of women who are recovered provides insight into what emotional variables require the most attention during treatment. Furthermore, it can be determined whether women who are recovered are able to process emotion in the same manner as those who have never had an eating disorder. Knowing the emotional processing capacity of women who are recovered helps in determining if affectively based interventions might increase treatment effectiveness.

Several hypotheses were tested in this study. It was hypothesized that interoceptive awareness, emotional awareness, emotional suppression, and alexithymia would account for a statistically significant amount of variance in distinguishing between individuals in the in-recovery, recovered, and control groups. In other words, participants in the in-recovery group should have higher interoceptive awareness, alexithymia, and emotional suppression scores and lower emotional awareness scores compared to participants in the recovered and the healthy control groups.

Method

Participants

Ninety adult women voluntarily participated in this study and self-identified as belonging to one of three equally sized groups. The *In-Recovery* group was comprised of women who had been diagnosed by professional health care providers as having met the DSM-IV (American Psychological Association [APA], 2000) criteria for Anorexia Nervosa, Restricting Type (AN-R) or Anorexia Nervosa, Binge Purge Type (AN-BP). In order to participate, these

women were required to be working towards recovery through some form of treatment. They were also required to have a BMI in the normal range (18.5 - 24.9) to ensure their physical safety and their cognitive capacities were not compromised during the study. These women were recruited from the Eating Disorder Program at the University of Alberta Hospital and from communities in and surrounding Edmonton, Alberta.

The *Recovered* group was comprised of women who considered themselves recovered from a previous diagnosis of AN. The definition of recovered continues to be a debated topic in the field. Most of the previous studies required only an absence of the physical symptoms, therefore it is not known whether the participants were still suffering from the psychological symptoms. For the purposes of this study, recovered status included an absence of physical and psychological symptoms at the present time. A few of the participants in this study did report that while they considered themselves recovered, their eating disorder related thoughts returned during particularly stressful times. The difference for them was that in their recovered state, they no longer had an urge to act on the thoughts.

The women in the recovered group were required to have a previous diagnosis of AN-R or AN-BP, be in the normal BMI range (18.5 – 24.9) for their height and weight, and not currently suffering from any of the physical or psychological symptoms associated with the disorder. This included not participating in eating disorder behaviors including food restriction or overcompensating for food intake with excessive exercise or laxative/diet pill abuse. These women were also

required to have stopped bingeing and purging for at least the last 3 months. Confirmation of the recovered status was achieved by administering the Eating Disorder Diagnostic Scale (EDDS; Stice, Telch, & Rizvi, 2000) to ensure that participants no longer meet the diagnostic criteria for AN. Absence of psychological symptoms of AN was assessed both through self-report and checking the scores on the EDDS to determine whether a fear of becoming fat or gaining weight was present and if weight and shape were influencing their self-evaluation. The participants in the recovered group were recruited from the University of Alberta and communities in and surrounding Edmonton, Alberta.

Participants in the in-recovery and recovered groups were excluded if they met the criteria for current drug or alcohol abuse or had been diagnosed with a psychotic disorder. They were also excluded if they had a BMI of 30 or higher. Women in either group who had been diagnosed with depression, anxiety, or personality disorders were not excluded from participating in this study given the high co-morbidity rates with AN. A total of 3 women were excluded from participating in the study due to the fact that they were actively suffering from AN and were at a BMI below 18.5.

The *Healthy Control* group consisted of women who had no previous eating disorder history (no current or life-time history of self-induced vomiting, binge eating, diuretic or laxative abuse, severe food restriction) and had never been diagnosed with a psychotic disorder. They were excluded if their BMI was below 18.5 or 30 or higher. The EDDS was also used to ensure that participants in the healthy control group did not meet the criteria for any of the diagnostic criteria for

an eating disorder. Participants in this group were recruited from the University of Alberta and communities in and surrounding Edmonton, Alberta.

Measures: Screening Tests

Demographics. A demographic form created by the researcher (Appendix A) was administered in order to obtain age, marital status, education, employment, ethnicity, socioeconomic status, and past/present eating disorder history. Also included were questions on physical and mental health status, specifically focusing on diagnosed substance abuse disorders, mental health disorders, and eating/weight loss habits. If participants were part of the in-recovery or recovered groups, specific information relating to their eating disorder was obtained.

Eating disorder symptoms. The Eating Disorder Diagnostic Scale (EDDS; Stice et al., 2000) is a 22-item self-report scale for diagnosing anorexia nervosa, bulimia nervosa, and binge eating disorder according to the DSM-IV. It is useful as both a diagnostic scale and for assigning a symptom composite score, which indicates overall eating disorder symptomatology. For the purposes of this study items were summed into an overall eating disorder symptom composite with scores ranging from 0 – 112. The EDDS has been found to have good test-retest reliability (r = .87), internal consistency (Cronbach's alpha = .89), and convergent validity with validated measures of eating disturbances (Stice & Ragan, 2002). The Cronbach's alpha for this study was .86.

Body mass index. Height and weight measurements were collected by self-report in order to determine Body Mass Index (BMI; Garrow & Webster, 1985). BMI is the standard measure of body fat used by medical professionals (*weight*

(kg)/*height* $(m)^2$). It is considered to be a good measure of healthy body weight as it not only takes into consideration one's height, but also allows for a range of weights that a person can be within and still considered healthy. According to this measure, individuals are considered underweight if their BMI is less than 18.5, are in the normal range if their BMI is between 18.5 and 24.9, overweight if they are between 25.0 and 29.9, and obese starting at 30. BMI based on self-report data correlates well with confederate measured weight with correlations ranging from .96 to .99 (United States Public Health Service, 1988). Prior research has also shown that BMI is a valid measure of adiposity with acceptable test-retest reliability (Garrow & Webster, 1985; Kraemer, Berkowitz, & Hammer, 1990; Stice, Agras, & Hammer, 1999).

Depression, anxiety, and stress. The Depression Anxiety Stress Scales (DASS-21; Lovibond & Lovibond, 1995) is a 21-item version of the original 42-item DASS. Using both clinical and nonclinical samples, two factor analytic studies have shown that the items on the DASS-21 can be grouped into the three subscales (Antony, Bieling, Cox, Enns & Swinson, 1998; Henry & Crawford, 2005). These subscales have seven items each: (a) depression and dysphoric mood (*depression subscale*), (b) symptoms of fear and autonomic arousal (*anxiety subscale*), and (c) symptoms of general nervousness and agitation (*stress subscale*). Items are rated according to symptoms experienced in the past week on a Likert scale ranging from 0 (*not at all*) to 3 (*most of the time*).

The DASS-21 reliably differentiates between the symptoms of anxiety and depression and between the symptoms of physical arousal and general anxiety

(Antony et al., 2005; Henry & Crawford, 2005). Concurrent validity has also been established in non-clinical and clinical samples (Antony et al., 2005). For example, Antony et al. (2005) found that the depression subscale was correlated (r = .79) with the Beck Depression Inventory (BDI; Beck, Rush, Shaw, & Emery, 1979), the anxiety subscale correlated (r = .85) with the Beck Anxiety Inventory (BAI; Beck & Steers, 1990), and the stress subscale correlated (r = .68) with the State-Trait Anxiety Inventory (STAI-T; Speilberger, 1983). The Cronbach's alpha for this study was .94.

Social desirability. To ensure that the self-report measures used in this study were not contaminated by social desirability or *faking good*, the Marlowe-Crowne Social Desirability (MCSD; Crowne & Marlowe, 1960) scale was administered. The original scale contained 33-items and had high test-retest (r = .89) and internal consistency reliabilities (ranging from r = .73 to .88) in a variety of populations (Crowne & Marlowe, 1964; Davis & Cowles, 1989; Fisher, 1967; Paulhaus, 1984; Tanaka-Matsumi & Kameoka, 1986). Since its initial development, several researchers have developed short versions of the MCSD. Of these short versions, the one with the most consistent support across fit indexes was Scale 1 developed by Ballard (1992). According to Loo and Loewen (2004), this version is a significant improvement over the full scale. Scale 1 consists of 11 items, responded to by a forced choice true or false. High scores indicate that a participant is over-reporting socially desirable behaviors and under-reporting socially undesirable ones. The Cronbach's alpha for this study was .93.

Measures: Study Variables

Interoceptive awareness. The Interoceptive Awareness (IA) scale from the Eating Disorder Inventory-2 (EDI-2; Garner, 1991) examines an individual's perceived ability to discriminate between sensations and feelings and between the sensations of hunger and satiety. The IA scale consists of ten items that are responded to on a 6-point Likert scale ranging from 1 (*never*) to 6 (*always*). This scale has been found to correlate highly with the Body Dissatisfaction scale, most of the EDI-2 subscales, and the Beck Depression Inventory. Furthermore, it has been shown to have good internal consistency with a Cronbach's alpha of .85 for a combined sample of eating disorder patients and of .80 for a control group. The Cronbach's alpha for this study was .90.

Alexithymia. The Toronto Alexithymia Scale (TAS-20; Bagby et al., 1994) is a well-validated and frequently used self-report measure to assess alexithymia. It is a 20-item self-report questionnaire that is divided into three subscales: (a) difficulty identifying emotional states, (b) difficulty in describing emotions and communicating them to others, and (c) the degree to which the respondent exhibits a concrete, externally oriented style of thinking. The items are on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*) with the overall total varying from 20 to 100. Congruent with previous studies, the cut-off score for alexithymia in this study was 56 (Loas, Otmani, Verrier, Fremaux, & Marchand, 1996; Zonnevijlle-Bender et al., 2004). Higher scores reflect more problems with emotional functioning. The TAS-20 has been found to have modest internal consistency (Cronbach's alpha = 0.64 - 0.83) and test-retest

reliability in addition to good convergent and discriminant validity (Bagby et al., 1994) in a wide range of cultural and linguistic settings (Taylor, Bagby, & Parker, 2003). The Cronbach's alpha for this study was .87.

Emotional suppression. The Courtauld Emotional Control Scale (CECS; Watson & Greer, 1983) is a 21-item scale designed to assess the emotional suppression of anger, anxiety, and depressed mood. Participants are asked to rate their attempts to control the outward expression of anger, anxiety, and depression on a 4-point scale that ranges from 1 (*almost never*) to 4 (*almost always*). Sub-scales contain 7 items and consist of an emotional stem (e.g. "When I feel unhappy…") and responses to be rated include: (a) "I refuse to say anything about it", (b) "I keep quiet", or (c) "I bottle it up". Originally developed for use with women with breast cancer, the CECS has now been used in a variety of other populations (Langana et al., 2002). Test-retest reliability has been found to be high for total scores ($r = 0.95$) over a 3 to 4 week period (Watson & Greer, 1983). In addition, this measure has been found to be largely free of social desirability response bias (Watson & Greer, 1983). Internal consistency has also been shown to be high for a variety of samples (Cameron, Booth, Schlatter, Ziginskas, & Harman, 2007; Classen, Koopman, Angell, & Spiegel, 1996; Giese-Davis et al., 2002; Watson & Greer, 1983; Watson et al., 1991). The Cronbach's alpha for this study was .93.

Emotional awareness. The Level of Emotional Awareness Scale (LEAS; Lane, Quinlan, Schwartz, Walker, & Zeitlin, 1990) is an observer-rated questionnaire that measures one's level of emotional awareness. The scale

consists of 20 hypothetical interpersonal scenes with two people described in two to four sentences. For the purposes of this study, Form B that consists of only 10 of the hypothetical scenes was used. These ten scenes are designed to elicit four types of emotion (anger, fear, happiness, and sadness) at five levels of increasing complexity (Lane & Schwartz, 1987). The different content of the scenes offer cues that correspond to the increasing levels of complexity of the emotional awareness model. After each scene is read, participants are asked to write out their response to two questions: "How would you feel?" and "How would the other person feel?"

Responses were scored using the *LEAS Scoring Manual and Glossary* (Lane, 1991). Each scene receives separate scores for the emotion described for self, for the other, and for the scene total score. Scores are assigned as follows: (a) a score of 0 is given for no emotional response (e.g. thought or cognitive state – "confused"); (b) a score of 1 for a response that only mentions awareness of physiological cues (e.g. "I'd feel pain") or states that no emotion would be felt; (c) a score of 2 for responses of undifferentiated emotion or stating an action tendency; (d) a score of 3 for differentiated emotional responses (e.g. "I'd feel happy"); (e) a score of 4 if the response had two or more opposing or qualitatively distinct emotions (e.g. "I'd feel happy and sad"); (f) a score of 5 was assigned to the total score for that scenario if the participant had received two 4's on the responses for self and other. An overall total score is then calculated by summing the total scores from each of the items out of a maximum of 50. Inter-rater reliability was tested by first recruiting a qualified undergraduate student who was

blind to group membership and the study hypotheses. This individual was trained by the main researcher in how to score the LEAS and several practice trials were run until an acceptable level of agreement was reached. The undergraduate student was then asked to independently re-score 40% of the completed LEAS. Inter-rater reliability was found to be quite high (Kappa coefficient = .96).

The LEAS has shown good validity and reliability in several studies. For example, it is highly correlated with other measures of cognitive-developmental complexity (Lane et al., 1990) and positively correlated with emotional range, perception of emotion, and openness to experience (Lane, Sechrest, Riedel, Weldon, Kaszniak, & Schwartz, 1996; Lane, Kivley, Du Bois, Shamasundara, & Schwartz, 1995; Lane, Sechrest, Riedel, Shapiro, & Kaszniak, 2000). Furthermore, the LEAS has been found to be helpful in determining the accuracy of recognizing emotions in individuals with alexithymia (Lane et al., 2000) and positively correlates with the amount of right hemisphere dominance in the judgement of facial emotion (Lane et al., 1995).

The LEAS also has good discriminant validity demonstrated by its lack of correlation with other emotional measures focusing on different constructs. For example, it does not correlate highly with the Differential Emotions Scale (DES-IV; Blumberg & Izard, 1985), which looks specifically at the quality of emotion. Moreover, the LEAS correlates negatively with TAS and TAS-20 scores (Berthoz et al., 2000; Lane et al., 1998). In addition, this scale demonstrates high inter-rater reliability across studies (ranging from r = .91 to .98), along with good internal consistency with Cronbach's alphas ranging from .83 to .88 (Barrett, Lane,

Sechrest, & Schwartz, 2000; Lane et al., 1990, 1995, 1996). The Cronbach's alpha for this study was .74.

Procedure

Participant recruitment took place from January 2010 to August 2011. An initial contact email describing the study was sent to mental health professionals in the eating disorder field in Edmonton requesting their involvement in the study. Posters and information sheets were sent out to the individuals who agreed to advertise the research in their facilities. Posters were also placed around the University of Alberta and the Eating Disorder Unit at the University of Alberta Hospital. Advertisements were also placed in the local media. After completion of the research session, each of the participants was given $10 to thank them for their time. Approval for the project was obtained from the University of Alberta Research Ethics Board – 2 and the Health Research Ethics Board – Health Panel.

An initial telephone screening process (Appendix K) was conducted to determine if the individual qualified to participate. The screening process included questions on age, current diagnoses and medications, psychiatric history, and methods of weight loss/control. Any questions or concerns were also addressed at this time. If the prospective participant met all the eligibility requirements and was interested in participating, the procedures of the study were explained and an individual session was scheduled.

During the research session and prior to completing any of the measures, participants were informed as to the purpose of the study, the risks and benefits, and the right to withdraw their participation at any time without penalty. It was

also communicated that all completed questionnaires would be stored safely in a locked filing cabinet for a period of 5 years and that data would be shredded after that time. Additionally, all participants were informed that only researcher assigned numbers would be used to identify individual responses and that no identifying information was to be placed on the individual questionnaires. After a participant verbally agreed to these terms, she was asked to sign a consent form (Appendix L).

The demographics form was then administered in a semi-structured interview format in order to allow the researcher to ask additional questions or to get clarification if needed. Once completed, participants were administered the EDDS, DASS-21, and MCSD in order to measure any pre-existing differences in the groups that might need to be controlled in the multivariate analyses. Participants were then administered the TAS-20, IA scale of the EDI-2, LEAS, AMT, and the SDM Task. Participants took around one and a half to two hours to complete the research session.

Results

Preliminary Analyses

Before conducting the preliminary or main analyses, the data were examined for accuracy of data entry, missing values, and fit between their distributions and the assumptions of multivariate analysis. The variables were examined separately for each of the groups.

All 90 participants were screened for missing values on all of the study variables and no missing values or values out of range were discovered. Pairwise

linearity was checked by within group scatterplots and assessed as satisfactory. In order to check for univariate normality and the presence of univariate outliers, each variable was screened for problems in skewness and kurtosis, linearity, and homoscedasticity. There was positive skewness on the subscales and the total score of the DASS-21 (*Sk* = 3.68). Positive skewness was also found on the Interoceptive Awareness scale (*Sk* = 4.67) and the EDDS (*Sk* = 4.02). Negative kurtosis (platykurtic) was found for the Identifying Feeling subscale of the TAS (*K* = -2.19) and the Anxious subscale of the CECS (*K* = -2.27). All of these values were outside the generally accepted range of -2 to 2. When investigating the histograms and box plots for the study variables for each of the groups, univariate outliers were identified on several of the scales. According to Tabachnick and Fidell (2007), one method to deal with outliers is to reduce their impact by transforming the study variables to change the shape of the distribution to near normal. Several transformations of the data were attempted to minimize loss of statistical power. The best results were with a square-root transformation that resulted in skewness and kurtosis values of less than two. The transformations also reduced the impact of the outliers. After transformations, the assumptions of univariate normality were met. The transformed values were used in subsequent analyses.

Multivariate outliers were screened by computing Mahalanobis distance for each case for all of the study variables. There were no multivariate outliers detected ($p < 0.001$) (Tabachnick & Fidell, 2007). Additionally, there was no evidence of multicollinearity.

Demographic and clinical characteristics. Means and standard deviations for the demographic and clinical characteristics of the three groups are presented in Tables 3-1 and 3-2. For the in-recovery group, 51% of the women were diagnosed with AN-BP and 49% were diagnosed with AN-R. The mean age of this group was 27.0 years (*SD* = 4.54) and 47% had completed high school, while 37% had an undergraduate or graduate education. The women had been suffering with AN for an average of 6.67 years (*SD* = 2.02), with their first official diagnosis at a mean age of 18.83 years (*SD* = 3.34). The average Body Mass Index (BMI) score was 20.19 (*SD* = 1.95), suggesting that the majority of these women had BMIs in or approaching the normal range (between 18.5 and 24.9). Just over half of the participants in this group were receiving psychotropic medication. Of the 30 women who participated, all 30 of them completed the full set of questionnaires.

In the recovered group, 47% of participants had been previously diagnosed with AN-BP and 53% had been diagnosed with AN-R. The mean age of this group was 26.3 years (*SD* = 5.06) and 43% of them had completed high school, while 43% had an undergraduate or graduate education. The women had suffered with AN for an average of 5.03 years (*SD* = 2.27), with their first diagnosis being at a mean age of 16.77 years (*SD* = 2.83). They had a mean BMI of 21.46 (*SD* = 1.59) and 30% of the participants in this group were taking psychotropic medication. Of the 30 women who participated, all 30 completed the full set of questionnaires.

Table 3-1

Demographic and Clinical Characteristics of the Three Study Groups

Variables	In-Recovery Group *M* (*SD*) (*n* = 30)	Recovered Group *M* (*SD*) (*n* = 30)	Control Group *M* (*SD*) (*n* = 30)	*F*(2, 87)	*p*
Age at testing (years)	27.00 (4.54)	26.33 (5.06)	22.10 (3.22)	10.83[a]	.001
Body Mass Index	20.19 (1.95)	21.46 (1.59)	22.11 (2.32)	6.62	.002
DASS	27.27 (11.96)	14.70 (9.92)	5.90 (3.51)	50.22[a]	.001
EDDS	39.23 (15.03)	13.43 (9.07)	10.97 (10.45)	61.33	.001
MCSD	4.50 (2.39)	4.53 (2.54)	5.63 (2.53)	2.02	.210
	Eating Disorder Group (*n* = 60)	Control Group (*n* = 30)		$X^2(1, N = 90)$	*p*
Ethnicity					
Caucasian	90%	63%			
Other	10%	37%		9.72	.002
Education					
High school	45%	67%			
College/University	55%	33%		3.76	.052
Employment					
Working	36%				
School	64%	100%		14.93	.001

Note: DASS = Depression Anxiety and Stress Scale; EDDS = Eating Disorder Diagnostic Scale; MCSD = Marlowe-Crowne Social Desirability scale. Chi-square test used for ethnicity, education, and employment; ANOVAs used for all other variables. [a]Welch's *F* (2, 52.769) used.

Table 3-2

Demographic Variables for the In-Recovery and Recovered Groups

Variables	In-Recovery Group (n = 30)	Recovered Group (n = 30)	$t(58)$ or $X^2(1, N = 60)$	p
Age diagnosed	18.83 (range: 12-29) (SD = 3.34)	16.77 (range: 11-25) (SD = 2.83)	2.34	.02
Type of AN				
Binge Purge	51%	47%		
Restricting	49%	53%	0.82	.37
Number of Years had AN				
5 years or less	23%	53%		
More than 5 years	77%	47%	5.71	.02
Hospitalization				
Yes	73%	47%		
No	27%	53%	4.44	.04
Type of treatment				
Psychotherapy or Physician	39%	32%		
Treatment Facility	61%	68%	0.31	.58

Note: t test used for age diagnosed; Chi-square used for all other variables.
Treatment facility includes inpatient and outpatient programs in hospitals and private treatment clinics.

The mean age of the control group was 22.1 years (*SD* = 3.22) and 67% had completed high school, while 33% had an undergraduate or graduate education. The mean BMI of the women was 22.11 (*SD* = 2.32). All 30 women who participated in the control group completed the full set of questionnaires.

Analyses of variance (ANOVAs) with post-hoc tests and Pearson's chi-square tests were conducted to investigate if there were any differences between the groups on the demographic variables. The assumptions of independence, normality, and homogeneity of variance were satisfied for all of the tests with the exception of age, for which Levene's test was statistically significant, $F(2, 87) = 5.82$, $p < .01$. In this case, the results for the ANOVA are presented for equal variances not assumed.

Several group differences were found to be statistically significant (see Table 3-1). For example, age at the time of testing differed between the three groups, $F(2, 52.769) = 10.83$, $p < .001$, $\eta\rho^2 = .14$. Tukey post-hoc comparisons ($p < .01$) indicated that women in the control group ($M = 22.10$, 95% CI [20.90, 23.30]) were younger in age than women in the in-recovery group ($M = 27.00$, 95% CI [24.34, 29.66]), and the recovered group ($M = 26.33$, 95% CI [24.34, 29.66]). As was expected, BMI was also found to differ between the three groups, $F(2, 87) = 6.62$, $p < .01$, $\eta\rho^2 = .13$. Tukey post-hoc comparisons ($p < .01$) revealed that women in the in-recovery group ($M = 20.19$, 95% CI [19.34, 21.03]) had lower BMIs than the women in the control group ($M = 22.11$, 95% CI [21.24, 22.97]). Comparisons between the recovered group ($M = 21.46$, 95% CI [20.87, 2.05]) and the other two groups were not statistically significant at $p < .05$.

Pearson's chi-square tests were used to investigate if there were group differences on the demographic variables. The in-recovery and recovered groups were combined into one eating disorder group and compared to the control group. The results of the chi-square tests revealed that there were differences in ethnicity, $X^2(1, N = 90) = 9.72$, $p < .01$, $V = .32$, and employment status, $X^2(1, N = 90) = 14.93$, $p < .001$, $V = .40$, indicating that more participants were Caucasian in the group of women with a history of eating disorders and that fewer participants had completed post-secondary education in the control group. There were no statistically significant differences ($p < .05$) between the groups on level of education.

To investigate if there were any pre-existing differences between the groups that might confound the findings for the emotional processing variables, several ANOVAs were conducted with post-hoc tests to determine the course of any group effects (see Table 3-1). The assumptions of independence, normality, and homogeneity of variance were satisfied for all of the ANOVAs with the exception of the DASS total score, for which Levene's test was statistically significant, $F(2, 87) = 6.87$, $p < .01$. In this case, the results for the ANOVA are presented for equal variances not assumed.

The first analysis investigated if there were differences in the three groups on their total scores on the DASS-21 (Lovibond & Lovibond, 1995). Total scores (symptoms of depression, anxiety, and stress) differed between the three groups, $F(2, 54.55) = 50.22$, $p < .001$, $\eta\rho^2 = .48$. Tukey post-hoc comparisons of the groups revealed that women in the in-recovery group ($M = 27.27$, 95% CI [22.80,

31.73]) had higher scores ($p < .001$) than women in the recovered group (M = 14.70, 95% CI [10.99, 18.41]) and women in the control group (M = 5.90, 95% CI [4.59, 7.21]). Participants in the recovered group also had higher ($p < .01$) scores when compared to women in the control group.

As expected, the number of eating disorder symptoms (EDDS; Stice et al., 2000) were different between the groups, $F(2, 87) = 61.33$, $p < .001$, $\eta\rho^2 = .56$. Tukey post-hoc comparisons of the three groups ($p < .001$) revealed that women in the in-recovery group (M = 39.23, 95% CI [33.82, 44.65]) had more eating disorder symptoms than women in the recovered group (M = 13.43, 95% CI [10.05, 16.82]) and women in the control group (M = 10.97, 95% CI [7.91, 14.02]). Women in the recovered and control groups did not differ in their levels of eating disorder symptoms.

Due to the large number of self-report measures used in this study and because individuals with AN tend to be highly perfectionistic (Goldner, Cockell, & Srikameswaran, 2002), it was important to also measure response bias in terms of social desirability or *faking good*. It was found that there was no difference between the three groups on social desirability, $F(2, 87) = 2.02$, $p > .05$, $\eta\rho^2 = .04$.

To determine if there were any differences between the in-recovery and recovered groups on the type, course, and treatment of AN, independent sample *t*-tests and Pearson's chi-square tests were conducted (see Table 3-2). The assumptions of independence, normality, and homogeneity of variance were satisfied for all of the *t*-tests. There was a statistically significant difference in the age of AN diagnosis, $t(58) = 2.34$, $p < .05$, $d = 0.61$, with women in the in-

recovery group (M = 18.83, 95% CI [17.37, 20.30]) having received their diagnosis at an older age than those in the recovered group (M = 16.77, 95% CI [15.71, 17.82]). In addition, there was a statistically significant difference in the number of years that the women had suffered with AN, $X^2(N = 60) = 5.71$, $p < .05$, $V = .31$, with women in the in-recovery group having suffered from AN for a longer period of time than women in the recovered group. Furthermore, there was also a statistically significant difference in whether or not the women had been hospitalized as part of their treatment, $X^2(N = 60) = 4.44$, $p < .05$, $V = .27$. Women in the in-recovery group had entered hospital programs a higher number of times than women in the recovered group. There were no statistically significant differences between the groups on the type of AN diagnosis or treatment they received.

Main Analysis

Mean scores and standard deviations for each of the predictor variables (TAS-20, IA scale of the EDI-II, CECS, and the LEAS) as a function of group are presented in Tables 3-3 and 3-4. Analysis of variance (ANOVA) and analysis of covariance (ANCOVA; controlling for differences in total score on the DASS) were used. Post-hoc tests were then used to determine the source of any group effects. The assumptions of independence, normality, and homogeneity of variance and regression slopes were satisfied for all of the tests with the exception of the Identifying Feeling subscale of the TAS-20, the Interoceptive Awareness scale, and the Emotional Awareness of Others subscale of the LEAS, for which the Levene's tests were statistically significant. In the cases where Levene's test

Table 3-3

Means and Standard Deviations for Predictor Variables as a Function of Group Membership Compared using ANOVA

Variables	In-Recovery *M* (*SD*) (*n* = 30)	Recovered *M* (*SD*) (*n* = 30)	Control *M* (*SD*) (*n* = 30)	Group *F*(2, 87)	Post-hoc Comparisons
TAS-20					
Describe Feelings	17.53 (4.31)	12.93 (5.05)	11.10 (3.89)	16.06***	IR > C IR > R
External Orientation	19.07 (4.35)	17.20 (4.77)	16.00 (3.76)	3.89*	IR > C
Total Score	59.63 (9.75)	45.87 (13.06)	38.37 (7.75)	32.66***	IR > R > C
CECS					
Anxiety	20.53 (4.83)	18.80 (5.60)	14.70 (4.81)	10.99***	IR > C R > C
Unhappy	19.87 (5.04)	17.23 (4.46)	15.30 (4.11)	7.18**	IR > C
Anger	20.67 (5.02)	16.83 (5.37)	16.17 (4.32)	7.67**	IR > C IR > R
Total Score	61.07 (12.16)	52.87 (12.54)	46.17 (9.17)	13.10***	IR > R> C
LEAS					
Self	28.53 (3.81)	31.40 (3.22)	32.47 (3.29)	10.52***	IR < C IR < R
Other	26.87 (4.15)	28.70 (3.60)	32.37 (3.31)	24.49***	IR < C R < C
Total	33.03 (3.48)	35.03 (4.18)	37.23 (4.21)	7.70**	IR < C

Note: TAS-20 = Toronto Alexithymia Scale; CECS = Courtauld Emotional Control Scale; and LEAS = Levels of Emotional Awareness scale. ANOVAs were used for all of the variables. IR = In-Recovery Group, R = Recovered Group, C = Control Group. *$p < .05$. **$p < .01$. ***$p < .001$

Table 3-4

Means and Standard Deviations for Predictor Variables as a Function of Group Membership, Compared using ANCOVA

Variables	In-Recovery *M* (*SD*) (*n* = 30)	Recovered *M* (*SD*) (*n* = 30)	Control *M* (*SD*) (*n* = 30)	Group *F*(2, 86)	DASS *F*(1,86)	Post Hoc Comparisons
TAS-20						
Identify Feelings	23.03 (5.99)	15.73 (7.05)	11.27 (3.35)	15.21**	6.41*	IR > C IR > R
IA	11.50 (6.15)	2.80 (4.03)	0.87 (1.57)	39.24**	19.17**	IR > C IR > R

Note: TAS-20 = Toronto Alexithymia Scale; IA = Interoceptive Awareness scale of the EDI-II. IR = In-Recovery Group, R = Recovered Group, C = Control Group. *$p < .01$. **$p < .001$.

was statistically significant, the results are presented for equal variances not assumed.

Alexithymia. An ANOVA conducted on the TAS-20 total score revealed differences in alexithymia scores between the three groups, $F(2, 87) = 32.66$, $p < .001$, $\eta\rho^2 = .43$. Tukey post-hoc comparisons ($p < .001$) revealed that women in the in-recovery group ($M = 59.63$, 95% CI [55.99, 63.27]) were more alexithymic than women in the control group ($M = 38.37$, 95% CI [35.47, 41.26]) and women in the recovered group ($M = 45.87$, 95% CI [40.99, 50.74]). Additionally, women in the recovered group were also more alexithymic than women in the control group ($p < .05$).

As shown in Table 3-5, the finding that women in the in-recovery group are more likely to be alexithymic is further supported by investigating alexithymia as a categorical variable (using the cut-off score of 56). The in-recovery and recovered groups were combined to form one eating disorder group, which was then compared with the control group using Pearson's chi-square test. Women who were currently suffering or had a history of suffering from AN were more alexithymic than women who had never had an eating disorder, $X^2(1, N = 90) = 17.20$, $p < .001$, $V = .44$. Looking at differences between women in-recovery and women who had recovered from AN, women in the in-recovery group were also more alexithymic than women in the recovered group, $X^2(1, N = 60) = 17.14$, $p < .001$, $V = .54$.

The subscales of the TAS-20 were also explored to determine if there were group differences. Several previous studies have found a strong correlation

between TAS-20 scores and depression scores (Bydlowski et al., 2005; Zonnevylle-Bender et al., 2004), which was also supported in this study as there was a statistically significant correlation found between the TAS-20 and DASS scores, $r(88) = 0.54$, $p < .001$. Based on this finding, an ANCOVA was conducted. It was revealed that there was an effect of group membership on ability to identify feelings, $F(1, 86) = 6.41$, $p < .01$, $\eta\rho^2 = .13$. (see Table 3-5). Bonferroni post-hoc comparisons of the three groups revealed that women in the in-recovery group (Adjusted $M = 4.43$, 95% CI [4.14, 4.72]) had more difficulties with identifying their feelings than women in the recovered (Adjusted $M = 3.91$, 95% CI [3.67, 4.14]), $p < .05$, and control groups (Adjusted $M = 3.61$, 95% CI [3.33, 3.89]), $p < .01$.

