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## Descriptive Experience Sampling Of Individuals With Bulimia Nervosa

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DESCRIPTIVE EXPERIENCE SAMPLING OF  
INDIVIDUALS WITH BULIMIA NERVOSA

by

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Bachelor of Arts  
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1990

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2006

A dissertation submitted in partial fulfillment  
of the requirements for the

**Doctor of Philosophy Degree in Psychology**  
**Department of Psychology**  
**College of Liberal Arts**

**Graduate College**  
**University of Nevada, Las Vegas**  
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**THE GRADUATE COLLEGE**

We recommend that the dissertation prepared under our supervision by

**Sharon Jones-Forrester**

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**Descriptive Experience Sampling of Individuals with Bulimia Nervosa**

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**August 2009**

## ABSTRACT

### **Descriptive Experience Sampling of Individuals with Bulimia Nervosa**

By

Sharon Jones-Forrester

Dr. Russell T. Hurlburt, Examination Committee Chair  
Professor of Psychology  
University of Nevada Las Vegas

Despite 30 years of research, much remains unknown about inner experience in individuals with bulimia nervosa (BN); yet attaining a clearer understanding of inner experience in BN may prove to be crucial in uncovering the nature of this profoundly disruptive disorder. The present study used Descriptive Experience Sampling (DES) to examine inner experience in 13 participants with BN, replicating to some degree Doucette (1992) and Jones-Forrester (2006). Results in the present study were largely consistent with Doucette (1992) and Jones-Forrester (2006) but substantially different from beliefs about inner experience from the extant non-exploratory DES BN literature. Specifically, the present study found (as did previous DES studies of BN) that inner experience in BN is most saliently characterized by fragmented multiplicity, in which there is a pronounced division of attention and a striking inability to maintain a clear and single focus of attention. The present study found that individuals with BN frequently had an intense focus on the sensory aspects of ongoing phenomena, which often included a pronounced awareness or hypersensitivity to bodily sensations. Inner experience among

individuals with BN in the present study was also characterized by unsymbolized thinking, inner speech, inner seeing, affect that is poorly differentiated and often confused with cognition, and interfering phenomena, in which participants were consciously attempting to interfere with or disconnect from ongoing process related to food, weight, shape, appearance, or BN-related behaviors. These results suggest that DES has utility for the direct examination of inner experience in BN, and that this examination may challenge currently held beliefs about the experiential nature of BN. Exploration of inner experience in individuals with BN allows for the expansion of our understanding of BN. The present study largely replicated previous DES BN studies and yielded previously unexamined phenomena that may prove important in the design of new, more effective intervention and prevention strategies.

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## CHAPTER 1

### INTRODUCTION TO BULIMIA NERVOSA

#### Inner Experience in Individuals with Bulimia Nervosa

Bulimia nervosa is a profoundly disruptive, potentially fatal disorder affecting millions of young women, and increasing numbers of young men. Despite 30 years of research, our understanding of the etiology, maintenance, and course of bulimia nervosa remains surprisingly limited. Why? We propose that this is because we know almost nothing about the inner experience of individuals with bulimia nervosa. Individuals who engage in bulimic behavior are clearly experiencing something that leads them to binge or purge. It is alarming that we still know almost nothing about what that something is. We have recently completed a Master's Thesis (Jones-Forrester, 2006) that was designed as a replication of Doucette (1992) and examined inner experience in bulimia nervosa, finding that this inner experience is substantially different from what would be expected in the current eating disorder literature. This dissertation will attempt to expand on these findings and will continue to examine inner experience in bulimia nervosa using Descriptive Experience Sampling, an accurate method of accessing experience, to explore the inner experience of thirteen individuals with bulimia nervosa.

The following review of the literature was therefore divided into two parts: a "content" part about eating disorders in general and bulimia nervosa in particular and a "method" part regarding the exploration of inner experience. The content part of this



review, below in Chapter 1, has three elements. First, we will provide a brief introduction to the history of eating disorders, illustrating that although these are fairly recent diagnostic constructs, descriptions of disordered eating date back millennia. Second, the three current diagnostic categories of eating disorders (anorexia nervosa, bulimia nervosa, and eating disorders not otherwise specified) will be introduced. Each disorder will be reviewed in terms of diagnostic criteria, symptomatology, medical sequelae, prevalence, course and comorbidity patterns. Third, the review will consider the parallel complex biological, cognitive, affective, environmental, interpersonal and intrapersonal aspects of bulimia nervosa.

The method part of this review, in Chapter 2, will also have three elements. First, we will consider those current assessment methods that rely primarily on self-report and clinical interview data, demonstrating that while the information yielded by these methods is necessary and valuable, it is also particularly vulnerable to bias. Individuals with eating disorders may intentionally or unintentionally give inaccurate responses to traditional assessment measures (Crowther & Sherwood, 1997).

Second, we will discuss current assessment methodologies, such as diaries, thought listing, and the Experience Sampling Method, all of which are designed to explore inner experience while controlling for bias and potential retrospective errors. Third, we will discuss Descriptive Experience Sampling, a method pioneered by Hurlburt (1990). We will attempt to demonstrate that this innovative method remedies the significant methodological difficulties inherent in alternate attempts to understand inner experience in psychopathology.

Before we begin, we note that although the current study will focus primarily on bulimia nervosa, the three eating disorders (anorexia nervosa, bulimia nervosa and eating

disorders not otherwise specified) share more common than differing characteristics.

Within the body of eating disorder literature, a number of theorists view these disorders as a single syndrome, with variance only in severity and symptom presentation (Polivy & Herman, 2002; Striegel-Moore & Cachelin, 2001). In keeping with the current DSM-IV-TR (APA, 2000) classification system, the present paper will focus primarily on bulimia nervosa as a distinct diagnostic eating disorder. However, shared etiology across eating disorders and crossover between bulimia nervosa and anorexia nervosa are the norm, with 50% of individuals initially diagnosed with anorexia nervosa eventually developing bulimia nervosa and a smaller group moving from bulimia nervosa into the anorexia nervosa diagnostic category (APA, 2002). Psychiatric comorbidity is also frequent across eating disorders, with 70% of individuals in clinical settings having at least one Axis I or Axis II comorbid disorder (Haas, & Clopton, 2003). Despite our current reliance on distinct categorical definitions, full syndromal, non-comorbid eating disorders are far less common than complex, comorbidity-influenced presentations.

### *The History of Eating Disorders*

While medical descriptions of eating disorders date back to the 1870's, the phenomenon of disordered eating has likely existed throughout human history. Behavior mirroring anorexia nervosa and bulimia nervosa was described in ancient Rome and among Christian saints in the middle ages. Modern case study descriptions of anorexia nervosa and bulimia nervosa date back to 1903 and 1932 respectively; however, this behavior was considered extremely rare before the 1960's (Russell, 1997; Vandereycken, 2002). However, there is currently some debate about the extent to which historical accounts of disordered eating accurately reflect current eating disorder diagnostic criteria

or are confounded with cultural and religious sociohistorical phenomena that may have generated anorexic and bulimic behaviors (Habermas, 2005).

In the 1960's and 1970's, clinical interest in body image and eating disorders began to grow, with bulimia nervosa being identified as a distinct disorder in 1979 and accepted into the DSM-III in 1980 (Russell, 1997; Vandereycken, 2002). Since 1980, our understanding of eating disorders has grown significantly, yet much remains to be understood regarding the complexities of eating disorder development, maintenance and treatment. The historical progression of current eating disorder diagnostic criteria began with anorexia nervosa in 1970, followed by bulimia nervosa in 1979 and eating disorders not otherwise specified in the 1980's (Garfinkel, 2002).

Since Russell (2004) introduced bulimia nervosa as a distinct psychiatric disorder in 1979, our knowledge of bulimia nervosa, specifically, and eating disorders, generally, has progressively grown. Individuals with bulimia nervosa and other eating disorders experience profound and frequently lifelong impairment in psychological, social, and physical functioning. However, these disorders are not receiving sufficient recognition as a critical public health issue according to the National Institute of Mental Health (Pearson, Goldklang, & Striegel-Moore, 2002). Polivy and Herman (2002) asserted an urgent need to reduce the current high "signal-to-noise ratio" (Polivy & Herman, 2002, p. 205) in our understanding of eating disorders. As the literature continues to grow, they hope that our understanding will crystallize into more definitive knowledge of these life threatening conditions and lead to a better quality of life for individuals with eating disorders. Although both scientific and social awareness continues to evolve, eating disorders remain complex and multiply determined conditions that defy simple theoretical explanations (Polivy & Herman, 2002).

## Overview of Eating Disorders

The DSM-IV-TR (APA, 2000) recognizes three distinct eating disorders, anorexia nervosa (AN), bulimia nervosa (BN) and eating disorders not otherwise specified (EDNOS). The diagnostic criteria, symptomatology, medical characteristics, prevalence rates, course and comorbidity patterns of each disorder will be briefly reviewed. After this initial review of each eating disorder, a more intensive discussion of the biological, genetic, familial, social, interpersonal and intrapersonal aspects of BN will be presented.

### *Anorexia Nervosa*

*Diagnostic Criteria.* The DSM-IV-TR (APA, 2000) diagnostic criteria for anorexia nervosa (AN) include a persistent refusal to maintain normal weight, accompanied by extreme fear of weight gain, intense valuation of weight and shape as primary conditions of self-worth, and unwillingness to perceive the degree of risk one's current weight (minimally at 15% below normal) represents. This excessive weight loss must be accompanied by an interval of amenorrhea lasting at least three months. There are two distinct types of AN, restricting type and binge-eating/purging type. In restricting type, individuals engage in severe dietary restriction without the use of binge eating or purging. In binge-eating/purging type AN individuals do engage in binge eating and purging behaviors including vomiting, abuse of purging substances or excessive exercise.

However, there has been recent controversy surrounding the inclusion of amenorrhea as one of the diagnostic criteria of AN or as a clinical measure in other eating disorders. For example, in a study of patients with AN, BN, or EDNOS, menstrual functioning could not be accurately assessed for more than one-third of these patients due to age (prior to onset of menarche or post-menopausal), use of oral contraceptives or

hormone replacements, pregnancy, having had hysterectomies, or being early in the onset of illness such that the 3 month duration of amenorrhea could not be accurately assessed. Furthermore, menstrual disturbance occurred across diagnostic groups, with amenorrhea occurring at a rate of 56% in AN relative to 25% amenorrhea in women with BN and EDNOS. Among participants in this study, amenorrhea occurred for reasons other than their direct eating disorder diagnosis, such as the barriers to accurate amenorrhea assessment listed above, suggesting that amenorrhea or other forms of menstrual disturbance should not be used as a diagnostic tool in any of the eating disorders (Abraham, Pettigrew, Boyd, Russell, & Taylor, 2005). The elimination of amenorrhea and replacement of the 85% weight criteria in the diagnosis of AN with a more specific measure of body mass index are being advocated as clinically useful changes to the DSM criteria for DSM-V (Mitchell, Cook-Myers, & Wonderlich, 2005).

*Symptomatology.* The most distinct symptom of AN is a combination of severe weight loss with an accompanying intense fear of weight gain. Preoccupation and, often, obsession with weight is the central defining psychological feature of AN. This preoccupation may manifest itself through strange food-related behaviors such as hoarding and organizing of food items. Negative affect, irritability, difficulty concentrating, obsessiveness, loss of sexual interest, low self-esteem, rigidity, perfectionism and social withdrawal are common (APA, 2000; Beumont, 2002). At it's most severe, AN transforms from disorder to identity. Beumont (2002) eloquently explained the all-pervasive nature of AN as follows. "Being emaciated is a goal in itself...[sic] It is not that they are closed to reason about their physical condition, but rather that it is irrelevant because the sole purpose of their lives is their illness." (p. 169).

*Medical Sequelae.* Because anorexia nervosa (AN) is associated with the maintenance of a prolonged state of near starvation, anorexic individuals often suffer from anemia, metabolic abnormalities, cerebral atrophy, temperature dysregulation, hypotension, hypothermia, osteoporosis, renal dysfunction and cardiovascular problems (APA, 2000).

Prolonged extreme dietary restriction, with or without compensatory behaviors, leads to malnutrition, dehydration and severe electrolyte imbalances (Beumont, 2002). In a recent literature review, Mitchell and Crow (2006) found that dermatological complications including hair loss, circulatory problems, nail dystrophy, laguno, and other dermatological disturbances; gastrointestinal complications including gastric motor disturbance, stomach rupture, colitis, ulcers, and pancreatitis; cardiovascular complications including arrhythmias, acrocyanosis, and pneumomediastinum; and skeletal complications including loss of bone density were the primary medical sequelae of AN.

In a recent literature review, Katzman (2005) found evidence that the medical sequelae associated with AN in adolescents may differ significantly from those found in adults, with adolescents experiencing earlier cardiac changes, risk of stunted growth, decreased bone density, and changes in cerebral structure and functioning. Katzman (2005) asserted that more research is needed to determine the specific medical sequelae of AN among adolescents and the extent to which these sequelae may or may not be reversible after recovery from AN.

*Prevalence and Course.* Full syndrome AN occurs in 0.5% of the population and generally develops between ages 14 to 18, with 90% of anorexic individuals being female (APA, 2000). The course of AN may be brief, intermittent, or chronic (APA, 2000).

Course is commonly determined by degree of weight loss, with greater degrees of weight

loss, use of compensatory behaviors and longer duration being the key indicators of poor prognosis (Fairburn & Harrison, 2003). Unfortunately, treatment is definitively successful for only 40% of individuals with AN, with 30% showing partial improvement and 20% remaining chronic (Williamson, Zucker, Martin, & Smeets, 2001). In a recent examination of eating disorder incidence and prevalence, Hoek (2006) found support for a prevalence rate of 0.3% for AN and suggested that we must continue to assume underestimation of eating disorder prevalence. Alarming, individuals with AN continue to have very low treatment rates, with only one third receiving mental health treatment (Hoek, 2006). The profound physical and psychological impact of AN is associated with higher mortality rates than any other disorder. It is estimated that more than 10% of individuals with AN die from the disorder (Agras et al., 2004). A recently completed 12-year longitudinal study of the course and treatment outcome predictors of AN yielded consistently discouraging results, with 7.7% dying over the course of the 12-year study, 39.6% having poor outcomes, 25.3% having moderate outcomes, and only 27.5% having good outcomes (Fichter, Quadflieg, & Hedlund, 2006). In another 2.5 year study of eating disorder relapse and remission after inpatient treatment, relapse rates were 32.6% for AN, with relapse being most likely to occur within 9 months of initial remission, and with lower observed weights, longer illness duration, and higher levels of continued treatment after duration being most predictive of relapse in AN (Richard, Bauer, Kordy, & COST Action B6, 2005). Additionally, individuals with longer duration of AN diagnosis and treatment, higher levels of impulsivity, and sexual problems were found to have poorer treatment outcomes overall (Fichter, Quadflieg, & Hedlund, 2006). Birmingham, Su, Hlynsky, Goldner, and Gao (2005) studied a 474 member eating

disorder patient cohort over the course of 20 years and found higher mortality in AN relative to BN and EDNOS, with suicide being the leading cause of death.

In a recent review of health services research in AN, Striegel-Moore (2005) found evidence that culturally diverse patients with AN are less likely to be appropriately treated or diagnosed. Striegel-Moore (2005) found that treatment cost and lack of health insurance were identified as the primary reasons for the current lack of mental health treatment in individuals with AN and advocates the urgent need for increased mental and physical health service equity given the high mortality rate associated with this disorder.

*Comorbidity.* Psychiatric comorbidity is the norm in AN, with 21-91% of individuals experiencing comorbid major depressive disorder and 20-65% experiencing comorbid anxiety disorders, primarily obsessive compulsive disorder and social phobia (Williamson et al., 2001). Anxiety and depression can either precede or follow AN onset (Bulik, 2002). Personality disorders, especially avoidant and obsessive compulsive personality disorder, may be experienced by up to 61% of individuals with AN (O'Brien & Vincent, 2003). Substance abuse disorders have a comorbid prevalence rate of 12 to 18% in AN, with the substances chosen largely facilitating desired weight loss (APA, 2002; O'Brien & Vincent, 2003; Powers, 2002).

### *Bulimia Nervosa*

As part of the overview of eating disorders, we now consider the diagnostic criteria, basic symptomatology, medical sequelae, prevalence, course and comorbidity patterns of BN. Because the present study focuses primarily on BN, we will return later to a more extensive review of BN following this overview.

*Diagnostic Criteria.* The DSM-IV-TR (APA, 2000) diagnostic criteria for BN include uncontrolled binge eating with accompanying unhealthy compensatory behaviors



and excessive emphasis on weight and shape as conditions of self worth. To meet full BN criteria, episodes of binge eating or compensatory behavior must occur frequently, at least twice per week and must have had a minimal 3-month duration.

Bulimia nervosa (BN), like AN, is divided into two distinct types. In the purging type, the individual engages in vomiting or the use of laxatives, diuretics, or enemas as a primary compensatory behavior for binge eating. In the nonpurging type, the individual compensates through severe caloric restriction, excessive exercise, or other methods (APA, 2000). The purging type is far more common, with 80-90% of individuals engaging primarily in these methods versus 10-20% engaging in nonpurging behaviors such as fasting, exercise, or diet pills in response to binge eating (APA, 2000; Cohen, 2003). Purging and nonpurging type BN are united by the characteristics of negative affect, dietary restraint, bulimic behaviors and negative body image (Anderson & Williamson, 2002). Generally, purging type BN is associated with higher levels of psychopathology and poorer prognosis (APA, 2002).

*Symptomatology.* Although individuals with BN are excessively preoccupied with weight and shape as conditions of self-worth, their symptoms are more behaviorally defined than are those of AN. Binge eating with or without compensatory behavior, is the most distinct symptom of BN. Because binge eating remains somewhat subjective and difficult to define within the current body of literature, the affective and biological aspects of this key BN symptom will be examined at some length as follows. The DSM-IV-TR (APA, 2000) recognizes a binge as a 2-hour period of excessive food intake with an accompanying sense of powerlessness over the binge eating behavior. However, eating disorder scholars vary in their relative emphasis on quantity or affect in binge eating, with some emphasizing primarily caloric intake, some emphasizing types of food

consumed, some emphasizing “out of control” affect and some emphasizing an interacting combination of these factors as the primary defining aspect of a binge episode. More research is required to determine exactly how negative affect, high caloric intake and the consumption of particular foods may interact during a binge episode.

Klein and Walsh (2003) emphasized volume and type of food consumed during binge eating as important factors in the maintenance of BN. They stated that typically high fat or sweet foods are consumed during a binge, with other types of food being reserved for normal consumption during periods of dietary restraint. Additionally, they discovered that individuals may consume up to 10, 000 calories per binge episode.

Affectively, binge eating episodes are reported to be triggered most frequently by stressful life events, anxious or depressed feelings, negative affect, negative social situations, sense of powerlessness, low self-efficacy, anger, boredom, loneliness, shame and poor self-esteem (Cogley & Keel, 2003; Stice, 2001a; Waller, 2002). Kalodner (2003) found that 66% of bulimic women were more likely to attribute binge eating to negative affect than to hunger. In spite of the use of binge eating as a maladaptive means to cope with this negative affect, the act of bingeing was profoundly disturbing, with 70% reporting suicidal ideation post binge. The affective aspects of binge eating appear to operate in a cyclic manner. Binge eating acts to reduce an individual’s self-efficacy about her ability to control bulimic behavior, thus leading to purging and more severe caloric restriction, increasing risk of further binge eating episodes (Fairburn, Stice, Cooper, Doll, Norman, & O’Connor, 2003).

In a recent study, individuals who engaged primarily in vomiting as a compensatory behavior demonstrated significantly more extreme lifetime body mass indices, younger onset of menarche, lower likelihood of using laxatives as a

compensatory behavior, greater degrees of novelty seeking, and lower levels of organization and perfectionism than did non-vomiting individuals, suggesting that vomiting may be a specifically high-risk compensatory behavior requiring targeted intervention (Reba et al., 2005).