ANOVAs were carried out on the remaining TAS-20 subscales. The first analysis looked at the Describing Feeling subscale and showed that there was a difference between the three groups, $F(2, 87) = 16.06$, $p < .001$, $\eta\rho^2 = .28$. Tukey post-hoc comparisons ($p < .001$) indicated that women in the in-recovery group ($M = 17.53$, 95% CI [15.92, 19.14]) had more difficulty describing their feelings than women in the control group ($M = 11.10$, 95% CI [9.65, 12.55]) and women in the recovered group ($M = 12.93$, 95% CI [11.04, 14.82]). The second analysis looked at the External Orientation subscale and revealed that there was a difference between the groups, $F(2, 87) = 3.89$, $p < .05$, $\eta\rho^2 = .08$. Tukey post hoc comparisons ($p < .05$) revealed that women in the in-recovery group ($M = 19.07$, 95% CI [17.44, 20.69]) displayed a more concrete and externally oriented

Table 3-5

Percentage of Participants in each Group who were Alexithymic or Nonalexithymic

	Eating Disorder Group (n = 60)	Control (n = 30)	$X^2(1)$	p
Alexithymic	46%	3%		
			17.20	<.001
Nonalexithymic	54%	97%		

	In-Recovery Group (n = 30)	Recovered Group (n = 30)		
Alexithymic	73%	20%		
			17.14	<.001
Nonalexithymic	27%	80%		

Note: Alexithymia was measured by the TAS-20.

thinking style than women in the control group (M = 16.00, 95% CI [14.60, 17.40]). Comparisons between the recovered group, (M = 17.20, 95% CI [15.42, 18.98]) and the other two groups were not statistically significant.

Emotional suppression. An ANOVA was conducted using the CECS total score (see Table 3-3), and it was revealed that there was a difference in emotional suppression scores between the three groups, $F(2, 87) = 13.10$, $p < .001$, $\eta\rho^2 = .23$. Tukey post-hoc comparisons of the three groups indicated that women in the in-recovery group (M = 61.07, 95% CI [56.35, 65.79]) were more likely to suppress their negative emotions than women in the recovered group (M = 52.87, 95% CI [48.06, 57.68]), $p < .05$, and women in the control group (M = 46.17, 95% CI [42.54, 49.79]) $p < .001$. In addition, women in the recovered group were also more likely ($p < .05$) to suppress their negative emotions when compared to the control group.

The subscales of the CECS were also explored to determine if there were group differences. ANOVAs were carried out on each of the subscales. The first analysis looked at the Anxious subscale and showed that there was a difference between the groups, $F(2, 87) = 10.99$, $p < .001$, $\eta\rho^2 = .20$. Tukey post-hoc comparisons ($p < .01$) between the three groups revealed that women in the in-recovery group (M = 20.53, 95% CI [18.73, 23.34]) suppressed more of their anxious feelings than women in the control group, (M = 14.70, 95% CI [12.90, 16.50]). Furthermore, women in the control group were less likely ($p < .01$) to suppress their anxious feelings when compared to the women in the recovered group, (M = 18.80, 95% CI [16.71, 20.89]).

The second analysis investigated the Unhappy subscale and found a difference between the groups, $F(2, 87) = 7.18$, $p < .01$, $\eta\rho^2 = .14$. Tukey post-hoc comparisons ($p < .01$) revealed that women in the in-recovery group ($M = 19.87$, 95% CI [17.98, 21.75]) were more likely to suppress their unhappy feelings than women in the control group, ($M = 15.30$, 95% CI [13.76, 16.84]). Lastly, an ANOVA was also conducted on the Anger subscale and a difference was also found between groups, $F(2, 87) = 7.67$, $p < .01$, $\eta\rho^2 = .15$. Tukey post-hoc comparisons ($p < .01$) revealed that women in the in-recovery group ($M = 20.67$, 95% CI [18.79, 22.54]) were more likely to suppress their anger than women in the recovered group ($M = 16.83$, 95% CI [14.83, 18.84]) and women in the control group ($M = 16.17$, 95% CI [14.56, 17.78]).

Emotional awareness. In order to investigate emotional awareness in the three groups, an ANOVA was conducted with LEAS total scores (see Table 3-3). The results revealed that there was a difference in emotional awareness scores between the groups, $F(2, 87) = 7.70$, $p < .01$, $\eta\rho^2 = 15$. Tukey post-hoc comparisons ($p < .01$) between the three groups indicated that women in the in-recovery group ($M = 33.03$, 95% CI [31.63, 34.44]) had more difficulties with emotional awareness than women in the control group ($M = 37.23$, 95% CI [35.66, 38.80]). Comparisons between the recovered group ($M = 35.03$, 95% CI [33.43, 36.63]) and the in-recovery and control groups were not statistically significant.

The subscales of the LEAS were also explored to determine if there were group differences using ANOVAs. The first analysis investigated emotional awareness of the self and found differences between the groups, $F(2, 87) = 10.52$, $p < .001$,

$\eta\rho^2 = .20$. Tukey post-hoc comparisons revealed that women in the in-recovery group ($M = 28.53$, 95% CI [27.11, 29.96]) had more difficulties with describing their own emotional state ($p < .01$) than women in the recovered group ($M = 31.40$, 95% CI [30.20, 32.60]) and women in the control group ($M = 32.47$, 95% CI [31.24, 33.69]). The second analysis looked at emotional awareness of others and also found differences between the groups, $F(2, 35.004) = 24.49$, $p < .001$, $\eta\rho^2 = .32$. Games-Howell post-hoc comparisons ($p < .001$) indicated that women in the in-recovery group ($M = 26.87$, 95% CI [25.32, 28.42]) had more difficulties with describing the emotional state of others than women in the control group, ($M = 32.37$, 95% CI [31.13, 33.60]), $p < .001$. Additionally, women in the recovered group ($M = 28.70$, 95% CI [27.35, 30.04]) had more difficulty describing the emotional state of others when compared to women in the control group.

Interoceptive awareness. Despite the finding that there is a high prevalence rate of both depression and anxiety in individuals with eating disorders (e.g., Hinrichsen, Wright, Waller, & Meyer, 2003), controlling for depressive symptoms and determining whether the observed effects are due to general distress or eating disorder specific features has rarely been done in previous AN studies. In order to better clarify the impact of distress scores on the observed effect and to assess the effect of group membership on interoceptive awareness scores, an ANCOVA was conducted using DASS total scores as a covariate (see Table 3-4). It is particularly important to look at DASS scores as a covariate in this study as there was statistically significant correlation between the IA scale and DASS scores, $r(88) = .74$, $p < .001$. There was an effect of group membership on interoceptive

awareness after controlling for the effect of DASS scores, $F(1, 86) = 19.17$, $p < .001$, $\eta\rho^2 = .48$. Bonferroni post-hoc comparisons ($p < .001$) revealed that women in the in-recovery group (Adjusted $M = 8.97$, 95% CI [7.25, 10.69]) had more difficulties with interoceptive awareness than women in the recovered (Adjusted $M = 3.08$, 95% CI [1.68, 4.48]) and control groups (Adjusted $M = 3.12$, 95% CI [1.46, 4.77].

Correlations between emotional processing variables. Correlations among the emotion processing variables are presented in Table 3-6. Alexithymia was positively correlated with both interoceptive awareness, $r(88) = .77$, $p < .001$, and emotional suppression, $r(88) = .70$, $p < .001$, and was not correlated with emotional awareness which was congruent with previous research. Interoceptive awareness was found to have a positive correlation with emotional suppression, $r(88) = .58$, $p < .001$, and a negative correlation with emotional awareness, $r(88) = -.27$, $p < .01$. Lastly, the correlation between emotional suppression and emotional awareness was found to be not statistically significant.

Table 3-6

Correlations between the Emotion Processing Variables

Measures	1	2	3	4
1. Alexithymia	-			
2. Interoceptive awareness	.77*	-		
3. Emotional suppression	.70*	.58*	-	
4. Emotional awareness	-.17	-.27*	.02	-

*$p < .001$

Emotional Processing Models

The primary objective of this study was to build a regression model that would determine which emotion processing variable or combination of variables would best predict group membership. Multinomial Logistic Regressions were conducted to determine which combination of emotional processing variables would be the best set of predictors. First, Log-Likelihood Ratio tests were calculated to assess whether the amount of difference accounted for within the sample by the combined emotional processing variables was the same as what would be expected from a hypothetical sample where the emotional processing variables had no association with group membership. Any difference between the hypothetical and actual data was then assessed through chi-square tests to determine whether the association between the emotional processing variables and group membership was statistically significant. Lastly, comparisons were also conducted for each of the emotional processing variables with each of the categories of group membership. Parameter estimates were also reported. These estimates looked at the differences between the expected and actual data and also looked at the statistical significance of the relationship between the different group categories and the emotional processing variables.

Multinomial Regression Analysis was used in this study, as it is amenable to small sample sizes and also to samples that have outcome variables with more than two categories. In addition, Multinomial Regression Analysis allows for the examination of specific contrasts between categories of each dependent variable and their association with independent variables, reducing the need for repeated

tests (Pampel, 2000). Therefore, Multinomial Regression Analysis increases the chance of showing that the relationships between the categories of the dependent variables and the independent variables arise from statistically significant differences between the actual data set when compared to the hypothetical data set generated from the null hypothesis.

Odds ratios (ORs) from the Multinomial Logistic Regression models that reflect estimated associations between group membership and the emotional processing variables are reported.

Alexithymia and emotional awareness as predictors. A Multinomial Logistic Regression was conducted to predict membership in the in-recovery or recovered groups with the control group as the reference group and using total score on emotional awareness and alexithymia as predictors (see Tables 3-7 and 3-8). Due to the large and statistically significant correlations between alexithymia and both emotional suppression and interoceptive awareness, the latter two variables were not included in the analysis to prevent problems with multicollinearity. A test of the full model against a constant only model was statistically significant indicating that the predictors as a set reliably distinguished between the three groups, $X^2(4, N = 90) = 57.89$, $p < .001$, and that the combined effect of the variables accounted for a considerable proportion of the variance between participants ($R^2 = .53$). Furthermore, tests conducted for alexithymia, $X^2(2, N = 90) = 43.43$, $p < .001$, and for emotional awareness, $X^2(2, N = 90) = 11.39$, $p < .001$, separately determined that these two predictor variables were associated with the changes in the categories of group membership.

Table 3-7

Model Fit for Group Membership with Alexithymia and Emotional Awareness as Predictor Variables

	Log Likelihood	X^2	df	*p*
Hypothetical	192.78			
Combined IVs	134.89	57.89	4	.001
Emotional Awareness	146.28	11.39	2	.003
Alexithymia	178.32	43.43	2	.001

Note: Emotional awareness measured by the LEAS; Alexithymia was measured by the TAS-20. Reference group = Control group.

Table 3-8

Multinomial Logistic Regression with Alexithymia and Emotional Awareness Predicting Group Membership

	In-Recovery						Recovered					
	B	*SE*	*OR*	95% CI	Wald Statistic	*p*	*B*	*SE*	*OR*	95% CI	Wald Statistic	*p*
Alexithymia	2.61	0.54	13.55	[4.74, 38.73]	23.68	.001	1.00	0.40	2.73	[1.25, 5.95]	6.36	.012
Emotional Awareness	-3.65	1.21	0.03	[0.00, 0.28]	9.04	.003	-1.89	0.87	0.51	[0.03, 0.82]	4.79	.029

Note: CI = confidence interval for odds ratio (*OR*). Reference group = Control group.

The findings in Table 3-8 highlight the specific direction of the association between alexithymia and emotional awareness and the categories of the groups. Overall, women with more difficulties with alexithymia and emotional awareness were more likely to be in the in-recovery and recovered groups than the control group. Within the in-recovery group and in relation to the expected distribution (reported as a constant), women who had higher alexithymia scores were more likely than women with lower alexithymia scores to be in the in-recovery group ($Wald = 23.68$, $p < .001$) than the control group. In addition, women with less emotional awareness were more likely to be in the in-recovery group than the control group ($Wald = 9.04$, $p < .01$). Within the recovered group category and in reference to the control group, women who had higher alexithymia scores were more likely than women with lower alexithymia scores to be in the recovered group ($Wald = 6.36$, $p < .05$). Furthermore, women who also had higher levels of emotional awareness were less likely to be in the recovered group ($Wald = 4.79$, $p < .05$).

Emotional suppression and emotional awareness as predictors. Due to the high correlations between the alexithymia and emotional suppression measures, another Multinomial Logistic Regression was conducted to avoid multicollinearity and to see if emotional suppression contributed to a higher prediction success rate. In the second Multinomial Logistic Regression analysis, emotional suppression and emotional awareness total scores were entered as the predictors of group membership (see Tables 3-9 and 3-10). A test of the full model against a constant only model was statistically significant. The results indicated that the predictors

Table 3-9

Model Fit for Group Membership with Emotional Awareness and Emotional Suppression as Predictor Variables

	Log Likelihood	X^2	df	*p*
Hypothetical	196.36			
Combined IVs	151.68	45.19	4	.001
Emotional Awareness	173.09	21.92	2	.001
Emotional Suppression	181.90	30.72	2	.001

Note: Emotional awareness measured by the LEAS; Emotional suppression was measured by the CECS. Reference group = Control group.

Table 3-10

Multinomial Logistic Regression with Emotional Suppression and Emotional Awareness Predicting Group Membership

	In-Recovery						Recovered					
	B	*SE*	*OR*	95% CI	Wald Statistic	*p*	*B*	*SE*	*OR*	95% CI	Wald Statistic	*p*
			10.8									
Emotional Suppression	2.39	0.55	6	[3.73, 31.63]	19.12	<.001	1.49	0.48	4.43	[1.72, 11.41]	9.50	.002
Emotional Awareness	-4.75	1.21	0.01	[0.00, 0.09]	15.46	<.001	-2.83	1.00	0.06	[0.01, 0.42]	7.99	.005

Note: CI = confidence interval for odds ratio (*OR*). Reference group = Control group

as a set reliably distinguished between women in the in-recovery and recovered groups when the reference category is the control group, $X^2(4, N = 90) = 45.19$, $p < .001$, and that the combined effect of the variables accounted for a considerable proportion of the variance between participants ($R^2 = .44$). Furthermore, tests conducted with emotional awareness, $X^2(2, N = 90) = 21.92$, $p < .001$, and emotional suppression, $X^2(2, N = 90) = 30.72$, $p < .001$, separately determined that these two predictor variables were associated with the changes in the categories of group membership.

The findings in Table 3-10 highlight the specific direction of the association between emotional suppression and emotional awareness and the categories of the groups. Overall, women with higher scores on emotional suppression and lower scores on emotional awareness were more likely to be in the in-recovery and recovered groups than the control group. Within the in-recovery group, and in relation to the expected distribution (reported as a constant), women who suppressed their negative emotions were more likely than women who did not suppress their emotions to be in the in-recovery group ($Wald = 19.12$, $p < .001$) than the control group. In addition, women with higher overall emotional awareness were less likely to be in the in-recovery group than the control group ($Wald = 15.46$, $p < .001$). Within the recovered group and in reference to the control group, women who suppressed their negative emotions were also more likely than women who did not suppress these emotions to be in the recovered group ($Wald = 9.50$, $p < .01$). Furthermore, women who also had higher levels of

emotional awareness were less likely to be in the recovered group (*Wald* = 7.99, $p < .01$).

Comparing the in-recovery and recovered groups. A Multinomial Logistic Regression was conducted to determine which of the emotional processing variables would predict group membership with the in-recovery group as the reference group (see Table 3-11 and 3-12). Emotional awareness, emotional suppression, and alexithymia total scores were entered as the predictors of group membership. Multinomial Logistic Regression allows for a closer examination of any differences between women in the recovered and in-recovery groups, providing insights into which of the emotional processing difficulties might dissipate with recovery. A test of the full model against a constant only model was statistically significant indicating that the predictors as a set reliably distinguished between the women in the in-recovery and recovered groups when the reference category is the in-recovery group, $X^2(4, N = 90) = 63.46$, $p < .001$, and that the combined effect of the variables accounted for a considerable proportion of the variance between participants ($R^2 = .57$). Furthermore, tests conducted with emotional awareness, $X^2(2, N = 90) = 15.30$, $p < .001$, and alexithymia, $X^2(2, N = 90) = 18.27$, $p < .001$, separately determined that these two predictor variables were associated with the changes in the categories of group membership. Emotional suppression was not a statistically significant predictor, $X^2(2, N = 90) = 5.57$, $p > .05$.

Table 3-11

Model Fit for Group Membership with Emotional Awareness, Emotional Suppression, and Alexithymia as Predictor Variables

	Log Likelihood	X^2	df	*p*
Hypothetical	197.75			
Combined IVs	134.29	63.46	6	.001
Alexithymia	152.56	18.27	2	.001
Emotional Awareness	149.59	15.30	2	.001
Emotional Suppression	139.86	5.57	2	.062

Note: Emotional awareness measured by the LEAS; Emotional suppression was measured by the CECS; and Alexithymia was measured by the TAS-20. Reference group = In-Recovery group.

Table 3-12

Multinomial Logistic Regression with Alexithymia and Emotional Awareness Predicting Group Membership

			Recovered			
Variable	*B*	*SE*	*OR*	95% CI	Wald Statistic	*p*
Alexithymia	-1.60	0.42	0.21	[0.09 – 0.46]	14.65	<.001
Emotional Awareness	1.66	1.04	5.29	[0.69 – 40.68]	2.57	.109

Note: CI = confidence interval for odds ratio (*OR*). Reference group = In-Recovery group.

The findings in Table 3-12 highlight the specific direction of the association between alexithymia, emotional awareness, and the categories of the groups. As emotional suppression was found to be not statistically significant it was dropped from further analyses. Overall, women reporting lower levels of alexithymia and higher emotional awareness were more likely to be in the recovered group than in the in-recovery group. Within the recovered group and in relation to the expected distribution (reported as a constant), women who had lower alexithymia scores were more likely than women who had higher alexithymia scores to be in the recovered group ($Wald = 14.65$, $p < .001$). Emotional awareness was not statistically significant in distinguishing between these two groups.

Discussion

The purpose of the present study was to investigate the emotional processing components of the Dialectical Constructivist Theory in order to determine its utility as a guiding framework for understanding the development of self in AN. Prior to the present study, no researchers have attempted to explore the utility of an integrative theory that combines two of the most common deficits in AN, emotional processing and sense of identity (Corcos et al., 2000; De Groot & Rodin, 1994). In the present study, measures of eating disorder symptomology, depression, social desirability, interoceptive awareness, alexithymia, emotional suppression, and emotional awareness were examined. First, ANOVAs were used to investigate group differences on each of the emotional processing variables. Next, Multinomial Logistic Regressions were applied to determine which combination of emotional processing variables would best predict whether women

were in-recovery from AN, recovered from AN, or never suffered from an eating disorder.

The present study contributes further empirical support that women who are currently suffering from AN display an overall emotional processing deficit. When compared to the recovered and control groups, women currently suffering from the disorder had more difficulties with interoceptive awareness, identifying and describing their own feelings, accurately judging others' emotional experience, and were more likely to suppress negative emotions. Although it was important to further explore the role of emotional processing variables in women currently suffering, it was also important to determine if there were any combinations of the variables that would best predict group membership. Being able to determine which emotional variables predicted whether women would be in-recovery or recovered could help target interventions to the most problematic deficits in emotional processing. Unfortunately due to the strong positive correlations with other emotional variables in the study, Multinomial Logistic Regression analyses that included interoceptive awareness could not be carried out due to problems with multicollinearity. However, what the large effect size for interoceptive awareness indicates is that this variable on its own accounted for the greatest amount of variation in group differences, suggesting that it holds a key role in the emotional processing deficits of women with AN.

When combinations of the emotional processing variables were investigated, alexithymia and emotional awareness were found to be the best predictors of whether women would be in the in-recovery, recovered, or healthy control groups.

The finding that alexithymia and emotional awareness are the best predictors for differentiating the three study groups also further confirms the global nature of emotional processing deficits in AN. This finding indicates that alexithymia and emotional awareness are two distinct, yet complementary components for evaluating emotional processing. It is also congruent with the Dialectical theory as it suggests difficulties not only on the pre-conceptual level of emotional organization, but also in the capacity to symbolize internal cues in order to describe one's own and others' emotional experience.

The Key to Emotional Difficulties: Interoceptive Awareness

The importance of interoceptive awareness in the recovery process was first discussed by Bruch (1969) and was thought to be a contributing factor in the development and maintenance of eating disorders. Interoceptive awareness is now thought to be one of the strongest predictors for risk of developing disordered eating in both cross-sectional (Leon, Fulkerson, Perry, & Cudeck, 1993) and prospective studies (Leon et al., 1995). Looking at the emotional processing variables separately, this study provided further empirical evidence that women with AN have a pronounced deficit in the awareness and identification of their internal states. The finding that these women have an immense difficulty with identifying their internal states is critical to our understanding of the disorder as interoceptive awareness involves not only recognizing and discriminating among internal cues, but also involves the capacity to identify the difference between hunger/satiety and emotional states.

The finding in this study that women with AN had a pronounced deficit in discriminating between individual sensations and in identifying their emotional states also provides further support that the primary concern in interoceptive awareness is a lack of emotional clarity. Although the results of the Identifying Feelings subscale of the TAS indicated that the identification of emotions is difficult for women in-recovery when compared to women who are recovered or who never had an eating disorder, a larger discrepancy was found for interoceptive awareness. The finding of impaired interoceptive awareness in women with AN is also supported by a recent study that used a heartbeat detection paradigm to explore interoceptive sensitivity in 28 female anorexic patients and 28 controls (Pollatos et al., 2008). Patients with AN were found to have an overall reduced capacity to accurately perceive body signals and more specifically, a decreased ability to recognize certain visceral sensations related to hunger. The authors concluded that their findings highlighted the potential importance of interoceptive awareness in the pathogenesis of eating disorders.

The present study also expands on previous findings on the role of interoceptive awareness, as it suggests that interoceptive awareness is a key factor in differentiating women in-recovery from women who are recovered or never suffered from an eating disorder. Although there was an initial statistically significant difference between levels of interoceptive awareness in women who had recovered from AN and women in-recovery, women in the recovered group did not differ from those who had never had an eating disorder after controlling for depression. The finding of no statistically significant difference in

interoceptive awareness in the recovered and control groups is supported by previous research where improvements in interoceptive awareness were associated with decreases in eating disorder symptoms at both post-treatment and long-term follow-up (Matsumoto et al., 2006). Overall, the findings of the present study support the importance of awareness of internal cues (hunger/satiety and emotional cues) as central to the development and maintenance of AN. Developing the awareness and skills to identify and work through their internal signals would help these women move from a place of confusion and numbing to one of acceptance of their emotional world.

Deficits in Interoceptive Awareness Impact Emotional Awareness

According to the Dialectical Constructivist Theory, all emotions have a physiological component that needs to be perceived and differentiated from other components in order to experience a specific emotional state. Being unsure of the somatic state that one is experiencing is highly problematic as it greatly impacts the ability to identify and describe emotional experiences (Craig, 2008; Pollatos, Kirsch, & Schandry, 2005, Wiens et al., 2000). The present study investigated deficits in emotional processing by not only looking at alexithymia (TAS, a self-report measure), but also at emotional awareness (LEAS, a performance measure). The use of self-report and performance-based measures was done in order to address previous concerns with the sole use of the TAS. For example, the TAS has been criticized for mixing together several factors of emotional processing that should be separated in order to be able to determine the specific areas of difficulties (Cooper, 2003). The TAS is also thought to be highly associated with

depression scores (Bydlowski et al., 2005). The results of the present study indicated that women in the in-recovery group not only struggled to identify their internal sensations, but also had difficulty translating emotions from physical sensations to subjectively experienced feelings. Furthermore, women with AN also had a greater difficulty judging the emotional experience of others when compared to women in the control group.

There has only been one other study to date that has looked at emotional awareness using the LEAS in women suffering from eating disorders (Bydlowski et al., 2005). The results of the present study further support the findings of Bydlowski et al. (2005) and suggest that women suffering from AN are not proficient at recognizing and contemplating their own or others' emotional experiences. The struggle to contemplate emotional experiences was indicated by women in the in-recovery group using more non-specific or cognitive-based descriptions when describing their own and others' emotional states than women in the control group. However, the inability to use more descriptive language to differentiate between their emotional states is not due to lack of good verbal skills. Instead, it is thought to be related to the inability of these women to use their verbal skills to adequately describe their emotional experience suggesting a pronounced deficit in emotional understanding (Smith, Amner, Johnsson, & Franck, 1997).

According to the Dialectical theory, emotion plays a key-organizing role in our experience and helps to create meaning in our lives. Based on this understanding, the foundation of the meaning-making process is built around the ability to be

open and sensitive to internal signals. Individuals must be able to attend to these internal cues and then symbolize them in words. This process is similar to the emotional awareness model developed by Lane and Schwartz (1987) as they have conceptualized emotional awareness as developing through a series of structural transformations that involve progressive differentiation and integration along a cognitive-developmental sequence. It is thought that the degree of structural organization of emotional awareness is linked to the developing structure of knowledge about the internal and external world, the self, and one's capacity to engage in interpersonal relationships.

Women with AN are not able to organize their internal experience and therefore cannot adequately integrate emotional states or utilize different blends of emotion in an adaptive way to ameliorate powerful emotional states. As the capacity to differentiate one's own and others' emotions in a particular situation is related to the ability to tolerate and manage numerous emotional states, emotions that are not integrated will remain global and undifferentiated. Having emotions that remain undifferentiated is concerning as according to the Dialectical theory, emotions are used to make meaning of our experiences and also to guide the selection of adaptive behaviour in order to meet our needs. Therefore, individuals with an inability to perceive internal sensations not only struggle to identify specific emotions, but also have a very difficult time choosing an effective and adaptive strategy to alleviate their emotional state (Sim & Zeman, 2004).

If women with AN are unable to adequately process their own emotional experiences, then it follows that these women would also struggle to represent the

emotional experience of others. The findings of the present study support this reasoning as it was found that women in-recovery struggled to accurately judge others' emotional experience when compared to the control group. Problems with representing and understanding both one's own and others' emotional experience might help to explain why women with eating disorders often have difficulties with social functioning (Kucharska-Pietura, Nikolaou, Masiak, & Treasure, 2004). A surprising finding was that women in the recovered group also struggled to represent the emotional state of others when compared to those who have never had an eating disorder. Despite gaining a level of mastery over their own internal and emotional experiences, women who were recovered from AN still lacked the capacity to differentiate the emotional experience of others. The struggle to describe the emotional experience of others presents a challenge for long-term recovery and may provide some insight as to why individuals with AN have such high relapse rates. Women who are recovered but still struggle to describe the emotional states of others may face challenges in interpersonal situations, which is problematic as interpersonal struggles are known to be frequent triggers for eating disorder behaviors (Abraham & Beumont, 1982).

Lack of Interoceptive Awareness and Emotional Suppression

It was over 30 years ago that Bruch (1973) hypothesized that women suffering from AN coped with threatening and overwhelming negative feelings by first suppressing these emotions. She then argued that they displaced these feelings onto their bodies, which were perceived to be a less dangerous target. Previous research has investigated Bruch's claim and found that women who suffer from

eating disorders over-control their negative affective states in order to help them cope (Geller et al., 2000; Zaitsoff, Geller, & Srikameswaran, 2002). The tendency to avoid or over-control affective arousal was supported by the present study as women in the in-recovery group were more likely to suppress anxious, angry, and unhappy feelings than women who had never suffered from an eating disorder.

The tendency for women in the in-recovery group to suppress their negative emotions also sheds some light on the debate surrounding interoceptive awareness in AN. The debate to be further clarified is whether the primary concern in interoceptive awareness is lack of clarity or if it is related to a non-acceptance or fear of affective experience. Although the findings of the present study suggest that lack of clarity of internal signals (hunger/satiety and emotional cues) is the primary concern, the finding that these women also use suppression to cope with negative emotions suggests that they are also non-accepting of their affective arousal experience. Non-acceptance may be the by-product of the confusion that is experienced when these women attempt to identify their internal sensations. Faced with confused and disorganized internal states, women with AN rely on techniques to suppress their affective experiences to get temporary relief and restore a state of internal equilibrium. Emotional suppression is a maladaptive strategy to deal with overwhelming emotions as it has been found to negatively impact both physical and emotional health (Petrie, Booth, & Davison, 1995).

An unexpected finding was that women in the recovered group also had higher levels of suppression of their anxious feelings than women who had never had an

eating disorder. One explanation for this finding might be that individuals with eating disorders are more prone to anxiety sensitivity. An increase in anxiety sensitivity in women with AN is supported by the finding that anxiety sensitivity plays a role in both the development and maintenance of eating disorder symptoms (Anestis, Holm-Denoma, Gordon, Schmidt, & Joiner, 2008). Despite learning to identify and cope with other internal states, women who are recovered may still continue to be sensitive to anxiety cues and have difficulty interpreting somatic anxious symptoms. Suppression of these negative affective states would continue to offer them a coping strategy to deal with these uncomfortable physical sensations as these women may not have had the opportunity to develop more effective coping strategies.

Dialectical Constructivism as a Guiding Framework

The finding that women with AN struggle with internal and emotional processing deficits is important as it provides support for the use of Dialectical Constructivist Theory as a guiding framework for understanding the development of self in this disorder. According to this theory, the ability to make meaning of our emotional experiences depends on our ability to access and integrate multiple levels and sources of information from both the internal and external environments. The foundational source of information for making meaning is our emotional experience. Women with AN are not able to accurately recognize or respond to their internal and emotional cues indicating changes in their internal state (e.g., hunger, satiety, fatigue). Not being able to process this basic internal information is concerning, as awareness of one's internal states is the most

fundamental skill required for component emotional functioning. Without basic awareness of their internal states women with the disorder struggle at the pre-conceptual level of emotion organization and regulation, the lowest end of the emotional awareness continuum. Deficits in discriminating internal states also indicates that these women do not have access to information from their internal experience which could guide them to what they might need and how to relate to others on an interpersonal level. Due to the lack of mastery over their internal states, they most likely experience their internal world as confusing, overwhelming, and disorganized and are not able to use their cognitive skills to structure and organize their emotional experience. Without the ability to structure and organize their internal emotional world, they are also unable to form a coherent sense of self.

Limitations and Direction for Future Research

There were several limitations in this study. First, the sample was composed predominately of young women with high levels of education, with all the participants in the control group being recruited from a university setting. Only recruiting participants in the control group from a university setting did lead to age differences between the groups. However, age differences were due to the inclusion of participants that had either experienced AN in the past or were still struggling to recover. The benefit to having variation in the age of the groups is that it allows the results of this study to be generalized to a wider population of women suffering from AN.

Another limitation of this study was that it only investigated emotional processing in women with the disorder. The same emotional processing variables used in this study should also be investigated in anorexic men to determine if they also struggle with similar emotional difficulties. It is also a possible that the use of a mixed diagnostic sample may be viewed as a limitation. Although there are situations where having a single diagnostic category for AN might be beneficial, a clinical sample that was not constrained by diagnosis was more appropriate for the aim of the present study. Allowing for both AN-R and AN-BP categories is also congruent with the diagnostic crossover that is well known in eating disorders. As the present study was a naturalistic study, another limitation is that women in the recovered group varied in terms of the length of time they had been recovered and the type of treatments they had received. Variations in length and type of treatment make it hard to determine what specifically contributed to their recovery and if they received any affectively based treatments.

Another limitation of this study was that the majority of the measures used were self-report. Using self-report measures can be problematic as individuals with AN struggle to identify and describe their internal emotional experiences. In order to avoid the potential biases that self-report measures may bring to the data, precautions were taken such as using the LEAS, which is a more covert measure for assessing emotional processing difficulties. In addition, a measure of social desirability was used to determine if participants were answering truthfully or if they might be providing answers that they thought would be appropriate. The results indicated that there was no statistically significant difference between the

three groups on social desirability. As the main researcher was not blind to diagnostic status, it is also possible that there are biases in the data. In order to reduce the potential for biases, most of the measures that were used were of a forced-choice format. For the measures that required a more subjective rating, a second rater who was blind to group membership was used.

Although we have determined that there are differences in emotional processing variables between women in-recovery and women recovered from AN, we do not know whether the type of treatment they received impacted these differences. Therefore, it might be useful in future studies to examine changes in the same emotional processing variables before and after therapy using the EFT model. Examining pre-and post-therapy scores could also help to determine if the EFT model is helpful in working on the specific struggles with emotional processing that were found is the present study and which of these variables changed over the course of therapy. To further clarify the specific pattern of interoceptive and emotional awareness skill deficits found in individuals with the disorder, observational methodology should also be used in conjunction with self- and other-report. Future studies may also benefit from the inclusion of clinical control groups, such as women with depression or anxiety, in order to determine if the emotional processing deficits are specific to AN or common to women with mood disorders in general.