Alternative compensatory behaviors other than purging by vomiting are also very common in BN and other eating disorder diagnostic groups, and are becoming increasingly common among the at-risk female university student population who are not yet exhibiting full syndromal bulimic symptoms. For example, in a study of all eating disorder diagnostic groups, Bryant-Waugh, Turner, East, Gamble, and Mehta (2006) recently found a laxative misuse prevalence rate of 26.4% among eating disorder patients, with no significant differences in laxative misuse by eating disorder diagnosis. They also found that laxative misuse correlated with greater eating disorder severity, with higher levels of general psychopathology, and with measures of anorexic behaviors and cognitions, dietary restraint, weight and shape concern, hostility, and depression relative to patients with eating disorders who did not engage in laxative misuse (Bryant-Waugh et al., 2006). In a nonclinical examination of diet pill, laxative, diuretic, and other diet aid use among university students in San Diego and San Francisco, 32% of students were found to use at least one of these compensatory methods regularly, with compensatory use being double in San Diego than in San Francisco, suggesting that these compensatory behaviors are markedly high in this at-risk population, and also suggesting that regional differences may partially contribute to eating disorder risk (Celio et al., 2006). Celio and her colleagues (2006) posit that the sharp increase in internet advertising of a wide range of diet aids and lack of information on the health effects of these compensatory behaviors

may further increase the risk of harm to female university students engaging in these behaviors.

Negative affect appears to play a central role in the binge-purge cycle. During binge eating, individuals experience dissociation, lack of control and a reduction of anxiety, which may reinforce additional binges. However, anxiety profoundly increases immediately after binge eating, leading to purging in a maladaptive attempt to regain control (Klein & Walsh, 2003). Binge eating and purging are mutually reinforcing by interacting to reduce negative affect, yet both behaviors ultimately increase levels of negative affect, sustaining the binge-purge cycle (Wilson & Fairburn, 2002).

Individuals who experience higher levels of relief from negative affect and bodily distress during binge eating appear to be less likely to benefit from treatment and more likely to have high levels of perfectionism, low levels of self-esteem, and greater disturbance of interoceptive awareness. This suggests that relief may be a powerful reinforcer in the maintenance of binge eating behavior (Davis & Jamieson, 2005).

Overall, for individuals with BN, binge eating is more defined by loss of control than by the type or amount of food consumed. Many people are unable to estimate the amount of food consumed and the frequency of their binge eating episodes accurately. These difficulties may be due to extreme negative affect, denial, and dissociation commonly occurring during episodes (Anderson & Williamson, 2002). Dissociation in BN has also been found outside of the context of binge eating behavior. For example, in one study, individuals with BN demonstrated dissociation when exposed to threatening word cues, suggesting that addressing dissociation may be an important task in BN intervention (Hallings-Pott, Waller, Watson, & Scragg, 2005). Negative affect appears to be an especially high risk factor in triggering a binge-eating episode. Individuals with BN

report increasing difficulty coping with negative emotions leading up to an episode and use binge eating as a maladaptive coping strategy (Schaffer, 2003).

The negative self-perpetuating cycle of binge eating and purging may also be sustained by biological factors. Biologically, individuals with eating disorders have consistently been found to have decreased levels of serotonin. Decreased levels of serotonin may trigger binge eating by reducing satiety cues and creating sensations of profound hunger. In this context, bingeing behavior may be reinforcing by temporarily increasing serotonin levels. Elevated levels of endogenous opioids and post-binge-eating rebound hypoglycemia may also contribute to the binge purge cycle (Williamson et al., 2001; Cohen, 2003). Disturbances of the serotonin pathways in BN have recently been found to continue after treatment, suggesting that these disturbances may impact both the development and maintenance of BN (Kaye, Frank et al., 2005). Additionally, disturbances in serotonin have been found to impact BN correlates such as affect, poor impulse control, and perfectionism even after initial BN treatment (Kaye, Bailer, Frank, Wagner, & Henry, 2005). Future research examining the role of neurotransmitter activity in eating disorders may clarify whether these dysregulations in serotonin and endogenous opioids exist prior to BN onset or are a consequence of the binge-purge cycle, and may then assist in determining more effective psychopharmacological and therapeutic interventions (Williamson et al., 2001; Kaye et al., 2005).

The compensatory behavior of excessive exercise is currently being re-examined. For example, Mond, Hay, Rodgers, and Owen (2006) argue that the current DSM-IV description of excessive exercise as a compensatory behavior in BN is more duration specific than motivation specific, and posit that anxiety or guilt when not exercising and exercise motivated exclusively by weight and shape concerns may more accurately

characterize exercise as a compensatory behavior. Adkins and Keel (2005) also examined the conceptualization of the motivational factors contributing to compensatory exercise in BN in a non-clinical study. They suggested that compulsive exercise (where individuals engage in rigid exercise programs, experience anxiety when failing to exercise, and exercise for appearance and weight management rather than health maintenance) was predictive of increased BN symptomatology relative to individuals engaging in excessive exercise, or exercise for health maintenance or physical fitness. Adkins and Keel (2005) recommended a consideration of exercise as a compensatory behavior in BN as compulsive rather than merely “excessive”.

Individuals with BN also experience decreased interoceptive awareness, leading them to have difficulty adequately distinguishing hunger, satiety and affective cues. The relative biological and psychological variables involved in this phenomenon, however, are not yet understood (Polivy & Herman, 2002). Therefore, binge eating, as the key symptom of BN, includes complex biological and psychological factors that are still not clearly understood despite an extensive body of research.

*Medical Sequelae.* The medical sequelae of BN are related to both binge-eating and purging behaviors. Electrolyte imbalances, parotid gland swelling, severe dental damage, scarring on hands, and risk of gastric rupture due to frequent self-induced vomiting are common (APA, 2000). Individuals with BN also experience significant risk of aspiration of gastric contents, chemical or bacterial pneumonitites, colon dysfunction due to laxative abuse, gastrointestinal bleeding, and urinary, kidney and pancreatic dysfunction (Gleaves, Miller, Williams, & Summer, 2000). Aside from the direct consequences of excessive vomiting, BN is also associated with extreme metabolic, endocrinal, and neurotransmitter dysregulation (Cohen, 2003). In a recent literature

review Mitchell and Crow (2006) found that medical complications including gastritis, dental problems, liver damage, and swelling of the parotid gland were common medical sequelae of BN.

Individuals who use syrup of ipecac to induce vomiting are at greatly increased risk for serious medical complications due to cardiotoxicity (Powers, 2002; Ogden, 2003; Gleaves et al., 2000).

*Prevalence and Course.* Prevalence estimates of full syndrome BN vary from a fairly conservative 1 to 3% in women, .01-.03% in men (APA, 2000), to 4.5% in female college aged students (Ogden, 2003), to 3-10% in women aged 15 to 29 (Polivy & Herman, 2002). Although there is an increasing level of public awareness about the need to treat eating disorders, it is likely that prevalence rates are significantly higher than currently reported due to continuing stigma, shame, and individual desire to avoid detection and intervention efforts (Polivy & Herman, 2002). However, in a recent examination of BN point-prevalence over a 20 year span, BN prevalence has somewhat decreased among college students between 1982 to 2002, with overall decreases in binge eating but not in purging or other compensatory behaviors, suggesting a potential shift in the prevalence of specific BN symptoms across this time span (Keel, Heatherton, Dorer, Joiner, & Zalta, 2006). This BN prevalence rate decrease is somewhat inconsistent with Hoek (2006), who found a 1% BN prevalence rate and support for general underestimation of eating disorder prevalence rates. Additionally, Hoek (2006) found support for an underutilization of mental health services, with only 6% of bulimic individuals receiving mental health treatment.

There are also larger and more disturbing barriers to the accurate estimation of BN prevalence. Research, prevention, and treatment initiatives are all dependent upon

accurate epidemiological data. However, according to Striegel-Moore and Cachelin (2001), prevalence studies are generally conducted with clinical samples, so little is known about community prevalence rates. The prevalence “gold standard,” the Epidemiological Catchment Area Study, did not include BN and thus there is currently “...no data base in the United States that would permit an estimate of the prevalence of BN in a nationally representative sample.” (Striegel-Moore & Cachelin, 2001, p. 639).

The course of BN is variable, with many individuals experiencing periods of relapse and remission, while others remain chronic, or experience significant symptom reduction after long symptomatic periods. Chronicity and relapse appear to be the norm in both the natural and clinical course of BN (APA, 2000). Generally, BN onset begins from late adolescence to the early twenties (Kaye, Klump, Frank, & Strober, 2000) and is most commonly associated with severe life stress and dieting. BN typically begins as a maladaptive attempt to achieve the thin ideal, but the binge-purge cycle can increasingly become self-sustaining and an overwhelming part of individual identity (Cohen, 2003).

In an extensive study of the natural course of BN, Fairburn, Cooper, and colleagues (2000) found generally poor outcomes, with 15% still meeting full criteria and 50-75% meeting clinically significant partial-syndrome criteria after a five-year period. In the community, remission and relapse rates appear to remain relatively steady at 30%. In clinical samples, relapse rates are approximately 30-50% (APA, 2000). Although 30% relapse rates appear fairly consistent across studies, recovery and maintenance rates show far greater variability. Klein and Walsh (2003) suggested that 50% of clinical cases of show full recovery, with 20% continuing to meet full BN criteria after a five-year period. However, Gleaves, Miller, Williams, and Summer (2000) suggested that relapse rates may actually be closer to 63% post treatment.



While there is a widely accepted understanding that relapse and remission are common in BN, in a recent review relapse rates ranged from 21 to 55% across studies, demonstrating a need for standardized, behaviorally-based definitions of relapse and remission to replace the current definitions, which are primarily duration based and highly variable (Olmstead, Kaplan, & Rockert, 2005).

In a recent wide-scale study of eating disorder diagnostic crossover, 27% of individuals with BN developed AN within the first 5 years of their initial diagnosis, and 36% of individuals with AN developed BN during this same time span, with difficulties with self-directedness, low levels of novelty seeking, and elevated alcohol use being the most significant correlates of the diagnostic crossover from BN to AN (Tozzi et al., 2005).

Because individuals are typically normal weight, bulimic behavior often remains hidden for years until severe medical complications arise (Polivy & Herman, 2002; Gilbert, 2000). In an extensive metaanalysis of BN prevalence and incidence across North America and Western Europe, Hoek and van Hoeken (2003) found that only 6% of individuals with full syndrome BN are receiving treatment for their disorder.

Currently, an average of only 11% of community BN cases are detected by family physicians. Of these, only 50% are then referred to eating disorder specialists (Hoek, 2002). This low rate of detection is particularly troubling in light of a recent community study showing that family physicians were consistently identified as the preferred source of eating disorder treatment over psychologists or psychiatrists, despite having received significantly less training on these issues (Mond, Hay, Rodgers, Owen, & Beumont, 2004). There is growing evidence of the need for more extensive eating disorder training and a more comprehensive, collaborative approach to detection across disciplines.

Mortality rates for BN range from 1-5%, with cause of death most commonly attributed to cardiac abnormalities, severe electrolyte imbalances, and suicide (Ogden, 2003; Powers, 2002). Kalodner (2003) associated elevated mortality rates with longer duration of purging-type BN symptoms, suicidal ideation, and higher levels of weight related substance abuse such as diet pills, laxatives, and syrup of ipecac.

*Comorbidity.* Although there is consistent evidence of frequent comorbid psychopathology in BN, there is still not a clear, unifying theory to explain these findings. In an extensive recent 5-year study conducted by the Remuda Ranch Program for Eating Disorders (Blinder, Cumella, & Sanathara, 2006), 97% of program inpatients were found to have at least one comorbid Axis I disorder, with 93 to 95% experiencing a comorbid mood disorder, most commonly depression, and with 55 to 59% experiencing a comorbid anxiety disorder. In this study, individuals with BN were more likely than individuals with AN to experience a comorbid substance use disorder, but there were no significant differences between individuals with BN and individuals with AN in comorbid mood and anxiety disorders (Blinder et al., 2006).

Comorbid depressive disorders, including major depressive disorder and dysthymic disorder, are experienced by 50-75% of individuals with BN (APA, 2002). Major depressive disorder appears to have the longest lasting comorbidity with BN, with 41% meeting criteria for major depressive disorder five years after their initial eating disorder diagnosis, despite an overall 30% decrease in other comorbid psychiatric symptoms (Fairburn, Cooper et al. 2000).

According to the American Psychiatric Association (2002), anxiety disorders, particularly generalized anxiety disorder and social phobia, are also very common in BN. However, there is currently little U.S. based research on specific comorbid prevalence

rates. Two extensive Western European DSM-IV based comorbidity prevalence studies have been conducted, finding lifetime prevalence of at least one comorbid anxiety disorder in 71% of individuals with BN, with anxiety frequently but not exclusively preceding eating disorder onset (Godart, Flament, Lecrubier, & Jeammet, 2000; Godart et al., 2003). In a collaborative study of comorbid anxiety disorders in AN and BN drawing samples from North America and Western Europe, 63.5% of individuals with eating disorders were found to have a comorbid lifetime anxiety disorder, with obsessive compulsive disorder and social phobia occurring most commonly. The onset of comorbid anxiety disorders occurred before eating disorder diagnosis in 42% of the sample. The anxiety comorbidity prevalence did not significantly differ by eating disorder diagnostic type (Kaye, Bulik et al., 2004). The only significant exception to this anxiety and eating disorder comorbidity pattern occurred for comorbid Post Traumatic Stress Disorder, which was three times more common in BN than in the other eating disorder diagnostic groups, with onset generally occurring after initial BN diagnosis. More research is required to determine the potential reasons for this higher rate of PTSD comorbidity in BN (Kaye, Bulik et al., 2004). Using a twin study paradigm, Keel, Klump, Miller, McGue, and Iacono (2005) found a potential shared transmission between eating and anxiety disorders, but recommended more research to determine the exact nature of this potential shared transmission.

Substance abuse disorders are also common in BN, with prevalence rates ranging from 22.9% to 47% for alcohol use disorders, to 28 to 37% for other substance abuse disorders in BN (APA, 2002; O'Brien & Vincent, 2003; Powers, 2002). In an 8-year longitudinal study of comorbid alcohol use disorder among women with AN and BN, 27% of sample participants had long-term comorbid alcohol use disorder, with an

additional 10% developing alcohol use disorder during the study, and with comorbid alcohol use disorder not significantly differing by eating disorder diagnostic type (Franko et al., 2005). In a related 8-year longitudinal study of comorbid drug use disorder among women with AN and BN, 17% of sample participants had a lifetime comorbid drug use disorder, with amphetamines, cocaine, and marijuana being the most commonly used drugs among this sample, and with no significant differences between eating disorder diagnostic groups in comorbid drug use disorder (Herzog et al., 2006).

Although the abuse of amphetamines, tranquilizers, and marijuana are frequently reported in BN, weight-related substances are far more commonly abused. Mitchell, Specker, and Edmonson (1997) report daily laxative abuse in 19.7%, daily diet pill abuse in 25.1%, and daily diuretic abuse in 10.2% of individuals studied, with frequent and occasional use reports being much higher. Diet pills can be amphetamines, herbals, or combination formulas that impact metabolism. Abuse of weight-related substances is particularly dangerous due to risk of severe electrolyte imbalances, hypertension, dehydration, colon and renal damage, and cardiotoxicity for the 1.1% reporting frequent syrup of ipecac abuse. Further, these substances are relatively inexpensive, legal, and readily available, making detection of abuse particularly difficult.

More research is required to determine the nature of the comorbid relationship between BN and substance use disorders. It is generally agreed that individuals with these comorbid disorders experience higher levels of overall psychopathology, but there is currently no support for an underlying shared model of addiction and limited evidence of shared etiological factors (O'Brien & Vincent, 2003; Wilson, 2002b). In a recent non-clinical sample of women with BN drawn from the Collaborative Study of the Genetics of Alcoholism, there was preliminary support for two distinct subtypes of BN: one with

comorbid substance dependence, high impulsivity, and more impaired levels of daily functioning and one without this comorbidity pattern, suggesting a need for further research into the impact of substance dependence on the maintenance of BN (Duncan et al., 2005).

Personality disorders, especially borderline personality, are frequently reported comorbid conditions with BN. It is possible that these elevated rates of personality disorder may be related to a common experience of sexual abuse or to increased levels of impulsiveness in BN, but more research is required (O'Brien & Vincent, 2003). In a recent review of comorbid personality disorders in individuals with eating disorders, Cassin and Von Ranson (2005) found extreme fluctuations in comorbid personality disorder prevalence rates, ranging from 0 to 58%, and with avoidant, obsessive compulsive, dependent, and borderline personality disorders being the most common comorbid personality disorders in eating disorders. Cassin and Von Ranson (2005) also found evidence that self-report based studies tended to overestimate personality disorder comorbidity, and suggested that personality dimensions such as perfectionism, impulsivity, and control may be more useful than personality disorders in predicting eating disorder symptomatology. To date, it is unclear if personality disorders precede BN, are sequelae, or if there are underlying moderating variables involved in this relationship (Wonderlich, 2002).

While much of the literature on comorbidity in BN has centered around mood, anxiety, and substance use disorders, less commonly comorbid conditions are also becoming a focus of study. For example, in a recent study of comorbidity in body dysmorphic disorder, 15% of participants had a comorbid eating disorder diagnosis that developed after the initial body dysmorphic disorder diagnosis, with this comorbidity

profile demonstrating poorer body image and greater utilization of mental health services relative to individuals without comorbid eating disorders in this clinical population (Ruffolo, Phillips, Menard, Fay, & Weisberg, 2006). While there is very little research on the comorbidity between bipolar and eating disorders, in a recent literature review bipolar disorder was found to be slightly more common in BN than in the other eating disorders, suggesting the need for additional research on this comorbidity pattern (McElroy, Kotwal, Keck, & Akiskal, 2005).

Much remains to be discovered about the complex and interacting relationships between BN and comorbid psychiatric disorders. In BN, depression can occur at any time, but anxiety typically precedes the onset of bulimic symptoms. These findings suggest that comorbid disorders may share some etiological elements with BN. However, there is currently little support for a purely common etiology, common risk factors, or common sequelae or antecedents to these disorders (Bulik, 2002).

#### *Eating Disorders Not Otherwise Specified*

Eating disorders not otherwise specified (EDNOS) must be discussed in a somewhat different format from AN or BN. EDNOS are disorders that do not meet the full syndromal criteria for either AN or BN, but are nonetheless clinically significant (APA, 2000). EDNOS are not organized by the established diagnostic criteria, symptomatology, medical sequelae, prevalence, course and comorbidity found in AN and BN literature but by their similarity to AN or BN. The present section will be designed to provide a brief definition of the DSM-IV-TR (APA, 2000) categorical inclusion criteria for EDNOS, followed by a review of what is currently known about prevalence and course in the existing eating disorder literature. Finally, there will be a brief discussion of

alternative views to the current categorization of AN, BN and eating disorders as distinct diagnostic categories.

*Diagnostic Inclusion Criteria.* Eating disorders not otherwise specified are largely defined by their similarity to AN, or BN. According to the American Psychiatric Association (2000), these disorders may closely resemble AN, meeting all diagnostic criteria with the exceptions that menses is present or current weight that is above the 15%-below-normal range required for an AN diagnosis. EDNOS may also closely resemble BN, meeting all diagnostic criteria with the exceptions that the frequency and duration of symptoms are somewhat lower than full syndrome criteria. Additionally, eating disorders not otherwise specified may include purging, without binge eating, in which individuals may purge after only small amounts of food intake, or may spit out binged food before it is swallowed. Individuals may also experience binge eating disorder, in which binge eating without compensatory behavior is the primary presenting symptom (APA, 2000). While it is currently considered an EDNOS, a growing number of researchers believe that there is sufficient evidence to justify the introduction of binge eating disorder as a separate diagnostic category in future APA Diagnostic and Statistical manuals (Cooper & Fairburn, 2003).

*Prevalence and Course.* In research practice, EDNOS are generally termed atypical, subclinical, or partial-syndrome eating disorders. To date, these terms appear to be used interchangeably. For the sake of clarity, the term partial-syndrome eating disorder will be used throughout this paper to signify eating disorders not otherwise specified. The current prevalence rate of partial-syndrome eating disorders is from 4-6% in the general population (Herzog & Delinsky, 2001) to 10% for women in late adolescence and early adulthood (Striegel-Moore & Smolak, 2001). This gives partial-

syndrome eating disorders more than twice the prevalence rates of full syndrome AN or BN (Polivy & Herman, 2002).

In a five-year community based study, 15% of individuals with BN maintained full criteria status, 34% went on to develop partial-syndrome disorders, and 2% went on to develop AN (Fairburn, Cooper, Doll, Norman, & O'Connor, 2000). While it is quite common for full syndrome eating disorders to evolve into partial-syndrome disorders, Williamson and colleagues (2001) found that up to 40% of individuals with partial-syndrome eating disorders proceed to a full syndrome diagnosis. To date, there is still very little known about the development, maintenance and treatment of partial-syndrome eating disorders. Current treatment recommendations are to treat anorexia-like partial-syndrome symptoms as AN and to treat BN-like symptoms as BN. However, research on the efficacy of this approach is limited (Fairburn & Harrison, 2003). Our current lack of knowledge about partial-syndrome eating disorders is particularly disturbing in that these individuals represent approximately 50% of the individuals currently seeking treatment (APA, 2002). Perhaps more alarmingly, Fairburn and Bohn (2005) found a 60% EDNOS prevalence rate among eating disorder diagnoses made, making this diagnosis far more common than AN and BN diagnoses combined. Despite the wide-spread prevalence of this diagnosis, there is a marked lack of research investigating the etiology, course, or treatment outcome of EDNOS, leading Fairburn and Bohn (2005) to recommend three potential solutions to this void in the literature. These three recommendations include expansion of the current AN and BN diagnostic criteria to include cases of EDNOS that closely resemble each of these diagnoses; inclusion of a mixed eating disorder diagnostic category to reflect cases of EDNOS that do not accurately belong in only one of the AN or BN categories, and finally eventual adoption of a singular transdiagnostic approach to



eating disorder classification, allowing for a classification system that accurately reflects the high level of clinical crossover between the current eating disorder diagnoses (Fairburn & Bohn, 2005). In an examination of the relationship between full syndromal BN and EDNOS with bulimic features there were more similarities than differences between these diagnostic groups on functional impairment, with full syndromal BN having higher lifetime AN rates, higher binge eating and purging frequency, and higher levels of eating concerns relative to EDNOS with bulimic features, but with no significant differences between these diagnostic groups on measures of psychiatric comorbidity, dietary restraint, weight and shape concerns, or subjective binge eating episodes (LeGrange, Binford, et al., 2006). Le Grange and his colleagues (2006) advocated re-evaluation of the current DSM-IV BN diagnostic criteria to include EDNOS with bulimic features that are clinically significant, to improve assessment and treatment of this currently under-diagnosed and under-treated diagnostic group.

#### *Alternative Views of Eating Disorder Categorization*

In clinical practice, eating disorders often differ primarily in the degree of pathology, with a lesser degree of variance in presenting symptoms (Crow, Agras, Halmi, Mitchell, & Kramer, 2002). Due to the high degree of commonality among eating disorder diagnoses, future researchers may return to a single spectrum perspective rather than separating into AN, BN and EDNOS. This approach is mirrored by the use of a transdiagnostic perspective, in which eating disorders are linked by an underlying common psychopathology (Fairburn & Harrison, 2003). This perspective may better account for the frequent crossover between AN, BN and EDNOS. In the past decade, more than twice the number of patients seeking eating disorder treatment were diagnosed with partial-syndrome AN or BN, or EDNOS (Polivy & Herman, 2002).

Since EDNOS is currently by far the most common eating disorder in both inpatient and outpatient settings, and patient transition between eating disorder diagnoses is the norm, Fairburn and Cooper (2007) proposed that the current AN and BN eating disorder diagnostic criteria be expanded to include subthreshold criteria, and a new "mixed eating disorder" diagnosis be added to account for the transitional nature of individuals moving between AN and BN symptom profiles. In addition, research must be expanded to examine treatment outcome across these profiles. However, Fairburn and Cooper (2007) acknowledged that expanding the current diagnostic criteria is only a temporary solution until we reach a better shared understanding of the transdiagnostic nature of the eating disorders as a whole.

Alternative views of eating disorder categorization have recently led to careful examination of our current research methodology and to results that may yield more focused prevention and intervention initiatives. For example, in a literature review of studies that used statistical procedures that allow for careful consideration of the relative continuity or discontinuity of eating disorders, Gleaves, Brown, and Warren (2004) found general support for the discontinuity model of eating disorders, in which these disorders exist as separate, distinct clinical phenomena, rather than existing along a continuum from normal to disordered eating. Additionally, they posited that our current categorization of AN and BN may benefit from diagnostic revisions that would consider binge eating and purging behaviors, regardless of eating disorder diagnosis, as clinically separate from dietary restriction in order to maximize our assessment, intervention, and prevention efforts (Gleaves et al., 2004).

In a recent study, Williamson, Gleaves, and Stewart (2005) provided evidence supporting a transition from categorical or dimensional eating disorder categorization

toward a more complex model that combines both categorical and dimensional frameworks into a three dimensional eating disorder classification system in which there would be three eating disorder classifications: AN restricting type, BN, and binge eating syndrome. In this classification system, BN would then be subdivided into normal vs. low body weight categories, and binge eating syndrome would then be subdivided into high vs. low body image concerns. In recommending this alternative classification system, Williamson et al. (2005) suggested that future etiological, prevention, assessment, and intervention research efforts should be guided by careful symptom-based, full-syndrome samples among each of these three categories to yield greater insight and efficacy than those based on our current categorical or dimensional models.

Consideration of the clinical significance of specific eating disorder behaviors appears likely to lead to clinically useful reorganization of our current categorization system. For example, in a wide scale community based study, there was evidence supporting the creation of three distinct subtypes of BN: one consistent with the current DSM-IV criteria; one in which individuals purge but do not engage in binge eating; and one in which individuals binge and engage in compensatory behaviors but do not purge by vomiting, thus not remaining consistent with a binge eating disorder presentation (Striegel-Moore et al., 2005). More research is needed to investigate the exact nature of these clinically significant potential BN subtypes (Striegel-Moore et al., 2005).

### Bulimia Nervosa Literature Review

The preceding section was intended to place (BN) within the larger diagnostic context of eating disorders. Because the present study will examine inner experience in BN particularly, our discussion will now turn to a more thorough examination of this

disorder. This discussion will begin with a review of our current understanding of BN etiology and will be followed by a review of heritability issues. The unique influences of gender and ethnicity on BN will then be examined. Familial factors and the history of sexual abuse relating to BN will then be examined. Next, the sociocultural factors will be discussed, followed by a review of the roles that social phenomena such as dieting and peer relationships may play in the development and maintenance of BN. This BN overview will conclude with an examination of the cognitive and intrapersonal correlates of the disorder.

### *Etiology*

Despite 30 years of research, there is not yet a clear and comprehensive understanding of BN etiology. Although there is growing evidence of significant risk factors, it is not currently possible to assert a definitive theory of etiology. Fairburn and Harrison (2003) warned against making definitive etiology statements without sufficient accumulated evidence.

There is undoubtedly a genetic predisposition and a range of environmental risk factors, and there is some information with respect to the identity and relative importance of these contributions. However, much remains unknown about the individual causal processes involved or about how they interact and vary across the development and maintenance of these disorders (Fairburn & Harrison, 2003, p. 409).

There are three current theories of BN development and maintenance, including the sociocultural, cognitive behavioral, and biopsychosocial models. Each of these models will be briefly reviewed, and each yield clinically useful perspectives, but

consistent with Fairburn and Harrison (2003) it is important to note that more research is required to determine the exact nature of BN etiology.

The sociocultural model holds that BN is maintained by an internalization of the sociocultural thin ideal, which leads to body dissatisfaction, negative affect, dietary restraint, and binge eating behaviors. The sociocultural model was recently supported in a literature review conducted by Stice, Peart, Thompson-Brenner, Martinez, and Westen (2006). However, this review illustrates several remaining barriers to a clearly defined etiology of BN including a lack of prospective studies accurately predicting BN onset; a lack of predictive studies based on BN risk factors; a lack of clarification of the potential differences in risk factors between bulimic adolescents and adults; and posits the need for more research on the etiology of specific risk factors or personality correlates of BN in order to yield greater insights into bulimic etiology (Stice et al., 2006).

An alternate view of the sociocultural model, called the dual-pathway model, holds that BN is maintained by an internalization of the sociocultural thin ideal which then leads to body dissatisfaction; and that it is this body dissatisfaction which acts as a catalyst for bulimic pathology, leading to negative affect and dietary restraint rather than internalization of the sociocultural thin ideal leading directly to negative affect and dietary restraint (Stice, 2001b). However, this dual-pathway model only accounted for 23% of the variance in bulimic pathology, suggesting that a complex interaction of other risk factors are likely to be critical in the development and maintenance of BN (Stice, 2001b).

The cognitive behavioral model of BN, posited by Fairburn, Cooper, and Shafran (2003) proposed that cognitive overemphasis on the importance of weight, shape, and eating leads to dietary restriction, compensatory behaviors, and cognitive preoccupation

with weight, shape, and eating. This dietary restriction and preoccupation then trigger binge eating behavior, which then triggers purging behavior. Intense self-criticism and negative self-evaluation appear to play an additional active role in maintaining these cyclic bulimic behaviors (Fairburn, Cooper, & Shafran, 2003).

An alternate view of the cognitive behavioral model of BN is the three-factor interactive model in which perfectionism, low self-efficacy, and cognitive perceptions of being overweight interact to contribute to binge eating behaviors but not to other compensatory behaviors, suggesting that further research to determine the cognitive and behavioral correlates of binge eating separately from the same correlates of purging may yield important insights that may then inform prevention and intervention efforts (Bardone-Cone, Abramson, Vohs, Heatherton, & Joiner, 2006).

The biopsychosocial model of BN holds that complex physiological, cognitive, affective, behavioral, and environmental risk factors interact to maintain bulimic symptoms. The biopsychosocial model was generally supported in a literature review conducted by Polivy, Herman, and Boivin (2004). However, there was still no single, unified etiological theory of BN that could be drawn from this review, suggesting that we have made little progress toward understanding BN etiology, that our current progress is limited by difficulties conducting prospective research studies, and ethical boundaries forbidding direct observation of binge eating and purging behaviors in vivo (Polivy et al., 2004). Ultimately, despite sincere efforts to examine all potential theories of BN etiology, Polivy and her colleagues concluded somewhat dishearteningly: “Perhaps researchers will simply have to get used to the idea that they may never have a genuine understanding of eating disorders” (p. 249).

Despite these relatively dire predictions for an integrated theory of BN, Southgate, Tchanturia, and Treasure (2005) have recently proposed an integrated model of eating disorder etiology in which genetic, environmental, and neurochemical vulnerability interact with neurodevelopmental processes during adolescence including development of the social information processing network that controls cognitive and affective processing. In the presence of triggering stressors, disruptions in development are proposed to lead to eating disorder onset through a series of maladaptive coping mechanisms during this vulnerable developmental period. These maladaptive coping strategies can include difficulties with cognitive or affective information processing, which can lead to perfectionism, impulsivity, need for control, and ultimately eating disorder symptomatology. While this remains a working model only, and is in need of extensive testing and validation, it appears to hold promise for incorporating a wide array of risk factors and presents a novel explanation for why adolescents may be an especially vulnerable period for eating disorder onset (Southgate et al., 2005).

To date, BN is understood to be multiply determined, with biological and environmental factors interacting to create vulnerability. Polivy and Herman (2002) proposed that the greater the number of interacting social, familial, cultural, biological, and individual psychological risk factors one experiences, the higher the risk of developing a clinically significant eating disorder. Consistent with Fairburn and Harrison's (2003) approach, this paper will review current literature on BN risk factors, while acknowledging that a definitive theory of etiology has yet to be discovered. At present, our understanding of the etiology of BN is significantly behind our knowledge of other issues related to this disorder (Striegel-Moore & Cachelin, 2001).

### *Heritability*

There is evidence of increased rates of eating, affective, and substance related disorders in the first-degree relatives of individuals with BN (APA, 2000). However, exact concordance rates remain somewhat unclear (APA, 2002). In twin studies, there is a 35% monozygotic concordance rate for BN and a 30% dizygotic concordance rate. More wide scale research is required, as several twin studies fail to account adequately for the effects of shared environment (Fairburn & Harrison, 2003). There is also evidence of the heritability of bulimic behaviors, especially binge eating and vomiting, perhaps contributing to biological risk factors in BN development (Strober & Bulik, 2002).

In a wide scale study of bulimic probands and their eating disorder affected family members, Kaye and his colleagues (2004) found that 34.8% of affected first-degree relatives met BN criteria, 27.5% of affected first-degree relatives had been diagnosed as bulimic with a history of AN, and 19.7% of affected first-degree relatives had been diagnosed with AN. This suggests that genetic heritability is most likely for eating disorders as a whole, regardless of presenting type (Kaye et al., 2004). Overall, there is agreement that BN has a strong genetic component, but far more research is needed to determine the relative contributions and complex interaction of genetic and environmental factors (Striegel-Moore & Cachelin, 2001). There is also a need for further examination of the potential genetic factors that may contribute to the biological and psychological correlates of BN (Polivy & Herman, 2002). As our genetic knowledge and technology evolve, it is likely that our understanding of the heritability and potential genetic markers involved in BN will grow exponentially.



## *Gender*

Bulimia nervosa (BN) is almost exclusively a women's health issue. Individuals with BN are 80-90% female (Powers, 2002; APA, 2000). There is significantly greater pressure for females to attain physical ideals of beauty and thinness and a greater risk of sexual abuse and harassment, all of which may contribute to a perception of powerlessness over one's body and a desire to restore control (Striegel-Moore & Smolak, 2002).

In spite of significant social advancements, gender inequality still exists. Young women are given the implicit and at times explicit message that their success is linked to their ability to achieve cultural ideals of attractiveness (Smolak & Murnen, 2001). In addition to these unique female social pressures, women also experience a somewhat elevated degree of risk for developing psychiatric disorders (Powers, 2002).

Physiologically, women experience a higher degree of hormonal fluctuation, which may influence hunger and satiety signals (Cohen, 2003); women also have a physiological tendency toward a higher body mass index (Powers, 2002). College women are the highest risk group for BN (Cashel, Cunningham, Landeros, Cokley, & Muhammad, 2003), with women ages 20-24 having particularly elevated risk (Hoek & van Hoeken, 2003).

Harvey and Robinson (2003) predict that prevalence rates for men will likely rise due to an increasing social and media pressure for men to achieve a lean and muscular ideal. These pressures are already reflected by marked increases in protein, steroid, and dietary supplement consumption. However, they found that men are still less likely to seek treatment and there is still a stigma associated with eating disorders and male

sexuality. Homosexual men appear to be at somewhat elevated risk for eating disorders and experience increased body dissatisfaction and higher levels of peer pressure to attain a muscular ideal (Hospers & Jansen, 2005). However, our current understanding of sexual orientation as a potential risk factor has been challenged by Wichstrom (2006) who conducted a prospective study to examine the extent to which sexual orientation in adolescence predicted future bulimic behaviors and found that same-sex sexual orientation in adolescence was predictive of bulimic symptomatology at 5-year follow-up for both males and females. This predictive relationship remained after controlling for initial eating disorder symptomatology, with males exhibiting slightly higher risk of developing eating disorder pathology. Wichstrom (2006) was unable to generate a clear explanation of elevated eating disorder risk among females with same-sex sexual orientation, and advocated additional research on this previously unexpected finding. While previous studies have suggested that eating disorder risk in homosexual males may be related to body dissatisfaction and internalization of the sociocultural thin ideal, Whichstrom (2006) did not find these to be significant mediators among his male participants. This study illustrates the need for more research to determine the role that sexual orientation may play in the onset and maintenance of bulimic symptomatology.

Examination of eating disorders in men is likely to uncover internalization of a muscular rather than a thin ideal. For example, Grieve, Newton, Kelley, Miller, and Kerr (2005) found that male undergraduate students report a desire to be more muscular and a perception that female undergraduate students perceive muscular men as more attractive than non-muscular men. Weltzin et al. (2005) found that men with eating disorders tend to engage in excessive exercise in favor of other compensatory behaviors, tend to value a muscular ideal, tend to engage in steroid use, are less likely to seek treatment, and are

less likely to receive extensive treatment after diagnosis. Since eating disorders are still perceived as largely a women's disorder, men report that they have found male-only treatment groups to be particularly helpful (Weltzin et al., 2005). Despite studies suggesting that a muscular sociocultural ideal may be contributing to a rise in disordered eating among men, a recent British study of men referred to a hospital-based eating disorder treatment program across a 21-year span found no evidence of an increase in clinically significant eating disorders among men, but cautioned that this may not be reflective of the hypothesized increase in disordered eating and compensatory exercise strategies among men in non-clinical samples (Button, Aldridge, & Palmer, 2008).

Among both females and males with eating disorders, consideration of gender identification may yield important information. In an examination of the relationship between women's gender role orientation and eating disorder symptomatology, Hepp, Spindler, and Milos (2005) found that androgyny was correlated with low eating disorder symptomatology, and undifferentiated gender role orientation was correlated with high eating disorder symptomatology. Hepp et al. (2005) posit that clear assessment of gender role orientation may be an important aspect of eating disorder intervention.

In a community-based study, Piran and Cormier (2005) suggest that behaviors such as self-silencing, suppression of anger, and self-objectification, typically associated with oppressive gender role constructs, were predictors of eating disorder pathology; they posit that challenging inflexible gender role constructs may help to prevent the development of eating disorder pathology.

Despite the profound gender split in BN, there has actually been a decrease in research directed specifically to gender issues. Unfortunately, the disinclination to examine gender appears to be more of a political than a scientific decision in the field and

may lead us to miss important contributing factors in the development, maintenance and treatment of BN specifically and eating disorders as a whole (Smolak & Murnen, 2001). Despite this overall decrease in gender-based eating disorder research, there have been encouraging recent developments in efforts to examine gender and ethnicity more directly. For example, Warren (2008) found that awareness and internalization of Western sociocultural ideals with regard to appearance were strong predictors of body dissatisfaction in both Hispanic and Euro-American college-aged men.

### *Ethnicity*

Bulimia nervosa (BN) has traditionally been viewed as occurring mainly in Caucasian women, but there is not currently sufficient research in diverse populations (APA, 2000). Caucasian women living in Western society do appear to constitute the highest risk group (Fairburn & Harrison, 2003). Cashel and her colleagues (2003) linked the somewhat elevated risk for Caucasian women to their greater internalization of the cultural thin ideal relative to African American women. However, other studies have shown BN prevalence to be equal across cultural groups. This discrepancy may be due to a lack of assessment measure standardization among diverse groups (Cashel et al., 2003).

Mitchell and Mazzeo (2004) found no significant differences between African American and Caucasian women on the severity of eating disorder symptoms but did find differences in the correlates of eating disorder pathology. Anxiety was an independent predictor of eating disorder pathology for African American women, whereas depression as an independent predictor for Caucasian women. Mitchell and Mazzeo (2004) suggested that African American women may experience greater stressors related to racism than do Caucasian women, and that may impact the development and maintenance of their eating disorder pathology. More importantly, the findings highlight the need for

consideration of how the predictors of eating disorder pathology may vary by culture (Mitchell & Mazzeo, 2004).