Conclusion

The objective of this study was to explore the pattern of emotional processing difficulties experienced by women in-recovery and recovered from AN and in

healthy controls. The results indicate that women with AN are unable to identify their internal and emotional states and are more likely to overregulate or suppress their negative emotions. Taken together, the results also indicate that interoceptive and emotional awareness and alexithymia are crucial factors to consider in treatment. These emotional variables were found to not only impact the women's behaviors and coping mechanisms, but also their understanding and ability to interact with others. Therefore, learning to be aware of internal sensations and guidance in how to use emotional labels and blends of emotions to help make meaning of their experience is crucial in helping these women reach the recovered phase. Overall, the Dialectical Constructivist Theory offers a new and integrative framework for understanding how deficits in emotional processing can contribute to the development and maintenance of AN. Having a theoretical framework to guide our understanding is important, as it will assist in the development and use of more effective interventions that may help in creating a sustained recovery for these women.

References

Abraham, S. & Beaumont, P. (1982). How patients describe bulimia or binge eating. *Psychological Medicine, 12,* 625-635. doi: http://dx.doi.org/10.1017/S0033291700055732

American Psychological Association. (2000). *Diagnostic and statistical manual of mental disorders fourth edition – text revision (DSM-IV-TR*). Washington, DC: Author.

Anestis, M. D., Holm-Denoma, J. M., Gordon, K. H., Schmidt, N. B., & Joiner, T. E. (2008). The role of anxiety sensitivity in eating pathology. *Cognitive Therapy Research, 32,* 370-385. doi: 10.1007/s10608-006-9085-y

Angus, L. E. & Greenberg, L. S. (2011). *Working with narrative in emotion-focused therapy: Changing stories, healing lives.* Washington, DC: American Psychological Association.

Antony, M. M., Bieling, P. J., Cox, B. J., Enns, M. W., & Swinson, R. P. (1998). Psychometric properties of the 42-item and 21-item versions of the Depression Anxiety Stress Scales in clinical groups and a community sample. *Psychological Assessment, 10*, 176-181.

Ballard, R. (1992). Short forms of the Marlowe-Crowne Social Desirability Scale. *Psychological Reports, 71,* 1155-1160. doi: 10.2466/PR0.71.8.1155-1160

Barrett, L. F., Lane, R. D., Sechrest, L., & Schwartz, G. E. (2000). Sex differences in emotional awareness. *Personality and Social Psychology Bulletin, 26,* 1027–1035. Retrieved from http://affective-science.org/pubs/2000/FBLaneetal2000.pdf

Barrett, L. F., Quigley, K. S., Bliss-Moreau, E., & Aronson, K. R. (2004). Interoceptive sensitivity and self-reports of emotional experience. *Journal of Personality and Social Psychology, 87,* 684–697. doi: 10.1037/0022-3514.87.5.684

Bagby, R. M., Parker, J. D. A., & Taylor, G. J. (1994). The twenty-item Toronto Alexithymia Scale – I. Item selection and cross-validation of the factor structure. *Journal of Psychosomatic Research, 38,* 23–32. doi: 10.1177/0145445502026002007

Beales, D. L., & Dolton, R. (2000). Eating disordered patients: Personality, alexithymia, and implications for primary care. *British Journal of General Practice, 50,* 21-26.

Beck, A. T., Rush, A. J., Shaw, B. F., & Emery, G. (1979). *Cognitive therapy of depression: A treatment manual.* New York: Guilford Press.

Beck, A. T., & Steers, R. A. (1990). *Manual for the Beck Anxiety Inventory*. San Antonio, TX: Psychological Corporation.

Becker-Stoll, F., & Gerlinghoff, M. (2004). The impact of a four-month day treatment program on alexithymia in eating disorders. *European Eating Disorders Review, 12,* 159-163. doi: 10.1002/erv.566

Berthoz, S., Ouhayoun, B., Parage, N., Kirzenbaum, M., Bourgey, M., & Allilaire, J. F. (2000). Preliminary study of the levels of emotional awareness in depressed patients and controls. *Annales Medico-Psychologiques, 158,* 665–672.

Bourke, M., Taylor, G., Parker, J., & Bagby, R. (1992). Alexithymia in women with anorexia nervosa: A preliminary investigation. *British Journal of Psychiatry, 161,* 240–243. doi: 10.1192/bjp.161.2.240

Bruch, H. (1969). Obesity and orality. *Contemporary Psychoanalysis, 5,* 129-143.

Brush, H. (1973). *Eating disorder: Obesity, anorexia nervosa, and the person within.* NY: Basic Books.

Bydlowski, S., Corcos, M., Jeammet, P., Paterniti, S., Berthoz, S., Luarier, C., et al. (2005). Emotion-processing deficits in eating disorders. *International Journal of Eating Disorders, 37,* 321-329. doi: 10.1002/eat.20132

Cameron, L. D., Booth, R. J., Schlatter, M. S., Ziginskas, D., & Harman, J. (2007). Changes in emotion regulation and psychological adjustment following use of a group psychosocial support program for women recently diagnosed with breast cancer. *Psycho-Oncology, 16,* 171-180. doi: 10.1002/pon.1050

Classen, C., Koopman, C., Angell, K., & Spiegel, D. (1996). Coping strategies associated with psychological adjustment in advanced breast cancer patients. *Health Psychology*, *15,* 434-437. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/8973923

Cochrane, C. E., Brewerton, T. D., Wcilson, D. B., & Hodges, E. L. (1993). Alexithymia in eating disorders. *International Journal of Eating Disorders, 14,* 219–222. doi: 10.1002/1098-108X(199309)14:2<219::AID-EAT2260140212>3.0.CO;2-G

Cooper, M. J. (2003). *The psychology of bulimia nervosa: A cognitive perspective*. Oxford, UK: Oxford University Press.

Corcos, M., Guilbaud, O., Speranza, M., Paterniti, S., Loas, G., Stephan, P., et al. (2000). Alexithymia and depression in eating disorders. *Psychiatry Research, 93,* 263-266. doi: http://dx.doi.org/10.1016/S0165-1781(00)00109-8

Craig, A. D. (2008). Interoception and emotion: A neuroanatomical perspective. In M. Lewis, J. M. Haviland-Jones, & L. F. Barrett (Eds.), *Handbook of emotions* (3rd ed., pp. 272 - 290). NY: Guilford.

Crowne, D. P., & Marlowe, D. (1960). A new scale of social desirability independent of psychopathology. *Journal of Consulting Psychology, 24,* 349-354. doi: 10.1037/h0047358.

Crowne, D. P., & Marlowe, D. (1964), *The Approval Motive,* New York: John Wiley & Sons.

Croyle, K. L., & Waltz, J. (2002). Emotional awareness and couples relationship satisfaction. *Journal of Marital Family Therapy, 28,* 435-444. doi: 10.1111/j.1752-0606.2002.tb00368.x

Damasio, A. R. (1994). *Descartes' error: Emotion, reason, and the human brain*. NY: Putnam.

Davis, C., & Cowles, M. (1989). A comparison of weight and diet concerns and personality factors among female athletes and non-athletes. *Journal of Psychosomatic Research, 33,* 527–536. doi: 10.1016/0022-3999(89)90060-3

De Groot, J. M., & Rodin, G. (1994). Eating disorders, female psychology, and the self. *Journal of American Academy of Psychoanalysis, 22,* 299-317. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/7961044

De Groot, J. M., Rodin, G., & Olmsted, M. P. (1995). Alexithymia, depression, and treatment outcome in bulimia nervosa. *Comprehensive Psychiatry, 36,* 53–60. doi: http://dx.doi.org/10.1016/0010-440X(95)90099-H

Dolhanty, J., & Greenberg, L. S. (2007). Emotion-focused therapy in the treatment of eating disorders. *European Psychotherapy, 7,* 97-116. Retrieved from http://cip-medien.com/media/download_gallery/EP/2007/06_EP_Vol7_2007-Eating_DolhantyK2.pdf

Dolhanty, J., & Greenberg, L. S. (2009). Emotion-focused therapy in a case of anorexia nervosa. *Clinical Psychology and Psychotherapy, 16,* 366-382. doi: 10.1002/cpp.624

Espina Eizaguirre, A., Ortego Saenz de Cabezon, A., Ochoa de Alda, I., Joaristi Olariaga, L., & Juaniz, M. (2004). Alexithymia and its relationships with anxiety and depression in eating disorders. *Personality and Individual Differences, 36,* 321–331. doi: http://dx.doi.org/10.1016/S0191-8869(03)00099-0

Federici, A., & Kaplan, A. S. (2008). The patient's account of relapse and recovery in anorexia nervosa: A qualitative study. *European Eating Disorders Review, 16,* 1 – 10. doi: 10.1002/erv.813

Fisher, G. (1967). Normative and reliability data for the standard and the cross-validated Marlowe-Crowne Social Desirability Scale. *Psychological Reports, 20,* 174-174. doi: 10.2466/pr0.1967.20.1.174

Garner, D. M. (1991*). Eating Disorders Inventory-2. Professional manual*. Odessa, FL: Psychological Assessment Resources.

Garrow, J. S., & Webster, J. (1985). Quetelets index (weight/height2) as a measure of fatness. *International Journal of Obesity, 9,* 147-153. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/4030199

Geller, J., Cockell, S. J., Hewitt, P. L., Goldner, E. M., & Flett, G. L. (2000). Inhibited expression of negative emotions and interpersonal orientation in anorexia nervosa. *The international Journal of Eating Disorders, 28,* 8 – 19. doi: 10.1002/1098-108X(200012)28:4<481::AID-EAT20>3.0.CO;2-K

Giese-Davis, J., Koopman, C., Butler, L. D., Classen, C., Cordova, M., Fobair, P., et al. (2002). Change in emotion regulation strategy for women with metastatic breast cancer following supportive-expressive group therapy. *Journal of Consulting and Clinical Psychology*, 70, 916-925. Retrieved from http://www.chc.ucsf.edu/pdf/8.%20Giese-Davis,%20et%20al.,%20jccp%202002.pdf

Gilboa-Schechtman, E., Avnon, L., Zubery, E., & Jeczmien, P. (2006). Emotional processing in eating disorders: Specific impairment or general distress related deficiency? *Depression and Anxiety, 23,* 331–339. doi: 10.1002/da.20163

Goldner, E. M., Cockell, S. J., & Srikameswaran, S. (2002). Perfectionism and

eating disorders. In G. L. Flett & P. L. Hewitt (Eds.*), Perfectionism: Theory, research, and treatment* (pp. 319-340). Washington, DC: American Psychological Association. doi: 10.1037/10458-013

Greenberg, L. S. (2002). *Emotion-focused therapy: Coaching clients to work through their feelings.* Washington, DC: American Psychological Association. doi: 10.1037/10447-000

Greenberg, L. S. (2008). Emotion and cognition in psychotherapy: The transforming power of affect. *Canadian Psychology, 49,* 49-59. doi: 10.1037/0708-5591.49.1.49

Greenberg, L. S., & Pascual-Leone, J. (1995). A dialectical constructivist approach to experiential change. In R. A. Neimeyer & M. J. Mahoney (Eds.), *Constructivism in psychotherapy* (pp. 169–194). Washington, DC: American Psychological Association.

Greenberg, L. S., & Pascual-Leone, J. (2001). A dialectical constructivist view of the creation of personal meaning. *Journal of Constructivist Psychology, 14,* 165–186.

Greenberg, L. S., Rice, L. N., & Elliott, R. (1993). *Facilitating emotional change: The moment-by-moment process.* New York: Guilford Press.

Greenberg, L. S., & Safran, J. D. (1987). *Emotion in psychotherapy: Affect, cognition, and the process of change.* New York: Guilford Press.

Greenberg, L. S., & Safran, J. D. (1989). Emotion in psychotherapy. *American Psychologist, 44,* 19–29. doi: 10.1037/0003-066X.44.1.19

Greenberg, L. S. & Watson, J. C. (2006). *Emotion-focused therapy for depression*. Washington, DC: American Psychological Association. doi: 10.1037/11286-000

Guidano, V. F. (1991*). The self in process.* NY: Guilford.

Guidano, V. F. (1995). Self-observation in constructivist therapy. In R. A. Neimeyer & M. J. Mahoney (Eds.), *Constructivism in psychotherapy* (pp. 155–168). Washington, DC: American Psychological Association.

Hinrichsen, H., Wright, F., Waller, G., & Meyer, C. (2003). Social anxiety and coping strategies in the eating disorders. *Eating Behavior, 4,* 117-126. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/15000975

James, W. (2007). *The principles of psychology*. Retrieved from psychclassics.yorku.ca.James/Principles/index.htm (Original work published 1890).

Johnston, A. (1996). *Eating in the light of the moon: How women can transform their relationships with food, through myths, metaphors, & storytelling.* Carlsbad, CA: Gurze.

Kraemer, H. C., Berkowitz, R. I. & Hammer, L. D. (1990). Methodological difficulties in studies of obesity I: Measurement issues. *Annals of Behavioral Medicine, 12,* 112-118. doi: 10.1207/s15324796abm1203_3

Kucharska-Pietura, K., Nikolaou, V., Masiak, M., & Treasure, J. (2004). The recognition of emotion in the faces and voice of anorexia nervosa. *International Journal of Eating Disorders, 35,* 42-47. doi: 10.1002/eat.10219

Lagana, L., Whealin, J., Carpio, F., Koopman, C., Classen, C., & Spiegel, D. (2002). Psychological morbidity among breast cancer survivors: A longitudinal study. *Rehabilitation Psychology, 47,* 370.

Lane, R. D. (1991). *LEAS scoring manual & glossary*. Tuscon, AZ: Author.

Lane, R. D., Kivley, L. S., Du Bois, M. A., Shamasundara, P., & Schwartz, G. E. (1995). Levels of emotional awareness and the degree of right hemisphere dominance in the perception of facial emotion. *Neuropsychologia, 33,* 525–538. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/7637851

Lane, R. D., Quinlan, D. M., Schwartz, G. E., Walker, P. A., & Zeitlin, S. B. (1990). The levels of Emotional Awareness Scale: A cognitive-developmental measure of emotion. *Journal of Personality Assessment, 55,* 124–134. doi:10.1080/00223891.1990.9674052

Lane, R. D., Reiman, E. M., Axelrod, B., Yun, L. S., Holmes, A., & Schwartz, G. E. (1998). Neural correlates of levels of emotional awareness: Evidence of an interaction between emotion and attention in the anterior cingulate cortex. *Journal of Cognitive Neuroscience, 10,* 525–535. doi: 10.1162/089892998562924

Lane, R. D., & Schwartz, G. E. (1987). Levels of emotional awareness: A cognitive developmental theory and its application to psychopathology. *American Journal of Psychiatry, 144,* 133–143.

Lane, R. D., Sechrest, L., Riedel, R., Shapiro, D. E., & Kaszniak, A. (2000). Pervasive emotion recognition deficit common to alexithymia and the

repressive coping style. *Psychosomatic Medicine, 62,* 492–501. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/10949094

Lane, R. D., Sechrest, L., Riedel, R., Weldon, V., Kaszniak, A., & Schwartz, G. (1996). Impaired verbal and nonverbal emotion recognition in alexithymia. *Psychosomatic Medicine, 58,* 203–210. Retrieved from http://www.egadconnection.org/203Impaired%20verbal%20and%20nonverbal%20emotion%20recognition%20in%20alexithymia.pdf

Lena, S. M., Fiocco, A. J., & Leyenaar, J. A. K. (2004). The role of cognitive deficits in the development of eating disorders. *Neuropsychology Review, 14,* 99-113. doi: 10.1023/B:NERV.0000028081.40907.de

Leon, G. R., Fulkerson, J. A., Perry, C. L., & Early-Zald, M. B. (1995). Prospective analysis of personality and behavioral vulnerabilities and gender influences in the later development of disordered eating. *Journal of Abnormal Psychology, 104,* 140–149. doi: 10.1177/0272431609340522

Leon, G. R., Fulkerson, J. A., Perry, C. L, & Cudeck, R. (1993). Personality and behavioural vulnerabilities associated with risk status for eating disorders in adolescent girls. *Journal of Abnormal Psychology. 102,* 438-444.

Loas, G., Otmani, O., Verrier, A., Fremaux, D., & Marchand, M. D. (1996). Factor analysis of the French version of the 20 item Toronto Alexithymia Scale (TAS-20). *Psychopathology, 29,* 139–144. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/8861519

Loo, R., & Loewen, P. (2004). Confirmatory factor analyses of scores from full and short versions of the Marlowe-Crowne Social Desirability Scale. *Journal*

of Applied Social Psychology, 34, 2343-2352. doi: 10.1111/j.1559-1816.2004.tb01980.x

Lovibond, S. H., & Lovibond, P. F. (1995). *Manual for the Depression Anxiety Stress Scales.* Sydney, Australia: Psychology Foundation.

Mahoney, M. (1991). *Human change processes.* NY: Basic Books.

Matsumoto, R., Kitabayashi, Y., Narumoto, J., Wada, Y., Okamoto, A., Ushijima, Y., et al. (2006). Regional cerebral blood flow changes associated with interoceptive awareness in the recovery process of anorexia nervosa. *Progress in Neuro-Psychopharmacology and Biological Psychiatry, 30,* 1265–1270. doi: http://dx.doi.org/10.1016/j.pnpbp.2006.03.042

Merwin, R. M., Zucker, N. L., Lacy, J. L., & Elliott, C. A. (2010). Interoceptive awareness in eating disorders: Distinguishing lack of clarity from non-acceptance of internal experience. *Cognition and Emotion, 24,* 892-902. doi: 10.1080/02699930902985845

Neimeyer, R. A. (1995). An invitation to constructivist psychotherapies. In R. A. Neimeyer & M. J. Mahoney (Eds.), *Constructivism in psychotherapy* (pp. 1-8). Washington, DC: American Psychological Association.

Overton, A., Selway, S., Strongman, K., & Houston, M. (2005). Eating disorders – The regulation of positive as well as negative emotion experience. *Journal of Clinical Psychology in Medical Settings, 12,* 39–56. doi: 10.1007/s10880-005-09

Paivio, S. C. & Pascual-Leone, A. (2010). *Emotion-focused therapy for complex trauma: An integrative approach.* Washington, DC: American Psychological Association. doi: 10.1037/12077-000

Pampel, F. C. (2000). *Logistic regression: A primer*. Thousand Oaks, CA: Sage.

Pascual-Leone, J. (1987). Organismic processes for neo-Piagetian theories: A dialectical causal account of cognitive development. *International Journal of Psychology, 22,* 531–570.

Pascual-Leone, J. (1990). Reflections on life-span intelligence, consciousness, and ego development. In C. Alexander & E. Langer (Eds.), *Higher states of human development: Perspectives on adult growth* (pp. 258–285). NY: Oxford University Press.

Pascual-Leone, J. (1991). Emotions, development, and psychotherapy: A dialectical-constructivist perspective. In J. D. Safran & L. S. Greenberg (Eds.), *Emotion, psychotherapy, and change* (pp. 302–335). NY: Guilford.

Pascual-Leone, J. (2000). Reflections on working memory: Are the two models complementary? *Journal of Experimental Child Psychology, 77,* 138–154. doi: 10.1006/jecp.2000.2593

Pascual-Leone, J., & Irwin, R. R. (1994). Abstraction, the will, the self, and modes of learning in adulthood. In M. C. Smith & T. Pourchot (Eds.), *Adult learning and development: Perspectives from educational psychology* (pp. 35–66). Mahwah, NJ: Erlbaum.

Pascual-Leone, J., & Johnson, J. (1999). A dialectical constructivist view of representation: Role of mental attention, executives, and symbols. In I. Sigel

(Ed.), *Developmental of metal representation: Theories and applications* (pp. 169–200). Mahwah, NJ: Erlbaum.

Paivio, S. C., & Pascual-Leone, A. (2010). *Emotion-focused therapy for complex trauma: An integrative approach.* Washington, DC: American Psychological Association.

Paulhus, D. L. (1984). Two-component models of socially desirable responding. *Journal of Personality and Social Psychology*, *46,* 598-609. doi: 10.1037/0022-3514.46.3.598

Paulus, M., & Stein, M. B. (2006). An insular view of anxiety. *Biological Psychiatry, 60,* 383–387. doi:10.1016/j.biopsych.2006.03.042

Petrie, K. J., Booth, R. J., & Davison, K. P. (1995). Repression, disclosure, and immune functioning: Recent findings and methodological issues. In J. W. Penebaker (Ed.), *Emotion, disclosure, & health* (pp. 223-237). Washington, DC: American Psychological Association.

Philippot, P., & Chalelle, G. (2002). Respiratory feedback in the generation of emotion. *Cognition and Emotion, 16,* 605–627.

Pollatos, O., Kirsch, W., & Schandry, R. (2005). On the relationship between interoceptive awareness, emotional experience, and brain processes. *Cognitive Brain Research, 25,* 948–962. doi: 10.1016/j.cogbrainres.2005.09.019

Polivy, J., & Herman, C. P. (2002). Causes of eating-disorders. *Annual Review of Psychology, 53,* 187–213. doi: 10.1146/annurev.psych.53.100901.135103

Pollatos, O., Gramann, K., & Schandry, R. (2007). Neural systems connecting interoceptive awareness and feelings. *Human Brain Mapping, 28*, 9-18. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/16729289

Pollatos, O., Kirsch, W., & Schandry, R. (2005). On the relationship between interoceptive awareness, emotional experience, and brain processes. *Cognitive Brain Research, 25,* 948–962. doi:10.1016/j.cogbrainres.2005.09.019

Pollatos, O., Kurz, A.L., Albrecht, J., Schreder, T., Kleemann, A.M., Schöpf, V., et al. (2008). Reduced perception of bodily signals in anorexia nervosa. *Eating Behaviors, 9*, 381-388. doi: 10.1016/j.eatbeh.2008.02.001

Reiff, D. W., & Lampson-Reiff, K. K. (1992). *Eating disorders: Nutrition therapy in the recovery process.* Gaithersburg, MD: Aspen.

Saarni, C. (1999). *The development of emotional competence*. NY: Guilford.

Samoilov, A., & Goldfried, M. R. (2000). Role of emotion in cognitive-behavioral therapy. *Clinical Psychology: Science and Practice, 7,* 373–385. doi: 10.1093/clipsy.7.4.373.

Sim, L., & Zeman, J. (2004). Emotion awareness and identification skills in adolescent girls with bulimia nervosa. *Journal of Clinical Child and Adolescent Psychiatry, 4,* 760–771. doi: 10.1207/s15374424jccp3304_11

Smith, G. J. W., Amner, G., Johnsson, P., & Franck, A. (1997). Alexithymia is patients with eating disorders: An investigation using a new projective technique. *Perceptual and Motor Skills, 85,* 247–256. doi: 10.2466/pms.1997.85.1.247

Sohlberg, S., & Strober, M. (1994). Personality in anorexia nervosa: An update and a theoretical integration. *Acta Psychiatrica Scandinavica, 89,* 1–15. doi: 10.1111/j.1600-0447.1994.tb05809.x

Speilberger, C. D. (1983). *Manual for the State-Trait Anxiety Inventory STAI (Form Y).* Palo Alto, CA: Consulting Psychologists Press.

Stice, E., Agras, W. S., & Hammer, L. D. (1999). Risk factors for the emergence of childhood eating disturbance: A five-year prospective study. *International Journal of Eating Disorders, 25,* 375-387. doi: 10.1002/(SICI)1098-108X(199905)25:4<375::AID-EAT2>3.0.CO;2-K

Stice, E., & Ragan, J. (2002). A preliminary controlled evaluation of an eating disturbance psychoeducational intervention for college students. *International Journal of Eating Disorders, 31,* 159-171. Retrieved from http://homepage.psy.utexas.edu/homepage/group/sticelab/scales/Images/Stice Ragan02.pdf

Stice, E., Telch, C. F., & Rizvi, S. L. (2000). Development and validation of the Eating Disorder Diagnostic Scale: A brief self-report measure of anorexia, bulimia, and binge-eating disorder. *Psychological Assessment, 12,* 123–131. doi: 10.1037//1040-3590.12.2.123

Strober, M. (1981). The significance of bulimia in juvenile anorexia nervosa: An exploration of possible etiologic factors. *International Journal of Eating Disorders, 1,* 28–34.

Tabachnick, B. G. & Fidell, L. S. (2007). *Using multivariate statistics* (5th Edition). Boston: Allyn and Bacon.

Tanaka-Matsumi, J., & Kameoka, V. A. (1986). Reliabilities and concurrent validities of popular self-report measures of depression, anxiety, and social desirability. *Journal of Consulting and Clinical Psychology*, 54, 328-333. doi: 10.1037/0022-006X.54.3.328

Taylor, G. J., Bagby, R. M., & Parker, J. D. A. (1997). *Disorders of affect regulation: Alexithymia in medical and psychiatric Illness.* Cambridge: Cambridge University Press.

Taylor, G. J., Bagby, R. M., & Parker, J. D. A. (2003). The twenty-item Toronto Alexithymia Scale--IV. Cross-cultural validity and reliability. *Journal of Psychosomatic Research, 55,* 277-283. doi: 10.1016/S0022-3999(02)00601-3

Taylor, G., Parker, J., Bagby, R., & Bourke, M. (1996). Relationships between alexithymia and psychological characteristics associated with eating disorders. *Journal of Psychosomatic Research, 41,* 561–568. doi: http://dx.doi.org/10.1016/S0022-3999(96)00224-3

Telch, C. F. (1997). Skills training for adaptive affect regulation in women with binge-eating disorder. *International Journal of Eating Disorders, 22,* 77-81. doi: 10.1002/(SICI)1098-108X(199707)22:1<77::AID-EAT10>3.0.CO;2-F

United States Public Health Service. (1988). *The Surgeon General's report on nutrition and health* (DHHS Publication No. 88-50210). Washington, DC: U.S. Government Printing Office.

Watson, J., & Greenberg, L. (1996). Emotion and cognition in experiential therapy: A dialectical-constructivist position. In H. Rosen & K. Kuelwein

(Eds.), *Constructing realities: Meaning making perspectives for psychotherapists* (pp. 253–276). San Francisco: Jossey-Bass.

Watson, M., & Greer, S. (1983). Development of a questionnaire measure of emotional control. *Journal of Psychosomatic Research, 27,* 299-305. doi: http://dx.doi.org/10.1016/0022-3999(83)90052-1,

Watson, M., Greer, S., Rowden, L., Gorman, C., Robertson, B., Bliss, J. M. et al. (1991). Relationships between emotional control, adjustment to cancer, and depression and anxiety in breast cancer patients. *Psychological Medicine, 21,* 51-57. doi: http://dx.doi.org/10.1017/S0033291700014641

Watson, J., & Rennie, D. (1994). Qualitative analysis of clients' subjective experience of significant moments during exploration of problematic reactions. *Journal of Counselling Psychology, 41,* 500–509. doi: 10.1037/0022-0167.41.4.500

Wagner, A., Aizenstein, H., Mazurkewicz, L., Fudge, J., Guido, K. F., Putnam, K., et al. (2008). Altered insula response to taste stimuli in individuals recovered from restricting-type anorexia nervosa. *Neuropsychopharmacology, 33,* 513–523. doi: 10.1038/sj.npp.1301443

Wiens, S. (2005). Interoception in emotional experience. *Current Opinion in Neurology, 18,* 442–447. Retrieved from http://w3.psychology.su.se/staff/sws/Wiens05_interoception.pdf

Wiens, S., Mezzacappa, E. S., & Katkin, E. S. (2000). Heartbeat detection and the experience of emotions. *Cognition & Emotion, 14,* 417–427. Retrieved from http://w3.psychology.su.se/staff/sws/Wiens00_heartbeatemotion.pdf

Zatisoff, S. L., Geller, J., & Srikameswaran, S. (2002). Silencing the self and suppressing anger: Relationships to eating disorder symptoms in adolescent females. *European Eating Disorder Review, 10,* 51-60. doi: 10.1002/erv.418

Zonnevijlle-Bender, M., Van Goozen, S., Cohen-Kettenis, P., Van Elburg, A., & Van Engeland, H. (2004). Emotional functioning in adolescent anorexia nervosa patients: A controlled study. *European Child and Adolescent Psychiatry, 13,* 28–34. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/11942427

CHAPTER 4

AUTOBIOGRAPHICAL AND SELF-DEFINING MEMORIES: CONSTRUCTING NARRATIVE IDENTITY IN ANOREXIA NERVOSA

"It is impossible to sufficiently articulate an inarticulate process, a very wordless time. I did not learn to live by words, so I have found myself with a few words to describe what happened… I have added words, color, and chronology to a time in my life that appears to me a pile of random frames scattered over the floor of my brain… I'm often surprised that I exist"

~ Hornbacher, 1998, p. 279

Introduction

It has long been recognized that individuals with anorexia nervosa (AN) struggle with impairments in self-awareness. Bruch (1982) was one of the first to argue that AN is the result of impairments in identity development and a failure to establish a diverse range of definitions for the self. As a result of these identity impairments, it is thought that individuals turn to body weight as a form of self-definition as it is both personally controllable and highly valued in our culture (Bruch, 1982). Based on this understanding, it is thought that eating disorders and the preoccupation with body image are more about a reflection of one's "search for selfhood and a self-respecting identity" (Bruch, 1979, p. 255) than they are about food or weight concerns. Despite long-standing clinical descriptions of struggles with self-awareness (Bruch, 1973), the concept of identity development in AN continues to remain poorly understood.

One reason that identity concerns continue to be poorly understood is that no clear or convincing theoretical frameworks have emerged to explain how the sense of self develops in this population (Polivy & Herman, 2002). One

comprehensive theory that may offer a framework for integrating the emotional and identity deficits observed in AN is the Dialectical Constructivist View of Self (Greenberg & Pascual-Leone, 1995, 2001; Greenberg, Rice, & Elliott, 1993; Guidano, 1991, 1995; Mahoney, 1991; Pascual-Leone, 1987, 1990a, 1991; Watson & Greenberg, 1996; Watson & Rennie, 1994). Having a guiding framework for understanding emotional difficulties and the development of a fragmented or constricted sense of self in individuals with AN is crucial for developing more effective treatments.

One method for investigating how individuals construct their identity is through investigating autobiographical memories as it is the encoding and retrieval of these memories that help maintain one's identity (Beike, Lampien, & Behrand, 2004; Conway, 2005; Conway & Pleydell-Pearce, 2000; Tulving, 2002). Autobiographical memories are episodic memories that contain personal content, are easily retrievable by the person recalling them, and make up one's life story (Birren & Schroots, 2006). The most common way to assess autobiographical memory is with the Autobiographical Memory Task (AMT; Williams & Broadbent, 1986). In this task, participants are provided with positive and negative cue words and then asked to recall specific personal memories in response to each of these words. As the AMT has been the primary method for assessing autobiographical memory, previous research has focused predominately on investigating the specificity of these recalled memories.

What has been revealed through these studies is that individuals with a range of psychological concerns have difficulty retrieving specific autobiographical

memories. The *over-general* memory effect has been found in individuals with affective disorders (Brittlebank, Scott, Williams, & Ferrier, 1993; Dalgleish, Spinks, Yiend, & Kuylen, 2001; Kleim & Ehlers, 2008, Mackinger, Pachinger, Leibestseder, & Fartacek, 2000; Raes et al., 2006), schizophrenia (Warren & Haslam, 2007; Wood, Brewin & MacLeod, 2006), and anxiety and other stress related disorders (Bryant, Sutherland, & Guthrie, 2007; Kleim & Ehlers, 2008).

Although general memory functioning has been investigated in the eating disorder population (e.g., Carter, Bulik, McIntosh, & Joyce, 2000; Davidson & Wright, 2002; Hunt & Cooper, 2001), there have been relatively fewer studies looking into autobiographical memory. What the preliminary research with the AMT has revealed is that autobiographical memory is impaired in individuals with eating disorders. In particular, individuals suffering from AN struggle with recalling specific and detailed memories for events in their lives (Dalgleish et al., 2003; Nandrino et al., 2006). Although it has been shown that autobiographical memory is impaired in terms of specificity, little is known about how these individuals construct a sense of identity from autobiographical memories. In addition, we also do not have an understanding of whether autobiographical memory and identity difficulties continue to be a challenge for individuals who are recovered.

One way that researchers have conceptualized identity is as a constructed narrative that is continually revised throughout one's lifetime (Habermas & Bluck, 2000; McAdams, 2001). Narrative identity encompasses how individuals come to understand themselves as unique and how they maintain a sense of personal unity

over time (McAdams, 2001; Singer, 2004). While the AMT has provided us with important insights into the functioning of autobiographical memory in the AN population, what it does not allow for is the indexing of memories that are important to the participant (Jansari & Parkin, 1996). Being unable to identify which memories are significant to the individual is problematic as autobiographical memory is made up of a vast range of personal experiences, however only some of these memories are used in the construction of one's identity.

In order to better understand which memories from one's lifetime collection of autobiographical memories are used in the construction of identity, Singer and Moffitt (1991-1992) developed a method for investigating a specific type of autobiographical memory known as self-defining memories (SDMs). SDMs are unique autobiographical memories that help individuals to "construct a coherent narrative that unifies and offers purpose to the life they have lived, are living, and hope to live" (Singer & Solovey, 1993, p. 12). In previous research, participants rated memories collected via this method as very important and the memories were judged by independent raters as more likely to be associated with themes of self-discovery than memories that have been collected through other more general autobiographical methods (Moffitt & Singer, 1994). Therefore, SDMs are useful for exploring how individuals create a sense of identity as they not only help to understand how individuals come to act the way they do, but also provide insight into their goals, personal strivings, and the future they are trying to achieve.

The goal of the present study is to investigate the autobiographical and self-defining memories of individuals in-recovery and recovered from AN in order to gain a better understanding of the construction and maintenance of narrative identity in this disorder. Having a better understanding of the level of specificity and integration of SDMs in the recovery process can help in determining whether the Dialectical theory is a good fit for conceptualizing the emotional and identity impairments found in this population. Additionally, having a more comprehensive understanding of how identity is constructed is important for developing more effective treatments.

Review of the Literature

The Search for Self in Anorexia

The study of the self has a very long tradition in psychology (e.g. Allport, 1955; Baumeister, 1987; Gordon & Gergen, 1968; James, 2007; Murphy, 1947; Schlenker, 1985). However, throughout history there have been numerous and diverse views on what the self is making it a complex construct to accurately define. Despite the diversity in views, there are many theorists that argue that the self is not only a useful explanatory construct, but also a necessary one as it provides the only perspective from which an individual's behavior can be truly understood (Epstein, 1973). More recent conceptualizations of the self agree that it needs to have a prominent role in psychological theories and understanding as it is now thought to be heavily involved in motivation, affect, cognition, and identity formation (Sedikides & Spencer, 2007).

The idea that AN involves impairments in the self is firmly rooted in the theoretical literature (Bruch, 1982; Strauman, Vookles, Berenstein, Chaiken, & Higgins, 1991; Vitousek & Ewald, 1993). The initial interest in investigating disturbances in the self began decades ago when Bruch (1979) stated that AN is the result of a maladaptive "search for selfhood and a self-respecting identity" (p. 255). She argued that the disorder was caused by disruptions in identity development, and more importantly, a failure to develop multiple diverse domains of self-definition. According to Bruch (1973), one of the main contributing factors was growing up in an environment with overly controlling and perfectionistic parenting. This type of parenting is thought to limit one's opportunities for autonomous functioning and to obstruct the development of a clear and complex sense of self. As the child without a sense of autonomy faces the challenges of adolescence, he or she begins to experience feelings of incompetence, self-doubt, and fear of losing control. In order to compensate for such a constricted sense of self and feelings of powerlessness, some of these individuals turn to body weight, both a personally controllable and culturally important construct, as a viable source of self-concept (Bruch, 1973).

Although the challenges of developing a sense of identity outside of an eating disorder was first seriously discussed in the 1970's, struggles with identity development have only re-surfaced as an area of focus in AN research in the last ten years. For example Bers, Blatt, and Dolinsky (2004) argue that:

> An internal focus in the sense of self which provides evidence that the pathology of anorexia nervosa goes beyond the physical and that there are

> deeper underpinnings to the sense of self of patients with anorexia nervosa than an inaccurate perception of body image or an exaggerated drive for thinness (p. 310).

According to Bers et al., although medical stability is crucial in treating these individuals, the development and changes in the sense of self must also become an important consideration in treatment.

One of the major concerns in research and treatment is that while numerous theories have been proposed to explain the development and maintenance of AN, all of the theories are limited in their effectiveness as guides for research and practice. Despite there being substantial evidence of a disturbance in identity development, no theories have been based on a theoretical model of the self (Stein & Corte, 2007). What has been agreed upon is women with eating disorders have a limited number of positive, stable, and well-developed self-representations articulated in their memory that reflect their personal and social identity (Stein & Corte, 2007). However, the specific nature of the identity impairments that characterize the disorder have yet to be determined.

The Dialectical Constructivist View of Self

One theory that may help in systematically addressing the specific nature of identity impairments in AN is the Dialectical Constructivist Theory of the Self (Greenberg & Pascual-Leone, 1995; Greenberg et al., 1993; Pascual-Leone, 1978, 1980, 1983, 1987, 1990a, 1990b, 1991; Watson & Greenberg, 1996). Dialectical Constructivism is the theory that underlies Emotion Focused Therapy (EFT; Greenberg et al., 1993) and it is helpful in understanding how one's sense of self

is created and maintained. This theory addresses the reality of both our inner experiences as well as our ability to construct meaning. According to the Dialectical Constructivist Theory, there are various levels of organization of the self that are in continuous interaction with one another. The highest level of integration is one's emotional schemes, which are the implicit emotional meaning structures that develop through early interactions with the environment (Greenberg, Auszra, & Herrmann, 2007; Greenberg & Watson, 2005). Emotion schemes not only shape emotional experiences, but also play a major role in the creation of a sense of self (Greenberg et al., 1993). In healthy development, caregivers are responsive and validating of the emotional needs of the child contributing to the development of adaptive emotion schemes. However, if the caregiver provides problematic or less than optimal responses, then the development of maladaptive emotion schemes can result. Core maladaptive emotion schemes are problematic as they can be increasingly inadequate in helping individuals manage their feelings as they attempt to navigate developmental and life challenges (Dolhanty & Greenberg, 2007).

According to the Dialectical Constructivist view, human beings construct meaning through accessing and integrating many levels and sources of information from their internal and external environments. There are two opposing yet complementary dialectical poles in the theory and it is the constant interaction between these two poles that helps us to make sense of our everyday experiences (Paivio & Pascual-Leone, 2010). One pole of the dialectic is our sensory or perceptual experience, which operates on a bodily felt sense or

sensorimotor level (Greenberg & Pascual-Leone, 2001). Under this more automatic and schematic experience, emotion has earned a central position as it plays a key-organizing role in our experience and is critical in the development of personal meaning. At this level, our immediate emotional experience is organized by numerous, and sometimes conflicting, emotion schemes synthesizing together.

The second side of the dialectic is the symbolic/logical or thinking aspect, and its role to reflect on and then explain or verbally symbolize the emotional experience. It is only when individuals reflect on their experience that they begin to make sense of what they are feeling and it is not until they go through a dialectical process of explaining it that they create meaning. Therefore, to make meaning in an integrated and effective way requires an openness and sensitivity to one's internal signals, a willingness to attend to them, and an ability to symbolize them in words. As multi-level processors, we integrate symbolic/logical information and sensory/perceptual information in order to create a sense of self and our world in a moment-by-moment fashion depending on what we are focusing our attention. Therefore, it is important to recognize both sources of experience, the more conscious and reflexive conceptual process (thinking) that provides explanations and the automatic reactions and schematic emotional processes (feeling). However, it is equally important to also take into consideration the dialectical relationship that occurs between the thinking and feeling processes (Greenberg et al., 1993). It is the dialectical creation of new meaning that leads to change and growth as individuals come to attend to new

aspects of their emotional experiences helping them to construct a new view of self and the world.

The self is conceptualized as a set of self-organizations in continuous flux and therefore the creation of a self-narrative is a necessary factor in developing a stable sense of identity (Greenberg & Angus, 2004). Narrative identity is a level of self-organization that is higher than the schematically based self and involves integrating previous experience and numerous self-representations into a coherent narrative that constitutes one's identity (Greenberg & Angus, 2004, Whelton & Greenberg, 2001). As these narratives consist of autobiographical memories that are uniquely our own, it is thought, "by examining autobiographical narratives, we gain access to individuals' construction of their own identity" (Robinson & Taylor, 1998, p. 126). Therefore, one's identity cannot be understood outside of this narrative as it provides the individual with both unity and meaning (McAdams, 2001; Neimeyer, 1995; Singer, 2004).

Autobiographical Memories and the Creation of a Life Story

Autobiographical memories are a form of episodic memory that consist of brief mental constructions developed from a database of autobiographical knowledge hierarchically organized from the most specific to the most general memories (Conway & Pleydell-Pearce, 2000; Kolodner, 1983). Autobiographical memory is important to intrapersonal functioning as it helps with the regulation of emotion and constructing, maintaining, and revising one's self-concept (Cohen, 1998). In terms of emotion regulation, individuals choose which types of personal emotional memories to focus on and rehearse. The association between

autobiographical memory and emotion regulation is important as one of the struggles individuals' with AN may have is that they are unable to focus on memories of pleasant activities and instead focus on experiences associated with negative emotions such as hurt or shame. The inability to focus on pleasant memories leads to a cyclical pattern where one's mood reinforces memory choice and then influences mood (Blaney, 1986). Besides emotional regulation, the other intrapersonal function of autobiographical memory is to help in the creation and maintenance of a coherent sense of self. Autobiographical memories preserve the self-concept through selecting only those memories that support one's view of who he or she is (Cohen, 1998). Therefore, individuals with AN may also focus on memories from their past that are associated with shame and guilt as these are the memories that are tied to a negative and critical self-identity.

The process of understanding and integrating autobiographical memories in a meaningful way becomes crucial in adolescence and the early adult years (Habermas & Bluck, 2000; Habermas & Paha, 2001). During this time, individuals are faced with creating a sense of self that provides a feeling of unity, meaning, and purpose (Erikson, 1980). The task of creating a meaningful and coherent sense of self is accomplished through developing and maintaining a life story (McAdams, 1996). One's life story consists of narratives that are based on autobiographical memories, which over time have become integrated and reflect the individual's sense of self (McAdams, 1996). The pattern of autobiographical memories that are activated provides the major active content of the self. In order to maintain a coherent sense of self, accessibility of autobiographical knowledge

is modulated in order to ground the self in memories of self-defining and goal-relevant experiences (Pillemer, 1998; Singer & Salovey, 1993). Identity is therefore thought to evolve over a lifetime as autobiographical memories are retrieved and modified, shaping the definition of what the self has been, what it presently is, and what it can be in the future (McAdams, 1996). The intertwined relationship between autobiographical memory and sense of self has led researchers in recent years to turn their attention more specifically to the identity function of autobiographical memories (Conway & Pleydell-Pearce, 2000; McAdams, 1996; Pillemer, 1998; Singer & Salovey, 1993, 1996).

Over-General Autobiographical Memory in Anorexia

To date, there have been only a few studies that have assessed autobiographical memories in individuals with AN. Although these studies have made important contributions to our understanding of autobiographical memory in this disorder, they also have several limitations such as only investigating certain segments of the population and focusing solely on memory specificity. For example, Dalgleish et al. (2003) investigated autobiographical memory in individuals suffering from AN or BN who also had a history of sexual abuse. The choice to look specifically at individuals who had a history of abuse was based on the finding that individuals who have been subjected to traumas early in life learn to retrieve memories in a less specific way to minimize the associated negative emotions (Raes et al., 2003; Williams, 1996). Therefore, the aim of the study was to investigate whether the same over-general memory effect was being used. Results using the AMT confirmed previous findings that individuals with eating

disorders produced memories that were more general when compared to controls. In addition, the researchers found that the level of self-reported parental abuse was associated with the tendency to produce over-general memories to negative cues.

Although the study conducted by Dalgleish et al. (2003) helped to identify the over-general memory effect as a factor in the eating disorder population, the generalizability of this study is limited as it only investigated individuals with a history of sexual abuse. In order to increase the generalizability of the findings, another study investigated autobiographical memory in women with AN that did not have a past history of sexual abuse (Nandrino, Doba, Lesne, Christophe, & Pezard, 2006). Specifically, adolescent and young adult females with a diagnosis of AN-R and a healthy control group were compared on the AMT. Individuals with AN recalled more general memories than controls. In addition, they were found to have similar scores on an explicit verbal memory test as controls, supporting the hypothesis that the over-general memory effect found in the autobiographical memory of the AN group was specifically related to emotional processes (Nandrino et al., 2006). As this deficit was observed for both negative and positive emotional cues, the authors concluded that in individuals with AN there was a general impairment in accessing emotional memories that impacts their entire emotional experience.

Another concern of both Dalgleish et al. (2003) and Nandrino et al. (2006) studies was that they investigated autobiographical memory using emotional cue words only. Therefore, it is not possible to determine if the over-general memory

effect applies to all autobiographical memories or if it is specific to emotionally cued autobiographical memories. In order to further explore the over-general memory effect, Kovacs, Szabo, and Paszthy (2011) investigated autobiographical memory in girls with AN-R using the negative and positive cue word conditions in the AMT, but also included a neutral cue word condition (e.g., onion, ladder, pottery). Girls with AN-R recalled more over-general memories for all of the cue word conditions compared to controls.

As has been shown in previous research (e.g., Becker-Stoll & Gerlinghoff, 2004; Bydlowski et al., 2005), individuals with AN often present with an inability to identify and accurately label their affective experience and, as such, suffer from emotional processing deficits. The inability to process negative emotional states is of great concern as it may contribute to struggles with self-awareness. It is now known that individuals suffering from eating disorders use cognitive and behavioral strategies, such as bingeing and purging or over-exercising, as an avoidance technique to distract them from negative affect. Individuals with AN also appear to cope with negative emotional experiences by modifying access to their autobiographical memories by retrieving these memories less specifically (De Decker, Hermans, Raes, & Eelen, 2003; Raes et al., 2003). It appears that the over-general memory strategy can cause significant challenges when attempting to develop a stable and coherent identity.

Self-Defining Memories: The Self as an Integrated Life Story

In order to assist the exploration of autobiographical memories that are critical to our narrative identity, researchers have identified a subset of autobiographical

memories known as self-defining memories (SDMs; Singer & Salovey, 1993). SDMs are defined as vivid memories that are emotionally intense, repetitively recalled, linked thematically to similar memories, and often the focus of unresolved conflicts or enduring concerns about the self (Singer & Salovey, 1993). They also reflect prominent themes in one's life and are a reminder of what makes up one's core identity during times of transition or change (Singer, 2004). SDMs are important to identity development as they have been found to be associated with the pursuit of long-term goals (Moffitt & Singer, 1994), meaning making (Blagov & Singer, 2004; Thorne, McLean, & Lawrence, 2004), emotional responses (Sutin & Robins, 2005; Wood & Conway, 2006), and dispositional traits (Sutin & Robins, 2005). In addition, individuals communicate with others about who they are, facilitate intimacy, and develop self-knowledge through the process of personally reflecting on and then sharing these memories (McLean & Thorne, 2003; Thorne & McLean, 2002, 2003; Thorne et al., 2004). Studying SDMs is therefore the initial step toward capturing the multifaceted interaction between affect, cognition, and motivation in one's personality (Singer & Salovey, 1993). It is thought that by investigating these memories it is possible to gain a better understanding of identity, meaning making, personal strivings, and goals, while also gaining insight into what is currently important individuals and the future they are trying to achieve (Addis & Tipett, 2008; McAdams, 2001; Singer, 2004).

SDMs are specifically associated with self-concept continuity and thus are critical for the development of an internalized life narrative (McAdams, 1996;

Singer, Rexhaj, & Baddeley, 2007; Thorne et al., 2004). The role of these memories in identity development is supported by the finding that during late adolescence and young adulthood there are significantly more SMDs recalled (Pillemer, 1998). Furthermore, the memories recalled during adolescence and young adulthood were also identified in later life as remaining important to one's sense of identity. The crucial role of these memories in understanding the relationship between autobiographical memory and identity has also been found in multiple mental health disorders including depression (Moffitt, Singer, Nelligan, Carlson, & Vyse, 1994), post-traumatic stress disorder (Sutherland & Bryant, 2005), and schizophrenia (Berna et al., 2011; Raffard et al., 2009).

Exploring the level of integration of SDMs into one's sense of self allows us to look into the impact that these memories are having on the development of narrative identity. When investigating integration, it is important to look at it from both a cognitive and emotional perspective. Integration from a cognitive perspective involves investigating the ability of individuals to assign meaning to these memories (Blagov & Singer, 2004; Thorne et al., 2004). The process of meaning making involves individuals reflecting on significant emotional memories and extracting from them lessons about the self, important relationships, or life in general. Learning from past experiences is important for both social adjustment and decision-making in everyday life as it prevents people from repeating the same mistakes they have made in the past (Singer, 2004). Therefore, integration occurs when individuals are able to make a connection between their experiences and how they have impacted who they have become. Overall,

understanding how integrated these memories are into one's identity is critical as it is impacts the stability of the self. This is particularly important when life events can lead individuals to question their beliefs about who they really are (Conway, Meares, & Standart, 2004; Sutherland & Bryant, 2005).

A necessary component of deep integration is that it also requires emotional processing. The necessity of emotional processing in the integration process is based on the observation that when individuals have experienced a difficult life event, they often attempt to finish their narration of their experiences with some type of positive evaluation (McAdams, 2001). Further support for the positivity or benefaction effect was found in a study conducted by Wood and Conway (2006) where it as found that individuals tend to lower the intensity of negative emotions in their SDMs. Altering the intensity of negative emotions appears to be highly beneficial as it has been found that individuals that are able to make meaning in a positive way from difficult or tragic life events are less prone to depression, having better physical health, and have higher levels of subjective well-being (McAdams et al., 2001; McAdams, 2006).

Current Study

In order to explore the application of the Dialectical Constructivist Theory to the AN population, the contributions of both the emotional and the rational-linguistic systems need to be fully addressed. The present study investigates the rational or cognitive component of the Dialectical theory by exploring meaning making and the development of self in women with AN. Although it has been determined that these women struggle with identity and that autobiographical

memory is impaired (Dalgleish et al., 2003; Kovacs et al., 2011; Laberg & Andersson, 2004; Nandrino et al., 2006), no studies to date have investigated SDMs or narrative identity in this population. There has also been no research conducted on narrative identity in women who have recovered. Therefore, there is not even a basic understanding of the autobiographical memories that these women use to create their sense of personal identity. In addition, this is the first study to investigate the SDMs of women with a history of AN, which will help in further understanding autobiographical memory and its connection to identity development in this population.

The AMT is used in this study to further explore the autobiographical memory functioning of women both in-recovery and recovered from AN. To date, no other research studies have investigated autobiographical memory using the AMT in women who are recovered. Although the AMT has provided insights into the nature of autobiographical memory disturbances, it does not allow one to determine if the memories that are recalled are personally important to the individual (Jansari & Parkin, 1996). Therefore, the present study also examines SDMs in order to investigate experiences that participants feel are highly representative of their identity. The aim of this study is to gain a clearer understanding of the characteristics and content of SDMs of women in-recovery and recovered from AN and in women who have never had an eating disorder. The SDM characteristics that are examined are memory specificity, emotional valence at the time of recall, and meaning making. In addition, the thematic content of the SDMs are also explored. It is well known that one key to recovery

is developing an identity outside of the eating disorder. Gaining a better understanding of the content of the SDMs of these women will provide insights into how they construct their identities and may also assist in determining what themes are important to recovery.

Several hypotheses are tested in the present study. The first hypothesis is that women in-recovery would find it more difficult to retrieve specific autobiographical memories relative to the recovered and the control groups. In addition, women in-recovery would have more general memories and a shorter recall latency associated with negative cue words than women in the recovered and control groups. In terms of SDMs, women in-recovery would have fewer specific memories than women in the recovered and control groups. Specifically, it was hypothesized women in-recovery would report fewer meaning making statements and more negative emotions at recall than women in the recovered and control groups. It was also thought that women in-recovery would report more SDMs related to the themes of life-threatening events and guilt/shame than women in the recovered and control groups.

Method

Participants

Ninety adult women voluntarily participated in this study and self-identified as belonging to one of three equally sized groups. The *In-Recovery* group was comprised of women who had been diagnosed by professional health care providers as having met the DSM-IV (American Psychological Association [APA], 2000) criteria for Anorexia Nervosa, Restricting Type (AN-R) or

Anorexia Nervosa, Binge Purge Type (AN-BP). In order to participate, these women were required to be working towards recovery through some form of treatment. They were also required to have a BMI in the normal range (18.5 - 24.9) to ensure their physical safety and their cognitive capacities were not compromised during the study. These women were recruited from the Eating Disorder Program at the University of Alberta Hospital and from communities in and surrounding Edmonton, Alberta.

The *Recovered* group was comprised of women who considered themselves recovered from a previous diagnosis of AN. The definition of recovered continues to be a debated topic in the field. Most of the previous studies required only an absence of the physical symptoms, therefore it is not known whether the participants were still suffering from the psychological symptoms. For the purposes of this study, recovered status included an absence of physical and psychological symptoms at the present time. A few of the participants in this study did report that while they considered themselves recovered, their eating disorder related thoughts returned during particularly stressful times. The difference for them was that in their recovered state, they no longer had an urge to act on the thoughts.

The women in the recovered group were required to have a previous diagnosis of AN-R or AN-BP, be in the normal BMI range (18.5 – 24.9) for their height and weight, and not currently suffering from any of the physical or psychological symptoms associated with the disorder. This included not participating in eating disorder behaviors including food restriction or overcompensating for food intake

with excessive exercise or laxative/diet pill abuse. These women were also required to have stopped bingeing and purging for at least the last 3 months. Confirmation of the recovered status was achieved by administering the Eating Disorder Diagnostic Scale (EDDS; Stice, Telch, & Rizvi, 2000) to ensure that participants no longer meet the diagnostic criteria for AN. Absence of psychological symptoms of AN was assessed both through self-report and checking the scores on the EDDS to determine whether a fear of becoming fat or gaining weight was present and if weight and shape were influencing their self-evaluation. The participants in the recovered group were recruited from the University of Alberta and communities in and surrounding Edmonton, Alberta.

Participants in the in-recovery and recovered groups were excluded if they met the criteria for current drug or alcohol abuse or had been diagnosed with a psychotic disorder. They were also excluded if they had a BMI of 30 or higher. Women in either group who had been diagnosed with depression, anxiety, or personality disorders were not excluded from participating in this study given the high co-morbidity rates with AN. A total of 3 women were excluded from participating in the study due to the fact that they were actively suffering from AN and were at a BMI below 18.5.

The *Healthy Control* group consisted of women who had no previous eating disorder history (no current or life-time history of self-induced vomiting, binge eating, diuretic or laxative abuse, severe food restriction) and had never been diagnosed with a psychotic disorder. They were excluded if their BMI was below 18.5 or 30 or higher. The EDDS was also used to ensure that participants in the

healthy control group did not meet the criteria for any of the diagnostic criteria for an eating disorder. Participants in this group were recruited from the University of Alberta and communities in and surrounding Edmonton, Alberta.

Measures: Screening Tests

Demographics. A demographic form created by the researcher (Appendix A) was administered in order to obtain age, marital status, education, employment, ethnicity, socioeconomic status, and past/present eating disorder history. Also included were questions on physical and mental health status, specifically focusing on diagnosed substance abuse disorders, mental health disorders, and eating/weight loss habits. If participants were part of the in-recovery or recovered groups, specific information relating to their eating disorder was obtained.

Eating disorder symptoms. The Eating Disorder Diagnostic Scale (EDDS; Stice et al., 2000) is a 22-item self-report scale for diagnosing anorexia nervosa, bulimia nervosa, and binge eating disorder according to the DSM-IV. It is useful as both a diagnostic scale and for assigning a symptom composite score, which indicates overall eating disorder symptomatology. For the purposes of this study items were summed into an overall eating disorder symptom composite with scores ranging from 0 – 112. The EDDS has been found to have good test-retest reliability (r = .87), internal consistency (Cronbach's alpha = .89), and convergent validity with validated measures of eating disturbances (Stice & Ragan, 2002). The Cronbach's alpha for this study was .86.

Body mass index. Height and weight measurements were collected by self-report in order to determine Body Mass Index (BMI; Garrow & Webster, 1985).

BMI is the standard measure of body fat used by medical professionals (*weight* (kg)/*height* $(m)^2$). It is considered to be a good measure of healthy body weight as it not only takes into consideration one's height, but also allows for a range of weights that a person can be within and still considered healthy. According to this measure, individuals are considered underweight if their BMI is less than 18.5, are in the normal range if their BMI is between 18.5 and 24.9, overweight if they are between 25.0 and 29.9, and obese starting at 30. BMI based on self-report data correlates well with confederate measured weight with correlations ranging from .96 to .99 (United States Public Health Service, 1988). Prior research has also shown that BMI is a valid measure of adiposity with acceptable test-retest reliability (Garrow & Webster, 1985; Kraemer, Berkowitz, & Hammer, 1990; Stice, Agras, & Hammer, 1999).

Depression, anxiety, and stress. The Depression Anxiety Stress Scales (DASS-21; Lovibond & Lovibond, 1995) is a 21-item version of the original 42-item DASS. Using both clinical and nonclinical samples, two factor analytic studies have shown that the items on the DASS-21 can be grouped into the three subscales (Antony, Bieling, Cox, Enns & Swinson, 1998; Henry & Crawford, 2005). These subscales have seven items each: (a) depression and dysphoric mood (*depression subscale*), (b) symptoms of fear and autonomic arousal (*anxiety subscale*), and (c) symptoms of general nervousness and agitation (*stress subscale*). Items are rated according to symptoms experienced in the past week on a Likert scale ranging from 0 (*not at all*) to 3 (*most of the time*).

The DASS-21 reliably differentiates between the symptoms of anxiety and depression and between the symptoms of physical arousal and general anxiety (Antony et al., 2005; Henry & Crawford, 2005). Concurrent validity has also been established in non-clinical and clinical samples (Antony et al., 2005). For example, Antony et al. (2005) found that the depression subscale was correlated (r = .79) with the Beck Depression Inventory (BDI; Beck, Rush, Shaw, & Emery, 1979), the anxiety subscale correlated (r = .85) with the Beck Anxiety Inventory (BAI; Beck & Steers, 1990), and the stress subscale correlated (r = .68) with the State-Trait Anxiety Inventory (STAI-T; Speilberger, 1983). The Cronbach's alpha for this study was .94.

Social desirability. To ensure that the self-report measures used in this study were not contaminated by social desirability or *faking good*, the Marlowe-Crowne Social Desirability (MCSD; Crowne & Marlowe, 1960) scale was administered. The original scale contained 33-items and had high test-retest (r = .89) and internal consistency reliabilities (ranging from r = .73 to .88) in a variety of populations (Crowne & Marlowe, 1964; Davis & Cowles, 1989; Fisher, 1967; Paulhaus, 1984; Tanaka-Matsumi & Kameoka, 1986). Since its initial development, several researchers have developed short versions of the MCSD. Of these short versions, the one with the most consistent support across fit indexes was Scale 1 developed by Ballard (1992). According to Loo and Loewen (2004), this version is a significant improvement over the full scale. Scale 1 consists of 11 items, responded to by a forced choice true or false. High scores indicate that a

participant is over-reporting socially desirable behaviors and under-reporting socially undesirable ones. The Cronbach's alpha for this study was .93.

Measures: Study Variables

Autobiographical memory. In order to assess general autobiographical memory, the Autobiographical Memory Test (AMT; Williams & Broadbent, 1986) was used. The AMT assesses participants' ability to retrieve a specific memory under timed conditions in response to a cue word. The present study investigated 20 cue words: five pleasant (*happy, excited, relieved, friendly, hopeful*), five unpleasant (*hopeless, rejected, guilty, hurt, ashamed*), and 10 neutral (*hobby, novel, pencil, album, parade, forest, skirt, branch, grass, broom*). All of the words used were selected to ensure that they were of approximately equal linguistic frequency and similar in emotional tone. Cue words were presented on 12.5cm x 7.5cm cards and were written in black ink in capital letters 3.5cm high. Words were presented in a fixed alternating order. Participants were asked to respond to each cue word with an event that reminded them of that word. They were informed that the event could be important or trivial and either recent or in the past as long as the event was specific. A specific event was defined as an event that happened at a particular time and place and lasted a day or less. To ensure that all participants understood the instructions, there were two practice words given (*interested, exhausted*) and examples of a general memory (e.g. *summers in the city*) and specific memory (e.g. *the day I got married*). Following the instructions used by Williams and Broadbent (1986), participants were allowed one minute for each cue word to retrieve a specific memory. The

question that was asked with each cue word was "Try to remember a day or a situation in the past when you felt…" and for neutral words "Try to remember a special day with/in…" Participants were not prompted. The latency to the first word of each recalled memory was recorded.

All memories were reported verbally to the researcher and tape-recorded. These tapes were then transcribed and coded as either general or specific. Memories were coded as specific if they met the criterion of specifying a specific event that lasted less than a day and as general if the memory happened on multiple occasions or was longer than a day. If no memory was given or if it was given after the one-minute time frame, it was coded as an omission and a conservative time of 60 seconds was recorded in line with previous studies (Kuyken & Dalgleish, 1995). Inter-rater reliability on 50% of the retrieved memories for coding of general versus specific was Kappa = 0.96. Average latencies for all responses were also calculated.

Self-defining memories. In order to measure SDMs, participants were administered the Self-Defining Memory (SDM) Task and the Self-Defining Memory Rating Sheet (SDMRS) (Blagov & Singer, 2004). The SDM task involved having participants write down five SDMs according to the standard instructions that describe the features of a SDM: (a) at least one year old, (b) must be remembered very clearly and that still feel important today, (c) would be shared with someone else to help them understand who the individual is, (d) triggers strong feelings (positive or negative or both), and (e) has been thought about many times and is familiar.

The SDMRS is a 14-item scale that asks the participant to rate from 0 (*not at all*) to 6 (*extremely*) their emotions associated with each SDM at the time of recall. The emotions listed are *happy, sad, angry, fearful, surprised, ashamed, disgusted, guilty, interested, embarrassed, contemptful*, and *proud*. The same rating scale was also used to indicate the strength of feelings connected to the memory, how important the event was in the participant's life, how often they thought about the memory, how clear it was, how often they told this memory to someone else, how vivid it was, and the importance in terms of who they are today. Lastly, participants were asked to indicate how long ago (in years) that the memory took place.

Scoring the self-defining memories. All of the SDMs were scored by the researcher for specificity, meaning making, and content according to *The Classification System and Scoring Manual for Coding Events in Self-Defining Memories* (Singer & Blagov, 2000-2001) and the *Manual for Coding Events in Self-Defining Memories* (Thorne & McLean, 2001). For each participant, specificity was assessed by the number of specific memories that were reported and meaning making was assessed by the number of integrated memories (in both cases scores ranged from 0 to 5). Inter-rater reliability using the Kappa statistic was performed for specificity, meaning-making, and thematic content to determine the consistency between the raters. This was done by first recruiting a qualified undergraduate student who was blind to group membership and the study hypotheses. This individual was trained by the main researcher in how to score the SDM task and several practice trials were run until an acceptable level

of agreement was reached. The undergraduate student was then asked to independently re-score 40% of the completed SDMs.

Specificity. In order to determine specificity, each memory was coded as either *non-specific* (0) or *specific* (1). A memory was rated as specific if it had at least one-single event statement (e.g. it was a unique occurrence and lasted less than one day) and occurred at a particular time and place. Memories were coded as non-specific if they lacked single-event statements (e.g., single lengthy time frame or narratives composed of equivalent events that keep occurring over time intervals that are not themselves part of the memory) (Singer & Blagov, 2000-2001). The inter-rater reliability for the raters was found to be Kappa = 0.82.

Meaning making. Meaning making was divided into two categories: integrative and non-integrative memories. *Integrative memories* were coded for presence of meaning making (1) and *non-integrative memories* for absence of meaning making (0). Integrative memories contained statements about what the memory had taught the individual (e.g. lessons learned, realizations made) and referred to life in general or to one's own life and sense of identity (Singer & Blagov, 2000-2001). Non-integrative memories may have mentioned emotional connections, contained generalizations about one's personality, or referred to the impact that the memory had on the individual, but they do not explain what the memory meant to the individual or how it conveyed meaning in the individual's life. The inter-rater reliability for the raters was found to be Kappa = 0.87.

Thematic content. Using the Thorne and McLean (2001) manual, SDMs were scored according to seven thematic categories: life-threatening events,

recreation/exploration, relationships, achievement/mastery, guilt/shame, drug/alcohol/tobacco, and as events unclassifiable if the memory did not fit any of the other categories. The inter-rater reliability for the raters for memory one was found to be Kappa = 0.85; memory two Kappa = .91; memory three Kappa = .94; memory four Kappa = .97; and memory five Kappa = .97.

Procedure

Participant recruitment took place from January 2010 to August 2011. An initial contact email describing the study was sent to mental health professionals in the eating disorder field in Edmonton requesting their involvement in the study. Posters and information sheets were sent out to the individuals who agreed to advertise the research in their facilities. Posters were also placed around the University of Alberta and the Eating Disorder Unit at the University of Alberta Hospital. Advertisements were also placed in the local media. After completion of the research session, each of the participants was given $10 to thank them for their time. Approval for the project was obtained from the University of Alberta Research Ethics Board-2 and the Health Research Ethics Board – Health Panel.