Regan and Cachelin (2006) examined the frequency of eating disorder behaviors in a multi-ethnic nonclinical sample consisting of participants from four ethnic groups (Latina, African-American, Asian-American, and Caucasian). They found significant ethnic differences in purging and compensatory behaviors, with Asian-American women being far less likely to engage in these behaviors than were Latina, African-American, and Caucasian women. Regan and Cachelin (2006) also found significant sex differences in binge eating, purging, and compensatory behaviors such that these behaviors were significantly more prevalent among women than men overall, but that the frequency of these sex differences differed by ethnicity. Purging was more common among women than among men in all but the Asian-American group, and binge eating being was significantly more common among African-American and Caucasian women than among men in any of the ethnicity groups. Overall, Regan and Cachelin (2006) posited that these ethnicity and sex differences suggest the need for careful consideration of ethnicity and sex differences in the assessment of eating disorder behaviors, and also suggest that these behaviors, while significantly different in women and men, appear to be more common in men than has been previously assumed.

Differences in the unique predictors of eating disorder pathology by ethnicity are beginning to be uncovered by other studies. For example, in a study with adolescent psychiatric inpatients, White and Grilo (2005) found significant differences in the predictors of dietary restraint, body dissatisfaction, binge eating, and purging among Caucasian, African American, and Latina women; they suggested that these differences

may indicate the need for culturally specific differences in prevention and intervention efforts in each of these cultural communities.

Cummins, Simmons, and Zane (2005) recommended the urgent need for clearer understanding of the complex interactions between culture and eating disorder pathology and recommended necessary methodological advances along four primary domains as follows. The first recommended methodological advance would be for studies to ensure greater cultural heterogeneity in research sampling to increase our ability to examine the culturally specific variables that may impact eating disorder pathology. Second, there is a need for larger samples giving more power to studies of eating disorder pathology in diverse samples. Third, there is a need for culturally sensitive and appropriate assessment measures. Finally, there is a need for clear operational definitions of the specific cultural factors that may impact eating disorder pathology in diverse communities (Cummins et al., 2005).

Research on eating disorders in diverse populations would also benefit from increased consideration of acculturation issues. In a study of dieting and weight control practices in a non-clinical sample of Lebanese university students, Tamim et al. (2006) found that 6% of these students engaged in purging, laxative, and diet pill use as a means of weight control. Additionally, students who had lived outside of Lebanon appeared to be at elevated risk for these behaviors, suggesting the potential influence of acculturation to the Western sociocultural thin ideal (Tamim et al., 2006).

In a study of the 1996 National Eating Disorders Screening Program, Becker, Franko, Speck, and Herzog (2003) found that ethnic-minority individuals were less likely to seek treatment. More disturbingly, Becker and her colleagues found that during the screening process, ethnic-minority individuals were 31% less likely to be referred for

treatment despite meeting identical diagnostic criteria. Unfortunately, despite increasing awareness, recent studies continue to uncover this disparity. In the Mexican American community, Cachelin and Striegel-Moore (2006) found that Mexican American women were less likely to be screened for eating disorders by their primary care physicians, were less likely to be referred for eating disorder treatment after presenting with eating disorder related concerns, and were less likely to seek access to psychological assistance with eating disorder concerns beyond presenting to their primary care physicians. Alarming, when presenting to their physicians with weight concerns, Mexican American women were not only less likely to be screened and treated for eating disorders, they were also more likely to be prescribed diet pills, potentially contributing to eating disorder pathology. These findings point to a clear and urgent need for increased awareness of and access to accurate eating disorder assessment and effective intervention strategies among primary care physicians treating Mexican American patients (Cachelin & Striegel-Moore, 2006).

In a non-clinical examination of ethnicity as a potential buffer against body dissatisfaction and internalization of the sociocultural thin ideal across three cultural groups, Warren, Gleaves, Cepeda-Benito, Fernandez, and Rodriguez-Ruiz (2005) found that European American women had the highest levels of body dissatisfaction and internalization of the sociocultural thin ideal, whereas Mexican American women had the lowest level of awareness of this ideal, and Spanish women were least likely to internalize this ideal. Warren and her colleagues (2005) posited that ethnicity may moderate the relationships between awareness and internalization of the sociocultural thin ideal, and body dissatisfaction; and advocate for further study of how ethnicity may act as a potential buffer against eating disorders so that both diverse and Western cultural

communities may benefit from positive external and internal alternatives to the sociocultural thin ideal.

Increased efforts to design culturally sensitive assessment tools to measure risk factors may further illuminate differences in mediating and moderating variables between diverse cultural groups and potential buffering effects of culture. This would include strategies that consider the contributions of acculturation, immigration, and discrimination, in the development and maintenance of BN. While culturally informed assessment and treatment strategies are critically important, there is also an immediate need for the inclusion of diverse representation in research samples (Striegel-Moore & Cachelin, 2001).

There have been efforts to consider BN a culture-bound syndrome, in that it is rarely found in cultures with limited Western media exposure. Keel and Klump (2003) found that exposure to Western media and access to large quantities and varieties of foods, with an accompanying cultural emphasis on thinness appear to create specific culture bound risk factors for binge eating. Within the United States, the growing pervasiveness of mainstream media in diverse communities may unfortunately lead to greater cultural equality in BN prevalence (Polivy & Herman, 2002). As a general rule, the greater the internalization of the mainstream ideal of thinness, the higher the risk of developing BN and other eating disorders, regardless of individual cultural membership (Gleaves et al., 2000).

Researchers are increasingly realizing the need for careful consideration of potential cultural differences in eating disorders, and it is likely that this will be a rapidly developing area of eating disorder research in the coming years. In a literature review of eating disorders and body image disturbances, Soh, Touyz, and Surgenor (2006) raised



several methodological concerns about cross-cultural eating disorder research. Specifically, they suggested that inclusion of acculturation measures, consideration of socioeconomic status, cultural body composition norms, culturally specific family patterns, examination of the culturally specific meaning of psychological control, and use of consistent research methods when studying eating disorders in diverse communities would allow for greater consistency and more meaningful insights into potential cross-cultural differences in eating disorder development, maintenance, prevention, and treatment (Soh et al., 2006). There are also increasingly calls for cultural variables to be considered in eating disorder diagnosis and classification in preparation for DSM-V. For example, Franko (2007) posited that inclusion of cultural considerations in DSM-V eating disorder classification is likely to increase the complexity and specificity of research questions related to ethnicity and acculturation; increase clinician's awareness of the prevalence of eating disorders in diverse populations, along with potential cultural differences in eating disorder presentation; and may increase the currently low rates of eating disorder detection and treatment in diverse communities.

### *Family Factors*

Individuals with BN frequently report high levels of family conflict. Family conflict may contribute to an elevated risk of developing BN and may also play an active role in symptom maintenance. While conflict may be expressed in diverse ways, high degrees of conflict, hostility, criticism regarding weight and appearance, unreasonable expectations, and lack of familial cohesion all appear to be powerfully correlated with BN (Polivy & Herman, 2002; Cohen, 2003, Stice, 2002). Further, high levels of familial perfectionism and stress reactivity may create additional pressure to achieve the thin ideal (Klein & Walsh, 2003). In contrast, Young, Clopton, and Bleckley

(2004) suggest that while family pressure to attain a thin ideal is correlated with increased bulimic behavior, high parental expectations is actually correlated with decreased bulimic behavior; possibly by acting as a buffer and providing a tangible indication of parental involvement. Familial dieting, negative feedback on weight, emotional insensitivity, and inadequate parenting also appear to be risk factors for disordered eating (Fairburn & Harrison, 2003). Direct family pressure on young women to lose weight is a significant predictor of disordered eating (Stice, 2002). Additionally, familial pressure to control weight is a strong predictor of an individual's internalization of the sociocultural thin ideal, whereas family dysfunction does not appear to strongly influence this internalization (Tester & Gleaves, 2005). Family conditions characterized by indifference and neglect are frequently reported in BN studies (Jacobi, Hayward, deZwaan, Kraemer, & Agras, 2004). In contrast, high degrees of overprotectiveness and enmeshment also appear to be contributing factors to BN onset and maintenance (Robert-McComb, 2001).

These dysfunctional family patterns may influence problematic social and intrapersonal behaviors in children prior to the development of an eating disorder. For example, early childhood behaviors such as self-harm, social isolation, insecure attachment, eating problems, and family environments characterized by a lack of intimacy, rigidity, discomfort with nudity, and lack of discussion of sexuality were all found to be common in women with eating disorders (Mangweth et al., 2005).

In a 22-year longitudinal study, Moorhead, Stashwick, Reinherz, Giaconia, Striegel-Moore, and Paradis (2003) found that parents of children with BN or AN perceived their child to be more anxious and depressed at age nine and to experience more behavioral problems at age fifteen than their non-eating-disordered siblings. The parents also reported twice the levels of pregnancy complications prior to delivery of, and

more early childhood health problems in, their eating disordered children. More research is needed to determine the relative biological and environmental contributors to BN and their complex interactions. Klein and Walsh (2003) also found a powerful correlation between parental and childhood obesity and the later development of BN. This factor may suggest both environmental and biological susceptibility. Although family conflict is most frequently examined as a risk factor in BN, it is likely that ongoing dysfunction plays an active role in maintenance and treatment issues. Okon, Greene, and Smith (2003) found that high degrees of family conflict and emotional expressiveness were powerful predictors of the frequency and severity of bulimic symptoms on the same day of the conflict.

Contrary to the majority of studies suggesting that individuals with eating disorders have family relationships characterized by high levels of conflict and dysfunction, Cook-Darzens, Doyen, Falissard, and Mouren (2005) in a study of families with an anorexic adolescent family member found that although these families were generally distressed by the adolescent's illness, they did not display notable patterns of conflict, dysfunction, rejection, or enmeshment, and were, in fact, as diverse as control families.

In a study of maternal influence, Francis and Birch (2005) found that mothers who were preoccupied with their own weight engaged in more attempts to influence their daughters' weights, and that these daughters in turn perceived more pressure to lose weight and engaged in higher levels of dietary restraint than did the daughters of non-weight-preoccupied mothers. Although potential maternal influences on daughter's body image may seem somewhat intuitive, paternal influence may be important but is less commonly studied. In a study of dysfunctional parenting, Rojo-Moreno, Livianos-

Aldana, Conesa-Burguet, and Cava (2006) found dysfunctional parenting to be a very strong correlate of eating disorders, with individuals with eating disorders perceiving both parents as more rejecting and less affective than did non-eating disordered controls. While Rojo-Moreno et al. (2006) found that maternal rejection specifically was a direct correlate of eating disorders, paternal rejection was found through structural equation modeling to be an important and relatively unexamined correlate. Rojo-Moreno et al. (2006) found that paternal rejection correlated with eating disorders through their correlation with comorbidity, whereas maternal rejection correlated directly with eating disorders. Future studies may benefit from examining the specific roles that each parental relationship may play in the development, maintenance, and treatment of BN.

In a study of participants in the National Eating Disorder Screening program, Becker, Thomas, Franko, and Herzog (2005) found that individuals with eating disorders are more likely to disclose their concerns to family members than to health care, educational, or mental health professionals. The authors advocate additional research directed toward examining how families may most effectively intervene after this type of disclosure. Therefore, while family conflict may be associated with bulimic pathology, families may also be able to play an as yet relatively unexamined role in effective prevention and intervention strategies.

To date, the majority of studies examining family conflict in BN are correlational, making definitive, causal statements about their role in development, maintenance, and treatment elusive (Polivy & Herman, 2002). Although the majority of studies in the field consider family conflict to be a risk factor, it is more accurate to consider these factors correlates until further research on the complex interplay of family conflict and pathology is available (Jacobi et al., 2004).

### *Sexual Abuse*

Sexual abuse appears to be an area of both great interest and great conflict in current BN literature. Some studies find a strong association between sexual abuse and the subsequent development of BN, while others found sexual abuse to be only marginally related. According to the American Psychiatric Association (2002), 20-50% of individuals seeking treatment for eating disorders report having experienced sexual abuse. Further, this traumatic experience is correlated with higher levels of psychiatric comorbidity in individuals with BN. The impact of sexual abuse on eating disorders also appears to differ by diagnostic type. For example, sexual abuse has been found to be more than twice as common in the childhood history of women with BN than in that of women with AN, and there is also a strong relationship between both childhood sexual and physical abuse and adult self-injurious behavior among women with eating disorders (Claes & Vandereycken, 2007).

Studies conducted within diverse communities have yielded somewhat contradictory results with regard to the relationship between sexual abuse and BN. Cachelin, Schug, Juarez, and Monreal (2005) found a 14% higher prevalence of sexual abuse in a community-based study of Mexican American women with eating disorders than in controls. The vast majority of these women experienced sexual abuse before the development of their eating disorder pathology, and experienced longer duration and more frequent incidents of sexual abuse than did their non-eating disordered peers. In a Hungarian study, Treuer, Koperdak, Rozsa, and Furedi (2005) found that childhood physical abuse appeared to have a greater impact on the severity of body image disturbance in patients with eating disorders than did sexual abuse. The importance of investigating the roles of other forms of childhood trauma in BN was echoed by Gerke,

Mazzeo, and Kliewer (2006) and Wonderlich and his colleagues (2007) who found childhood sexual abuse and physical abuse to be weaker predictors of bulimic symptomatology than childhood emotional abuse. Whereas the majority of studies examining the relationship between eating disorders and sexual abuse have focused on women, Feldman and Myer (2007) found that gay and bisexual men who had experienced childhood sexual abuse were significantly more likely to develop subclinical eating disorder, or full BN, but not AN.

Leonard, Steiger, and Kao (2003) found a strong correlation between the experience of sexual abuse and symptom severity. Intensive interviews with women reporting childhood sexual abuse have uncovered the fact that food may have been used as either a reward or punishment in the context of the abuse, leading to an early dissociation from normal cues of hunger and satiety (Woolsey, 2002). Van Gerko and her colleagues (2005) found that women with eating disorders and a history of sexual abuse engaged in more frequent bingeing and purging and had slightly higher degrees of body image disturbance than did individuals with eating disorders who did not have a sexual abuse history.

Childhood sexual abuse instills an overwhelming sense of powerlessness. For many women, disordered eating begins as an attempt to reassert power over their body or avoid physical signs of adult sexuality (Murray, 2003). The experience of childhood sexual abuse significantly increases negative affect and need for control and decreases self-esteem and self-identity (Polivy & Herman, 2002). Although Fallon and Wonderlich (1997) found evidence that childhood sexual abuse is correlated with more severe bulimic pathology and higher levels of psychiatric comorbidity, they determined sexual abuse to be a nonspecific risk factor in the development of BN.

In an extensive metanalysis, sexual abuse was found to be a nonspecific risk factor of medium potency in the subsequent development of BN (Jacobi et al., 2004). However, studies examining childhood sexual abuse in BN to date have been primarily correlational and small, thus limiting definitive conclusions. Although sexual abuse is largely accepted as a nonspecific risk factor for BN, Van Gerko et al. (2005) suggested that screening individuals for a history of sexual abuse may be important for the creation of effective eating disorder prevention and intervention initiatives.

### *Sociocultural Factors*

In the past two decades, Western culture has continued to praise thinness as an essential condition of beauty for women. Increasingly, the strong sociocultural pressure to attain thinness has been linked to social, personal, and professional achievement (Cohen, 2003). While the media perpetuates this ideal for all women, individuals with BN appear to be at increased risk from these messages, perceive a higher degree of pressure from media images, are more vulnerable to negative weight related messages, and internalize these messages more efficiently. Furthermore, exposure to media emphasis on thinness and the stigmatization of overweight bodies increases body dissatisfaction and acts as a motivator for bulimic behavior (Stice, 2002; Stice, 2001a).

In an extensive meta-analysis, Cafri, Yamamiya, Brannick, and Thompson (2005) found three sociocultural factors that appear to be especially important correlates of body dissatisfaction, which is in turn a significant risk factor in eating disorder development. These three factors were awareness of the sociocultural thin ideal, internalization of this ideal, and perception of pressure to achieve this ideal. Each of these three factors was correlated with body image, but internalization of and pressure to attain the sociocultural

thin ideal yielded larger effect sizes than did mere awareness of this ideal (Cafri et al., 2005).

The idolization of thinness is the norm in Western culture. The image of thinness as a necessary condition of female beauty is powerfully entrenched, creating: "...a perceived cultural message, perhaps even a cultural imperative, that girls dislike their bodies and should attempt to change them." (Smolak & Murnen, 2001, p. 97). Although the majority of women exposed to these images do not develop BN, individuals with other precipitating risk factors may be particularly sensitive to these images, may frequently seek out these images, and may employ maladaptive strategies to attempt to attain the thin ideal (Polivy & Herman, 2002).

While exposure to the sociocultural thin ideal is often associated with the media, social comparison also occurs on an informal level between peers. In a study of social comparison of attractiveness with a non-clinical sample of female undergraduate students, Krones, Stice, Batres, and Orjada (2005) demonstrated that participants experienced significant levels of body dissatisfaction after even very brief in vivo exposure to a peer matching the sociocultural thin ideal.

The sociocultural portrayal of women's sexuality also appears to impact eating disorder development. Moradi, Dirks, and Matteson (2005) studied women's experiences of sexual objectification and found these experiences were positively correlated with greater internalization of the sociocultural thin ideal, increased levels of shame and self-objectification, and higher levels of eating disorder symptoms.

Paradoxically, sociocultural factors can also contribute to a stigmatization against individuals who engage in disordered eating in order to achieve the sociocultural thin ideal. For example, in an extensive public survey conducted in the United Kingdom,



Crisp (2005) found evidence of public attitudes consistent with stigmatization of individuals with eating disorders, including public beliefs that eating disorders are self-inflicted, and difficulties feeling empathy for and communicating with individuals with eating disorders; these stigmatizing attitudes were greatest among adolescents, parents of adolescents, and individuals from lower socioeconomic groups. This stigmatization decreased slightly between 1998 and 2003 after a national public awareness of mental health issues campaign, suggesting that additional public awareness and education campaigns may be useful in decreasing stigmatization of individuals with eating disorders (Crisp, 2005).

### *Dieting*

Despite its omnipresence in current popular culture, dieting is considered to be the most powerful risk factor in the development of BN (Jacobi et al., 2004). According to the American Psychiatric Association (2000), BN onset most often occurs during or after a period of dieting. The intense normalization of dieting behavior during college is particularly alarming in that extreme dieters are 18 times more likely to develop an eating disorder than nondieters (Wilson, 2002a). Once bulimic patterns have been established, the individual usually remains within normal weight range but continues to diet when not binge eating. Gilbert (2000) discovered that 30-40% of individuals with BN were overweight prior to onset, thus creating conditions supporting initial dieting attempts. Dieting is associated with a marked decrease in serotonin levels, an adoption of unrealistically high standards regarding weight and shape, and a sense of deprivation that is a powerful catalyst for the loss of control in binge eating (Wilson, 2002a).

Stice (2001b) tested the dual-pathway model of bulimic behavior, which proposes that bulimic behavior is generated from the internalization of the sociocultural thin ideal,

which leads to body dissatisfaction, which in turn leads to dietary restraint and negative affect, ultimately leading individuals to be at risk for bulimic pathology. Stice (2001b) provided support for the main effects in this dual-pathway model overall, but less conclusive support for the mediators involved in this model. In a more recent test of the dual-pathway model, Van Strein, Engels, Van Leeuwe, and Snoek (2005) found no support for the relationship between dietary restraint and binge eating but strong support for the relationships between negative body image and dietary restraint in both an eating disordered and control sample. More research is required to determine how dietary restraint may influence risk of bulimic pathology.

While several studies have associated dieting with BN risk, Stice, Presnell, Groesz, and Shaw (2005) demonstrated that administration of a healthy weight management diet program was correlated with fewer bulimic symptoms over the course of one year. However, this study was conducted with a non-clinical group and may thus not generalize to a more significantly eating disordered population. Butryn and Wadden (2005) addressed the concern that weight management efforts may place individuals at greater risk of eating disorder development. In a literature review of weight management efforts with obese children and adolescents, they found no significant correlation between professionally managed diet programs and later development of eating disorder pathology (Butryn & Wadden, 2005). Future research may benefit from clearer operational definitions distinguishing between unhealthy dietary restraint and more healthful forms of dieting.