An initial telephone screening process (Appendix K) was conducted to determine if the individual qualified to participate. The screening process included questions on age, current diagnoses and medications, psychiatric history, and methods of weight loss/control. Any questions or concerns were also addressed at this time. If the prospective participant met all the eligibility requirements and was interested in participating, the procedures of the study were explained and an individual session was scheduled.

During the research session and prior to completing any of the measures, participants were informed as to the purpose of the study, the risks and benefits, and the right to withdraw their participation at any time without penalty. It was also communicated that all completed questionnaires would be stored safely in a locked filing cabinet for a period of 5 years and that data would be shredded after that time. Additionally, all participants were informed that only researcher assigned numbers would be used to identify individual responses and that no identifying information was to be placed on the individual questionnaires. After a participant verbally agreed to these terms, she was asked to sign a consent form (Appendix L).

The demographics form was then administered in a semi-structured interview format in order to allow the researcher to ask additional questions or to get clarification if needed. Once completed, participants were administered the EDDS, DASS-21, and MCSD in order to measure any pre-existing differences in the groups that might need to be controlled in the multivariate analyses. Participants were then administered the AMT and the SDM Task. Participants took around one and a half to two hours to complete the research session.

Results

Preliminary Analyses

Before conducting the preliminary or main analyses, the data were examined for accuracy of data entry, missing values, and fit between their distributions and the assumptions of multivariate analysis. The variables were examined separately for each of the groups.

All 90 participants were screened for missing values on all of the study variables and no missing values or values out of range were discovered except for on the SDM task. There were 3 participants in-recovery and 2 who were recovered who did not complete any of the SDM task due to fatigue during the research session. Pairwise linearity was checked by within group scatterplots and assessed as satisfactory. In order to check for univariate normality and the presence of univariate outliers, each variable was screened for problems in skewness and kurtosis, linearity, and homoscedasticity. There was positive skewness on all the subscales and the total score of the DASS-21 ($Sk = 3.68$) and the EDDS ($Sk = 4.02$). All of these values were outside the generally accepted range of -2 to 2. In addition, when investigating the histograms and box plots for the study variables for each of the groups, several univariate outliers were identified on several of the scales. According to Tabachnick and Fidell (2007), one method to deal with outliers is to reduce their impact by transforming the study variables to change the shape of the distribution to near normal. Several transformations of the data were attempted to minimize loss of statistical power. The best results were with a square-root transformation that resulted in skewness and kurtosis values less than two. The transformations also reduced the impact of the outliers. After transformations, the assumptions of univariate normality were met. The transformed values were used in subsequent analyses.

Multivariate outliers were screened by computing Mahalanobis distance for each case for all of the study variables. There were no multivariate outliers

detected ($p < 0.001$; Tabachnick & Fidell, 2007). Additionally, there was no evidence of multicollinearity.

Demographic and clinical characteristics. Means and standard deviations for the demographic and clinical characteristics of the three groups are presented in Tables 4-1 and 4-2. For the in-recovery group, 51% of the women were diagnosed with AN-BP and 49% were diagnosed with AN-R. The mean age of this group was 27.00 years (*SD* = 4.54) and 47% had completed high school, while 37% had an undergraduate or graduate education. The women had been suffering with AN for an average of 6.67 years (*SD* = 2.02), with their first official diagnosis at a mean age of 18.83 years (*SD* = 3.34). The average Body Mass Index (BMI) score was 20.19 (*SD* = 1.95), suggesting that the majority of these women had BMIs in or approaching the normal range (between 18.5 and 24.9). Just over half of the participants in this group were receiving psychotropic medication. Of the 30 women who participated, all 27 completed the full set of questionnaires.

In the recovered group, 47% of the participants had been previously diagnosed with AN-BP and 53% had been diagnosed with AN-R. The mean age of this group was 26.3 years (*SD* = 5.06) and 43% of them had completed high school, while 43% had an undergraduate or graduate education. The women had suffered with AN for an average of 5.03 years (*SD* = 2.27), with their first diagnosis being at a mean age of 16.77 years (*SD* = 2.83). They had a mean BMI of 21.46 (*SD* = 1.59) and 30% of the participants in this group were taking psychotropic

Table 4-1

Demographic and Clinical Characteristics of the Three Study Groups

Variables	In-Recovery Group *M* (*SD*)	Recovered Group *M* (*SD*)	Control Group *M* (*SD*)	*F*(2, 87)	*p*
Age at testing (years)	27.00 (4.54)	26.33 (5.06)	22.10 (3.22)	10.83[a]	.001
Body Mass Index	20.19 (1.95)	21.46 (1.59)	22.11 (2.32)	6.62	.002
DASS	27.27 (11.96)	14.70 (9.92)	5.90 (3.51)	50.22[a]	.001
EDDS	39.23 (15.03)	13.43 (9.07)	10.97 (10.45)	61.33	.001
MCSD	4.50 (2.39)	4.53 (2.54)	5.63 (2.53)	2.02	.210
	Eating Disorder Group (*n* = 60)	Control Group (*n* = 30)		$X^2(1, N = 90)$	*p*
Ethnicity					
Caucasian	90%	63%			
Other	10%	37%		9.72	.002
Education					
High school	45%	67%			
College/University	55%	33%		3.76	.052
Employment					
Working	36%				
School	64%	100%		14.93	.001

Note: DASS = Depression Anxiety and Stress Scale; EDDS = Eating Disorder Diagnostic Scale; MCSD = Marlowe-Crowne Social Desirability scale. Chi-square test used for ethnicity, education, and employment; ANOVAs used for all other variables. [a]Welch's *F* (2, 52.769) used.

Table 4-2

Demographic Variables for the In-Recovery and Recovered Groups

Variables	In-Recovery Group (n = 30)	Recovered Group (n = 30)	$t(58)$ or $X^2(1, N = 60)$	p
Age diagnosed	18.83 (range: 12-29) (SD = 3.34)	16.77 (range: 11-25) (SD = 2.83)	2.34	.02
Type of AN				
Binge Purge	51%	47%		
Restricting	49%	53%	0.82	.37
Number of Years had AN				
5 years or less	37%	63%		
More than 5 years	63%	37%	5.71	.02
Hospitalization				
Yes	73%	47%		
No	27%	53%	4.44	.04
Type of treatment				
Psychotherapy or Physician	39%	32%		
Treatment Facility	61%	68%	0.31	.58

Note: t test used for age diagnosed; Chi-square used for all other variables. Treatment facility includes inpatient and outpatient programs in hospitals and private treatment clinics.

medication. Of the 30 women who participated, all 28 completed the full set of questionnaires.

The mean age of the control group was 22.1 years (SD = 3.22) and 67% had completed high school, while 33% had an undergraduate or graduate education. The mean BMI of the women was 22.11 (SD = 2.32). All 30 women who participated in the control group completed the full set of questionnaires.

Analyses of variance (ANOVAs) with post-hoc tests and Pearson's chi-square tests were conducted to investigate if there were any differences between the groups on the demographic variables. The assumptions of independence, normality, and homogeneity of variance were satisfied for all of the tests with the exception of age, for which Levene's test was statistically significant, $F(2, 87) = 5.82$, $p < .01$. In this case, the results for the ANOVA are presented for equal variances not assumed.

Several group differences were found to be statistically significant (see Table 4-1). For example, age at the time of testing differed between the three groups, $F(2, 52.769) = 10.83$, $p < .001$, $\eta\rho^2 = .14$. Tukey post-hoc comparisons ($p < .01$) indicated that women in the control group (M = 22.10, 95% CI [20.90, 23.30]) were younger in age than women in the in-recovery group (M = 27.00, 95% CI [24.34, 29.66]), and the recovered group (M = 26.33, 95% CI [24.34, 29.66]). As was expected, BMI was also found to differ between the three groups, $F(2, 87) = 6.62$, $p < .01$, $\eta\rho^2 = .13$. Tukey post-hoc comparisons ($p < .01$) revealed that women in the in-recovery group (M = 20.19, 95% CI [19.34, 21.03]) had lower BMIs than the women in the control group (M = 22.11, 95% CI [21.24, 22.97]).

Comparisons between the recovered group ($M = 21.46$, 95% CI [20.87, 2.05]) and the other two groups were not statistically significant at $p < .05$.

Pearson's chi-square tests were used to investigate if there were group differences on the demographic variables. The in-recovery and recovered groups were combined into one eating disorder group and compared to the control group. The results of the chi-square tests revealed that there were differences in ethnicity, $X^2(1, N = 90) = 9.72$, $p < .01$, $V = .32$, and employment status, $X^2(1, N = 90) = 14.93$, $p < .001$, $V = .40$, indicating that more participants were Caucasian in the group of women with a history of eating disorders and that fewer participants had completed post-secondary education in the control group. There were no statistically significant differences ($p < .05$) between the groups on level of education.

To investigate if there were any pre-existing differences between the groups that might confound the findings for the emotional processing variables, several ANOVAs were conducted with post-hoc tests to determine the course of any group effects (see Table 4-1). The assumptions of independence, normality, and homogeneity of variance were satisfied for all of the ANOVAs with the exception of the DASS total score, for which Levene's test was statistically significant, $F(2, 87) = 6.87$, $p < .01$. In this case, the results for the ANOVA are presented for equal variances not assumed.

The first analysis investigated if there were differences in the three groups on their total scores on the DASS-21 (Lovibond & Lovibond, 1995). Total scores (symptoms of depression, anxiety, and stress) differed between the three groups,

$F(2, 54.55) = 50.22$, $p < .001$, $\eta\rho^2 = .48$. Tukey post-hoc comparisons of the groups revealed that women in the in-recovery group ($M = 27.27$, 95% CI [22.80, 31.73]) had higher scores ($p < .001$) than women in the recovered group ($M = 14.70$, 95% CI [10.99, 18.41]) and women in the control group ($M = 5.90$, 95% CI [4.59, 7.21]). Participants in the recovered group also had higher ($p < .01$) scores when compared to women in the control group.

As expected, the number of eating disorder symptoms (EDDS; Stice et al., 2000) were different between the groups, $F(2, 87) = 61.33$, $p < .001$, $\eta\rho^2 = .56$. Tukey post-hoc comparisons of the three groups ($p < .001$) revealed that women in the in-recovery group ($M = 39.23$, 95% CI [33.82, 44.65]) had more eating disorder symptoms than women in the recovered group ($M = 13.43$, 95% CI [10.05, 16.82]) and women in the control group ($M = 10.97$, 95% CI [7.91, 14.02]). Women in the recovered and control groups did not differ in their levels of eating disorder symptoms. Due to the large number of self-report measures used in this study and because individuals with AN tend to be highly perfectionistic (Goldner, Cockell, & Srikameswaran, 2002), it was important to also measure response bias in terms of social desirability or *faking good*. It was found that there was no difference between the three groups on social desirability, $F(2, 87) = 2.02$, $p > .05$, $\eta\rho^2 = .04$.

To determine if there were any differences between the in-recovery and recovered groups on the type, course, and treatment of AN, independent sample *t*-tests and Pearson's chi-square tests were conducted (see Table 4-2). The assumptions of independence, normality, and homogeneity of variance were

satisfied for all of the *t*-tests. There was a statistically significant difference in the age of AN diagnosis, $t(58) = 2.34$, $p < .05$, $d = 0.61$, with women in the in-recovery group ($M = 18.83$, 95% CI [17.37, 20.30]) having received their diagnosis at an older age than those in the recovered group ($M = 16.77$, 95% CI [15.71, 17.82]). In addition, there was a statistically significant difference in the number of years that the women had suffered with AN, $X^2(N = 60) = 5.71$, $p < .05$, $V = .31$, with women in the in-recovery group having suffered from AN for a longer period of time than women in the recovered group. Furthermore, there was also a statistically significant difference in whether or not the women had been hospitalized as part of their treatment, $X^2(N = 60) = 4.44$, $p < .05$, $V = .27$. Women in the in-recovery group had entered hospital programs to treat their AN a higher number of times than women in the recovered group. There were no statistically significant differences between the groups on the type of AN diagnosis or treatment they received.

Main Analyses: Autobiographical Memory

The AMT data are presented in Table 4-3. Previous studies have found differences as a function of emotional valence (e.g., Brittlebank et al., 1993, Dagleish et al., 2003) therefore separate data for the positive, negative, and neutral cue conditions are presented. The ANOVA on all general memory responses revealed an overall group difference, $F(2, 87) = 7.73$, $p < .01$, $\eta\rho^2 = .15$. Bonferroni post-hoc comparisons ($p < .05$) indicated that women in both the in-recovery ($M = 8.47$, $SD = 5.08$) and recovered ($M = 7.00$, $SD = 4.39$) groups

Table 4-3

Statistical Results for Autobiographical Memories of the Three Groups as Measured by the Autobiographical Memory Test

	In-Recovery (n = 30)	Recovered Group (n = 30)	Control Group (n = 30)	F (2, 87)	p	Post hoc
All general responses	8.47 (5.08)	7.00 (4.39)	4.10 (2.32)	7.73	<.01	IR > C R > C
All specific responses	11.37 (5.07)	12.60 (4.34)	15.83 (2.26)	13.84[a]	<.001	IR < C R < C
Neutral general responses	5.03 (3.08)	4.53 (2.57)	2.70 (1.66)	4.55	<.05	IR > C
Neutral specific responses	4.97 (3.08)	5.47 (2.57)	7.30 (1.65)	10.77[a]	<.001	IR < C R < C
Emotion general responses	3.60 (2.39)	2.87 (2.27)	1.47 (1.46)	8.39	<.001	IR > C R > C
Emotion specific responses	6.40 (2.39)	7.13 (2.27)	8.53 (1.46)	9.56[a]	<.001	IR < C R < C
Positive general responses	1.73 (1.26)	1.43 (1.33)	0.70 (1.06)	6.83	<.01	IR > C R > C
Positive specific responses	3.27 (1.26)	3.57 (1.33)	4.30 (1.06)	4.87	<.05	IR < C
Negative general responses	1.87 (1.50)	1.43 (1.19)	0.77 (0.82)	5.24	<.01	IR > C
Negative specific responses	3.13 (1.50)	3.57 (1.19)	4.23 (0.82)	7.46[a]	<.01	IR < C R < C
Latency negative	10.75 (8.90)	12.36 (5.39)	13.79 (5.08)	3.13	<.05	IR < C
Latency total	10.52 (6.87)	10.38 (4.26)	10.14 (2.72)	0.94[a]	>.05	n.s.
Latency neutral	10.42 (7.84)	9.52 (4.18)	8.50 (2.99)	0.06[a]	>.05	n.s.
Latency emotion	10.69 (1.93)	11.53 (5.05)	11.79 (4.13)	0.32	>.05	n.s.
Latency positive	10.64 (5.99)	10.73 (6.15)	9.73 (5.14)	.28	>.05	n.s.

Note: Comparisons between groups were performed with ANOVAs. [a]Indicates Welch's F was used due to violations of Levene's test.

reported more general memories for all of the emotion and neutral word conditions than women in the control group ($M = 4.10$, $SD = 2.32$).

Neutral and emotional cue words. It was important to determine if the over-general memory recall found in the in-recovery and recovered groups when they were compared with the control group was specific to emotional memories or if it was also a concern for non-emotionally cued memories. To investigate whether this deficit was specific to emotional memories, two types of cue words were presented (ten neutral and ten emotion words) and ANOVAs were used to look at group differences. It was revealed that there was an overall group difference in general responses to neutral cue words, $F(2, 87) = 4.55$, $p < .05$, $\eta\rho^2 = .01$. Bonferroni post-hoc comparisons ($p < .05$) indicated that women in the in-recovery group ($M = 5.03$, $SD = 3.08$) had more general memory responses to neutral cue words than women in the control group ($M = 2.70$, $SD = 1.66$). Additionally, an ANOVA was used to look at differences in emotion cue word responses in the three groups and revealed that there were group differences, $F(2, 87) = 8.39$, $p < .001$, $\eta\rho^2 = .16$. Bonferroni post-hoc comparisons ($p < .05$) indicated that women in the in-recovery group ($M = 3.60$, $SD = 2.39$), and women in the recovered group ($M = 2.87$, $SD = 2.27$), had more general memory responses to emotional cue words than women in the control group ($M = 1.47$, $SD = 1.46$).

Emotional valence and specificity. It was also important to explore potential group differences in memory specificity in relation to both positive and negative emotional cue words. In order to investigate the specificity of the memories in

relation to emotional valence, five positive and five negative emotion cue words were presented and ANOVAs were used to look at any differences in memory specificity between the groups. Investigating the general memory responses of participants to positive emotional cues words revealed an overall difference between the groups, $F(2, 87) = 6.83$, $p < .01$, $\eta\rho^2 = .14$. Bonferroni post-hoc comparisons ($p < .05$) revealed that women in the in-recovery group ($M = 1.73$, $SD = 1.26$), and women in the recovered group ($M = 1.43$, $SD = 1.33$), had more general memory responses to positive cue words than women in the control group ($M = 0.70$, $SD = 1.06$). An ANOVA was also used to look at differences in the general memory responses to negative emotion cue words and revealed an overall difference, $F(2,87) = 5.24$, $p < .01$, $\eta\rho^2 = .11$. Bonferroni post-hoc comparisons ($p < .01$) indicated that women in the in-recovery group ($M = 1.87$, $SD = 1.50$) reported more general memory responses to negative emotional cue words than women in the control group.

Autobiographical memory recall latency. In order to investigate whether women in the in-recovery or recovered groups would be slower to retrieve memories relative to controls and whether emotional valence was a factor, ANOVAs were conducted on differences in latencies for the different cues words. Only the ANOVA looking at latency differences to negative cued words was statistically significant, $F(2, 87) = 3.13$, $p < .05$, $\eta\rho^2 = .05$. Bonferroni post-hoc comparisons ($p < .05$) revealed that women in the in-recovery group ($M = 10.75$, $SD = 8.90$) were quicker at recalling negatively cued memories than women in the control group ($M = 13.79$, $SD = 5.08$).

Main Analyses: Self-Defining Memories

In order to examine the hypothesis related to specificity, affect, and integration, separate ANOVAs were conducted with group membership as the independent variable and memory specificity, affect (positive and negative), and integrative meaning as the dependent variables (see Table 4-4).

Memory specificity. Specificity was coded and totalled across the five memories. A one-way ANOVA was conducted to examine differences among the three groups in relation to the specificity of their SDMs. The ANOVA revealed that there was no statistically significant differences between the groups, $F(2, 82) = .19$, $p > 0.5$, $\eta\rho^2 = .00$, on the number of specific SDMs they reported.

Memory integration. Meaning-making statements were coded using the memory integration scoring system (Singer & Blagov, 2002) and totalled across the five memories. An ANOVA was conducted to examine whether there were any group differences in the level of integration or meaning making. Group differences on the number of meaning-making statements provided were found, $F(2, 82) = 3.50$, $p < .05$, $\eta\rho^2 = .03$. Dunnett's t post-hoc comparisons ($p < .05$) revealed that the SDMs of women in the in-recovery included fewer meaning-making statements ($M = 1.30$, $SD = 1.44$) in their SDMs than women in the control group ($M = 2.23$, $SD = 1.61$).

Table 4-4

Statistical Results for Self-Defining Memory Task of the Three Groups

Memory Characteristics	In-Recovery (n = 27)	Recovered Group (n = 28)	Control Group (n = 30)	F (2, 82)	p	Post-hoc comparisons
Specificity	3.46 (1.53)	3.48 (1.311)	3.26 (1.55)	0.19	>.05	n.s.
Integration	1.30 (1.44)	2.25 (1.69)	2.23 (1.61)	3.50	<.05	IR < C
Negative Emotion Valence	83.33 (39.52)	47.64 (35.80)	39.27 (26.04)	13.20	<.001	IR > C IR > R
Positive Emotion Valence	34.11 (22.56)	44.00 (16.63)	47.60 (15.68)	4.01	<.05	IR < C
Tell Others	1.94 (1.29)	2.05 (0.97)	2.64 (1.15)	3.13	<.05	IR < C
Strength of Feelings	4.91 (0.69)	4.81 (0.61)	4.72 (0.57)	0.69	>.05	n.s.
Importance of Events	5.01 (0.87)	4.79 (0.80)	4.87 (0.78)	0.52	>.05	n.s.
How Often Thought About	3.76 (0.73)	3.44 (0.77)	3.39 (0.94)	1.68	>.05	n.s.
Clarity	4.81 (0.89)	4.96 (0.74)	4.89 (0.67)	0.25	>.05	n.s.
Vividness	4.71 (0.99)	4.79 (0.84)	4.62 (0.85)	0.25	>.05	n.s.
Impact on Sense of Self	4.89 (0.91)	4.76 (0.75)	4.79 (0.77)	0.21	>.05	n.s.

Note: Comparisons between groups were performed with ANOVAs.

Experienced emotion during retrieval. In order to determine if any differences existed in the emotional valence of the SDMs, the level of intensity of positive and negative emotions at the time of memory recall were summed across the five SDMs for each participant and the values for each of the groups was compared with an ANOVA. To measure emotional valence, positive and negative emotion words were listed and participants were asked to rate how strongly they felt any of these emotions when recalling and thinking about their memories. Overall, there was a statistically significant effect of group on negative emotional valence, $F(2, 82) = 13.20$, $p < .001$, $\eta\rho^2 = .24$. Tukey post-hoc test ($p < .01$) revealed that women in the in-recovery group ($M = 83.33$, $SD = 39.52$) were more likely to report experiencing negative emotions when recalling and thinking about their SDMs than women in the recovered group ($M = 47.64$, $SD = 35.80$) and control group ($M = 39.27$, $SD = 26.04$). As expected, there was also a statistically significant effect of group on positive emotional valence, $F(2, 82) = 4.01$, $p < .05$, $\eta\rho^2 = .09$. Tukey post-hoc test ($p < .05$) revealed that women in the control group ($M = 47.60$, $SD = 15.68$) were more likely to report experiencing positive emotions when recalling and thinking about their SDMs than women in the in-recovery group ($M = 34.11$, $SD = 22.56$).

Additional characteristics. When the in-recovery, recovered, and control groups were compared on all of the remaining characteristics of the SDMs, it was found that there was no differences between the groups ($p > .05$). The remaining SDM characteristics that were investigated included how strong the feelings connected to the memories were, how important the events were to the

participant's life, how often they thought about the memories, how clear and how vivid the memories were, and how much the experiences impacted a sense of who they are today. These findings suggest that all of the participants understood the SDM procedure and selected highly emotional, important, and vivid memories that had an impact on their sense of identity. One exception was found for how likely the women were to tell others about their reported SDMs as it was revealed that there was an overall group difference, $F(2, 82) = 3.13$, $p < .05$, $\eta\rho^2 = .07$. Dunnett's t post-hoc comparisons ($p < .05$) revealed that women in the in-recovery group ($M = 1.94$, $SD = 1.29$) were less likely to tell others their SDMs when compared to the control group ($M = 2.64$, $SD = 1.15$).

Memory content. The percentages and number of SDMs according to their content is presented in Table 4-5 and Figure 4-1. Group differences were found for three of the content themes. The first difference revealed was in the life-threatening events theme, $X^2(2, N = 63) = 6.00$, $p < .05$. The proportion of SDMs characterized around the theme of life-threatening events was lower for women in the recovered group (8.7%) than for women in the in-recovery group (20.3%), $X^2(1, n = 39) = 5.77$, $p < .05$ and the control group (16.0%), $X^2(1, n = 36 = 4.00$, $p < .05$). Group differences were also found for the recreation/exploration theme, $X^2(2, n = 38) = 7.32$, $p < .05$. The proportion of SDMs characterized around the theme of recreation/exploration was lower for women in the in-recovery group (3.8%) than for women in the recovered group (10.7%), $X^2(1, n = 20) = 5.00$, $p < .05$, and the control group (12%), $X^2(1, n = 23) = 7.35$, $p < .01$. In addition, an overall group difference was also found for the guilt/shame theme, $X^2(2, n = 72) =$

Table 4-5

Self-Defining Memory Content Themes and Emotional Valence by Theme

Category Characteristics	In-Recovery Group (n = 27)	Recovered Group (n = 28)	Control Group (n = 30)	$X^2(2)$	p	Post-hoc comparison
Percentage and number of SDMs for each content category						
Life-Threatening Event	20.3 (27)	8.7 (12)	16.0 (24)	6.00	.05	IR > R R < C
Recreation/Exploration	3.8 (5)	10.7 (15)	12.0 (18)	7.32	.03	IR < C IR < R
Relationship	18.8 (25)	26.4 (37)	27.3 (41)	4.04	.13	n.s.
Achievement/Mastery	30.1 (40)	36.4 (51)	35.3 (53)	2.04	.36	n.s.
Guilt/Shame	26.3 (35)	17.1 (24)	8.7 (13)	10.08	.01	IR > C
Drug/Alcohol/Tobacco Use	0.7 (1)	0.7 (1)	0.7 (1)			
Percentages of positive/negative/neutral SDMs for each content category						
Life-Threatening Event	7.7 (2)/ 92.3 (25)/ 0	8.3 (1)/ 91.7 (11)/ 0	29.2 (7)/ 66.6 (16)/ 4.2 (1)			
Recreation/Exploration	100 (5)/ 0/ 0	73.3 (11)/ 26.7 (4)/ 0	88.8 (16)/ 5.6 (1)/ 5.6 (1)			
Relationship	56 (14)/ 44 (11)/ 0	59.5 (22)/ 40.5 (15)/ 0	56.1 (23)/ 41.5 (17)/ 2.4 (1)			
Achievement/Mastery	75 (30)/ 25 (10)/ 0	84.3 (43)/ 15.7 (8)/ 0	88.7 (47)/ 9.4 (5)/ 1.9 (1)			
Guilt/Shame	8.6 (3)/ 91.4 (32)/ 0	4.2 (1)/ 95.8 (23)/ 0	15.4 (2)/ 84.6 (11)/ 0			
Drug/Alcohol/Tobacco Use	0/ 100 (1)/ 0	0 /100(1)/ 0	0/ 100 (1)/ 0			

Note: Percentages of memory content for the in-recovery group are based on a total of 133 memories, for the recovered group on a total of 140 memories, and for the control group a total of 150 memories.

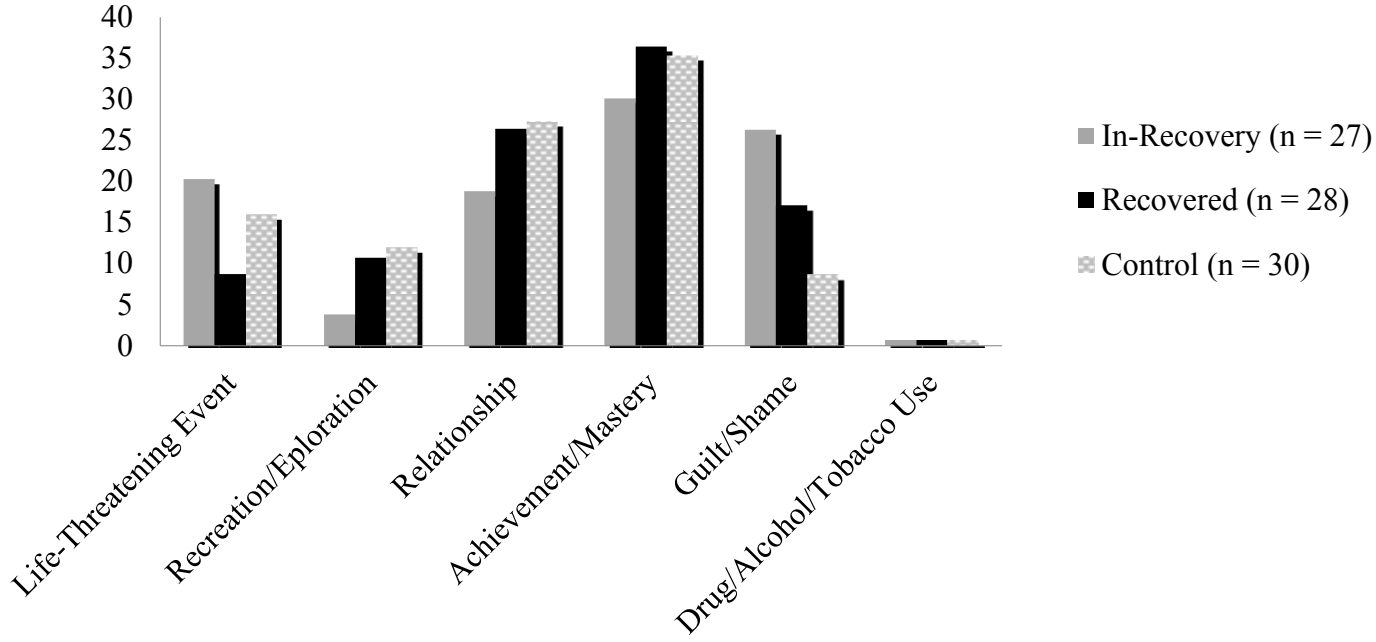

Figure 4-1. Percentage of self-defining memories according to their content in the three groups.

10.08, $p < .05$. The proportion of SDMs characterized by the themes of guilt/shame was higher for women in the in-recovery group (26.3%) when compared to women in the control group (8.7%), $X^2(1, n = 48) = 10.08$, $p < .01$. There were no statistically significant group differences on the SDMs characterized by any of the other themes.

Relationships between self-defining memory characteristics and clinical variables. The correlations between SDM characteristics (memory age, specificity, integration, negative and positive affect, and whether they told others) were also examined for each of the three groups (see Tables 4-6, 4-7, and 4-8). For women in the in-recovery group, there was a negative correlation between the number of integrative statements made in the SDMs and the amount of negative emotionality reported at time of recall, $r(27) = -.56$, $p < .01$. A negative correlation was also found between how often the women in the in-recovery group told others about their SDMs and the specificity of the SDMs that they reported, $r(28) = -.38$, $p < .05$. In addition, a positive correlation was found between the age of the memory and the amount of negative affect reported at the time of recall, $r(28) = .38$, $p < .05$. For women in the recovered group, a positive correlation was found between how often these women would tell others about their SDMs and the amount of positive emotionality they reported at the time of recalling their SDMs, $r(28) = .68$, $p < .001$.

Table 4-6

Correlations between Self-Defining Memory Characteristics for the In-Recovery Group (n = 27)

	Specificity	Tell Others	Positive Affect	Negative Affect	Integration
Memory Age	-.08	.07	-.15	.38*	-.35
Integration	-.23	-.01	.25	-.56**	
Negative Affect	-.31	.33	-.36		
Positive Affect	.21	-.06			
Tell Others	-.38*				

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

Table 4-7

Correlations between SDM Characteristics for the Recovered Group (n = 28)

	Specificity	Tell Others	Positive Affect	Negative Affect	Integration
Memory Age	-.16	.04	.04	.11	-.28
Integration	-.02	.09	.14	.07	
Negative Affect	-.14	-.30	-.37		
Positive Affect	-.26	.68*			
Tell Others	-.09				

**p < .001*

Table 4-8

Correlations between SDM Characteristics for the Control Group (n = 30)

	Specificity	Tell Others	Positive Affect	Negative Affect	Integration
Memory Age	-.42*	-.33	-.02	.21	-.34
Integration	-.58**	.26	.35	-.37*	
Negative Affect	.37*	-.19	-.27		
Positive Affect	-.14	.41*			
Tell Others	-.24				

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

There were several statistically significant correlations between SDM characteristics in the control group. For example, a negative correlation was found between the number of integrative statements made in their SDMs and the amount of negative emotionality that was reported at their time of recall, $r(30) = -.37$, $p < .05$. Interestingly, negative emotionality had the opposite impact on SDM specificity as there was a positive correlation between the specificity of their SDMs and the amount of negative emotionality that was reported at recall, $r(30) = .37$, $p < .05$. A positive correlation was found between how often the women in the control group told others their SDMs and the amount of positive emotionality reported at recall, $r(30) = .41$, $p < .05$. There were also negative correlations found between how long ago the memory took place and how specific they were, $r(30) = -.42$, $p < .05$, and between the number of integrative statements in the SDMs and their level of specificity, $r(30) = -.58$, $p < .01$

Discussion

The purpose of the present study was to investigate the cognitive/narrative components of the Dialectical Constructivist Theory in order to determine its utility as a guiding framework for understanding the construction of self in AN. Prior to the present study, no studies have attempted to use an integrative theory that combines two of the most common deficits in this disorder, emotional processing and sense of identity. Having a better understanding of the specificity, level of integration, and thematic content of the SDMs increases our understanding of how sense of self is constructed in this population.

The present study contributes further empirical support that women who are currently suffering from AN experience an over-general memory effect when recalling their autobiographical memories. When compared to the recovered and control groups, women in-recovery recalled more general neutral and emotionally cued autobiographical memories. They also displayed a shorter latency time when recalling negatively cued memories. Although it was important to further explore the role of autobiographical memory, it was also important to extend these findings by exploring the role of SDMs. No statistically significant differences on the specificity of the memories between the three groups were found. However, women in-recovery reported SDMs that were less integrated into their identity and associated with more negative emotions than women in control group. This lack of integration and high negative emotionality at recall suggests that women in-recovery are not able to stand back from and reflect on their emotional experiences. Not being able to integrate information from both their internal and external environments prevents these women from constructing new meaning and developing a coherent self-narrative.

Autobiographical Memory and the Over-General Memory Effect

It was hypothesized that there would be differences in the recollection of specific memories related to negative, positive, and neutral cue words for women in-recovery compared to both the recovered and control groups. Looking at the results of the AMT, it was revealed that there was a statistically significant relationship between autobiographical memory specificity and suffering from AN both currently and in the past. Women in-recovery were characterized by a global

overgeneralization of autobiographical memories as both emotionally and neutrally cued memories were found to be more general than those reported by women in the control group. The finding that the neutral cued memories were also impacted is congruent with the findings of Kovacs et al. (2011) and suggests that women in-recovery have a tendency to recall all of their autobiographical memories in a non-specific manner. It was also found that women in-recovery had more general memories to negatively cued words than women in the recovered group. This finding suggests that part of the recovery process involves specifically processing negative autobiographical memories. Furthermore, women in-recovery were also found to have shorter recall latencies for negatively cued memories. The finding of longer latencies for positively cued memories than for negatively cued memories has also been found in individuals suffering from depression (Williams & Broadbent, 1986; Williams & Scott, 1988) and indicates that these individuals are more focused on negative autobiographical memories than memories that are positive or neutral.

According to the Dialectical framework, there is a constant dialectical interaction between the implicit emotional side of our experiences and the more cognitive/narrative side. The finding that women with AN have problems with affect regulation and struggle to recall specific autobiographical memories suggests that the over-general memory effect may be a coping strategy to help these women deal with emotional experiences they cannot regulate. Having a coping strategy may be necessary, as the results of the present study indicate that negative emotional experiences appear to be easily and quickly recalled

suggesting that these women are more focused on their negative emotional experiences (Karwautz et al., 2001). Finding ways to blunt the negative emotionality of these memories may help women with AN to cope with experiences that they cannot regulate in more adaptive ways. However, the use of over-general memory as a possible coping strategy is concerning as it has been found to be associated with impaired problem solving (Evans, Williams, O'Loughlin, & Howells, 1992; Goddard, Dritschel, & Burton, 1996, 1997; Raes et al., 2005; Scott et al., 2000), problems with imagining future events (Williams et al., 1996), and delayed recovery from affective disorders (Brittlebank et al., 1993; Dalgleish et al., 2001; Harvey et al., 1998; Peeters et al., 2002). Furthermore, the findings of the present study suggest that even after recovery, the tendency to report over-general memories is still present. This finding is congruent with previous studies investigating autobiographical memory specificity in individuals who recovered after suffering from an emotional disorder as they also continued to struggle with an over-general memory (Mackinger, Loschin, & Leibetseder, 2000; Mackinger et al., 2000; Williams & Dritschel, 1988).

A surprising finding was that when looking specifically at SDMs, there was no over-general memory effect found for any of the groups. One reason for the difference in memory specificity between the AMT and the SDM task may be that the SDM task asked participants to recall memories that would help others to understand "*how you have come to be the person you currently are*". As such, the task seems to mitigate against finding over-general memories as it is asking participants to identify specific autobiographical memories that they have thought

about and reflected on often when constructing their sense of self. Furthermore, the present study investigated young adult women and research looking specifically into college students' SDMs found that anywhere from 70% to 83% of the memories reported by this population are specific. The high percentage of specific memories reported by individuals in this age group is thought to be due to the increased focus on developing a sense of identity during this time period (Blagov & Singer, 2004; Pillemer, Rhinehart, & White, 1986; Singer & Blagov, 2002; Wood & Conway, 2006).

The Importance of Emotion in Self-Defining Memories

In the present study women in-recovery had more negative emotionality associated with their SDMs than women in the recovered and control groups. Conversely, women who had never had an eating disorder recalled more positive emotions associated with their SDMs. The focus on negative emotionality in women in-recovery is concerning as affect provides a primary self-organizing system. Due to the salience of emotion as a cue, those experiences that evoke negative affects are linked in associative networks with other events that have evoked the same negative affect. The role of emotion then is to bind together related elements in memory in order to evoke the same emotion. According to the Dialectical Constructivist Theory, when individuals recall their autobiographical memories they automatically evoke *emotion schemes* containing emotions, beliefs, and expectations that are associated with that experience, which then influences the processing of current life events. It follows that one of the difficulties with developing a sense of self in AN may be due to the fact that these women are

unable to process and integrate the negative emotions that are evoked by their emotional memories. For example, having a negative emotion like shame triggered in a present situation would then bring into awareness all the other events, beliefs, and expectations in memory that are connected to this emotion scheme and would lead to the activation of a sense of self that is *bad* or *worthless*. Therefore, not being able to synthesize the negative emotions that are associated with their SDMs leads to dysfunctional responses and imbalanced internal representations of the self, other, and the world.

Having a sense of self that is built around negative affective experiences is also problematic as previous studies looking into affect regulation have found that part of emotion regulation is learning to focus memory resources on events that maintain a positive mood (Cartensen & Mikels, 2005). In other words, making meaning of highly negative events by reflecting on what has been learned from these past experiences and how they have impacted one's understanding of the self and the world, leads to feeling less negative about the events in the present. The capacity to change the emotional tone of an experience is thought to be critical for not only maintaining self-esteem, but also for creating a sense of coherence in the self (McAdams, 2001). Even though the women in the control and recovered groups reported negative and traumatic life experiences in their SDMs, they tended to see these events as containing more positive emotion and less negative emotion over time. This finding suggests that part of the recovery process involves reflecting on negative emotional memories not only to work

through negative emotions like shame, but also to develop a less negative and constrained understanding of the self.

Integrating Self-Defining Memories to Construct a Narrative Identity

According to the Dialectical Constructivist Theory, it is crucial to our sense of self that we are able to symbolize and make meaning from emotionally significant life events. The process of constructing meaning involves first attending to and then symbolizing what is occurring in our experience both internally and externally (Greenberg et al., 1993). The next step is to reflect on and explain how past experiences have contributed to different aspects of the self and what can be learned about the self from these experiences (Habermas & Bluck, 2000). In the present study the ability to develop a sense of self from SDMs was found to be impaired in women in-recovery as they were found to use fewer meaning making statements in their memory descriptions. Unlike the findings of the AMT, these results cannot be explained by an inability to recall specific autobiographical memories as the specificity did not differ between the three groups. Additionally, the inability of women in-recovery to integrate their SDMs into their identities was found under conditions where the subjective impact, vividness, clarity, and significance of the retrieved memories were also not different between the three groups. As such, the lack of integration in the in-recovery group cannot be due to differences in how they understood the procedure or in the significance of the memories that they selected to report.

The lack of integration in the SDMs of women in-recovery is concerning as it is known that the ability to develop and maintain a coherent sense of self involves

creating links between one's current sense of self and one's past experiences (e.g. McAdams, 1993; McLean, 2008; McLean & Fournier, 2008). Without the ability to learn about the self and the world from their SDMs, women in-recovery would also have difficulty creating and maintaining a coherent life story. Therefore, being able to process the emotions associated with these memories and developing an understanding of what the individual has learned about the self from the experience is crucial in developing an organized, competent, and coherent sense of self. Without the ability to continually organize the self, these women lose touch of their emotional self. The lack of grounding in the self may help to explain why these women have identities that are highly fused with their eating disorder. Without an internal sense of self, women in-recovery most likely turn to learned social and cultural rules on how they *ought to be* in order to develop a narrative identity as a way to both comprehend and explain their behaviors.

The Self as Relational: Sharing Self-Defining Memories with Others

Another important aspect of the Dialectical Constructivist Theory is that it is developmental. From birth humans are thought to be fundamentally oriented towards interacting with the environment in order to both thrive and grow (Greenberg et al., 1993). The self is continually being constructed through both internal experiences and external interactions with others. As such, the self is continually organizing itself to meet each new situation adaptively by differentiating and integrating these internal and external signals to create new meaning (Greenberg et al., 1993). In other words, affect is not only a core

constitute of the self, but is also fundamentally relational. The relational self (Gilligan, 1982) is continually engaged in a process of dialectically constructing temporary self-organizations in response to situations that individuals may or may not attend to when creating their sense of self (Greenberg et al., 1993).

In order to investigate the relational component of the self, the present study also explored how often the women shared their SDMs with others. Women in-recovery were found to be less likely to tell others about these memories when compared to the healthy control group. One reason for this may be the high proportion of memories reported by the in-recovery group that were associated with the theme of guilt/shame. Having SDMs associated with guilt/shame may lead these women to withhold these experiences from others out of fear of being judged or further shamed. Additionally, due to the need to control food intake and a discomfort with social interactions, individuals with AN tend to withdraw socially from others and therefore would have less memory sharing opportunities. It is important then to help these women to be open with others about their struggles as having some form of social support has been found to be an important factor in the recovery process (Bloks, Van Furth, Callewaert, & Hoek, 2004; Cockell, Zaitsoff, & Geller, 2004; Tozzi, Sullivan, Fear, McKenzie, & Bulik, 2003).

Investigating how often SDMs were shared with others is important as it plays a crucial role in identity development (Thorne, 2000). This is based on the understanding that memory not only has a personal function, but more importantly a social function as it is stored and communicated in a narrative form

(Nelson, 2003). It is when we share our SDMs with others that a sense of self-knowledge and intimacy is developed (McLean & Thorne, 2003; Thorne & McLean, 2002; 2003; Thorne et al., 2004). The opportunity to share personal experiences with others is important as it has been found to influence the ability to make making of these experiences, particularly in situations where self-explanation is supported (McLean, 2005). The finding that women in-recovery are not sharing their SDMs with others also suggests that these women are not able to create a holistic understanding of the self. As the self is constantly being created in a moment-by-moment process, the synthesizing of one's self in the moment is guided not only by our emotional processing, but also by views or beliefs about the self obtained from others (Greenberg et al., 1993).

Identity Rooted in Life-Threatening Events and Guilt/Shame Memories

When investigating the thematic content of the SDMs, it was found that women that were recovered from AN reported fewer life-threatening events than women in-recovery or healthy controls. Furthermore, women in-recovery also recalled fewer recreation/exploration memories and more memories associated with guilt/shame than the control group. The findings for the control group seem to be congruent with previous research exploring category content in undergraduate students' SDMs as it was found that relationship was the most prevalent category, followed by achievement/mastery and then life-threatening events (Blagov & Singer, 2004; Singer et al., 2007). The lower rate of recreation/exploration memories for the recovery group when compared to both the recovered and control groups might be attributable to the fact that this is a

very isolating disorder. As such, social contact for many of these women might have been significantly reduced for many years. Women with AN can also have a personality style that is associated with high stimulus avoidance, high reward dependence, and low novelty seeking which might limit them from seeking out new activities (Strober, 1991).

The finding of a higher proportion of guilt/shame based SDMs in the in-recovery group is congruent with previous research into the experience of shame in eating disorders. For example, it has been found that individuals with eating disorders have higher internalized shame scores than individuals with anxiety and depression (Grabhorn, Stenner, Kaufbold, Overbeck, & Stangier 2005), and that the level of shame associated with eating disorder behaviors was the strongest predictor of eating disorder severity (Burney & Irwin, 2000). It is known that the behaviors that result from eating disorders are associated with feelings of guilt, shame, and embarrassment and lead women to condemn their own inadequacy and hide in shame (Pettersen, Rosenvinge, & Ytterhus, 2008). Therefore, feelings of shame in women with AN are highly problematic as they further aggravate eating disorder behaviors leading to the development of a *shame-shame* cycle (Skarderud, 2007). The results of this study suggest that women in-recovery experience feelings of shame that are deeply rooted into their sense of self.

Having a shame-based sense of self is concerning, as shame is an emotion rooted in the *threat to self* (Gilbert, 1998). It is a self-conscious emotion that involves feeling inferior, bad, inadequate, and/or flawed. These feelings lead to the belief that others are looking down on the self with a condemning or

contemptuous view (Greenberg & Paivio, 1997). In other words, individuals experiencing shame often feel that others want to avoid, reject, or hurt them. As a result, individuals not only become fearful of revealing themselves to others, they also develop a stream of self-attacking thoughts (Gilbert, 1998). Shame is also problematic as it recruits numerous negative and threat based emotions into the experience of the self such as anger, anxiety, and disgust.

It is also often the case that early experiences of being shamed are linked with powerful, hostile, and rejecting others. In these situations, the context of being shamed involves some element of threat and therefore many of our shame experiences are coded in a similar manner as trauma memories. These memories then operate like conditioned emotional memory, meaning that when they are activated they generate a high level of arousal and fear that can interfere with their processing (Gilbert, 1998). The pervasive role of shame in the SDMs of women with AN highlights the importance of both recognizing and understanding the context of these shame-based memories. It is also crucial for practitioners to be aware that the central shame based expression is silence, which may challenge both the therapeutic relationship and the use of interventions (Skarderud, 2007). Shame is thought to be the most damaging when it is hidden and denied (Tangney & Dearing, 2003). Therefore, helping women in-recovery become more aware of these shame-based experiences, the associated emotions, and accessing a stronger experiencing voice may be helpful in developing a sense of self outside of the eating disorder. Exploring feelings of shame would also help in working through

eating disorder related feelings of self-hate, vulnerability, and a sense of being *disgusting* or *too fat.*

According to the Dialectical Constructivist Theory, one maladaptive coping strategy that individuals use to deal with these shame-based feelings is to silence or avoid parts of their self-experience. The result of this process is that women with AN are no longer able to access the emotion schemes that are associated with healthy self-aspects. Being unable to access adaptive emotions limits the actions that are available to these women to get their needs met and prevents the creation of adaptive, flexible, and coherent self-narratives. As the results of the present study indicate, without the ability to develop a coherent self-narrative women with AN end up forming a fragmented self that often involves a harsh and powerful *anorexic voice* and a helpless and powerless *experiencing self*. The extremely harsh *anorexic voice* works to set rules, demands full compliance, and constantly berates the self for not following its impossible standards (Dolhanty & Greenberg, 2007).

As the silenced *experiencing self* is not adequately symbolized, it essentially lacks any voice. The result of this process is that the *anorexic voice* becomes dominant. Therefore, the type of narrative identity that is produced in individuals with AN is much more than a negative view of the self, others, and the world. Instead, it encompasses an evocation of powerlessness and an overwhelming shame-based experience (Greenberg & Watson, 2006). As was indicated by the results of the present study, the sense of self in women in-recovery is dominated by a shame-based narrative. It appears that these women are unable to access

alternative aspects of the self on which to base their identity. As a result, one of the most critical therapeutic tasks may be assisting these individuals to better tolerate and regulate their emotions (Greenberg & Safran, 1989; Gutwill & Gitter, 1994; Kearney-Cooke & Striegel-Moore, 1994), as this leads to a restoration in the spontaneity of the self and assists the transformation of one's maladaptive self-organization (Greenberg & Watson, 2006).

Limitations and Direction for Future Research

Several limitations should be considered in interpreting the present findings. First, the sample was composed predominately of young women with high levels of education with all the participants in the control group being recruited from a university setting. Only recruiting participants in the control group from a university setting did lead to age differences between the groups. However, age differences were also due to the inclusion of participants that had either experienced AN in the past or were still struggling to recover. Allowing women who were in various stages of recovery to participate in this study contributed to the generalizability of the findings and increased our understanding of the recovery process.

Another limitation was that participants were asked to recall five SDMs and therefore it is likely that there were numerous important life events or experiences that may have been left out. Additionally, participants were asked to provide written descriptions of these memories. Although this is a common method for investigating SDMs, it is possible that having to write out these memories was challenging for some of the women in the in-recovery group, as they are more

prone to fatigue. As a result, there may have been important details left out or a more general tone used particularly on the memories reported at the end of the research session. Future research could overcome this limitation by having participants verbally report their memories.

In addition, the present study also only explored spontaneous meaning making in the SDMs. Due to the written format, the researcher was not able to explicitly cue participants after they had failed to provide an integrative memory as to whether they had learned something about themselves or others from the memories they reported. Therefore, future studies may want to look at cueing meaning making statements after the participant has failed to produce spontaneous insights from their memories. Cueing meaning making would help in determining whether the difficulty is in integrating memories or if it is related to a tendency to report the facts of an event rather than the personal meaning of it.

It may also be fruitful to investigate how specific life experiences (e.g., graduating university, having a child, getting married) impact the narrative identity of women who are in-recovery or recovered. It could then be determined whether these important life experiences contribute to the development of a sense of self or if these women come to rely more heavily on identifying with their eating disorder during significant periods of transition. It would also be beneficial for future research to look at including a group of participants who are suffering from diagnosed mood disorders and also to investigate other types of eating disorders as comparison groups to see if the themes and characteristics of the memories are specific to AN. A necessary next step would also involve

investigating autobiographical memory and SDMs from a longitudinal perspective. Longitudinal studies would allow for the examination of which of the women in the in-recovery phase proceed to full recovery, which women remain in this phase, and which end up relapsing and how autobiographical memory and narrative identity are connected to any of these outcomes.

Conclusion

The objective of this study was to use the Dialectical Constructivist Theory as a guiding framework for investigating difficulties in the construction of self in AN. This study focused on the cognitive/narrative components of the theory by investigating the autobiographical and self-defining memories of women in-recovery and recovered from this disorder. Women in-recovery were found to have an over-general memory effect when recalling emotionally or neutrally cued autobiographical memories. Furthermore, they were more likely to have SDMs associated with negative emotionality and themes of guilt/shame than women who are recovered from AN or healthy controls. The results of this study also indicated that the emotionally significant memories of women in-recovery were not reflected on or explored in order to obtain a better understanding of the self or the world. Without the ability to reflect on and make meaning of past emotional memories, these women are left with the overwhelming unprocessed negative emotions associated with them. It appears then that women with AN are unable to function in an integrated manner as there is no way to ground their sense of self in their emotional experiences. Therefore, becoming more aware of their emotional experiences and learning to make meaning from these experiences in more

effective ways is crucial to the recovery process. Overall, the Dialectical Constructivist Theory appears to offer an empirically supported framework for understanding the construction of self in AN and can further inform our understanding and treatment of this life-threatening disorder.

References

Addis, D. R. & Tippett, L. J. (2008). The contributions of autobiographical memory to the content and continuity of self: a social-cognitive neuroscience approach. In F. Sani (Ed.), *Self-continuity: Individual and collective perspectives* (pp. 71-84). New York: Psychology Press. Retrieved from http://www.memorylab.org/Files/Addis_Tippett_proofs_2008.pdf

Allport, G. W. (1955). *Becoming: Basic considerations for a psychology of personality*. New Haven: Yale University Press.

American Psychological Association. (2000). *Diagnostic and statistical manual of mental disorders fourth edition – text revision (DSM-IV-TR*). Washington, DC: Author.

Antony, M. M., Bieling, P. J., Cox, B. J., Enns, M. W., & Swinson, R. P. (1998). Psychometric properties of the 42-item and 21-item versions of the Depression Anxiety Stress Scales in clinical groups and a community sample. *Psychological Assessment, 10*, 176-181.

Ballard, R. (1992). Short forms of the Marlowe-Crowne Social Desirability Scale. *Psychological Reports, 71,* 1155-1160. doi: 10.2466/PR0.71.8.1155-1160

Baumeister, R. F. (1987). How the self became a problem: A psychological review of historical research. *Journal of Personality and Social Psychology, 52,* 163–176. Retrieved from http://persweb.wabash.edu/facstaff/hortonr/articles%20for%20class/Baumeister%20self%20as%20problem.pdf

Beck, A. T., Rush, A. J., Shaw, B. F., & Emery, G. (1979). *Cognitive therapy of depression: A treatment manual.* New York: Guilford Press.

Beck, A. T., & Steers, R. A. (1990). *Manual for the Beck Anxiety Inventory*. San Antonio, TX: Psychological Corporation.

Becker-Stoll, F., & Gerlinghoff, M. (2004). The impact of a four-month day treatment program on alexithymia in eating disorders. *European Eating Disorders Review, 12,* 159-163. doi: 10.1002/erv.566

Beike, D. R., Lampien, J. M., & Behrand, D. A. (2004). *The self and memory.* New York: Psychology Press.

Berna, F., Bennouna-Greene, M., Potheegadoo, J., Verry, P., Conway, M. A., & Danion, J. M. (2011). Impaired ability to give a meaning to personally significant events in patients with schizophrenia. *Consciousness and Cognition, 20,* 703–711. doi: http://dx.doi.org/10.1016/j.concog.2010.12.004

Bers, S. A., Blatt, S. J., & Dolinsky, A. (2004). The sense of self in anorexia – nervosa patients: A psychoanalytically informed method for studying self-representation. *The Psychoanalytic Study of the Child, 59,* 294–315. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/16240616

Birren, J. E., & Schroots, J. J. F. (2006). Autobiographical memory and the narrative self over the life span. In J. E. Birren & K. W. Schaie (Eds.), *Handbook of the psychology of aging*, (pp. 477-498). San Diego, CA: Academic Press.

Blaney, P.H. (1986). Affect and memory: A review. *Psychological Bulletin, 99,* 229–246. doi: 10.1037/0033-2909.99.2.229

Blagov, P. S., & Singer, J. A. (2004). Four dimensions of self-defining memories (specificity, meaning, content, and affect) and their relationships to self-restraint, distress, and repressive defensiveness. *Journal of Personality, 72,* 481–511. doi: 10.1111/j.0022-3506.2004.00270.x

Bloks, H., Van Furth, E. F., Callewaert, I., & Hoek, H. W. (2004). Coping strategies and recovery in patients with a severe eating disorder. *Eating Disorders,* 12, 157-169. doi: 10.1080/10640260490445131

Brittlebank, A. D., Scott, J., Williams, J. M. G. & Ferrier, I. N. (1993). Autobiographical memory in depression: state or trait marker? *British Journal of Psychiatry,* 162, 118–121. doi: 10.1192/bjp.162.1.118

Bruch, H. (1973). *Eating disorder: Obesity, anorexia nervosa, and the person within.* NY: Basic Books.

Bruch, H. (1979). *The golden cage: The enigma of anorexia nervosa*. Cambridge, Mass: Harvard University Press.

Bruch, H. (1982). Anorexia nervosa: Therapy and theory. *American Journal of Psychiatry, 139,* 187– 94.

Bryant, R. A., Sutherland, K., & Guthrie, R. M. (2007). Impaired specific autobiographical memory as a risk factor for posttraumatic stress after trauma. *Journal of Abnormal Psychology, 116,* 837-841. doi: 10.1037/0021-843X.116.4.837

Burney, J. & Irwin, H. J. (2000). Shame and guilt in women with eating-disorder symptomatology. *Journal of Clinical Psychology*, *56*, 51–61. doi: 0.1002/(SICI)1097-4679(200001)56:1<51::AID-JCLP5>3.0.CO;2-W

Bydlowski, S., Corcos, M., Jeammet, P., Paterniti, S., Berthoz, S., Luarier, C., et al. (2005). Emotion-processing deficits in eating disorders. *International Journal of Eating Disorders, 37,* 321-329. doi: 10.1002/eat.20132

Carter, F. A., Bulik, C. M., McIntosh, V. V., & Joyce, P. R. 119 (2000). Changes on the Stroop test following treatment: Relation to word type, treatment condition, and treatment outcome among women with bulimia nervosa. *International Journal of Eating Disorders*, *28*, 349–355. doi: 10.1002/1098-108X(200012)28:4<349::AID-EAT1>3.0.CO;2-A

Cockell, S., Zaitsoff, S., & Geller, J. (2004). Maintaining Change Following Eating Disorder Treatment. *Professional Psychology Research and Practice, 35,* 527-534. doi: 10.1037/0735-7028.35.5.527

Cohen, G. (1998). The effects of aging on autobiographical memory. In C. P. Thompson, D. J. Herrmann, D. Bruce, J. D. Read, D. G. Payne, & M. P. Toglia (Eds.), *Autobiographical memory: Theoretical and applied perspectives*. Mahwah, NJ: Erlbaum.

Conway, M. A. (2005). Memory and the self. *Journal of Memory and Language, 53*, 594-628. doi: 10.1016/j.jml.2005.08.005

Conway, M. A., Meares, K., & Standart, S. (2004). Images and goals. *Memory, 12,* 525-531. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/15487548

Conway, M., & Pleydell-Pearce, C. (2000). The construction of autobiographical memories in the self-memory system. *Psychological Review, 107,* 261–288. doi: 10.1037//0033.295x.1072.261

Crowne, D. P., & Marlowe, D. (1960). A new scale of social desirability independent of psychopathology. *Journal of Consulting Psychology, 24,* 349-354. doi: 10.1037/h0047358.

Crowne, D. P., & Marlowe, D. (1964), *The Approval Motive.* New York: John Wiley & Sons.

Dalgleish, T., Spinks, H., Yiend, J., & Kuyken, W. (2001). Autobiographical memory style in seasonal affective disorder and its relationship to future symptom remission. *Journal of Abnormal Psychology, 110,* 335–340. doi: 10.1037//0021-843X.110.2.335

Dalgleish, T., Taghavi, R., Neshat-Doost, H., Moradi, A., Canterbury, R., & Yule, W. (2003). Differences in patterns of processing bias for emotional information across disorders: An investigation of attention, memory and prospective cognition in children and adolescents with depression, generalized anxiety and Posttraumatic Stress Disorder (PTSD). *Journal of Clinical Child and Adolescent Psychology, 32*, 10-21. Retrieved from http://www.mrc-cbu.cam.ac.uk/research/emotion/cemhp/documents/JCCP_dalgleish_et_al.pdf

Dalgleish, T., Tchanturia, K., Serpell, L., Hems, S., Yend, J., De Silva, P., et al. (2003). Self-reported parental abuse related to autobiographical memory style in patients with eating disorders. *Emotion, 3,* 211–222. Retrieved from http://www.mrc-cbu.cam.ac.uk/research/emotion/cemhp/documents/dalgleish_et_al_amt_ed_emotion.pdf

Davidson, E. J., & Wright, P. (2002). Selective processing of weight- and shape-related words in bulimia nervosa: Use of a computerised Stroop test. *Eating Behaviors, 3,* 261-273. doi: http://dx.doi.org/10.1016/S1471-0153(02)00064-8

Davis, C., & Cowles, M. (1989). A comparison of weight and diet concerns and personality factors among female athletes and non-athletes. *Journal of Psychosomatic Research, 33,* 527–536. doi: 10.1016/0022-3999(89)90060-3

De Decker, A., Hermans, D., Raes, F., & Eelen, P. (2003). Autobiographical memory specificity and trauma in inpatient adolescents. *Journal of Clinical Child and Adolescent Psychology, 32,* 22-31. doi: 10.1207/S15374424JCCP3201_03

Dolhanty, J., & Greenberg, L. S. (2007). Emotion-focused therapy in the treatment of eating disorders. *European Psychotherapy, 7,* 97-116. Retrieved from http://cip-medien.com/media/download_gallery/EP/2007/06_EP_Vol7_2007-Eating_DolhantyK2.pdf

Epstein, S. (1973). The self-concept revisited: Or a theory of a theory. *American Psychologist, 28,* 404–414. Retrieved from http://www.humsci.auburn.edu/classes/hdfs8040/Readings/epstein_1973.pdf

Evans, J., Williams, J. M. G., O'Loughlin, S., & Howells, K. (1992). Autobiographical memory and problem-solving strategies of parasuicide patients. *Psychological Medicine, 22,* 399-405. doi: http://dx.doi.org/10.1017/S0033291700030348

Fisher, G. (1967). Normative and reliability data for the standard and the cross-validated Marlowe-Crowne Social Desirability Scale. *Psychological Reports, 20,* 174-174. doi: 10.2466/pr0.1967.20.1.174

Garrow, J. S., & Webster, J. (1985). Quetelets index (weight/height2) as a measure of fatness. *International Journal of Obesity, 9,* 147-153. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/4030199

Gilbert, P. (1998). What is shame? Some core issues and controversies. In P. Gilbert, & B. Andrews (Eds.), *Shame: Interpersonal behavior, psychopathology and culture* (pp. 3–36). NY: Oxford University Press.

Gilligan, S. G. (1982). The Ericksonian approach to clinical hypnosis. In J. Zeig (Ed.), *Ericksonian approaches to hypnosis and psychotherapy. New* York: Brunner/Mazel.

Goddard, L., Dritschel, B. & Burton, A. (1996). Role of autobiographical memory in social problem solving and depression. *Journal of Abnormal Psychology, 105,* 609–616. doi: 10.1037/0021-843X.105.4.609

Goddard, L., Dritschel, B., & Burton, A. (1997). Social problem-solving and autobiographical memory in non-clinical depression. *British Journal of Clinical Psychology, 36,* 449-451. doi: 10.1111/j.2044-8260.1997.tb01252.x

Goldner, E. M., Cockell, S. J., & Srikameswaran, S. (2002). Perfectionism and eating disorders. In G. L. Flett & P. L. Hewitt (Eds*.), Perfectionism: Theory, research, and treatment* (pp. 319-340). Washington, DC: American Psychological Association. doi: 10.1037/10458-013

Gordon, C., & Gergen, K. J. (1968). *The self in social interaction*. NY: Wiley.

Grabhorn, R., Stenner, H., Kaufbold, J., Overbeck, G. & Stangier, U. (2005). Shame and social anxiety in anorexia and bulimia nervosa. *Zeitschrift Für Psychosomatische Medizin Und Psychotherapie*, *51*, 179–193. doi: 10.1002/cpp.463

Greenberg, L. S., & Angus, L. E. (2004). The contributions of emotion processes to narrative change in psychotherapy: A dialectical constructivist approach. In L. E. Angus & J. McLeod (Eds.), *The Handbook of narrative and psychotherapy: Practice, theory, and research (*pp. 331 – 350). Thousand Oaks, CA: Sage.

Greenberg, L., Auszra, L., & Herrmann, I. R. (2007). The relationship among emotional productivity, emotional arousal and outcome in experiential therapy of depression. *Psychotherapy Research, 17,* 482-493. doi: 10.1080/10503300600977800

Greenberg, L. S., & Paivio, S. (1997). *Working with emotion in psychotherapy.* New York: Guilford Press.

Greenberg, L. S., & Pascual-Leone, J. (1995). A dialectical constructivist approach to experiential change. In R. A. Neimeyer & M. J. Mahoney (Eds.), *Constructivism in psychotherapy* (pp. 169–194). Washington, DC: American Psychological Association.

Greenberg, L. S., & Pascual-Leone, J. (2001). A dialectical constructivist view of the creation of personal meaning. *Journal of Constructivist Psychology, 14,* 165–186. doi:

10.1080/10720530125970

Greenberg, L. S., Rice, L. N., & Elliott, R. (1993). *Facilitating emotional change: The moment-by-moment process.* New York: Guilford Press.

Greenberg, L. S., & Safran, J. D. (1989). Emotion in psychotherapy. *American Psychologist, 44,* 19–29. doi: 10.1037/0003-066X.44.1.19

Greenberg, L. S. & Watson, J. C. (2006). *Emotion-focused therapy for depression*. Washington, DC: American Psychological Association. doi: 10.1037/11286-000

Guidano, V. F. (1991*). The self in process.* NY: Guilford.

Guidano, V. F. (1995). Self-observation in constructivist therapy. In R. A. Neimeyer & M. J. Mahoney (Eds.), *Constructivism in psychotherapy* (pp. 155–168). Washington, DC: American Psychological Association.

Gutwill, S., & Gitter, A. (1994). Eating problems and sexual abuse: Treatment considerations. In C. Bloom, A. Gitter, S. Gutwill, L. Ogle, & L. Zaphiropoulos (Eds.), *Eating problems: A feminist psychoanalytic treatment model.* NY: Basic Books.

Habermas, T., & Bluck, S. (2000). Getting a life: The emergence of the life story in adolescence. *Psychological Bulletin, 126*, 748–769. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/10989622

Habermas, T., & Paha, C. (2001). The development of coherence in adolescents' life narratives. *Narrative Inquiry, 11,* 35-54. doi: http://dx.doi.org/10.1075/ni.11.1.02hab

Harvey, A. G., Bryant, R. A., & Dang, S. T. (1998). Autobiographical memory in acute stress disorder. *Journal of Consulting and Clinical Psychology, 66,* 500-506. doi: 10.1037/0022-006X.66.3.500

Henry, J. D., & Crawford, J. R. (2005). The short-form version of the Depression Anxiety Stress Scales (DASS-21): Construct validity and normative data in a large non-clinical sample. *British Journal of Clinical Psychology, 44*, 227-239. Retrieved from http://homepages.abdn.ac.uk/j.crawford/pages/dept/pdfs/BJCP_2005_DASS21.pdf

Hornbacher, M. (1998). *Wasted: A memoir of anorexia and bulimia*. NY: Harper Perennial.