College women are at elevated risk of developing BN, in part because of a pervasive emphasis on dieting in college. Dieting is actually far more common than not dieting during the college years, with the thinness ideal becoming increasingly

unattainable. The current healthy norm of body fat is 22-25%, yet the current ideal of beauty is associated with having no more than 10-15% body fat (Gleaves et al., 2000). Despite efforts to educate college women about the risks of extreme dieting and eating disorders, 70% of college-aged women report perceiving themselves as significantly overweight and 10% engage in regular bulimic behaviors (Cohen, 2003). An additional 20% of young women report using weight loss strategies such as fasting, vomiting, laxatives, or diet pills in the past year (Hill, 2002) and 19% report regular and clinically significant bulimic symptoms (Hoek, 2002). Alarming, dieting has also been associated with poorer performance on tests of executive functioning relative to non-dieters, suggesting that dieting in college may actually undermine maximal academic performance (Kemps, Tiggemann, & Marshall, 2005).

The cultural ideal of thinness is pervasive despite the elusiveness of attaining it. Less than 5% of the population has the ideal body weight (Kalodner, 2003). Dieting is becoming a cultural norm, with 55% of women and 29% of men reporting dieting in the past year (Hill, 2002). Most individuals who diet will not develop BN or any other eating disorder. However, it appears that college-aged women are particularly vulnerable to internalizing not only the cultural ideal of thinness but also the stigmatization of being overweight (Polivy & Herman, 2002). The spike in dieting and bulimic symptomatology during the college years may be due in part to increased exposure to peer influence, with an accompanying lack of familial supervision of eating habits.

### *Peer Factors*

During the college years, peer messages increasingly normalize making negative judgments about self and others based on weight, shape and appearance (Smolak & Murnen, 2001). Peer influence increases internalization of the thin ideal and may

normalize and directly teach bulimic behavior (Polivy & Herman, 2002). There is a heightened need for approval and conflict avoidance in BN, with an accompanying marked difficulty with identifying and asserting personal needs, creating heightened reliance on peers for self-definition (Robert-McComb, 2001).

Individuals with BN report poorer social adjustment, a higher degree of sensitivity to rejection and social criticism and higher needs for love, affection, praise and approval than their noneating disordered peers. These conditions create increases in negative affect, weight preoccupation, and bulimic behavior (Fairburn, Stice et al., 2003; Cohen, 2003; Oates-Johnson & DeCourville, 1999). Individuals with BN also report greater pressure from peers to lose weight and more teasing from peers about weight, shape, and appearance. Additionally, individuals report first learning binge eating, vomiting and other compensatory techniques from peers (Stice, 2002). In a longitudinal study of non-clinical university students, Gilbert and Meyer (2005) found that student fears of negative evaluation from others was a significant predictor of bulimic attitudes over the course of an academic year and posited that training focused on coping with these fears may help to prevent the development of bulimic pathology.

Cashel, and her colleagues (2003) found that women in sororities report more dieting, greater internalization of the thin ideal, more emphasis on attractiveness, and stronger beliefs in the correlation between attractiveness and achievement than their nonsorority peers. Overall, college women face the highest degree of eating disorder risk and women in sororities may have elevated risk beyond this baseline. Unfortunately, strong group identification in sororities may make it difficult for women to attempt to change extreme dieting and bulimic behaviors.

Zalta and Keel (2006) suggested that college settings such as sororities and residence houses may create peer socialization that increases acceptance of bulimic behavior. However, they also suggested that individual peer selection may mediate this socialization either by acting as a buffer against or a further risk factor in the development of bulimic behaviors depending upon the peers selected. In a study with participants in the National Eating Disorders Screening program, Becker and her colleagues (2005) reported that individuals were most likely to disclose eating disorder to a peer than to either a family member, educational, or physical or mental health care provider, and advocate that eating disorder prevention training may equip peers to act as important sources of support and intervention.

#### *Cognitive Factors*

Bulimia nervosa (BN) appears to be maintained by negative schemas about weight, shape, and appearance. Individuals selectively attend to information that confirms their negative schemas while rejecting any information that contradicts the schema. Once the negative schemas are formed, women increasingly view their bodies as vehicles for change. In BN, there is a powerful belief that changing or controlling the body will decrease feelings of powerlessness and increase control over other domains (Kearney-Cooke & Striegel-Moore, 1997).

Fairburn, Cooper, and Shafran (2003) proposed a cognitive behavioral theory of BN in which BN is maintained by an overemphasis on eating, weight, and shape as primary determinants of self-worth; extreme dietary restraint and compensatory behaviors result from this overemphasis. Dietary restraint then acts as a catalyst for binge eating, which then reinforces cognitive overemphasis on eating, weight, and shape. Consistent with this vicious cycle, individuals with BN also demonstrate intense self-

criticalness, and negative self-evaluation, which serve to maintain bulimic behaviors. Intrapersonal characteristics such as perfectionism, low self-esteem, lack of affect tolerance, and difficulties in interpersonal relationships were hypothesized to contribute to the maintenance of BN in symptomatic individuals and to contribute to treatment resistance (Fairburn, Cooper, & Shafran, 2003).

Shortly after this cognitive-behavioral model was proposed, Cooper, Wells, and Todd (2004) proposed a cognitive model of BN in which binge eating behavior is maintained by a cycle of negative environmental events, negative self-focused cognitions, and disturbance of interoceptive awareness. In this model, individuals with BN are hypothesized to use binge eating, which they perceive as uncontrollable, to cope with their aversive thoughts and feelings; this negative cognition and affect is proposed to have been generated by traumatic experience in early life which lead individuals to cope by attempting to adhere to the sociocultural thin ideal. This binge eating behavior then results in increased negative affect, negative self-focused cognitions, and further disturbance of interoceptive awareness, which then act as a catalyst for purging behaviors (Cooper et al., 2004).

Recently Abramson, Bardone-Cone, Vohs, Joiner, and Heatherton (2006) have proposed a three-factor model of cognitive vulnerability to BN in which individuals with high levels of perfectionism and low levels of self-efficacy, and who perceive their weight as inconsistent with their perfectionistic ideals, are more likely to engage in binge eating behaviors than are individuals with perfectionism and low self-efficacy who perceive their weight as consistent with their perfectionistic ideals. Abramson et al. (2006) hypothesized that these at-risk bulimic individuals will be more likely to engage in binge eating as a means of coping with negative affect and with their negative

cognitive focus on the discrepancy between their ideal and self-perceived weight than will bulimic individuals whose weight is consistent with their perfectionistic ideals.

Exploration of potential specific cognitive factors contributing to the development and maintenance of BN continues to be an area of interest in the literature. For example, Cohen and Petrie (2005) found that a non-clinical sample of female undergraduate students with eating disorder symptomatology had greater cognitive inflexibility with regard to dichotomous and catastrophic thinking about weight, shape, and food than did their non-symptomatic peers. Cooper, Rose, and Turner (2006) identified five core cognitive beliefs associated with eating disorder pathology, including distrust of others, perfectionism, lack of self-efficacy, lack of self-control, and emotional deprivation. These cognitive beliefs are closely parallel to the core cognitive beliefs related to abandonment, harm vulnerability, perfectionism, dependence, lack of self-efficacy, and enmeshment proposed by Jones, Harris, and Leung (2005). Of particular interest, Jones et al. (2005) found that many of these negative core cognitive beliefs continued after initial recovery from eating disorder symptomatology.

Hilbert and Tuschen-Caffier (2005) used a mirror exposure task to assess the cognitions of individuals with BN, binge eating disorder, and controls. They found that individuals with BN and binge eating disorder demonstrated a significantly similar cognitive profile, but that bulimic individuals exhibited a higher degree of bodily-focused cognition overall and more negative body-focused cognition during the mirror exposure task. In an experimental study in problem-solving tasks involving anagrams of words associated with negative affect and food cognitions, women with bulimic pathology demonstrated cognitive avoidance of threatening stimuli (Meyer et al., 2005).

Individuals with BN often display marked cognitive distortions, particularly with regard to weight, shape, food, and bulimic behaviors. Despite content, these distortions can all be characterized as “all or nothing” thinking. These extremes act to decrease perception of risk regarding bulimic behavior and increase commitment to these behaviors. All or nothing thinking decreases self-efficacy by leading the individual to perceive any deviation from caloric restriction as a loss of control, thus triggering binge eating and subsequently purging as an attempt to restore control (Waller, 2002; Gleaves et al., 2000; Polivy & Herman, 2002).

Overemphasis on eating, weight, shape, and appearance can occasionally contribute to unusual cognitive phenomena. For example, Shafran and Robinson (2004) found evidence for an eating disorder specific cognitive distortion which they termed “thought-shape fusion,” in which eating disordered individuals held a strong belief that merely thinking about eating high calorie foods would lead to weight gain, bodily sensations of fatness, and feelings of immorality. Shafran and Robinson (2004) posited that cognitive behavioral therapies should focus on challenging these types of specific cognitive phenomena rather than challenging more global forms of cognitive distortion in BN.

Aside from the research focus on cognitive content, there is also evidence of specific deficits in cognitive processing among individuals with BN. For example, Lopez, Tchanturia, Stahl, and Treasure (2008) found support for weak central coherence in information processing among women with BN, in which their cognitive style was characterized by excessive focus on detail and difficulty integrating these details into larger conceptual wholes on neuropsychological tests.



Overall, there are cognitive correlates of BN that may serve as initial cognitive risk factors or which may develop as a consequence of bulimic symptomatology. Cooper (2005) posited that there is still relatively little concrete research evidence of a causal link between cognition and bulimic behavior. Cooper (2005) acknowledged strong evidence for negative self-evaluation and disturbances in attention to eating disorder specific stimuli in BN but asserted that there is critical need for more research in general, and more ecologically valid research in particular, into the specific cognitive constructs that may be involved in the development and maintenance of BN. Cooper (2005) argued that while many treatment protocols rest on assumptions about the cognitive aspects of BN, treatment studies have often measured general cognitive constructs, such as overemphasis on weight and shape, but have neglected to measure specific cognitive correlates. Additionally, Cooper (2005) asserted that far more rigorous research methodology is required to support our current beliefs about cognition in BN.

...the heart of any cognitive model, the proposed causal relationship between cognition and disturbed behavior, remains largely untested in patients with EDs, either longitudinally, in cross-sectional designs controlling for relevant variables statistically, or in tightly controlled experimental designs in which relevant cognitions are manipulated and the effect on relevant behavior is measured (Cooper, 2005, p. 521).

Cooper (2005) demonstrated that there is now a much needed “second generation” of cognitive theories that are beginning to focus on more specific cognitive factors, such as specific automatic thoughts (i.e. lack of control, permissive thoughts about food); specific negative self-beliefs (i.e. sense of worthlessness, inability for self or others to accept current weight); and permissive thoughts about food, but argued that these models are

still early in their evolution, and will require extensive testing and treatment application to determine their clinical utility. Building upon her advocacy of a “second generation” approach, in a recent study Cooper and her colleagues (Cooper, Todd, Turner, & Wells, 2007) have found initial support for treatment targeting specific cognitive changes in BN rather than on traditional cognitive behavioral interventions, and posited that this may be more acceptable to patients than targeting specific behavior change at treatment outset.

Jones-Forrester (2006) found that inner experience in BN is characterized by a striking lack of cognition overall, these “second generation” theories may also be useful in challenging the current presumptions about cognitive distortions and negative self-focused cognition, and may uncover other forms of cognitive dysregulation in BN, such as lack of differentiated cognition.

### *Affective Factors*

The affective processes potentially involved in maintaining BN are still not fully understood, with affective research in BN falling into three distinct categories: examinations of negative affect, interoceptive awareness, and alexithymia. Each of these affective factors will be briefly reviewed.

Negative affect appears to be important in the maintenance of BN behaviors, is the most commonly studied affective correlate of BN, and is a frequent target for BN intervention efforts, but much remains unexplained about the precise role that negative affect may play in the development and maintenance of bulimic pathology. In a nonclinical study with three groups of female undergraduate students that were grouped into eating disordered, subclinically symptomatic, and asymptomatic groups based on their self-report scores on the Questionnaire for Eating Disorder Diagnoses, Cohen and Petrie (2005) found that participants with eating disorders or who were subclinically

symptomatic experienced more negative affect, less positive affect, and more cognitive rigidity relative to the asymptomatic group, suggesting that screening for mood and cognitive disturbance may improve prevention efforts among nonclinical but at-risk university populations (Cohen & Petrie, 2005). Overton, Selway, Strongman, and Houston (2005) found that women with eating disorders reported significantly more negative affect and more positive affect than did controls. These results contrast with the Cohen and Petrie (2005) result of less rather than more positive affect, and suggest that that bulimic behaviors may be used as a maladaptive means of coping with overwhelming affect and that both under and over-regulation of affect may be important correlates of BN. Overall, more research is needed to determine the exact role that both negative and positive affect may play in BN.

Negative affect has been conceptualized as both a precedent and antecedent of bulimic behaviors, with affect triggering binge eating behavior and with negative affect actually increasing after binge eating (Cogley & Keel, 2003; Stice, 2001a; Waller, 2002; Kalodner, 2003). Fairburn, Stice, and their colleagues (2003) suggest that negative affect may be cyclic in BN, initially acting as a catalyst for binge eating, then increasing the risk for binge eating when this behavior fails to regulate negative affect effectively. However, results with regard to the role of negative affect in BN have been variable. For example, Hilbert and Tuschen-Caffier (2007) and Stein, Kenardy, Wisemean, Dounchis, and Wifley (2007) found that while negative affect acted as an antecedent of binge eating, mood actually worsened immediately post-binge. However, Smyth and his colleagues (2007) found the opposite, that engaging in binge eating or purging resulted in mood improvement.

The escape theory of binge eating proposes that perfectionism leads to negative self-awareness, which increases negative affect; this negative affect then leads to an avoidant narrowing of cognitive focus which facilitates binge eating as a means of coping with the negative affect (Blackburn, Johnston, Blampied, Popp, & Kallen, 2006). In a community based study of this model, Blackburn and colleagues (2006) used structural equation modeling and found evidence of goodness of fit for the escape theory of binge eating behavior, suggesting that intervention efforts aimed at reducing negative affect and enhancing coping skills may be particularly effective. Cognitive factors are likely to interact with negative affect to increase BN risk. For example, Corte and Stein (2005) found that negative affect and low self-esteem that is aroused by negative body weight schemas was correlated with eating disorder behavior, suggesting that interventions aimed at replacing negative body-focused schemas may be helpful in reducing both negative affect and eating disorder pathology.

In a nonclinical study with 11 to 15 year-old girls, Sim and Zeman (2005) found that negative affect, deficits in emotional awareness, and difficulty coping with negative affect were all partial mediators in the relationship between body dissatisfaction and bulimic symptomatology, suggesting that affect regulation skill training should be incorporated into prevention and intervention efforts with this potentially at-risk age group.

In a test of the dual-pathway model of BN, in which dietary restraint and negative affect constitute two pathways to body dissatisfaction and bulimic behavior, Strien, Engels, Van Leeuwe, and Snoek (2005) found support for the negative affect pathway, in which body dissatisfaction leads to negative affect, which then elicits bulimic behavior as a maladaptive means of coping with negative affect. Strien and colleagues (2005)

suggested that disturbances in interoceptive awareness in BN partially but not fully account for the relationship between negative affect and BN symptoms, and suggested that more research is needed to determine the extent to which interoceptive awareness may be a mediator of this pathway. In a recent study, difficulties with identifying and understanding emotions and poor emotion regulation skills were found to account for much of the relationship between emotional dysregulation and binge eating, suggesting that an inability to respond effectively to negative affect may play a role in maintaining binge eating behavior over and above the contributions of dietary restriction and body dissatisfaction (Whiteside, Chen, Neighbors, Hunter, Lo, & Larimer, 2007). Overall, more research is required to determine the exact relationship between negative affect and bulimic pathology.

In a recent nonclinical study exposing normal-weight women to images of high and low calorie foods, Kilgore and Yurgelun-Todd (2006) found that positive affect during high calorie foods image exposure was correlated with high levels of activity in the lateral orbitofrontal cortex, suggesting lack of motivation to eat, whereas negative affect was correlated with increased activation on the medial orbitofrontal cortex, anterior cingulate, and insula, suggesting increased motivation to eat and activation of reward systems when exposed to high calorie food images under conditions of negative affect. Kilgore and Yurgelun-Todd (2006) suggested that negative affect may thus be associated with preference for high calorie foods and posited that more research is required to determine the exact nature of the relationships between affect, cerebral activation of areas relating to hunger and satiety, and specific food cravings.

Given that high levels of negative affect have been widely supported to increase BN symptomatology, prolong course, and worsen treatment response, Stice, Bohon,

Marti, and Fischer (2008) have recently advocated creating dietary and dietary-negative affect BN subtypes rather than the current DSM-IV purging and non-purging BN subtypes, and found strong evidence for the reliability, validity, and clinical utility of this proposed strategy.

Interoceptive awareness (Garner, 1991) has been defined as the ability to identify accurately and respond to affective states and physiological hunger and satiety cues. The exact role that deficits in interoceptive awareness may play in BN are still not fully understood (Policy & Herman, 2002), but this remains an area for potentially clinically useful inquiry. For example, in a study of adolescent females, Sim and Zeman (2004) found that adolescents with BN demonstrated significant difficulties with emotional awareness skills including disturbances in interoceptive awareness, difficulty expressing affective states to others, difficulties labeling their own emotions, and difficulties with affective discrimination. Fassino, Piero, Gramaglia, and Abbate-Dage (2004) found support for disturbances in interoceptive awareness across eating disorder categories, with individuals with BN demonstrating significantly higher interoceptive awareness deficits relative to the other eating disorder groups, suggesting that individuals with BN are likely to have difficulties distinguishing between affect and sensations, difficulties accurately identifying hunger and satiety cues, and high levels of the interoceptive awareness correlates of perfectionism and rigid goals. Decreased pain sensitivity has also been found across eating disorder subgroups, with the greatest decreases occurring in binge-type AN and BN, suggesting the binge-eating and purging may particularly correlate with the physiological aspects of disturbances in interoceptive awareness (Papezova, Yamamotova, & Uher, 2005). In a recent study, interoceptive-awareness deficits were found to act as a mediator between anxiety sensitivity and eating disorder

symptoms such that eating disordered individuals who have interoceptive-awareness deficits may engage in symptomatic behaviors in a maladaptive attempt to decrease symptoms of physiological anxiety (Anetis, Holm-Denoma, Gordon, Schmidt, & Joiner, 2008).

Alexithymia has been conceptualized as an affective deficit that includes difficulties with affect identification, with distinguishing between affective states, with communicating affective states to others, and with difficulties distinguishing between affective states and bodily sensations (Lumley, 2004). Additionally, individuals with alexithymia are understood to be generally externally focused and lacking in internally referenced psychological awareness (Lumley, 2004). Perhaps more straightforwardly, Taylor (2000) defined alexithymia as a deficit in affect regulation and the cognitive processing of affect, and in a literature review found that alexithymia rates ranged from 40 to 61% among individuals with eating disorders. However, Lumley (2004) cautions that there is still not clear agreement with regard to the operational definition and assessment of alexithymia, and posits that more research is required to determine how this construct may impact disease processes, and prevention and intervention strategies.

There has been cyclic interest in alexithymia research with regard to eating disorders. The current literature suggests that recent research may demonstrate renewed interest in this affective factor in BN. For example, Southgate and colleagues (2005) presented neuropsychological support for emotion-processing deficits in eating disorders, including impaired activation of the appetitive-motivational system in AN and increased activation of this system with food cues in BN, but suggested that more research is required to determine how these deficits may impact BN development and maintenance.

In another study, individuals with eating disorders demonstrated significantly more alexithymia and less emotional awareness than did controls, with no significant differences between eating disorder diagnostic categories on alexithymia and with anorexic individuals demonstrating significantly lower emotional awareness than individuals with BN (Bydlowski et al., 2005). Additionally, this study found evidence of a global affective-processing deficit, in which individuals with eating disorders experienced difficulties accurately identifying their own emotions and the emotions of others (Bydlowski et al., 2005).

Evidence for alexithymia across eating disorders was also found by Wheeler, Greiner, and Boulton (2005), who found a significant positive correlation between alexithymia and binge eating behaviors, with eating disordered individuals particularly demonstrating the alexithymic characteristics of difficulties with identifying and expressing affect. Additionally, alexithymia was found to correlate most significantly with binge eating disorder, followed by BN, but did not appear to be significantly related to AN (Wheeler et al., 2005). Petterson (2004) suggested that individuals with AN may use ritualistic dietary restriction to cope with affective experiences and recommended therapy using an intersubjective approach to assist anorexic clients with alexithymia in organizing their affective experiences.

Individuals with BN and AN in an inpatient population were able to identify facial emotions as accurately as did non-clinical controls, but nonetheless demonstrated clinically significant levels of alexithymia, suggesting that alexithymia among women with eating disorders is likely to be far more complex than mere difficulties with identifying affect (Kessler, Schwarze, Filipic, Traue, & von Wietersheim, 2006). This pattern of relatively intact facial emotion recognition in BN was also found in a recent



Legenbauer, Vocks, and Ruddel (2008) study. In their analysis of emotion recognition and emotional awareness among women with BN, there was no significant difference in ability to recognize facial emotions between women with BN and controls, other than a mild deficit among women with BN in recognizing the facial expression of surprise. However, women with BN did have consistent difficulties identifying their own emotions. Legenbauer and her colleagues (2008) posited that this pattern of intact facial emotion recognition in BN suggests that poor emotional self-awareness in BN is likely attributable to cognitive-affective rather than perceptual deficits.

When examined prospectively, alexithymia may prove to have some utility in eating disorder outcome research. For example, in a wide-scale prospective study, Speranza, Loas, Wallier, and Corcos (2007) found that individuals with eating disorders who were highest in alexithymia at baseline showed the lowest levels of improvement in eating disorder symptomatology after a three year period. However, in contrast to the above studies, a European study recently found no relationship between alexithymia and eating disorders among patients with AN and BN after controlling for negative affect (Montebarocci, Codispoti, Surcinelli, Franzoni, Baldaro, & Rossi, 2006).

Specific to alexithymia in BN, De Groot, Rodin, and Olmstead (1995) found 56% higher rates of alexithymia in individuals with BN relative to controls, and that despite non-significant improvements in BN symptoms, alexithymia persisted after BN treatment and remission, suggesting that alexithymia in BN may be particularly persistent and disruptive. These studies are consistent with the Jones-Forrester (2006) study that found that inner experience in BN was characterized by relatively infrequent, and poorly differentiated affect; and difficulty distinguishing between affect and cognition.

While the studies above indicate that alexithymia is likely to play a role in eating disorder pathology for a subset of bulimic individuals, few studies have examined the specific role that alexithymia may play in BN assessment or in the consideration of alexithymia in BN with and without comorbid psychopathology. Two studies have examined these questions. Quinton and Wagner (2005) examined alexithymia as it relates to BN assessment measures and found that alexithymia did not significantly predict eating disorders as measured by the EAT-26 and the Drive for Thinness and Body Dissatisfaction subscales of the EDI-2. Individuals with bulimic attitudes demonstrated relatively greater difficulties identifying affect but conversely demonstrated more ability to describe affect relative to those without bulimic attitudes, suggesting that more research is required to determine the specific nature of alexithymia in BN and the extent to which alexithymia may be confounded with existing BN assessment characteristics such as the Interoceptive Awareness subscale of the EDI-2. Espina Eizaguirre, Saenz de Cabezón, Ochoa de Alda, Olariaga, and Juaniz, M. (2004) examined how comorbidity, which is the norm in BN, may impact alexithymia. Espina Eizaguirre et al. (2004) found that there was no significant relationship between alexithymia and eating disorders after controlling for depression and anxiety, suggesting that alexithymia may be more closely related to mood and anxiety disorders than to BN. However, there was remaining clinically significant, although not statistically significant, alexithymia after this control, suggesting that it may be useful to screen for alexithymia as well as comorbid depression and anxiety in BN assessment efforts (Espina Eizaguirre et al., 2004). Overall, further research is required to determine the exact nature of alexithymia in each of the eating disorder diagnostic groups.

This brief examination of negative affect, deficits in interoceptive awareness, and alexithymia in BN indicates that there are perhaps more questions than definitive answers with regard to the role affective factors may play in the development and maintenance of BN. These studies suggest that affect in BN may be far more complex than has been previously assumed. As an appreciation for the complexity of affect in BN continues to grow, it is likely that research questions in this area as well as clinical implications will become increasingly complex and multifaceted. In an example of this trend, Gilboa-Schechtman, Avnon, Zubery, and Jeczimen (2006) posited the need for more research that carefully examines the potential role that emotional distress may play in mediating problems with affect regulation and poor affective awareness among women with eating disorders, and advocated that emotional awareness and emotional regulation may be increasingly important treatment outcome goals. This issue of affective complexity was also echoed by Anetis, Selby, Fink, and Joiner (2007), who found distress tolerance to be a significant predictor of BN even after controlling for several other common affective correlates of BN including negative affect, depression, anxiety, anxiety sensitivity, urgency, sensation seeking, body dissatisfaction, perfectionism, drive for thinness, and interoceptive awareness. Anetis and his colleagues (2007) posited that a focus on building distress tolerance skills among individuals with eating disorders is thus likely to be far more clinically effective than simply focusing separately on treating negative affect, interoceptive deficits, or alexithymia.

Given that current prevention and intervention efforts are largely built on cognitive behavioral strategies assuming that negative affect plays an important role in BN, but with limited understanding of affect regulation and information processing in

eating disorders as a whole, and less in BN specifically, more research is clearly required before we are able to accurately determine the complete nature of affective factors in BN.

### *Intrapersonal Factors*

Bulimia nervosa (BN) is characterized by profound body dissatisfaction with excess emphasis on attaining ideal weight and shape as a condition of self worth. The well-established biological, sociocultural, familial and intrapersonal risk factors discussed in the preceding sections seem to contribute to negative self-evaluation and body dissatisfaction. Stressful life events significantly contribute to the onset of BN and may also play an active role in symptom maintenance. Further, ongoing life stress increases vulnerability to psychological risk factors such as low self-esteem and high levels of perfectionism, increasing symptom severity (Williamson et al., 2001; Ruggiero, Levi, Ciuna, & Sassaroli, 2003). Overall, body dissatisfaction significantly increases one's risk of developing BN (Polivy & Herman, 2002). Surprisingly, adolescents with BN have been found to demonstrate higher levels of suicidal ideation and self-harm behavior than do adolescents with AN (Ruuska, Kaltiala-Heino, Rantanen, & Koivisto, 2005) suggesting that at least in adolescence, BN may be accompanied by an even greater suicide risk than is commonly expected.

Intrapersonal stress and stressful life events are likely to impact the development and maintenance of BN in multiple, interdependent ways. For example, individuals with eating disorders have been found to have higher levels of worry than do controls, may use generalized worry to avoid threatening topics associated with weight and shape, and that this worry may impact perfectionism, low self-esteem, and difficulties with interoceptive awareness (Sassaroli, Bertelli et al., 2005). Sassaroli and Ruggiero (2005) found evidence that stressful situations were correlated with worry, low self-esteem, and bulimic

symptomatology among a nonclinical sample of female high school students, suggesting that stress may contribute to the development and maintenance of bulimic symptoms both within and outside of clinical populations.

In addition to the presence of stressful life events, individuals with BN are reported to have poorer identity formation, lower self-esteem, and higher needs for control, love, approval, praise, and affection than their non-eating disordered peers (Polivy & Herman, 2002; Oates-Johnson & DeCourville, 1999). Low self-efficacy and a global sense of ineffectiveness have been identified as significant individual risk factors for BN (Jacobi et al., 2004). Low levels of self-competence and weight-related shame and guilt have been reported to decrease coping skills in individuals with BN, maintaining the binge-purge cycle (Bardone, Perez, Abramson, & Joiner, 2003; Burney & Irwin, 2000). Young, Clopton, and Bleckley (2005) found that low self-esteem was a more important predictor of BN than was body dissatisfaction. It is possible that these individual intrapersonal correlates may systematically interact in the development and maintenance of BN. For example, perfectionism, low self-efficacy, and perception of being overweight are all interacting predictors of binge eating behavior but do not appear to contribute significantly to compensatory behaviors in BN (Bardone-Cone, Abramson, Vohs, Heatherton, & Joiner, 2006).

Impulsivity has been frequently associated with BN; however, it is currently unclear if poor impulse control is a correlate, a consequence of comorbid conditions, or a direct risk factor for eating disorders (Stice, 2001a). Bulimic behavior leads to significant impairments in perceived quality of life. Individuals with BN perceive the world as stressful and report using the binge-purge cycle as a means to cope with overwhelming affective and situational stressors (Hay, 2003; Cohen, 2003). Impulsivity and

compulsivity are common positive correlates of BN that are both associated with poorer overall functioning (Engel, Corneliussen et al., 2005). Body dissatisfaction often leads to highly ritualistic body checking and body avoidance behaviors. These behaviors increase body dissatisfaction, facilitating increased symptom severity (Tylka, 2004; Shafran, Fairburn, Robinson, & Lask, 2004). Body checking includes behaviors such as frequent weighing, measuring and mirror scrutiny of the body, appearance reassurance seeking, and physical comparisons to others. Body avoidance behaviors include avoidance of mirrors, refusal of weighing, and wearing non-revealing clothing to hide body shape. In two related studies of body checking and avoidance, Shafran and her colleagues (2004) found that 92% of individuals with eating disorders reported frequent body checking behavior, with 33% checking in excess of sixteen times per day. Body avoidance behavior was less common, with 61% reporting consistent body avoidance and 20% reporting brief periods of avoidance before resuming frequent body checking behavior. In both studies, body checking and avoidance were associated with improved sense of control in only 5% of individuals. For the remaining 95%, checking and avoidance behaviors increased negative affect and decreased perceptions of control, facilitating an increase in binge eating and purging behavior. Promisingly, a recent study demonstrated that mirror exposure protocols, in which individuals with extreme body concerns engaged in guided accurate bodily assessment during a mirror exposure task and were provided with feedback about their accuracy, demonstrated significant reductions in body checking and avoidance behaviors (Delinsky & Wilson, 2006).

Aside from the body dissatisfaction involved in body avoidance and body checking behaviors, fear of weight gain in treatment may also help to maintain bulimic behavior. For example, Butryn, Lowe, Safer, and Agras (2006) found evidence that

weight suppression, defined as the difference between highest premorbid weight and weight before engaging in eating disorder treatment, is predictive of poorer treatment outcome and high levels of treatment withdrawal.

Body dissatisfaction, social comparison, and fear of negative evaluation all correlate with BN and may impact how individuals with BN perceive others in their environment. For example, in a study of attention to visually presented face stimuli, participants with bulimic symptomatology demonstrated preferential attention to attractive female faces, suggesting that these participants may view attractive female others as threatening (Maner et al., 2006).

Whereas body dissatisfaction has repeatedly been shown to be a powerful correlate of BN, there has been minimal research on positive body perception in the eating disorder literature. However, in one non-clinical study, Tester and Gleaves (2005) found that deceptive self-enhancement, defined as an inaccurate but positive perception of one's body shape, may act as a buffer against eating disorder risk and body dissatisfaction.

These intrapersonal risk factors of BN contribute to negative self-evaluation and body dissatisfaction, which are complicated by life stressors, leading to significant levels of distress in individuals with BN. Therefore, it is not at all surprising that individuals with BN experience a significantly poorer quality of life than do their peers. In a community-based study, individuals with eating disorders demonstrated poorer quality of life than controls, and these quality of life deficits appear to persist after initial eating disorder remission (de la Rie, Noordenbos, & van Furth, 2005). Self-esteem was found to be an especially salient aspect of quality of life overall in this study, but the active and in-remission participants differed somewhat in the predictors of quality of life. In

individuals with active eating disorders, quality of life correlated with emotional and social functioning and mental health, whereas for individuals in remission, quality of life correlated with vitality, social functioning, and mental health without a strong emotional functioning component. The authors posit that assessment of quality of life in individuals with eating disorders may yield important information for treatment strategies.



## CHAPTER 2

### INTRODUCTION TO INNER EXPERIENCE METHODS

#### Understanding Inner Experience

We have completed the first part of the literature review, discussing eating disorders in general and (BN) in particular. We turn now to the second part of the review and consider methods used to explore inner experience. This chapter will begin with a review of current assessment methods that rely primarily on self-report and clinical interview data. The advantages and potential biases of each method will be discussed. Second, we will review current methodologies used to explore inner experience while controlling for potential bias and retrospective errors. Third, we will discuss Descriptive Experience Sampling. We will attempt to demonstrate that this is currently a highly effective method designed to minimize retrospective error, and allow us to access and more accurately understand inner experience in psychopathology. Finally, we will review the preliminary eating disorder research using this method as a foundation upon which the current study will be built.

Despite 30 years of extensive research, very little is understood about how BN is experienced at the individual level. A search of PSYCINFO, the most widely used psychology research database, using the terms “phenomenological\* eating disorders,” “phenomenolog\* eating disorders,” “experiential\* eating disorders” and “experience\*

eating disorders,” reveals that less than .05% of eating disorder studies focus on phenomenological or experiential issues.

Introspective and qualitative research methods remain somewhat controversial in psychology, but ethically, the potential benefits of exploring and understanding inner experience far outweigh its inherent methodological risks. Vermersch (1999) addressed the ethical implications of our reluctance as a science to collect and analyze potentially invaluable qualitative data with the following challenge.

How much longer can we afford to remain blind to this dimension? Are we not under some sort of obligation to add a truly scientific dimension to subjectivity? For my part, I would want to add that what is also at stake is the need to coordinate the innumerable practices which make us use first person data...with the present scientific vacuum which surrounds all those aspects of cognitive functioning which can only be apprehended at a phenomenological level (Vermersch, 1999, p. 31).

This challenge will serve as a guideline in analyzing current methodologies and in carefully applying the descriptive experience sampling method to the inner experience of individuals with eating disorders.

## Retrospective Assessment Methods

### *Self-Report Questionnaires*

Self-report measures are the most commonly used assessment strategy in eating disorder research. In this method, individuals are usually presented with a list of diagnostic criteria or symptom related items. Individuals then rate each item, usually using a Likert scale, in terms of the degree to which that specific item relates to their

current eating disorder experience. For example, on the Eating Attitudes Test (EAT-26; Garner, Olmstead, Bohr, & Garfinkel, 1982), individuals are asked to rate the frequency with which they “are preoccupied with a desire to be thinner” using a 6 point Likert scale ranging from always to never.

The primary advantages of self-report measures are that they allow for a limitless variety of questions relating to a construct of interest and that they are usually easily understood and straightforward to administer. At a time when mental health services are frequently underfunded and overwhelmed, administration of quick and relatively inexpensive self-report assessment measures may be preferable to administration of structured clinical interviews. Sysko, Walsh, and Fairburn (2005) examined the agreement between the Eating Disorder Examination (EDE) and the Eating Disorder Examination Questionnaire (EDE-Q) and found that these measures were significantly correlated with higher correlations for compensatory behaviors than for more complex bulimic behaviors. They suggested that while administration of self-report may be more practical in managed care settings, more research is needed to determine which of these measures might ultimately yield the greatest clinical utility in BN assessment.

There are several well-established methodological difficulties with an exclusive reliance on self-report measures, including memory, cognitive processing, individual and affective factors and self-presentation bias. Tourageau (2000) asserted that self-report surveys are vulnerable to multiple memory errors that may occur during encoding, storage, or retrieval processes. At encoding, information related to a survey item may not have been adequately encoded in long-term memory for later retrieval. Encoding difficulties may occur due to a lack of attention to the initial experience or due to the presence of cognitively competing information during the encoding process. Storage

difficulties have been attributed to competing information occurring after the initial event that may distort memory, creating self-report inaccuracies. Individuals may also experience retrieval problems. The tendency to store similar events together in long-term memory may interfere with ability to accurately retrieve event-specific information from this category.

Finally, self-report measures are also vulnerable to retrospective biases in which one's current beliefs about the construct being measured may influence beliefs about past events, thus distorting memory. These distortions are reflected in varying patterns of underestimation or overestimation of stability and change depending on the construct being measured. Due to these multiple errors, the accuracy of recall over more than very brief time periods must be carefully questioned (Tourangeau, 2000).

Because negative affect is a common feature in eating disorders, self-reports may overestimate actual rates of negative affect as these experiences were likely particularly salient. This overestimation may occur through mood dependent memory effects, in which it is easier for individuals to retrieve affective information that is consistent with their current affective state (Kihlstrom, Eich, Sandbrand, & Tobias, 2000). Thus, if individuals are distressed while completing a self-report, they are more likely to remember mood congruent items, more likely to forget mood incongruent items, and more likely to rate items relating to negative affect as frequent and severe.

Ecological validity is a measure of the degree to which a task reflects one's natural daily activities. For example, self-report measures administered in laboratory settings may not generalize to the expression of the construct of interest in an individual's daily experience. Ecological validity is lacking in most commonly used self-report measures. Self-reports create unnatural conditions first by prompting recall of

information over an extended period of time and secondly by assessing individuals outside of their normal surroundings. Passage of significant periods of time between events and recall introduce increased reconstructive bias and self-report of private phenomena outside of one's natural settings that may not generalize to daily eating disorder behavior. These difficulties make techniques that collect ecologically valid data far more advantageous when assessing the characteristically complex affect, cognition and behavior in eating disorders (Smyth, Wonderlich, Crosby, Millenberger, Mitchell, & Rorty, 2001).

According to Schaeffer (2000), self-report questions that are threatening to the individual are especially prone to self-presentation bias. Evaluation of threat is likely to vary between individuals, but is generally identified on items that evoke a sense of shame, negative affect, or risk of pressure to seek treatment. However, any item that is particularly disturbing to the individual may be evaluated as threatening. Increasing the degree of privacy given during self-report administration by using methods such as computerized self-report may decrease the risk of self-presentation bias. Additionally, self-report measures may not be adequately sensitive to subcultural differences within eating disorder diagnostic groups. For example, Doninger, Enders, and Burnett (2005) conducted a factor analysis of the Eating Attitudes Test (EAT-26) among female university athlete samples, and found a poor fit with the current EAT-26 three factor model consisting of dieting, BN and food preoccupation, and oral control, with female university athlete samples instead supporting a five factor model, including drive for thinness, food preoccupation, other's perceptions, purging behavior, and dieting behavior. This suggests that female university athletes may experience unique

characteristics and pressures with regard to eating disordered behavior that are not adequately captured by the EAT-26.

Self-report measures are uniquely vulnerable to methodological difficulties at the individual level. Individuals may not fully understand survey items and these items may not be adequately defined. In eating disorder surveys, items that assess preoccupation, binge eating, and loss of control all require a certain degree of interpretation that may vary widely between individuals. Examples of these types of items include: “Give too much time and thought to food” and “Have gone on eating binges where I feel that I may not be able to stop” (Garner et al., 1982). Further, individuals may not understand or attend to specific time-frame requirements on surveys, so that symptomology measured over a four-week period, for example, may not be accurately reported. Individuals may also be somewhat reluctant to disclose personal and potentially threatening information on self-reports, either refusing to do so, or using response sets that may bias the collected data. Structurally, self-reports may not adequately account for the degree to which current symptomatology, language and literacy abilities and level of distress may affect an individual’s ability to accurately complete self-report measures (Kessler, Wittchen, Abelson, & Zhao, 2000).