Hunt, J., & Cooper, M. (2001). Selective memory bias in women with bulimia nervosa and women with depression. *Behavioural and Cognitive Psychotherapy, 29,* 93-102. doi: http://dx.doi.org/10.1017/S1352465801001102

James, W. (2007). *The principles of psychology*. Retrieved from psychclassics.yorku.ca.James/Principles/index.htm (Original work published 1890).

Jansari, A. J., & Parkin, A. J. (1996). Things that go bump in your life: Explaining the reminiscence bump in autobiographical memory. *Psychology and Aging, 11,* 85-91. doi:10.1037/0882-7974.11.1.85

Karwautz, A., Rabe-Hesketh, S., Hu, Z., Zhao, J., Sham, P., Collier, D. A., et al. (2001). Individual-specific risk factors for anorexia nervosa: a pilot study

using a discordant sister-pair design. *Psychological Medicine, 31,* 317-329. Retrieved from http://www.univie.ac.at/essstoerungen/riskpaperkarwautz2001.pdf

Kearney-Cooke, A., & Striegel-Moore, R. (1994). The etiology and treatment of body image disturbance. In D. M. Garner & P. E. Garfinkel (Eds.), *Handbook of treatment for eating disorders* (2nd ed., pp. 295–306). NY: Guilford.

Kleim, B., & Ehlers, A. (2008). Reduced autobiographical memory specificity predicts depression and posttraumatic stress disorder after recent trauma. *Journal of Consulting and Clinical Psychology, 76,* 2, 231-242. doi: 10.1037/0022-006X.76.2.231

Kolodner, J. L. (1983). Reconstructive memory: A computer model. *Cognitive Science, 7,* 281–328. doi: http://dx.doi.org/10.1016/S0364-0213(83)80002-0

Kraemer, H. C., Berkowitz, R. I. & Hammer, L. D. (1990). Methodological difficulties in studies of obesity I: Measurement issues. *Annals of Behavioral Medicine, 12,* 112-118. doi: 10.1207/s15324796abm1203_3

Kovacs, T., Szabó, P., & Pászthy, B. (2011). Reduced specificity of autobiographical memory in anorexia nervosa. *Journal of Cognitive and Behavioral Psychotherapies, 11,* 56-66.

Kuyken, W., & Dalgleish, T. (1995). Autobiographical memory and depression. *British Journal of Clinical Psychology, 33,* 89-92. doi: 10.1111/j.2044-8260.1995.tb01441.x

Laberg, S., & Andersson, G. (2004). Autobiographical memory in patients treated for bulimia nervosa. *European Eating Disorder Review, 12,* 34-41. doi: http://dx.doi.org/10.1002/erv.534

Loo, R., & Loewen, P. (2004). Confirmatory factor analyses of scores from full and short versions of the Marlowe-Crowne Social Desirability Scale. *Journal of Applied Social Psychology, 34,* 2343-2352. doi: 10.1111/j.1559-1816.2004.tb01980.x

Lovibond, S. H., & Lovibond, P. F. (1995). *Manual for the Depression Anxiety Stress Scales.* Sydney, Australia: Psychology Foundation.

Mackinger, H. F., Loschin, G. G., & Leibetseder, M. M. (2000). Prediction of postnatal affective changes by autobiographical memories. *European Psychologist, 5*, 52-61. doi: 10.1027//1016-9040.5.1.52

Mackinger, H. F., Pachinger, M. M., Leibetseder, M. M., & Fartacek, R. R. (2000). Autobiographical memories in women remitted from major depression. *Journal of Abnormal Psychology, 109,* 331-334. doi: 10.1037/0021-843X.109.2.331

Mahoney, M. (1991). *Human change processes.* NY: Basic Books.

McAdams, D. P. (1993). *The stories we live by: Personal myths and the making of the self.* New York: Morrow.

McAdams, D. P. (1996). Personality, modernity, and the storied self: A contemporary framework for studying persons. *Psychological Inquiry, 7,* 295–321. Retrieved from

http://www.sesp.northwestern.edu/docs/publications/1827729675490a414cbe4e8.pdf

McAdams, D. P. (2001). The psychology of life stories. *Review of General Psychology,* *5,* 100–122. Retrieved on http://www.sesp.northwestern.edu/docs/publications/430816076490a3ddfc3fe1.pdf

McAdams, D. P. (2006). The redemptive self: Generativity and the stories Americans live by. *Research in Human Development, 3,* 81-100. Retrieved from http://www.redemptiveself.northwestern.edu/docs/publications/954596231490a0bf9677c7.pdf

McAdams D. P., Reynolds, J., Lewis, M., Patten, A. H., & Bowman, P. J. (2001). When bad things turn good and good things turn bad: Sequences of redemption and contamination in life narrative and their relation to psychosocial adaptation in midlife adults and in students. *Personality & Social Psychology Bulletin, 27,* 474-485. doi:10.1177/0146167201274008

McLean, K. C. (2005). Late adolescent identity development: Narrative meaning-making and memory telling. *Developmental Psychology, 41,* 683– 691. doi: 10.1037/0012-1649.41.4.683

McLean, K. C. (2008). Stories of the young and the old: Personal continuity and narrative identity. *Developmental Psychology, 44,* 254-264. doi: 10.1037/0012-1649.44.1.254

McLean, K. C., & Fournier, M. (2008). The content and processes of autobiographical reasoning in narrative identity. *Journal of Research in Personality, 42*, 527-545. Doi: 10.1016/j.jrp.2007.08.003

McLean, K. C., & Thorne, A. (2003). Late adolescents' self-defining memories about relationships. *Developmental Psychology, 39,* 635–645. Retrieved from http://www.self-definingmemories.com/McLean___Thorne__2003.pdf

Moffitt, K. H., & Singer, J. A. (1994). Continuity in the life story: Self-defining memories, affect, and approach/avoidance personal strivings. *Journal of Personality, 62,* 21–43. doi: 10.1111/j.1467-6494.1994.tb00793.x

Moffitt, K. H., Singer, J. A., Nelligan, D. W., Carlson, M. A., & Vyse, S. A. (1994). Depression and memory narrative type. *Journal of Abnormal Psychology, 103,* 581-583. Retrieved from http://www.self-definingmemories.com/Moffitt__Singer__Nelligan__Carlson____Vyse__1994.pdf

Murphy, G. (1947*). Personality: A biosocial approach to origins and structure*. NY: Harper & Row.

Nandrino, J. L., Doba, K., Lesne, A., Christophe, V., & Pezard, L. (2006). Autobiographical memory deficit in anorexia nervosa: Emotion regulation and effect of duration of illness. *Journal of Psychosomatic Research, 61,* 537–543. Retrieved from http://www.lptl.jussieu.fr/user/lesne/JPsychosomaticRes.pdf

Neimeyer, R. A. (1995). An invitation to constructivist psychotherapies. In R. A. Neimeyer & M. J. Mahoney (Eds.), *Constructivism in psychotherapy* (pp. 1-8). Washington, DC: American Psychological Association.

Nelson, K. (2003). Narrative and self, myth and memory: Emergence of the cultural self.

In R. Fivush & C. A. Haden (Eds.), *Autobiographical memory and the construction of a narrative self: Developmental and cultural perspectives* (pp. 3-28). Mahwah, NJ: Lawrence Erlbaum.

Paivio, S. C. & Pascual-Leone, A. (2010). *Emotion-focused therapy for complex trauma: An integrative approach.* Washington, DC: American Psychological Association. doi: 10.1037/12077-000

Pascual-Leone, J. (1978). Computational models for metasubjective processes. *Behavioral and Brain Sciences, 1,* 112-113. doi:10.1017/S0140525X00059999

Pascual-Leone, J. (1980). Constructivist problems for construct theories: The current relevance of Piaget's work and a critique of information-processing simulation psychology. In R. Kluwe & H. Spade (Eds.), *Developmental models of thinking* (pp. 263-296). NY: Academic Press.

Pascual-Leone, J. (1983). Growing into human maturity: Towards a metasubjective theory of adulthood stages. In P. B. Baltes & O. G. Brim (Eds.), *Life span development and behavior,* Vol. 5 (pp. 117-156). New York: Academic Press.

Pascual-Leone, J. (1987). Organismic processes for neo-Piagetian theories: A dialectical causal account of cognitive development. *International Journal of Psychology, 22,* 531–570. doi: 10.1080/00207598708246795

Pascual-Leone, J. (1990a). An essay on wisdom: Towards organismic processes that make it possible. In R. J. Sternberg (Eds.), *Wisdom: Its nature, origin and development* (pp. 244-278). New York: Cambridge University Press.

Pascual-Leone, J. (1990b). Reflections on life-span intelligence, consciousness, and ego development. In C. Alexander & E. Langer (Eds.), *Higher states of human development: Perspectives on adult growth* (pp. 258–285). NY: Oxford University Press.

Pascual-Leone, J. (1991). Emotions, development, and psychotherapy: A dialectical-constructivist perspective. In J. D. Safran & L. S. Greenberg (Eds.), *Emotion, psychotherapy, and change* (pp. 302–335). NY: Guilford.

Paulhus, D. L. (1984). Two-component models of socially desirable responding. *Journal of Personality and Social Psychology*, 46, 598-609. doi: 10.1037/0022-3514.46.3.598

Peeters, F., Wessel, I., Merchkelback, H., & Boom-Vermeeren, M. (2002). Autobiographical memory specificity and the course of major depressive disorder. *Comprehensive Psychiatry, 43,* 344-350. Retrieved from http://arno.unimaas.nl/show.cgi?fid=2441

Pettersen, G., Rosenvinge, J. H. & Ytterhus, B. (2008). The 'double life' of bulimia: Patients' experiences in daily life interactions. *Eating Disorders Review*, *16*, 204–211. doi: 10.1080/10640260802016696

Pillemer, D. B. (1998). *Momentous events, vivid memories.* Cambridge, MA: Harvard University Press.

Pillemer, D. B., Rhinehart, E. D., & White, S. H. (1986). Memories of life transitions: The first year in college. *Human Learning, 5,* 109-123.

Polivy, J., & Herman, C. P. (2002). Causes of eating-disorders. *Annual Review of Psychology, 53,* 187–213. doi: 10.1146/annurev.psych.53.100901.135103

Raes, F., Hermans, D., de Decker, A., Eelen, P., Williams, J., & Mark, G. (2003). Autobiographical memory specificity and affect regulation: An experimental approach. *Emotion, 3,* 201-206. Retrieved on https://lirias.kuleuven.be/bitstream/123456789/114593/1/91.pdf

Raes, F., Hermans, D., Williams, J. M. G., Beyers, W., Brunfaut, E., & Eelen, P. (2006). Reduced autobiographical memory specificity and rumination in predicting the course of depression. *Journal of Abnormal Psychology, 115,* 699-704. doi: 10.1037/0021-843X.115.4.699

Raes, F., Hermans, D., Williams, J. M. G., Demyttenaere, K., Sabbe, B., Pieters, G., et al. (2005). Reduced specificity of autobiographical memory: A mediator between rumination and ineffective social problem-solving in major depression? *Journal of Affective Disorders, 87,* 331–335. doi: http://dx.doi.org/10.1016/j.jad.2005.05.004

Raffard, S., D'Argembeau, A., Lardi, C., Bayard, S., Boulenger, J., & Van Der Linden, M. (2009). Exploring self-defining memories in schizophrenia. *Memory, 17,* 26-38. Retrieved from http://www.self-definingmemories.com/Raffard__D_Argembeau__Lardi__Bayard__Boulenger____Van_der_Linden__2009.pdf

Robinson, J. A., & Taylor, L. R. (1998). Autobiographical memory and self-narratives: A tale of two stories. In C. P. Thompson, D. J. Herrmann, D. Bruce, J. D. Read, & D. G. Payne (Eds.), *Autobiographical memory: Theoretical and applied perspectives* (pp.125-144). Mahwah, NJ: Psychology Press.

Schlenker, B. R. (1985). *The self and social life*. NY: McGraw-Hill College.

Scott, J., Stanton, B., Garland, A., & Ferrier, I. N. (2000). Cognitive vulnerabilities in patients with bipolar disorder. *Psychological Medicine, 30*, 467-472. doi: http://dx.doi.org/

Sedikides, C. & Spencer, S. (2007). *Frontiers in social psychology: The self*. NY: Psychology Press.

Singer, J. A. (2004). Narrative identity and meaning-making across the adult lifespan: An introduction to a special section of the Journal of Personality. *Journal of Personality, 72,* 437-459. Retrieved from http://www.self-definingmemories.com/Singer__2004.pdf

Singer, J. A., & Blagov, P. S. (2000-2001). *Classification system and scoring manual for self-defining autobiographical memories.* Unpublished manuscript, Connecticut College, New London.

Singer, J. A. & Blagov, P. S. (2002). *Classification system and scoring manual for self-defining autobiographical memories: A scoring manual.* Unpublished manuscript, Department of Psychology, Connecticut College, New London.

Singer, J. A., & Moffitt, K. H. (1991-1992). An experimental investigation of specificity and generality in memory narratives. *Imagination, Cognition and Personality, 11,* 233-257. doi: 10.2190/72A3-8UPY-GDB9-GX9K

Singer, J. A., Rexhaj, B., & Baddeley, J. (2007). Older, wiser, and happier? Comparing older adults' and college students' self-defining memories. *Memory, 15,* 886–898. Retrieved from http://www.selfdefiningmemories.com/Singer__Rexhaj____Baddeley__2007.pdf

Singer, J. A., & Salovey, P. (1993). *The remembered self: Emotion and memory in personality.* NY: Free Press.

Singer, J. A., & Salovey, P. (1996). Motivated memory: Self-defining memories, goals, and affect regulation. In L. L. Martin & A Tesser (Eds.), *Striving and feeling: Interactions among goals, affect, and self- regulation* (pp. 229–250). Mahwah, NJ: Erlbaum.

Skarderud, F. (2007). Shame and pride in anorexia nervosa: A qualitative descriptive study. *European Eating Disorders Review, 15,* 81-97.

Speilberger, C. D. (1983). *Manual for the State-Trait Anxiety Inventory STAI (Form Y).* Palo Alto, CA: Consulting Psychologists Press.

Stice, E., Agras, W. S., & Hammer, L. D. (1999). Risk factors for the emergence of childhood eating disturbance: A five-year prospective study. *International Journal of Eating Disorders, 25,* 375-387. doi: 10.1002/(SICI)1098-108X(199905)25:4<375::AID-EAT2>3.0.CO;2-K

Stice, E., & Ragan, J. (2002). A preliminary controlled evaluation of an eating disturbance psychoeducational intervention for college students. *International Journal of Eating Disorders, 31,* 159-171. Retrieved from

http://homepage.psy.utexas.edu/homepage/group/sticelab/scales/Images/SticeRagan02.pdf

Stice, E., Telch, C. F., & Rizvi, S. L. (2000). Development and validation of the Eating Disorder Diagnostic Scale: A brief self-report measure of anorexia, bulimia, and binge-eating disorder. *Psychological Assessment, 12,* 123–131. doi: 10.1037//1040-3590.12.2.123

Strauman, T. J., Vookles, J., Berenstein, V., Chaiken, S., & Higgins, E. T. (1991). Self discrepancies and vulnerability to body dissatisfaction and disordered eating. *Journal of Personality and Social Psychology, 61,* 946–956. Retrieved from http://persweb.wabash.edu/facstaff/hortonr/articles%20for%20class/straumanndisc.pdf

Stein, K.F., & Corte, C. (2007). Identity impairment and the eating disorders: Content and organization of the self- concept in women with anorexia nervosa and bulimia nervosa. *European Eating Disorders Review, 15*, 58-69. Retrieved from http://deepblue.lib.umich.edu/bitstream/2027.42/55904/1/726_ftp.pdf

Strober, M. (1991). Disorders of the self in anorexia nervosa: An organismic-developmental paradigm. In C. Johnson (Ed.), *Psychodynamic treatment for anorexia nervosa and bulimia* (pp. 354-373). New York: Guilford Press.

Sutherland, K., & Bryant, R. A. (2005). Autobiographical memory and the self-memory system in posttraumatic stress disorder. *Journal of Anxiety Disorders, 22,* 555–560. doi: http://dx.doi.org/10.1016/j.janxdis.2007.03.008

Sutin, A. R., & Robins, R. W. (2005). Continuity and correlates of emotions and motives in self-defining memories. *Journal of Personality, 73,* 79–824. Retrieved from http://www.selfdefiningmemories.com/Sutin___Robins__2005.pdf

Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th Edition). Boston: Allyn and Bacon.

Tanaka-Matsumi, J., & Kameoka, V. A. (1986). Reliabilities and concurrent validities of popular self-report measures of depression, anxiety, and social desirability. *Journal of Consulting and Clinical Psychology*, 54, 328-333. doi: 10.1037/0022-006X.54.3.328

Tangney, J. P., & Dearing, R. L. (2003). *Shame and Guilt*. London: Guilford Publications.

Thorne, A. (2000). Personal memory telling and personality development. *Personality and Social Psychology Review*, *4*, 45-56. Retrieved from http://people.ucsc.edu/~avril/PDFs/Pdf.5.pdf

Thorne, A., & McLean, K. C. (2001). *Manual for coding events in self-defining memories.* Unpublished manuscript, University of California, Santa Cruz. Retrieved from http://people.ucsc.edu/~avril/PDFs/Pdf.11..pdf

Thorne, A., & McLean, K. C. (2002). Gendered reminiscence practices and self-definition in late adolescence. *Sex Roles, 46,* 266–277. Retrieved from http://people.ucsc.edu/~avril/PDFs/Pdf.4.pdf

Thorne, A., & McLean, K. C. (2003). Telling traumatic events in adolescence: A study of master narrative positioning. In R. Fivush & C. Haden (Eds.),

Connecting culture and memory: The development of an autobiographical self (pp. 169–185). Mahwah, NJ: Erlbaum.

Thorne, A., McLean, K. C., & Lawrence, A. M. (2004). When remembering is not enough: Reflecting on self-defining memories in late adolescence. *Journal of Personality, 72,* 513–541. Retrieved from http://escholarship.org/uc/item/5kz329k8#page-1

Tozzi, F., Sullivan, P. F., Fear, J. L., McKenzie, J., & Bulik, C. M. (2003). Causes and recovery in anorexia nervosa: The patient's perspective. *International Journal of Eating Disorders, 33,* 143–154. doi: 10.1002/eat.10120

Tulving, E. (2002). Chronesthesia: Awareness of subjective time. In D. T. Stuss & R. C. Knight (Eds.), *Principles of frontal lobe functions* (pp. 311–325). New York: Oxford University Press.

United States Public Health Service. (1988). *The Surgeon General's report on nutrition and health* (DHHS Publication No. 88-50210). Washington, DC: U.S. Government Printing Office.

Vitousek, K. B., & Ewald, L. S. (1993). Self-representation in eating disorders: A cognitive perspective. In Z. V. Segal & S. J. Blatt (Eds.), *The Self in emotional distress: Cognitive & psychodynamic perspectives* (pp. 221 – 257). NY: Guilford.

Watson, J., & Greenberg, L. (1996). Emotion and cognition in experiential therapy: A dialectical-constructivist position. In H. Rosen & K. Kuelwein (Eds.), *Constructing realities: Meaning making perspectives for psychotherapists* (pp. 253–276). San Francisco: Jossey-Bass.

Watson, J., & Rennie, D. (1994). Qualitative analysis of clients' subjective experience of significant moments during exploration of problematic reactions. *Journal of Counselling Psychology, 41,* 500–509. doi: 10.1037/0022-0167.41.4.500

Warren, Z., & Haslam, C. (2007). Overgeneral memory for public and autobiographical events in depression and schizophrenia. *Cognitive Neuropsychiatry, 12,* 301-321. doi: 10.1080/13546800601066142

Whelton, W. J., & Greenberg, L. S. (2001). The self as a singular multiplicity: A process-experiential perspective. In J.C. Muran (Ed.), *Self-relations in the psychotherapy process* (pp. 87-106). Washington, D.C.: APA Press.

Williams, J. M. G. (1996). Autobiographical memory in depression. In D. Rubin (Ed.), *Remembering our past: Studies in autobiographical memory* (pp. 244-267). Cambridge, England: Cambridge University Press.

Williams, J. M. G., & Broadbent, K. (1986). Autobiographical memory in attempted suicide patients. *Journal of Abnormal Psychology,* 95, 144–149. doi: 10.1037/0021-843X.95.2.144

Williams, J. M. G., & Dritschel, B. H. (1988). Emotional disturbance and the specificity of autobiographical memory. *Cognition & Emotion, 2,* 221-234. doi: 10.1080/02699938808410925

Williams, J. M. G., Ellis, N. C., Tyers, C., Healy, H., Rose, G., & MacLeod, A. K. (1996). The specificity of autobiographical memory and imageability of the future. *Memory & Cognition, 24,* 116-125. doi: 10.3758/BF03197278

Williams, J. M., & Scott, J. (1988). Autobiographical memory in depression. *Psychological Medicine, 18,* 689–695. doi: http://dx.doi.org/10.1017/S0033291700008370

Wood, N., Brewin, C. R., & McLeod, H. J. (2006). Autobiographical memory deficits in schizophrenia. *Cognition & Emotion, 20,* 536-547.

Wood, W., & Conway, M. (2006). Subjective impact, meaning making and current and recalled emotions for self-defining memories. *Journal of Personality, 74,* 811–846. Retrieved from http://www.selfdefiningmemories.com/Wood___Conway__2006.pdf

CHAPTER 5

CONCLUSION

This dissertation began with a paper offering a systematic review of current psychological treatments for anorexia. The review suggested that two important elements are missing from most available treatments for this disorder. The first element that is missing is a primary focus on the interoceptive and emotional processing deficits that are prevalent in this population. The second element is emphasis on the inability of these women to form a coherent and stable identity outside of their eating disorder. The two empirical papers in this dissertation addressed each one of these elements, emotional processing and identity construction, in women in-recovery and recovered from anorexia and healthy controls. The overarching goal was to determine if the Dialectical Constructivist Theory could be used as a guiding framework for understanding and treating this disorder. The findings of this dissertation have indicated that using the Dialectical Constructivist Theory as a guiding framework can improve not only our understanding of anorexia, but also increase treatment effectiveness.

Empirical Implications: Dialectical Constructivism Applied to Anorexia

In Chapters 3 and 4 an experiment with adult women ($N = 90$) explored group differences in emotional processing and identity construction. The goal of the study was to explore the use of the Dialectical Constructivist Theory as a framework for understanding the development of self in AN. This theory looks at the dialectical interaction between emotional processing and the cognitive/narrative processes that are used to symbolize and make meaning of our

emotional experiences. Having a better understanding of the emotional and narrative components and how they interact to contribute to a constricted sense of self in women suffering with anorexia has important implications for the treatment of this disorder.

As was highlighted by the results of Chapters 3 and 4, difficulties with emotion processing and identity construction are prevalent in women in-recovery and are not present in women who are recovered. Chapter 3 used ANOVAs and Multinomial Logistic Regression analyses to look at group differences on emotional processing variables and explored which variables would best predict group membership. Chapter 4 used ANOVAs to explore group differences on the level of integration, quality, and content of autobiographical and self-defining memories.

The findings of Chapter 3 added further empirical support that women in-recovery display an overall emotional processing deficit. When compared to the recovered and control groups, women in-recovery had more difficulties with interoceptive awareness, identifying and describing their own feelings, accurately judging others' emotional experience, and were more likely to suppress their negative emotions. Differences in interoceptive awareness were found to be the largest contributor to group differences. Being able to identify internal states is the most basic skill required for component emotional functioning. Therefore, with no basic awareness of their internal states, women in-recovery struggle at the pre-conceptual level of emotional organization and regulation. To clarify this with an example a woman with anorexia may experience some type of

physiological sensation (knotted sensation in her stomach) indicating an emotional state (anxiety), but may confuse this emotion cue with a physiological cue (satiety) and as such, respond by turning to eating disorder behaviors (restricting food intake or purging). Over time the eating disorder behaviors become the first, and eventually only, response for relieving this individual of these emotional states. The results of this study indicate that it is crucial to help women suffering from this disorder to first attend to their internal signals, then to identify and regulate these internal states.

This study also shows that women who were recovered were able to process their emotional experience in similar ways to women who had never had an eating disorder. This finding suggests that an integral component of recovery involves helping clients attune to internal signals and find words to process complex emotional experiences. However, the women who had recovered in this study also continued to be slightly more alexithymic and suppressed more negative emotions than women who had never had an eating disorder. They also struggled with contemplating the emotional experience of others. Based on this understanding, learning ways to better identify and describe these internal sensations and developing an increased comfort with attending to and working through their emotional experiences might be crucial for long-term relapse prevention.

The results of the study in Chapter 4 revealed that women in-recovery were found to have more general autobiographical memories than women who were recovered or who had never had an eating disorder. The finding that women in-

recovery struggle to recall specific autobiographical memories and that this is no longer a concern for women who are recovered suggests that the over-general memory effect may be a coping strategy to help women with anorexia to avoid dealing with their negative emotional experiences. In support of the need to have a strategy to numb or shut out their negative emotional states, it was also revealed that women in-recovery had shorter recall latencies to negatively cued memories than women in the control group. This finding has also been shown in individuals suffering from depression (Williams & Broadbent, 1986; Williams & Scott, 1988) and suggests that these women are overly focused on their negative emotional experiences.

It is possible that without the ability to regulate their emotions, women with anorexia ruminate on their negative emotional experiences (e.g., experiences associated with guilt/shame or life-threatening events) which remain on a general level to protect the individual from being overwhelmed by the intense negative emotions (e.g., shame, guilt, anger, sadness) that are associated with these memories (Karwautz et al., 2001). As individuals become more entrenched in their eating disorder world they rely more on restrictive behaviors to help them cope with what they perceive to be overwhelming emotions that often threaten their sense of self (e.g., experiencing shame and therefore viewing the self as bad), as they do not have adaptive coping strategies to help them regulate these emotional states. By focusing on their restrictive behaviors and not further processing their past emotional experiences these women limit themselves from integrating any new positive emotional information that might help them to

understand these negative emotional experiences (e.g., that the event was not their fault). The inability to see one's life experiences from a more positive perspective is concerning as it suggests that women in-recovery may be unable to make peace with their past struggles and to see the redemptive aspects of more challenging life experiences. Without the ability to make meaning of their past experiences and to determine how these experiences have impacted their sense of who they are today, an overall shame-based sense of self often develops around feelings of being worthless or not good enough, while the healthy self-aspects become silenced.

The research described in Chapter 4 of this dissertation therefore suggests that the next phase of treatment after learning to access or regulate emotion is processing past emotional experiences. The finding that women who are recovered do not experience the over-general memory effect for negatively cued emotional memories further highlights the importance of processing memories associated with negative emotions in order to learn to tolerate and regulate these painful experiences. As was supported by the findings in this study accessing, reflecting on, and working through past emotional memories helps transform the painful maladaptive emotions that are associated with them, so that these memories can be integrated into one's narrative identity.

Clinical Implications: Dialectical Constructivism Applied to Anorexia

The findings of this project have important implications for the psychological treatment of anorexia. The Dialectical-Constructivist Theory describes the way meaning is constructed through the dialectical interplay of both emotional and

cognitive/narrative levels of processing. Women in-recovery were shown to have significant deficits on both sides of this dialectic. Emotion Focused Therapy (EFT; Greenberg, Rice, & Elliott, 1993) is grounded in a Dialectical Constructivist Theory of the self and as such, is a form of therapy that helps clients reconnect both sides of the dialectic through increasing their emotional awareness and cognitive/narrative skills so that they can develop a more flexible and coherent sense of self.

EFT is one form of treatment that is thought to be beneficial in the treatment of eating disorders as it is suited to individuals who struggle to regulate affect and works on understanding past emotional experiences (Dolhanty & Greenberg, 2007). The goal of EFT is to help clients to arrive at their core emotional experiences by first disclosing and then re-living their significant and highly emotionally charged life experiences. Through this process the individual begins to fully differentiate their emotions, access more adaptive emotions, and make meaning of life experiences. In other words, it is through the telling and sharing of emotional life experiences in relation to others that we bring meaning to emotions and create our narrative identities.

Overall, women with anorexia struggle with an impairment in identifying and describing their internal signals and emotional experiences. This is concerning as it was revealed in Chapter 4 that their self-defining memories are not integrated and are highly associated with feelings of guilt and shame which was not the case for women who were recovered or the healthy controls. Therefore, it is important when working with these women to gain access to these core maladaptive

emotions that diminish and silence the self and lead to feelings of hopeless despair (Dolhanty & Greenberg, 2007). This process involves the in-session activation of maladaptive emotions like shame so that they can eventually be paired with alternative, healthy emotions. In order to work towards transforming maladaptive emotions, it appears that the first step in treating these women is to help them learn to attend to their bodily felt sensations, then to allow, express, and finally symbolize them.

One of the reasons CBT may be ineffective for some clients is that simply talking about emotions does not have the same impact as processing them in-session. In fact, the outcome of only discussing emotions in session is that the distance from painful emotions is maintained and the therapist unintentionally ends up contributing to the client's emotional avoidance strategies (Dolhanty & Greenberg, 2007). In addition, it appears that a majority of individuals struggling with AN have a difficulty tolerating and regulating their emotional experience and that many of the existing treatments for this disorder are not effective in addressing these concerns (Corstorphine, 2006). In order to address this concern CBT and Behavioral therapies have been recently adapted to address the emotional vulnerability and regulation concerns in this population. For example, Cognitive-Emotional-Behavioural Therapy (CEBT) uses interventions from CBT, DBT, mindfulness, and experiential therapies to challenge the basis of the emotional distress that is found in individuals with AN so that they can more adaptively attend and respond to their emotions (Corstorphine, 2006). Furthermore, to enhance the effectiveness of behavior therapy for AN, Emotion

Acceptance Behavior Therapy (EABT) has also emerged which addresses the role of AN in facilitating emotional avoidance (Wildes & Marcus, 2011). EABT combines behavioral interventions with techniques that work towards increasing emotional awareness and decreasing emotional avoidance so that individuals with AN can assume valued activities and relations outside of their eating disorder. The preliminary results of EABT are promising in increasing the treatment effectiveness of behavioral therapy for AN (Wildes & Marcus, 2011).

It appears that many different forms of therapy for AN are recognizing the critical role of interventions aimed towards improving emotion regulation. Unfortunately, there is still a focus on the cognitive restructuring of dysfunctional thoughts regarding emotions and less focus on aiding and tolerating actual emotional arousal (Haynos & Fruzzetti, 2011). The importance of focusing on emotional dysregulation in the AN population is critical and can be supported by the promising initial results that are being found using therapies that focus on emotional regulation like DBT and EFT. According to therapies like DBT and EFT that are focused on addressing emotion dysregulation concerns, the function of eating disorder behaviors is to regulate overwhelming emotional experiences and the focus of treatment should be on the lack of access to adaptive strategies to help manage these challenging emotional states (Haynos & Fruzzetti, 2011).

The findings of the present study also suggest women in-recovery are unable to integrate their highly emotionally charged memories into a coherent life story and often do not share these memories with others. EFT can help these women by assisting them to access and disclose specific autobiographical memories that

highlight what is being explored in therapy. The process of evoking these emotionally charged memories in the session allows for a space to share these experiences so that they can be reflected on and experienced in a new emotional way. Being able to access new emotional meanings evokes new insights, understandings, and access to new views of self and other. A recent study by Kagan and Angus (2010) provides support for the importance of helping clients make meaning of emotionally overwhelming life events in therapy. They found that when clients with depression were able to integrate their distressing emotional experiences into a more coherent self-narrative and develop a capacity to share these painful events with others, they had one of two positive outcomes: (a) experienced a new sense of self compassion or (b) had a new and more meaningful way of viewing and understanding the self or others.

As was revealed in Chapter 4, women in-recovery were also more likely to have self-defining memories associated with themes of guilt and shame. Having a sense of self that is rooted in shame is toxic to one's sense of self and is the main contributing factor to the feelings of helplessness and powerlessness that are pervasive in this population. It is critical that healthcare professionals are aware of the role that shame plays in the identity of women with anorexia and how it impacts the therapeutic relationship. As was highlighted in Chapter 4, when treating these women it is important to keep in mind that they can feel easily shamed and so caution should be used to not further shame them by ignoring their emotional expressions. It is also crucial to validate their disclosed experiences as these women may be very concerned about what parts of their inner experiences

can be revealed and which should remain hidden. In order to gain access to their significant emotional memories and to work towards transforming shame, a strong therapeutic alliance must be built so that these women can feel safe enough to reveal the silenced or hidden aspects of the self.