### *Clinical Interviews*

Clinical interviews overcome some of the methodological problems inherent in self-report surveys and allow for a more thorough assessment of eating disorder diagnostic criteria. The primary advantage of clinical interviewing is that it relies on strong rapport between interviewer and interviewee, providing opportunities to detect inconsistent or inaccurate information. Clinical interviews also create a sense of collaboration, in which any confusion about questions can be clarified and individuals

with eating disorders can be encouraged to disclose potentially distressing information in a more formal, confidential format.

The Eating Disorder Examination 12th Edition (EDE; Fairburn & Cooper, 1993) is the most widely used structured clinical interview to assess eating disorders. The EDE consists of four subscales measuring dietary restraint and concerns about eating, shape and weight. EDE questions are based directly on eating disorder diagnostic criteria. For example, the first question relating to BN in the EDE is the first diagnostic criteria for BN in the DSM-IV-TR (APA, 2000) relating to recurrent episodes of binge eating. The EDE provides an overall rating of eating disorder severity, as well as individual subscale scores over the past four-week period. EDE questions are rated in a seven-point Likert scale, with higher scores indicating greater eating disorder severity. The EDE has excellent reliability and validity, yielding far greater diagnostic detail than traditional self-reports.

However, self-presentation bias may be higher in clinical interviews than in self-report measures due to the relationship established through therapeutic rapport and the use of multiple probes. Further, the high degree of shame associated with eating disorder pathology and the common reluctance to seek treatment, may significantly bias interview responses. Ultimately, the use of multiple and multimodal assessments help to control for bias and is considered the gold standard in practice (Guest, 2000).

Passi, Bryson and Lock (2003) reported higher endorsement of eating disorder pathology on self-report than on the EDE, attributable in part to a lack of adequate understanding of self-report items. They found that providing training to participants on difficult to interpret items, such as defining loss of control, significantly improved the correlation between their self-report and clinical interview results.

In an extensive study with 500 adolescents, Field, Taylor, Celio and Colditz (2004) found that 12% of individuals who endorsed bulimic behaviors on self-report questionnaires failed to do so on a clinical interview. Although these differences may be attributable to item miscomprehension, it is more likely that they were due to a lack of temporal overlap between the administration of self-report measures and another clinical interview, the Eating Disorders Interview. When using multimodal assessments, it is necessary to ensure items are being used to measure the same time period, that both the clinical interview and the self-report questionnaires are clearly worded and that any vague items are clearly defined prior to administration (Field et al., 2004).

In an examination in an adolescent eating disordered sample of the correspondence between the Eating Disorders Examination (EDE) structured clinical interview and the Eating Disorders Examination-Questionnaire (EDE-Q), a self-report measure derived from the EDE, Binford, LeGrange, and Jellar (2005) found that these measures were relatively comparable for three of the four EDE subscales but were discrepant for the Eating Concerns EDE subscale, suggesting that the clarification and support provided by EDE administrators may yield more accurate reflections of eating concerns among bulimic adolescents in particular, and other eating disordered adolescent groups in general. Additionally, Binford and her colleagues (2005) found that bulimic adolescents endorsed twice the objective binge eating episodes on the EDE than on the EDE-Q, suggesting that administrator empathy may increase symptom endorsement among bulimic adolescents. Given the relative ease, speed, and lower cost of administering the EDE-Q relative to the EDE, Binford et al. (2005) concluded that the EDE-Q may yield useful and comparable information to the EDE but warned that caution



is merited when using the EDE-Q with bulimic adolescents relative to other adolescent eating disorder diagnostic groups.

Clinical interviews overcome some of the methodological problems inherent in self-report surveys, but unfortunately introduce additional error possibilities into the eating disorder assessment process. The limitations in the studies discussed above indicate a clear risk of self-presentation bias, shame, reluctance to seek treatment and lack of clear understanding of diagnostic criteria inherent in clinical interviewing methods. It is our evaluation that clinical interviews allow the collection of valuable diagnostic information but are still sufficiently vulnerable to bias and memory errors to warrant the use of additional supporting information, particularly information that increases insight into the inner experience of eating disorders.

Current retrospective eating disorder assessment methods rely primarily on self-report and clinical interview data. While the information yielded by these methods is necessary and valuable, it is also particularly vulnerable to bias. Individuals with eating disorders often misrepresent their responses to traditional assessment measures (Crowther & Sherwood, 1997). This misrepresentation primarily occurs through stigma, shame, and a desire to avoid detection and intervention efforts (Polivy & Herman, 2002), but may also occur through self-presentation bias, memory, or cognitive processing errors. Traditional assessment measures have thus proven to be insufficient for gaining a clear understanding of eating disorder phenomena.

#### Concurrent Assessment Methods

As we have seen, self-report and clinical interviewing methods are subject to significant retrospective and memory biases. Despite that fact, self-report and clinical

interview methods are used almost exclusively in eating disorder research. Eating disorders are profoundly disruptive and potentially fatal; they must be examined in the most methodologically sound ways possible. Researchers disappointed by the significant methodological errors and lack of ecological validity in traditional self-report and clinical interviewing methods have designed strategies to gain insight into inner experience. This discussion will begin with a review of diary methods, followed by cognitive methods (think aloud, thought listing, and thought sampling), and electronically cued checklists (Experience Sampling Method and Ecological Momentary Assessment). A brief introduction to each of these methods, with a review of advantages, disadvantages and application to eating disorder research where available will be provided. This chapter will conclude with a discussion of Descriptive Experience Sampling, a method that overcomes the significant methodological difficulties in previous attempts to explore inner experience.

### *Diary Methods*

Diary methods instruct participants to record requested information about a construct of interest at assigned time intervals throughout the day. However, information may not necessarily be recorded at the assigned times and may be recorded after the fact in paper-and-pencil diary formats. The primary advantages of diary methods are that they allow for the collection of diverse information relating a particular question of interest to the researcher and have greatly increased ecological validity. Facilitating collection of data in the participant's natural environment decreases retrospective bias by prompting for events to be recorded immediately after they occur. Diary methods yield much more complexity than is possible with traditional self-report measures.

Bolger and his colleagues (2003) reviewed three types of diary design. In time-based designs, entries are completed at assigned time periods. In signal-based designs, entries are completed when the participant is signaled, either randomly or non-randomly to do so. In event-based designs, individuals are asked to make an entry after each construct-related event occurs. Diary methods allow researchers to assess events across time and clarify existing individual patterns. These methods are quite non-invasive, cost effective and easily understood by participants. However, they remain highly vulnerable to self-presentation bias and reactivity. Studies using diary methods often report high attrition rates due to lack of clinical supervision and long time commitments for participants in most of these studies. Additionally, diary methods require that participants be trained on expected entry content and completion (Breakwell & Wood, 2000).

Diaries are also vulnerable to retrospective bias, particularly if participants do not complete entries at the assigned times. Although frequent monitoring has been proven to increase compliance rates, many diaries are still in paper-and-pencil format and thus compliance and timely reporting is not verifiable (Breakwell & Wood, 2000). Thiele, Laireiter and Baumann (2002) suggest that compliance may be increased in diary studies by using simple diary formats, maintaining frequent researcher-participant contact, and providing adequate training at the start of the study.

Diary methods have been used in eating disorder studies, ranging from simple assessment of food intake to more complex, interacting variables. Waters, Hill, and Waller (2001) used a food intake diary for participants to record food consumed during regular and binge eating episodes. The diary included a craving checklist to record subjective experience of cravings, antecedents, time, location, and presence of others. This diary method was found useful for identifying binge-eating triggers. However, a

potential limitation of this study is that it is quite difficult for individuals to accurately record food intake, especially during binge episodes when dissociation and high levels of distress are common.

Waugh and Bulik (1999) also used a food intake diary to assess food consumption and affect in the children of mothers with eating disorders. While the food diary did not reveal any significant differences between the children of eating disordered and control mothers, a videotaped meal did show significantly fewer positive interactions between parents and children in the eating disorder group. In this study, diary methods alone were insufficient to determine the degree of eating disorder risk in children with an eating disordered mother.

Diary methods appear to be becoming increasingly popular in studies of eating disorders, behavioral weight loss, and nutrition concerns. For example, Freeman and Gil (2004) used a daily diary method with female undergraduate students identified as engaging in binge eating behaviors and found that negative affect, stress, and lack of social support all correlated with binge eating behavior. Additionally, coping with stress through distraction correlated with increased binge eating likelihood for all participants except those highest in dietary restraint, suggesting that distraction may lead to disinhibition of dietary restraint among binge eaters (Freeman & Gil, 2004). Diary methods have also proved helpful in assessing the efficacy of behavioral weight loss programs with obese individuals (Lazzer et al., 2005; Carels, Cacciapaglia, Rydin, Douglass, & Harper, 2006).

In a study with bulimic and binge eating disorder patients who recorded daily food intake diaries for a one week period to determine the impact of self-monitoring on objective and subjective binge eating episodes, Hildebrandt and Latner (2006) found that

the act of self-monitoring led to a decrease in objective binge eating but an increase in subjective binge eating such that less food was consumed but the episode was still perceived as out of control by the patients, suggesting that self-monitoring techniques may decrease binge eating volume but will not necessarily be clinically useful for detecting subclinical binge eating behavior.

Diary methods may also be useful in examining the impact of health behaviors related to bulimic behaviors. For example, Wells and Cruess (2006) conducted a study of eating and sleep behaviors among nonclinical undergraduate university students using a diary methodology and found that sleep deprivation correlated with decreased caloric intake and poorer nutritional choices. Since mood and anxiety disorders are common comorbid diagnoses in BN (APA, 2000), and both of these comorbid diagnoses may result in sleep disturbance, further research on the impact of sleep disturbance on eating behaviors appears warranted.

However, there are clear disadvantages to diary methods, including reactivity, habituation, and risk of retrospective bias when compliance is inconsistent. Because traditional paper-and-pencil diaries cannot be verified, diary studies are increasingly using electronic diaries that can be programmed to prompt entries, control for time non-compliance and allow greater verifiability (Bolger, Davis, & Rafaeli, 2003). However, Green, Rafaeli, Bolger, ShROUT, and Reis (2006) have demonstrated general equivalence between paper and electronic diary methods on compliance, with checklists measures yielding somewhat greater sensitivity electronically than in paper format, and suggest that more research is required before definitive statements can be made about the utility of electronic diary methodologies relative to paper diary methodologies. Based on the limitations of diary methods discussed above, the ecological validity and insight into the

inner experience of eating disorders provided by diary methods may be offset by their vulnerability to memory errors, self-presentation bias, and lack of adequate sensitivity.

### Cognitive Methods

Cognitive concurrent assessment methods collect information about thoughts in inner experience. They may collect fairly complex data about cognitive processes, as in the think aloud method, may collect data about individual thoughts about a specified topic as in the thought listing method, or may collect samples of cognitive data in the participant's natural environment as in thought sampling.

#### *Think Aloud*

The think aloud method has been widely used to assess cognitive processes in individual experience. In this method, individuals are asked to state their thoughts aloud, usually into a tape recorder during a problem-solving task. The researcher then organizes and codes verbalizations to obtain insight into the psychological and cognitive processes involved in the assigned task (Yang, 2003). The primary advantage of the think aloud method is that it allows the research to collect immediate information about the cognitive aspects of inner experience at the time it is occurring, thus largely avoiding retrospective and memory biases.

Genest and Turk (1981) argued that the think aloud method is reactive, vulnerable to incomplete reporting, and lacking in ecological validity. Because thinking aloud requires verbalization, it may not accurately represent the thought itself. However, Yang (2003) proposed that increasing the level of collaboration between researcher and participant may reduce error and reactivity and increase understanding of complex

reports, a method strongly advocated by the descriptive experience sampling method to be addressed later.

There are few eating disorder studies to date using the think aloud method. Barnhofer, de Jong-Meyer, Kleinpab, and Nikesch (2002) discovered significant differences in cognitive and memory styles using this method in a depression study. Specifically, they found that depressed individuals retrieved fewer memories overall and more categoric memories than nondepressed individuals. Therefore, think aloud strategies appear to have utility in assessing cognitive issues in psychopathology.

Davison, Vogel, and Coffman (1997) designed a modified think aloud method termed Articulated Thoughts in Simulated Situations (ATSS). In the ATSS method, individuals listen to hypothetical situations ranging from neutral to highly emotional and report their thoughts aloud after imagining themselves in the situation presented. The ATSS method allows for greater target-situation flexibility than traditional think aloud protocols and immediate reporting reduces the risk of retrospective recall errors, but may still be vulnerable to self-presentation bias. To date, no ATSS eating disorder research has been conducted. However, research on anxiety, depression, social anxiety, family conflict and therapy outcome has shown the method to have utility for studying cognitive processes in situational contexts.

In vivo exposure was used in one think aloud study by Cooper and Fairburn (1992), in which individuals with eating disorders and controls were given three exposure exercises to evoke eating, weight, and shape related cognitions. Participants were asked to weigh themselves, eat a chocolate mint, and stand in front of a full-length mirror while completing a thought checklist. Overall, participants with eating disorders had more negative eating, weight and shape related cognitions than controls. Further,

individuals with AN reported more negative eating related cognitions and individuals with BN reported more negative weight and appearance related cognitions. These reported differences appear to be consistent with their respective diagnostic criteria.

While there remain few studies using this methodology to examine eating disorders, there are three recent studies using this methodology to examine eating disorders with interesting results. First, Hilbert and Tuschen-Caffier (2004) used a think-aloud procedure during a video exposure task with participants undergoing cognitive behavioral therapy for binge eating disorder and found that exposure techniques appear to be as effective as cognitive restructuring in decreasing negative bodily-focused cognition and cognitive distortions.

Second, Hilbert and Tuschen-Caffier (2005) used a think-aloud procedure during a mirror exposure task with a bulimic, binge eating disorder, and control group participants, and found that participants with BN demonstrated more negative bodily-focused cognition during the mirror exposure relative to the binge eating disorder and control groups. Additionally, the think-aloud technique yielded greater sensitivity than the Body Cognition Inventory, a traditional self-report measure. Although this difference in sensitivity did not reach statistical significance, it did appear to yield more clinically significant information (Hilbert & Tuschen-Caffier, 2005).

Third, Swift (2005) used a think-aloud procedure with a nonclinical sample of undergraduate university students during an exposure task to pictures representing the sociocultural thin ideal and neutral pictures, and found that exposure to the sociocultural thin ideal pictures was associated with lower body dissatisfaction overall, and that participants high in feminine gender role stress exhibited less body dissatisfaction than participants with lower levels of feminine gender role stress.



These studies illustrate the potential utility of think-aloud procedures in examining eating disorders, but are still vulnerable to self-presentation bias, and are lacking in ecological validity. More research is needed to determine the extent to which these results may be generalizable.

### *Thought Listing*

In the thought listing method, participants are asked to write down all of their thoughts after being presented with a particular topic or visual stimulus (Cacioppo & Petty, 1981). This method is somewhat superior to think aloud in that it allows for greater detail than immediate verbalization, but is not as effective in ruling out the effect of retrospection, is still fairly reactive, and is lacking in ecological validity and vulnerable to self-presentation bias. To date, there have been very few thought listing studies on eating disorders. In the one current examination of eating disorders using thought-listing methodology, Engeln-Maddox (2005) used traditional self-report measures and a thought listing procedure during a study exposing female undergraduate students to advertisements representing the sociocultural thin ideal and found that while 74% of participants listed at least one thought that challenged the content of the advertisements, 82% listed thoughts consisting of negative comparisons between themselves and the advertisement models. Additionally, Engeln-Maddox (2005) found that these negative comparisons were correlated with higher levels of body dissatisfaction and greater internalization of the sociocultural thin ideal. Future thought listing studies controlling self-presentation bias and reactivity to the greatest possible are needed to determine the extent to which these results may be generalizable.

### *Thought Sampling*

Thought sampling methods require participants to complete checklists or questionnaires related to thoughts immediately when they are cued to do so. Participants may also be required to report on measures of thinking and mood (Hurlburt, 1997). Cues may be presented on a programmed schedule, or may occur randomly. Particularly when random cuing and immediacy of reports are combined, thought sampling markedly overcomes the problem of retrospective recall common in self-report measures and enhances the ecological validity of a study. Thought sampling methods introduce a greater degree of flexibility into the cognitive and affective aspects of inner experience (Cooper & Fairburn, 1992; Zotter & Crowther, 1991).

Thought sampling has been used in two studies of BN. Zotter and Crowther (1991) applied thought sampling to a study of the cognitive aspects of BN. The women were randomly cued and asked to record their thoughts and activities at each cue. They found that women with BN reported significantly more dichotomous thinking and cognitive distortions than did controls when tested using the thought sampling method.

The thought sampling method was used by Zotter-Bonifazi, Crowther, and Mizes (2000) to measure the correlation between thought sampling and self-report. Participants completed a brief self-statement questionnaire assessing the presence and intensity of eating, shape and weight related cognitions every 30 minutes. They found that a high correlation between self-report measures of BN and participant reports using the Bulimic Cognitions Inventory during in vivo thought sampling. This study revealed that thought sampling could be used to support participant's endorsement of cognitive items on traditional self-report measures.

Thought sampling studies have markedly enhanced our understanding of cognitive and affective processes in psychopathology and have introduced protocols such as random sampling and immediate reporting to control for retrospective recall bias. However, this method is still lacking in ecological validity and is prone to self-presentation bias. To our knowledge, there have been no recent studies using thought-sampling to examine eating disorders.

### Phenomenological Methods

While there are a variety of phenomenological interviewing methodologies used throughout the social sciences, the three phenomenological approaches that have most strongly impacted current psychological research include methodologies influenced by Husserl, Heidegger, and Grounded Theory. Each of these will be briefly reviewed, followed by a discussion of the relative advantages and disadvantages of these phenomenological methodologies, and a review of how these methodologies have been applied to eating disorder research.

Wertz (2005) characterized Husserlian phenomenology as a means to access an interviewee's lived experiences by avoiding bias and focusing on the meaning and subjective experience of the individual from their own perspective. The four primary steps of Husserlian phenomenological research include the bracketing of presuppositions, interviewing to gain insight into the interviewee's subjective lived experience, analysis of the meanings of these lived experiences, and finally, compilation and further analysis of these meanings to reach a more generalized understanding (Wertz, 2005). Davidson (2004) characterized Husserlian phenomenology more straightforwardly as an approach that is centrally focused on conscious objective experience with its resulting layers of

meaning; this approach advocates the bracketing of all presuppositions so that the individual meaning of the interviewee can be examined with the least amount of bias possible.

Broussard (2005) characterized Heideggerian phenomenological interviewing methodologies as a three-phase process in which individuals are interviewed using open-ended questions followed by thematic probes; a thematic analysis of these interviews is then conducted to understand the themes emerging from this interview data; analysis of specific episodes that best define these themes is then completed, followed by identification of paradigm cases which are defined as examples of patterns of meaning that illuminate how individual meaning has developed from the individual's social and situational interactions. The Heideggerian phenomenological approach is based on recognizing interviewee's expertise on their own experience and encourages interviewers to use a reflective diary to organize their own reactions to interviewees that can then be used to further identify themes that emerge during interviewing (Broussard, 2005). Finally, Broussard (2005) explained that interviewers using the Heideggerian phenomenological method are encouraged to validate their results both with interviewees and with other qualitative and non-qualitative research.

Fassinger (2005) characterized grounded theory, originally formulated by Glaser and Strauss, as a sociological qualitative research method built on the premise that individuals construct meaning and reality from their interpersonal relationships, and that theories should be built upon a framework of raw data gathered from reports of individual experiences obtained using open-ended questions and probing, followed by careful coding of these experiences. This coding involves three levels of analysis including open coding, in which data is divided into meaning units to generate thematic

categories for further investigation; axial coding, in which these categories are further organized and compared; and finally selective coding, in which categories identified from this process are integrated into a wider theory (Fassinger, 2005). After this initial theory is proposed, grounded theory methodology then uses further theoretical sampling to test the category organization proposed in data analysis and to continue to refine theories proposed from this method (Fassinger, 2005).