In order to access the shame-based memories, emotion focused interventions are used to help clients to access and fully experience in the session their experiences associated with shame, humiliation, and embarrassment rather than continuing to avoid them. The aim of EFT work is to help clients to reveal their flaws and shortcomings and to have the experience with the therapist of not being judged as worthless or defective. It is when clients can reveal their inner vulnerabilities and silenced aspects of self and have these aspects received by another human being that healing can occur (Greenberg & Paivio, 1997). Therefore, healing is thought to result from being exposed to new information that works to restructure maladaptive emotional schemes. It is through interpersonal learning that clients are able to internalize the therapist's acceptance, which then leads to an increased ability to also accept the self.

Each time women with anorexia are able to reveal hidden aspects of their experience they are incorporating new emotional information, which then leads to a new learning about the self and changes in one's narrative identity. These changes in one's emotional experience and in narrative identity would allow these women to become more empowered as they gain mastery over their bodily felt experiences and a sense of self-efficacy in navigating their lived experience in the world. The result of working through these shame-based experiences is the

development of more coherent and flexible narrative identities outside of the eating disorder, giving these women a more integrated understanding of the self. This is especially important when working with women with anorexia as it is known that much of the resistance they can display in treatment is related to the anxiety and fear they have of losing their sense of identity as it is so strongly connected to their eating disorder (Costin, 1999; Hornbacher, 1998).

The power of having women with anorexia share their self-defining memories in a therapeutic setting is also supported by the more recent finding of memory reconsolidation, which suggests that our memories can be modified when they are reactivated (Nadel & Moscovitch, 1997). According to Greenberg (2010), changing these memories so that they are more integrated into one's sense of self is most likely the result of the same reconsolidation process. As self-defining memories by definition are associated with high emotional arousal they are also more likely to be remembered, allowing the emotional experience to be recreated in the session. Each time the memory is retrieved in therapy it becomes open to be altered through accessing and experiencing new emotions. Activating new emotions and emotional understandings allows for the chance to change maladaptive emotion memories before the memory goes through the reconsolidation process (Angus & Greenberg, 2011). As a result of this autobiographical memory consolidation process, individual's memories are not only stabilized and strengthened, but also qualitatively changed (Angus & Greenberg, 2011). It is during these experiential moments that clients are able to

access new perspectives on self, leading to the creation of a more holistic sense of self.

Final Summary

"Uniting affect and words helps someone communicate with herself and with others by restoring to the patient's words the fullness of their meaning"

~ Rizzuto, 1995, p. 12

The treatment review and empirical research in this dissertation offer support for the use of Dialectical Constructivism as a guiding framework for understanding the development of self in the process of recovery. Many promising directions for future research and for the development of more effective therapeutic interventions can be derived from focusing on the interplay between both the emotional and cognitive/narrative levels of processing in these women. Although eating disorders are thought to be chronic with symptoms lasting throughout recovery, the results of this project suggest that psychological recovery is possible. This level of recovery, which goes much further than the restoration of weight, is connected to an awareness of one's emotional experience and reflecting on and sharing these important experiences with others. It is through the process of reuniting affect with words that women with anorexia make meaning of their experiences so that these events can be integrated into their sense of self. Although one's identity can become dominated by this life-threatening disorder, the results of this project suggest that assisting clients to rediscover and recreate a narrative identity that includes both the negative and positive emotional events in their lives can release them from the anorexic identity that has held them trapped and hidden for so many years.

References

Angus, L. E. & Greenberg, L. S. (2011). *Working with narrative in emotion-focused therapy: Changing stories, healing lives.* Washington, DC: American Psychological Association.

Corstorphine, E. (2006). Cognitive-emotional-behavioural therapy for the eating disorders: Working with beliefs about emotions. *European Eating Disorders Review, 14,* 228-461. doi: 10.1002/erv.747.

Costin, C. (1999). *The eating disorder sourcebook: A comprehensive guide to the causes, treatments, and prevention of eating disorders.* Los Angeles: Lowell House.

Dolhanty, J., & Greenberg, L. S. (2007). Emotion-focused therapy in the treatment of eating disorders. *European Psychotherapy, 7,* 97-116. Retrieved from http://cip-medien.com/media/download_gallery/EP/2007/06_EP_Vol7_2007-Eating_DolhantyK2.pdf

Greenberg, L. S. (2010). *Emotion-focused therapy.* Washington, DC: American Psychological Association.

Greenberg, L. S., & Paivio, S. C. (1997). *Working with emotions in psychotherapy.* NY: Guilford Press.

Greenberg, L. S., Rice, L. N., & Elliott, R. (1993). *Facilitating emotional change: The moment-by-moment process.* New York: Guilford Press.

Haynos, A. F., & Fruzzetti, A. E. (2011). Anorexia nervosa as a disorder of emotion dysregulation: Evidence and treatment implications. *Clinical*

Psychology: Science and Practice, 18, 183 - 202. doi: 10.1111/j.1468.2850.2011.01250.x

Hornbacher, M. (1998). *Wasted: A memoir of anorexia and bulimia*. NY: Harper Perennial.

Kagan, F., & Angus, L. (2010). *A whole new me: Identity construction and self-narrative change in psychotherapy.* Submitted manuscript.

Karwautz, A., Rabe-Hesketh, S., Hu, Z., Zhao, J., Sham, P., Collier, D. A., et al. (2001). Individual-specific risk factors for anorexia nervosa: a pilot study using a discordant sister-pair design. *Psychological Medicine 31,* 317-329. Retrieved from http://www.univie.ac.at/essstoerungen/riskpaperkarwautz2001.pdf

Nadel, L., & Moscovitch, M. (1997). Memory consolidation, retrograde amnesia, and the hippocampal complex. *Current Opinion in Neurobiology, 7,* 217-227. Retrieved from http://www.u.arizona.edu/~nadel/pdf/Papers%20as%20PDFs/1997%20PDFs/Current%20Opinion%201997.pdf

Rizzuto, A-M. (1995). Sound and sense: Words in psychoanalysis and the paradox of the suffering person. *Canadian Journal of Psychoanalysis, 3,* 1-15.

Wildes, J. E., & Marcus, M. D. (2011). Development of emotion acceptance behavior therapy for anorexia nervosa: A case series. *Journal of Eating Disorders, 44,* 421-427. doi: 10.1002/eat.20826

Williams, J. M. G., & Broadbent, K. (1986). Autobiographical memory in attempted suicide patients. *Journal of Abnormal Psychology,* 95, 144–149. doi: 10.1037/0021-843X.95.2.144

Williams, J. M., & Scott, J. (1988). Autobiographical memory in depression. *Psychological Medicine, 18,* 689–695. doi: http://dx.doi.org/10.1017/S0033291700008370

Appendix A: Demographics Form

Id Number: _____

BACKGROUND INFORMATION

The information we are asking you to provide for this sheet is strictly confidential and is intended to better help understand the differences in psychological functioning of women with who have struggled with anorexia and those without a history of anorexia. You may or may not choose to respond to some or all of the questions below.

General Information

1. What is your age? _____

2. What is your ethnic status?
    a. Caucasian
    b. Middle Eastern
    c. East Indian
    d. Asian
    e. African/Caribbean Canadian
    f. Hispanic
    g. Aboriginal
    h. Other (specify) _____

3. What is your current marital status?
    a. Single, never married
    b. Common-law or Other long-term relationship
    c. Married
    d. Separated or divorced
    e. Widowed

4. What is the highest level of education that you have completed?
    a. Grade (specify) _____
    b. College or Technical School Training
    c. Undergraduate University Degree
    d. Graduate University Degree
    e. Other (specify) _____

5. What is your religious affiliation?
    a. Catholic
    b. Protestant
    c. Baptist/Evangelical
    d. Eastern Religion (Non-Christian)
    e. Other (specify) _____
    f. None

6. At present are you:
    a. Unemployed
    b. Employed part-time
    c. Employed full-time
    d. Attending school
    e. Other (specify) _____

7. If presently employed, what is your primary occupation?

8. What was your total income over the last year?
    a. Less than $10,000
    b. $10,000 - $20,000
    c. $20,000 - $30,000
    d. $30,000 - $40,000
    e. $40,000 - $50,000
    f. Over $50,000

Health Related Information

9. Are you currently taking any medication? If so, please name types and frequency.

_____

10. Have you been diagnosed as suffering from depression or anxiety? If known, please name type of disorder.

_____

a. If yes, please indicate how long ago this diagnosis was made?

_____

11. Have you ever been diagnosed as suffering from substance (alcohol or drug) abuse?

_____

a. If yes, please indicate how long ago this diagnosis was made.

_____

12. Have you ever suffered a head injury? (Please indicate how long ago and level of seriousness).

_____

13. Are you currently diagnosed as suffering from anorexia?

_____

14. If you are not currently suffering from anorexia, have you ever been diagnosed as suffering from anorexia in the past?

_____

15. Have you ever received diagnoses for any other eating disorders? (Please indicate how long ago and the type).

_____

If you answered yes to question #13, please respond to the following questions:

a. At what age were you diagnosed as having anorexia?

_____

b. How many years or months have you suffered from anorexia?

_____

If you answered yes to question #14, please respond to the following questions:

16. Do you currently consider yourself to be recovered from anorexia?

_____

a. If so, how long have you been in recovered (years, months, days)?

b. If you consider yourself recovered, what treatment (or other) experience(s) were the most helpful to you in overcoming anorexia?

17. What treatment (or other) experiences have been the most harmful to overcoming anorexia?

If you answered yes to either question #13 or #14, please respond to the following questions:

18. How you ever been hospitalized for anorexia? If so, how long ago and how many times?

_____

19. What type of additional treatment, if any, have you sought?
    a. Individual psychotherapy (specify duration)
    _____
    b. Family therapy (specify duration)
    _____
    c. Psychoeducational Group Therapy (specify the duration)
    _____
    d. Self-help Group (specify the duration)
    _____
    e. Community/Private Treatment Center (specify the duration)
    _____
    f. Medication (specify the duration)
    _____
    g. Other (specify type and duration)
    _____

20. Any other thoughts you may wish to share with me about your experiences regarding anorexia or treatment/recovery

Appendix B: Eating Disorder Diagnostic Scale (EDDS)

Please carefully complete all questions.

	Not at all			Slightly		Moderately	Extremely
Over the past 3 months…							
1. Have you felt fat?	0	1	2	3	4	5	6
2. Have you had a definite fear that you might gain weight or become fat?	0	1	2	3	4	5	6
3. Has your <u>weight</u> influenced how you think about (judge) yourself as a person	0	1	2	3	4	5	6
4. Has your <u>shape</u> influenced how you think about (judge) yourself as a person?	0	1	2	3	4	5	6

5. During the past 6 months have there been times when you felt you have eaten what other people would regard as an unusually large amount of food (e.g. a litre of ice cream) given the circumstances?
   YES NO

   If you answered NO to question #5 please go to question #15.

6. During the times when you ate an unusually large amount of food, did you experience a loss of control (feel you couldn't stop eating or control what or how much you were eating)? YES NO

   If you answered YES to question #6, please answer the following questions, if you answered NO, please go to question #15:

7. How many DAYS per week on average over the past 6 MONTHS have you eaten an unusually large amount of food and experienced a loss of control?
   0 1 2 3 4 5 6 7

8. How many TIMES per week on average over the past 3 MONTHS have you eaten an unusually large amount of food and experienced a loss of control?

0 1 2 3 4 5 6 7

During these episodes of overeating and loss of control did you…

9. Eat much more rapidly than normal? YES NO

10. Eat until you felt uncomfortably full? YES NO

11. Eat large amounts of food when you didn't feel physically hungry?
    YES NO

12. Eat alone because you were embarrassed by how much you were eating?
    YES NO

13. Feel disgusted with yourself, depressed, or very guilty after overeating?
    YES NO

14. Feel very upset about your uncontrollable overeating or resulting in weight gain?
    YES NO

15. How many times per week on average over the past 3 months have you made yourself vomit to prevent weight gain or counteract the effects of eating?
    0 1 2 3 4 5 6 7 8 9 10 11 12 13 14

16. How many times per week on average over the past 3 months have you used laxatives or diuretics to prevent weight gain or counteract the effects of eating?
    0 1 2 3 4 5 6 7 8 9 10 11 12 13 14

17. How many times per week on average over the past 3 months have you fasted (skipped at least 2 meals in a row) to prevent weight gain or counteract the effects of eating?
    0 1 2 3 4 5 6 7 8 9 10 11 12 13 14

18. How many times per week on average over the past 3 months have you engaged in excessive exercise specifically to counteract the effects of overeating episodes?
    0 1 2 3 4 5 6 7 8 9 10 11 12 13 14

19. How much do you weigh? If uncertain, please give your best estimate.
    _____ lb

20. How tall are you? ____ ft ____ in.

21. Over the past 3 months, how many menstrual periods have you missed?
    0 1 2 3 4 Not applicable

22. Have you been taking birth control pills during the past 3 months?
    YES NO

Appendix C: Depression Anxiety Stress Scale-Brief Version (DASS-21)

For each of the statements below, please circle the number which best indicates how much the statement applied to you OVER THE PAST WEEK. There are no right or wrong answers. Do not spend too much time on any one statement.

0 = Did not apply to me at all
1 = Applied to me to some degree
2 = Applied to me a considerable degree, or a good part of the time
3 = Applied to me very much, or most of the time

___ 1. I felt downhearted and blue.

___ 2. I felt that I had nothing to look forward to.

___ 3. I felt that life was meaningless.

___ 4. I felt I wasn't worth much as a person.

___ 5. I was unable to become enthusiastic about anything.

___ 6. I couldn't seem to experience any positive feeling at all.

___ 7. I found it difficult to work up the initiative to do things.

___ 8. I was aware of the action of my heart in the absence of physical exertion (e.g., sense of heart rate increase, heart missing a beat).

___ 9. I was aware of dryness of my mouth.

___ 10. I experienced breathing difficulty (e.g., excessively rapid breathing, breathlessness in the absence of physical exertion).

___ 11. I experienced trembling (e.g., in the hands).

___ 12. I was worried about situations in which I might panic and make a fool of myself.

___ 13. I felt I was close to panic.

___ 14. I felt scared without any good reason.

___ 15. I found it hard to wind down.

___ 16. I found it difficult to relax.

___ 17. I felt that I was using a lot of nervous energy.

___ 18. I found myself getting agitated.

___ 19. I tended to over-react to situations.

___ 20. I felt that I was rather touchy.

___ 21. I was intolerant of anything that was letting me get on with what I was doing.

Appendix D : Marlowe-Crowe Social Desirability Scale (MCSDS)

Directions: Listed below are a number of statements concerning personal attitudes and traits. Read each item and decide whether the statement is true of false as it pertains to you.

1. I sometimes feel resentful when I don't get my way. T F
2. On a few occasions, I have given up doing something because I thought too little of my ability. T F
3. There have been times when I felt like rebelling against people of authority even though I knew they were right. T F
4. No matter who I'm talking to, I am always a good listener. T F
5. I can remember "playing sick" to get out of something. T F
6. There have been occasions when I took advantage of someone. T F
7. I'm always willing to admit it when I make a mistake. T F
8. I sometimes try and get even, rather than forgive and forget. T F
9. When I don't know something, I don't at all mind admitting it. T F
10. I am sometimes irritated by people who ask me for favors. T F
11. I have never deliberately said something that hurt someone's feelings. T F

Appendix E: Toronto Alexithymia Scale (TAS-20)

Using the scale provided as a guide, indicate how much you agree or disagree with each of the following statement by circling the corresponding number. Give only one answer for each statement.

Strongly Disagree	Moderately Disagree	Neither Disagree nor Agree	Moderately Agree	Strongly Agree
1	2	3	4	5

1.	I am often confused about what emotion I am feeling.	1	2	3	4	5
2.	It is difficult for me to find the right words for my feelings.	1	2	3	4	5
3.	I have physical sensations that even doctors don't understand.	1	2	3	4	5
4.	I am able to describe my feelings easily.	1	2	3	4	5
5.	I prefer to analyze problems rather than just describe them.	1	2	3	4	5
6.	When I am upset, I don't know if I am sad, frightened, or angry.	1	2	3	4	5
7.	I am often puzzled by sensations in my body.	1	2	3	4	5
8.	I prefer to just let things happen rather than to understand why they turn out that way.	1	2	3	4	5
9.	I have feelings that I can't quite identify.	1	2	3	4	5
10.	Being in touch with emotions is essential.	1	2	3	4	5
11.	I find it hard to describe how I feel about people.	1	2	3	4	5
12.	People tell me to describe my feelings more.	1	2	3	4	5
13.	I don't know what is going on inside me.	1	2	3	4	5
14.	I often don't know why I am angry.	1	2	3	4	5
15.	I prefer talking to people about their daily activities rather than their feelings.	1	2	3	4	5

16. I prefer to watch “light” entertainment shows rather than psychological dramas. 1 2 3 4 5

17. It is difficult for me to reveal my innermost feelings, even to close friends. 1 2 3 4 5

18. I can feel close to someone, even in moments of silence. 1 2 3 4 5

19. I find examination of my feelings useful in solving personal problems. 1 2 3 4 5

20. Looking for hidden meanings in movies or plays distracts from their enjoyment. 1 2 3 4 5

Appendix F: Courtauld Emotional Control Scale (CECS)

Listed below are some reactions people have to certain feelings or emotions. Read through each statement, and by selecting an appropriate number on the scale, indicate how much each statement describes the way you GENERALLY react.

1 = Almost Never
2 = Sometimes
3 = Often
4 = Almost Always

1. When I feel ANGRY: I keep quiet.
   1 2 3 4

2. When I feel ANGRY: I refuse to argue or say anything.
   1 2 3 4

3. When I feel ANGRY: I bottle it up.
   1 2 3 4

4. When I feel ANGRY: I say what I feel.
   1 2 3 4

5. When I feel ANGRY: I avoid making a scene.
   1 2 3 4

6. When I feel ANGRY: I smother my feelings.
   1 2 3 4

7. When I feel ANGRY: I hide my anger.
   1 2 3 4

8. When I feel ANXIOUS: I let others see how I feel.
   1 2 3 4

9. When I feel ANXIOUS: I keep quiet.
   1 2 3 4

10. When I feel ANXIOUS: I refuse to say anything about it.
    1 2 3 4

11. When I feel ANXIOUS: I tell others all about it.
    1 2 3 4

12. When I feel ANXIOUS: I say what I feel.
    1 2 3 4

13. When I feel ANXIOUS: I bottle it up.
    1 2 3 4

14. When I feel ANXIOUS: I smother my feelings.
    1 2 3 4

15. When I feel UNHAPPY: I refuse to say anything about it.
    1 2 3 4

16. When I feel UNHAPPY: I hide my unhappiness.
    1 2 3 4

17. When I feel UNHAPPY: I put on a bold face.
    1 2 3 4

18. When I feel UNHAPPY: I keep quiet.
    1 2 3 4

19. When I feel UNHAPPY: I let others see how I feel.
    1 2 3 4

20. When I feel UNHAPPY: I smother my feelings.
    1 2 3 4

21. When I feel UNHAPPY: I bottle it up.
    1 2 3 4

Appendix G: Interoceptive Awareness Scale (IA)

For each item decide if the item is true about you. Write the number in the blank that corresponds to your rating. For example, if your rating for an item is **OFTEN**, you would write the number **3** for that item in the blank.

1 = ALWAYS
2 = USUALLY
3 = OFTEN
4 = SOMETIMES
5 = RARELY
6 = NEVER

____ 1. I get frightened when my feelings are too strong.

____ 2. I get confused about what emotion I am feeling.

____ 3. I can clearly identify what emotion I am feeling.

____ 4. I don't know what's going on inside me.

____ 5. I get confused as to whether or not I am hungry.

____ 6. I worry that my feelings will get out of control.

____ 7. I feel bloated after eating a normal meal.

____ 8. When I am upset, I don't know if I am sad, frightened, or angry.

____ 9. I have feelings I can't quite identify.

____ 10. When I am upset, I worry that I will start eating.

Appendix H : Levels of Emotional Awareness Scale – Form B (LEAS-B)

Subject#:_____ Study#:_____

INSTRUCTIONS

Please describe what you would feel in the following situations. The only requirement is that you use the word "feel" in your answers. You may make your answers as brief or as long as necessary to express how you would feel. In each situation there is another person mentioned. Please indicate how you think that other person would feel as well.

1. You are walking through the desert with a guide. You ran out of water hours ago. The nearest well is two miles away according to the guide's map. How would you feel? How would the guide feel?

2. You are running in a race with a friend with whom you have trained for some time. As you near the finish line, you twist your ankle, fall to the ground, and are unable to continue. How would you feel? How would your friend feel?

3. You are traveling in a foreign country. An acquaintance makes derogatory remarks about your native country. How would you feel? How would your acquaintance feel?

4. Your sweetheart has been gone for several weeks but finally comes home. As your sweetheart opens the door....how would you feel? How would your sweetheart feel?

5. You and your spouse are driving home from an evening out with friends. As you turn onto your block you see fire-trucks parked near your home. How would you feel? How would your spouse feel?

6. You receive an unexpected long-distance phone call from a doctor informing you that your mother has died. How would you feel? How would the doctor feel?

7. You tell a friend who is feeling lonely that she/he can call you whenever she/he needs to talk. One night she/he calls at 4:00 a.m. How would you feel? How would your friend feel?

8. Someone who has been critical of you in the past pays you a compliment. How would you feel? How would the other person feel?

9. You sell a favorite possession of your own in order to buy an expensive gift for your spouse. When you give him/her the gift, he/she asks whether you sold the possession. How would you feel? How would your spouse feel?

10. You and your best friend are in the same line of work. There is a prize given annually to the best performance of the year. The two of you work hard to win the prize. One night the winner is announced: your friend. How would you feel? How would your friend feel?

Appendix I: Autobiographical Memory Test (AMT) Score Sheet

	Latency	Prompt
Exhausted		
Interested		
Happy		
Hobby		
Hopeless		
Novel		
Excited		
Pencil		
Rejected		
Album		
Relieved		
Parade		
Guilty		
Forest		
Friendly		
Skirt		
Hurt		
Branch		
Hopeful		
Grass		
Ashamed		
Broom		

"Describe a specific personal event in response to the words given. This should be something that happened that is either important or trivial, but that occurred at a particular place and time (the event lasted less than one day). Please try and do this as quick as you can".

PROMPT: "Can you think of a specific time – one particular event".

Specific _____

Categorical/General _____

Omission _____

Appendix J: Self-Defining Memory Task (SDM)

This part of the study concerns the recall of a special kind of personal memory called a self-defining memory. A self-defining memory has the following attributes:

1. It is a memory from your life that you remembered very clearly and that still feels important to you even as you think about it.

2. It is a memory about an important enduring theme, issue, or conflict from you life. It is a memory that helps explain who you are as an individual and might be the memory you would tell someone else if you wanted that person to understand you in a profound way.

3. It is a memory linked to other similar memories that share the same theme or concern.

4. It may be a memory that is positive or negative, or both, in how it makes you feel. For example, a negative memory may include a situation in which you were treated harshly, criticized, humiliated, or shamed in some way. The only important aspect is that it leads to strong feelings.

5. It is a memory that you have thought about many times. It should be familiar to you like a picture you have studied or a song (happy or sad) you have learned by heart.

To understand best what a self-defining memory is, imagine you have just met someone you like very much and are going for a walk together. Each of you is very committed to helping the other get to know the "real you". You are not trying to play a role or to strike a pose. While, inevitably, we say things that present a picture of ourselves that might not be completely accurate, imagine that you are making every effort to be honest. In the course of the conversation, you describe a memory that you feel conveys powerfully how you have come to be the person you currently are. It is precisely this memory, which you tell the other person and simultaneously repeat to yourself, that constitutes a self-defining memory.

On the following pages you will be asked to recall and write *five* self-defining memories.

Memory Rating Sheet: Memory 1

Using the rating scale below, please indicate how you felt today in recalling and thinking about your memory.

0	1	2	3	4	5	6
Not at all			Moderately			Extremely

1. Happy _____
2. Sad _____
3. Angry _____
4. Fearful _____
5. Surprised _____
6. Ashamed _____
7. Disgusted _____
8. Guilty _____
9. Interested _____
10. Embarrassed _____
11. Contemptful _____
12. Proud _____

1. How strong are the feelings connected with this memory?

0	1	2	3	4	5	6
Not at all			Moderately			Extremely

2. How important was this event in your life?

0	1	2	3	4	5	6
Not at all			Moderately			Extremely

3. How often do you think about this memory?

0	1	2	3	4	5	6
Not at all			Moderately			Extremely

4. How clear is your memory about this event?

0	1	2	3	4	5	6
Not at all			Moderately			Extremely

5. How often do you tell this memory to someone else?

0	1	2	3	4	5	6
Not at all			Moderately			Extremely

6. How vivid is this memory?

0	1	2	3	4	5	6
Not at all			Moderately			Extremely

7. How would you describe the feelings connected with this memory

0	1	2	3	4	5	6
Not at all			Moderately			Extremely

8. How much impact did this experience or event have in terms of who you are today

0	1	2	3	4	5	6
Not at all			Moderately			Extremely

How old were you when this event occurred? _____

(Please provide the approximate number of years ago the memory took place - to the nearest whole number. Please note that you should not put the age when the memory took place, but instead how many years ago it took place).

Appendix K: Telephone Script

Hello, my name is Michelle Emmerling. I am a graduate student from the University of Alberta Counselling Psychology department. I am contacting you because you recently provided your name and contact details through my e-mail and indicated you would be interested in being contacted about my research. I am conducting a study that looks at some of the underlying factors in women with anorexia, recovered from anorexia, and those of a healthy weight.

Your participation in this study would be completely voluntary. This means that you do not have to agree to participate unless you want to. Did you have any initial questions?

Just to clarify any information that I receive from you by the phone today, including your name and any other identifying information, will be strictly confidential and will be kept under lock and key. That being said, would you be willing to answer some questions to help me determine if you are eligible for this study? (If yes, proceed; if no thank them for their time and end the call).

Good. I have some initial questions for you.

How old are you?

What is the highest level of education you have obtained?

Are you currently suffering from an eating disorder?

a) If yes, which type?

Have you ever been previously diagnosed as suffering from an eating disorder?

a) If yes, what type of eating disorder?
b) How long ago was this diagnosis made?

If yes for anorexia then, do you consider yourself "in-recovery" or recovered from AN?

Is it okay to continue? I will now read off a short list of questions. If your answer to any of them is yes, wait until I am all done and tell me that when I am finished. I do not want you to answer each question individually.

Have you ever suffered a serious brain injury that required treatment?
Have you ever been diagnosed as suffering from or received treatment for alcohol or drug abuse?
Have you ever been diagnosed as suffering from a psychotic disorder?

(Healthy Controls) Are you currently suffering from depression or anxiety?

(Healthy Controls) For any period of time in your life have you regularly used inappropriate methods to control weight gain such as vomiting, laxatives, or diuretics?

Would your response to any of these questions be "yes?" (If person says yes, thank them for their time and that they are not eligible for the study. If they answer no, proceed)

The purpose of this research study survey is to look at some of the psychological factors that might underlie anorexia. You will be asked to complete a series of questionnaires and tasks in a one-on-one setting. This should take about 2-3 hours and can be in either one session, or split up over two sessions if you prefer. All research on human volunteers is reviewed by a committee that works to protect your rights and welfare.

Do you have any questions?

Does this sound like a study you would like to become involved in?

If yes, What day(s) and time(s) would be best for you to arrange the research session?

Let me give you some important information about the study. Have you got a pen and piece of paper?

(Healthy Controls) My name is Michelle Emmerling. The study is being conducted in the Education Building North at the main campus at the University of Alberta. On the day of your appointment, please meet me in the waiting area of the Education Clinic located on the main level of the building just down from the cafeteria.

The day before your session, I will phone you to make sure that you are still able to make it. If you have to cancel your appointment or have any additional questions, you can contact me at mee@ualberta.ca

I look forward to meeting you on [day and time of appointment]. Thank you very much for helping us with our research!"

If no, thank them for their time and for considering participation in the study.

Appendix L: Information and Consent Forms

Study Title: Emotions and Anorexia

Principal Investigator: William Whelton, PhD.
wwhelton@ualberta.ca

Sub-Investigator: Michelle Emmerling, M.Ed.
mee@ualberta.ca

Background: I am student in Counselling Psychology doing this research as part of my program. Very little research exists on what leads to anorexia nervosa or what makes it last. So we do not yet know enough about anorexia to help those who have this dangerous eating disorder.

Purpose: You are being asked to be part of a research study. The goal is to understand the role of emotions and memories in women with anorexia and in women without the problem. The hope is that the results will lead to more helpful treatments for anorexia.

Procedures: Being part of this study means:

a) Going to one research session (about two hours) or two research sessions (about one hour per session). It depends on which is best for you.

b) Filling out several forms and using words to share memories with the investigator (this will be tape recorded).

Possible Benefits: Your answers may help to make better treatments for anorexia. They may also help you to understand yourself.

Possible Risks: You should not have any discomfort while filling out the forms in this study. If you do, you should tell the investigator. If you have discomfort after you have finished the study, please speak with the investigator by phone or e-mail. The investigator will speak with you about your choices (examples: connecting you with support services or stopping your participation in the study).

Confidentiality: All collected information will not be shared with anyone else. Your name will not be linked with the forms you fill out. Instead, a coded number will be placed on them.

The consent form will be kept in a different place than your finished forms. All information that is tape recorded will be written out by the investigator. The tapes will then be destroyed. Your name will not be linked to this information.

All the completed forms will be placed in a locked filing cabinet in a protected location. This information will be kept there for five years after the study is finished. Any report published as a result of this study will not use any information that could identify you. Any research assistants used in this study will not know your name. They will also not share any of the information on the forms with others. They will be asked to follow the *University of Alberta Standards for the Protection of Human Research Participants*. If you are getting treatment from the Eating Disorders Program at the University of Alberta Hospital, Dr. Ostolosky (or any other staff member), will not be able to see any of the information you gave during the study. They will also not know whether you participated in the study or not. After the study is finished, you can get a copy of the main findings from the study supervisor's office.

There are a few situations where some of the information you give will have to be shared with others. This is because the investigator has a responsibility to report any abuse to children or if there is harm to yourself or others. The investigator also has a responsibility to help any participant that is not getting treatment, but is found to have an eating disorder. If this happens the investigator will discuss these concerns with you and will connect you with someone who can help.

Voluntary Participation: Your involvement in this study is voluntary. You have the right to choose not to be part of it. There will be no consequences for taking back your agreement to be part of the study. This can be done at any time. This can also mean having the forms you completed taken out of the study. The last point at which you can do this is when all the information has been collected from every participant. You can also turn down participating in any part of the study. You may also choose not to answer questions you do not wish to answer. But, if there are too many questions unanswered, it is likely that your forms will have to be taken out of the study. Your choice to be part of this study or not, will not harm your relationship (now or in the future) with the University of Alberta or Alberta Health Services.

Reimbursement of Expenses: You will be given $10.00 (or $5.00 per session if you have two sessions), to help you with the cost of parking and to thank you for your time. If you are in an inpatient treatment program, you will be given a $10.00 gift certificate for Chapters bookstore to thank you for your time.

Contact Names and Telephone Numbers: If you have concerns about your rights as a study participant, you may contact the Patient Relations Office of Alberta Health Services, at (780)342-8080. This office has no association with the study investigators.

Please contact any of the individuals identified below if you have any questions or concerns:

Name: Michelle Emmerling, MEd. **Telephone Number:** 780-964-3778

Name: William Whelton, PhD. **Telephone Number:** 780-492-7979

CONSENT FORM

Part 1:

Title of Project: *Emotions and Anorexia*

Principal Investigator(s): William Whelton, PhD. Phone Number: 780-492-7979

Co-Investigator(s): Michelle Emmerling, MEd. Phone Number: 780-964-3778

Part 2 (to be completed by the research subject):

	Yes	No
Do you understand that you have been asked to be in a research study?	☐	☐
Have you read and received a copy of the attached Information Sheet?	☐	☐
Do you understand the benefits and risks involved in taking part in this research study?	☐	☐
Have you had an opportunity to ask questions and discuss this study?	☐	☐
Do you understand that you are free to withdraw from the study at any time, without having to give a reason and without affecting your future medical or mental health care?	☐	☐
Has the issue of confidentiality been explained to you?	☐	☐
Do you understand who will have access to your completed data?	☐	☐

Who explained this study to you?

_____

I agree to take part in this study: YES ☐ NO ☐

Signature of Research Subject

_____

(Printed Name)

_____

Date:_____

Signature of Witness

_____

I believe that the person signing this form understands what is involved in the study and voluntarily agrees to participate.
Signature of Investigator or Designee_____
Date _____

THE INFORMATION SHEET MUST BE ATTACHED TO THIS CONSENT FORM AND A COPY GIVEN TO THE RESEARCH SUBJECT