The primary advantages of each of these phenomenological methods are that they are collaborative, and that they shift away from reliance on predetermined theory-based self-reports. These methods also allow researchers to conduct interviewing with groups that have traditionally been under-represented in traditional self-report samples, such as groups of individuals with comorbid disorders, community members that may not share clear diagnostic commonalities, or policy stakeholders that have often not been interviewed using traditional methodologies. Davidson (2004) advocated applying these approaches to research, clinical practice, and policy initiatives so that interactions with clinical populations can be collaborative, and based on respect for the meaning that the individual attributes to their own lived experiences.

In spite of these advantages, phenomenological methods do require an extensive time and task commitment from participants and may be vulnerable to experimenter presuppositions. Probing questions during interviewing can also create vulnerability to self-presentation bias and experimenter expectancy biases (Fassinger, 2005). Hurlburt and Heavey (2006) posited that by focusing on the thematic meaning of lived experience, and asking participants to reflect on lived experience well after it has occurred, these phenomenological methods may be vulnerable to retrospective errors and experimenter presuppositions with regard to these themes. Additionally, by using eidetic reduction,

these phenomenological methods attempt to reduce data to its essential thematic features, thus potentially creating vulnerability to bias when analyzing interviewee's subjective experiences (Hurlburt & Heavey, 2006). In a discussion of the differences between DES and other phenomenological methods, Hurlburt and Heavey (2006) asserted that DES defines "experience" as only what is in awareness at a specific randomly sampled moment, the moment of the beep, rather than examining participant's lived experiences thematically which may increase the potential for retrospective errors in these phenomenological methods. DES also examines the participants actual randomly sampled experiences without thematic categorization, thus controlling for additional potential sources of bias.

Each of these phenomenological methods has been applied to eating disorder research on a fairly limited basis. For example, Broussard (2005) used a Heideggarian phenomenological interviewing method which asked women with BN open-ended questions about their experience of BN and identified four primary experiential themes including perceptions of self as isolated from others, fear of judgment from others, fear of losing bulimic identity, and feelings of being conflicted with regard to the meaning of bulimic behavior and using bulimic behavior to alleviate distress. In analyzing data from this study, Broussard (2005) found that women with BN tended to view their behavior as relatively normal, thus creating additional barriers to effective intervention and assessment.

In a study using a Husserlian phenomenological interviewing method, Newton, Boblin, Brown, and Ciliska (2006) examined the meaning of intimacy among women with AN and found that these women defined intimacy and physical and emotional closeness and companionship and identified fear of rejection, lack of partner

understanding of their eating disorder experience, lack of congruence in disclosure, body dissatisfaction, and lack of sexual desire as significant barriers to intimacy. Overall, this study suggests fewer differences in the experience of intimacy among women with AN than was expected given the presumption of difficulties with intimacy in the AN literature (Newton et al., 2006).

In a study using the grounded theory phenomenological interviewing method, Nordbo, Espeset, Gulliksen, Skarderud, and Holte (2006) examined the meaning of anorexic behavior among women with AN and found eight thematic meaning constructs. These constructs included security, in which women perceived their anorexic behavior as providing them with structure and stability; avoidance, in which this behavior provided a technique to avoid negative affect and stressful events; mental strength, in which this behavior was seen as providing a sense of mastery and self-control; self-confidence, in which this behavior was used to access appearance-based affirmation from others resulting in higher levels of positive self-regard; identity, in which this behavior was perceived as creating a valued new identity for the individual; care, in which this behavior elicits care and concern from others; communication, in which this behavior is used to communicate distress to others; and death, in which this behavior is used as a means of suicide through self-starvation (Nordbo et al., 2006). Nordbo and her colleagues (2006) suggested that therapeutic consideration of the meaning attached to behavior may be a crucial step in attempting to overcome treatment resistance.

Overall, these phenomenological methods mark a clear attempt to overcome biases resulting from exclusively theory-driven self-report methods, but remain vulnerable to retrospective errors, self-presentation, experimenter expectancy biases, and experimenter presuppositions with regard to identified themes.

## Electronically Cued Checklists

### *Experience Sampling Method*

Introduced by Csikszentmihalyi and colleagues (Larson & Csikszentmihalyi, 1983; Hektner & Csikszentmihalyi, 2002), the Experience Sampling Method (ESM) uses time-programmed or random signals to cue participants to complete self-report questionnaires, checklists and brief open-ended questions such as “What were you doing?.” The primary advantage of ESM is that because individuals are asked to immediately record their responses when cued, there is very little time lapse in which retrospective recall errors can occur.

Repeated experience sampling in the individual’s natural environment greatly increases ecological validity. The emphasis on contextual variables in ESM and the collection of repeated self-report measures allow for accurate assessment of behavioral patterns and changes over time. The collaborative relationship between participant and researcher increases compliance and allows for rapid clarification of any questions about the procedure. The use of both closed and open-ended questions to assess the details of experience yields much more complex data than previously considered methods. Several ESM studies use a brief measure called the ESM self-report form. The ESM self-report includes several open-ended questions about the individual’s thoughts, activities and locations, followed by Likert scale items and checklists rating affect and perception of activities (Larson & Csikszentmihalyi, 1983; Hektner & Csikszentmihalyi, 2002; Hurlburt, 1997).

In spite of significant methodological advances, ESM requires an extensive time and task commitment from participants, thus leading to potential self-selection bias and



attrition issues. Additionally, ESM may be somewhat reactive and prone to self-presentation bias (Larson & Csikszentmihalyi, 1983; Hektner & Csikszentmihalyi, 2002).

Experience sampling measures must be carefully selected. The inclusion of open-ended questions increases flexibility but should avoid mood dependent effects by limiting participant ratings of the affective aspects of events. Further, open-ended questions may be misunderstood by participants and should be clearly stated and defined (Stone, Kessler, & Haythornthwaite, 1991). Klinger and Kroll-Mensing (1995) suggested that maximum flexibility can be attained through the addition of narrative reports of thought, cognition, and affect to the ESM self-report. Punzo and Miller (2002) argued that the use of excessive closed ended questions may be leading and decrease spontaneous reporting of experience.

Experience sampling research has greatly benefited from technological advances. Currently, palmtop computers with Experience Sampling Procedure (ESP) software are being used to collect idiographic information. This software uses a list of Likert scale items that can be presented to participants in random order to control for response bias. Electronic sampling methods markedly increase verifiability and control participant response time to reduce retrospective recall. While these advances significantly improve ESM methodology, they are somewhat expensive to purchase and maintain and require participant training on the technology before use (Barrett & Barrett, 2001).

The ESM technique has recently been adapted to a web-based version to examine web-site user experiences interactively while they are on-line; this adaptation appears to increase both the precision and convenience of ESM data collection (Chen, 2006), but has not yet been applied to other non-web-site based research applications. Although Chen (2006) has applied web-based ESM to a nonclinical sample of web users, this

methodology may also be very useful for testing web-based eating disorder prevention and intervention technologies.

Experience Sampling Method has been applied to eating disorder research on a limited basis. In an early study, Johnson and Larson (1982) used ESM and found that women with BN experienced significantly increased negative mood and affective lability relative to controls, and that as preoccupation with food increased, bulimic women experienced higher levels of social isolation than did controls. Okon, Greene, and Smith (2003) used this method to measure activity, affect, behavior and daily family hassles in bulimic individuals. They found that high levels of family conflict increased bulimic symptoms but only in the individuals who rated their families as globally dysfunctional.

In a case study of an individual with AN, ESM was used to assess hyperactivity, obsessions, compulsions, affect, and eating disorder pathology. This study allowed for greater understanding of the interaction between hyperactivity and other symptom variables. Specifically, Vansteelandt and his colleagues (2004) found hyperactivity to increase with negative affect and weight preoccupation. The insights gained in this study facilitated more effective and individualized exposure and response prevention treatment planning (Vansteelandt, Pieters, Vandereycken, Claes, Probst, & Van Mechelen, 2004).

Using ESM, Steiger, Lehoux, and Gauvin (1999) found no correlation between dietary restraint and binge eating in impulsive bulimic women, but a high correlation in non-impulsive women. More research is needed to investigate impulsiveness as a potential moderating variable, as the relatively small sample sizes in ESM research make causal statements particularly difficult.

ESM was also used to show significant situational variability in BN symptoms. Specifically, time spent alone and at home greatly increases bulimic symptoms. These

findings argue against the consideration of BN as a potential affective disorder, as affective disorders typically show far higher levels of stability across situations (Larson & Asmussen, 1992).

ESM was used to examine emotional eating in African American adolescents, demonstrating that stress and anger were significant predictors of emotional eating in female but not male adolescents, and that increased positive coping training may be useful in challenging this potentially disruptive pattern (Nussbaum, 2005).

Using ESM with individuals diagnosed with AN or BN, Corte and Stein (2005) found that activation of weight-related schema correlated with low self-esteem and higher negative affect, and that these factors then mediate bulimic and anorexic behaviors. Of particular interest, this ESM study yielded lower levels of eating-disorder-specific behavior and cognition than may be expected from the eating disorder literature. Corte and Stein (2005) explained that:

One unexpected finding was that less than half of the sample of eating-disordered women indicated that the body-weight schema was activated in working memory even once across the 5-day period. In addition, reports of disordered eating behaviors at the time of the signal were similarly and surprisingly infrequent. ...These findings raise the possibility that recollections of the amount of time involved in weight-related thoughts and ED behaviors may be exaggerated as a result of encoding and recall errors resulting from the intensity of negative affect or recency or primacy effects...Even during the acute phase of the illness, women with AN and BN appear to be engaged in and spend the majority of their time involved in non-weight-related activities and domains of self-definition. However, given the low self-esteem and negative affect associated with weight-

related self-thoughts and severe physical and emotional consequences of the ED behaviors, the relatively low frequency of these thoughts and behaviors does not diminish their seriousness and importance. Rather, these results provide evidence to suggest that, at least in the ambulatory sample of women with an eating disorder, their normal daily life consists of some diversity in activation of domains of self-definition and behavioral involvement (Corte & Stein, 2005, p. 1712-1713).

Overall, these results suggest that the diagnostic assumption of preoccupation with weight and shape in the eating disorders may not accurately reflect the daily experiences of women with these disorders (Corte and Stein, 2005).

Overall, ESM marks a clear progress over other concurrent assessment cognitive methods to explore inner experience by introducing immediacy and randomness. This allows for greater understanding of the interactions between individual and situational variables. However, self-selection bias and attrition factors must be considered due to the extensive and time-consuming nature of these tasks. There is also a current lack of agreement about how to best analyze data collected with this method and the use of self-report techniques still allow for self-presentation bias and reactivity (Scollon, Kim-Prieto, & Diener, 2003).

#### *Ecological Momentary Assessment*

In Ecological Momentary Assessment (EMA; Stone & Shiffman, 1994; Stone, Shiffman & DeVries, 1999), individuals are asked to immediately report on the assigned construct at a particular moment over repeated intervals in their natural environment. For example, individuals may be asked to rate their level of stress at the moment they are cued and answer questions about their coping strategies at multiple random intervals over

the course of a day (Stone, Shiffman & DeVries, 1999). Where ESM collects primarily self-report measures, checklists, and brief open ended questions, EMA collects more diverse information, using more flexible measures than are used in ESM.

EMA is advantageous due to higher ecological validity and greater flexibility than the previously discussed inner experience methods. EMA samples can be collected using time or signal-contingent cues and ask participants to report immediately to control for retrospective bias. In event-contingent designs, participants immediately report measures of momentary experience after each construct related event. Although self-report measures are used in EMA, participants are asked to report on broader aspects of experience than is typical in experience sampling or cognitive methods. The collection of multiple samples provides a more accurate assessment of variables over time than is possible in traditional self-reports.

The increasing use of computerized EMA methods makes sampling somewhat easier for participants and increases verifiability. Palmtop computers are programmed to randomly signal participants to record measures of momentary experience. Flexible software incorporates self-report measures and questions on a wide array of relevant contextual and individual variables (Shiffman, 2000). However, as in experience sampling method, extensive time and task commitments in EMA may contribute to attrition or self-selection bias, and repeated completion of the same assessment measures may lead to reactivity and response sets (Stone & Shiffman, 1994; Stone, Shiffman, & DeVries, 1999).

There has been a recent increase in research using EMA to examine a host of eating disorder correlates, with a particularly focus on negative affect. For example, in a community-based study using EMA to examine the potential role of negative mood in

binge eating among women with BN and binge eating disorder, Hilbert and Tuschent-Caffier (2007) found that negative mood was a significant antecedent of binge eating but that, contrary to BN maintenance theories, binge eating was found to be ineffective in helping to regulate negative moods. However, in another community-based study, Smyth and his colleagues (2007) found that while negative mood was strongly associated with BN events (either bingeing or purging) among inpatients with BN, they found that these events resulted in a significant improvement in mood, thus supporting maintenance theories of BN. In an inpatient study of women with AN and BN, Vansteelandt, Rijmen, Pieters, Probst, & Vanderlinden (2007) used EMA to examine the relationships between drive for thinness, affect regulation, and physical activity among women with eating disorders, and found that high levels of physical activity were associated with the lowest BMI, chronically negative affect, and drive for thinness among women with both AN and BN. In an EMA examination of negative affect and dietary restraint among women with binge eating disorder, Stein, Kenardy, Wiseman, Douchis, and Wilfley (2007) found negative affect to be a powerful antecedent of bingeing, but also found that negative affect actually significantly increased immediately after a binge episode among these women. Additionally, in their EMA examination of the potential role that anger and impulsivity may play in BN behavior, Engel and his colleagues (2007) found that impulsivity moderated the relationship between anger and BN episodes such that individuals higher in impulsivity were more likely to engage in binge-purge behaviors as their momentary levels of anger increased. In a recent EMA study of the antecedents of binge eating among women with BN, Engelberg, Steiger, Gauvin, and Wonderlich (2007) found that negative affect and dissociation both increased the probability of engaging in binge

eating behaviors and advocated for increased self-awareness and affect tolerance efforts in BN interventions.

Aside from being used to examine specific affective eating disorder correlates, EMA has also recently been used to examine potential individual personality differences among women with BN. In a community-based study of women with BN, Wonderlich, Crosby, Engel, Mitchell, Smyth and Miltenberger (2007) used EMA to identify three distinct personality subtypes among their 131 women with BN. These three identified subtypes (Low Personality Pathology, Interpersonal-Emotional, and Stimulus Seeking-Hostile) moved away from traditional comorbid-with-BN personality disorder diagnostic symptoms and instead focused more on specific affective and behavioral personality traits. Wonderlich and his colleagues (2007) found that their participants with the highest levels of personality pathology displayed the highest rates of daily BN-related behavior and posited that this may prove to have utility in individualizing treatment efforts.

Stein and Corte (2003) examined the utility of using computerized EMA to assess eating disorder pathology. They found slightly higher endorsement of eating disorder pathology on clinical interviews than on EMA measures in individuals with AN and BN. More research is needed to determine the reason for this difference, but compliance with EMA is suspected to be the primary explanation. Participants in the study reported embarrassment, interference with scheduled activities and forgetting the palmtop device as the primary reasons that full EMA compliance was not achieved (Stein & Corte, 2003).

An EMA study of binge eating in bulimics collected mood ratings before and after binges, and measured the degree of hunger, type of foods consumed, and presence

of other people during binge eating randomly for seven days. Wegner, Smyth, Crosby, Wittrock, Wonderlich, and Mitchell (2002) found no direct relationship between negative affect and pre-binge eating behavior. The lack of correlation found between negative affect and binge eating immediately preceding and immediately following a binge eating episode challenges theories that cite negative affect as a key binge eating trigger.

Computerized EMA has also been used in cognitive therapy based eating disorder research. Norton, Wonderlich, Myers, Mitchell and Crosby (2003) programmed cognitive therapy modules into palmtop computers and prompted participants to complete self-directed modules. Although this study is currently in pilot stages, the opportunity to extend therapy and increase compliance is likely to show promising results.

Unfortunately, EMA was not found to improve outcome or reduce binge eating frequency, but it was able to discriminate degree of negative affect and dietary restraint in binge eating disorder (le Grange, Gorin, Dymek, & Stone, 2002; le Grange, Gorin, Catley, & Stone, 2001).

In a study using an EMA procedure with anorexic individuals, Engel, Wonderlich et al. (2005) found that these individuals were very compliant with EMA procedures and demonstrated large variability in both within- and between-subject ratings of negative affect and overall mood, suggesting the potential clinical utility of using EMA in assessing affective variables in eating disorders. Additionally, in a study using EMA with bulimic participants, dietary restraint was found to not act as an immediate trigger for binge eating but instead increased cravings, which then increased the likelihood of engaging in binge eating behaviors, suggesting that individuals with BN are able to assess their symptoms accurately and may be able to increase treatment efficacy using



this protocol (Engelberg, Gauvin, & Steiger, 2005). It is possible that more extensive research with larger sample sizes using EMA could increase our understanding of inner experience in eating disorders. However, the use of self-report questionnaires in EMA studies continues to carry a higher degree of self-presentation bias and reactivity than is optimal.

Overall, EMA allows for the measurement of complex affective, cognitive, behavioral and situational variables in eating disorders in the natural environment. Combining random signal and event contingent reports may optimize flexibility and allow for greater insight into the state and trait variables influencing eating disorder pathology. Although there is a lack of agreement about appropriate analysis of data collected through EMA, new statistical designs are being considered that may account for the complexity inherent in the EMA method (Smyth et al., 2001).

### Descriptive Experience Sampling

The Descriptive Experience Sampling (DES) Method will be described, followed by a discussion of the methodological advantages and disadvantages of this method. Next, common characteristics found in the application of the method will be reviewed. The application of Descriptive Experience Sampling to the inner experience of individuals with BN will then be discussed as a foundation upon which the present study will be built.

#### *DES Method*

In DES, pioneered by Hurlburt (1990, 1993) participants are advised of confidentiality, and are told that they may skip any samples they would not be comfortable reporting. Participants are instructed to “freeze” their experience that was

naturally ongoing at the last undisturbed moment before the beep occurs and record their experience in a notebook provided. Before collecting samples, they are advised that it is that particular moment, rather than what is occurring before or after that moment, that is defined as “the moment of the beep.” Isolation of this moment is occasionally difficult for individuals to define; the first several sampling days, with their interviews, assist in training the individual in defining the moment of the beep. Participants are asked to wear the beeper as they engage in their normal daily activities until they have collected approximately six samples of inner experience over the same number of beeps, which takes approximately 3 hours. Participants are then interviewed no longer than 24 hours after the samples are collected.

During the interview, participants are asked to describe their inner experience in each sample collected. Participants are asked questions by the researcher and project supervisor until all present are satisfied that the sample has been clearly and completely described. After each sample is described and all questions have been asked, the participants are given a brief summary and are asked to confirm that the understanding of their experience is complete and accurate, or if there is anything they feel needs to be added, corrected, or clarified. Each sample requires approximately 10-15 minutes of interviewing and interviews typically last for one hour. Participants are then asked if they are willing to continue the DES process. If so, the next interview date is set and participants are asked to collect new samples within 24 hours of the next interview. The sample collection and interviewing process continues until a sufficient understanding of the characteristics of that individual’s inner experience is obtained. This process normally takes four to eight days of interviewing, with variability in number of days dependent upon ease with which the participant is able to understand and complete the

DES task, complexity of inner experience, time in which a thorough understanding of inner experience is reached and consensus of all present that the process has been adequately understood.

### *Critique*

Self-report, clinical interviews and cognitive approaches yield valuable data about eating disorder pathology but remain vulnerable to memory errors, cognitive processing and individual biases that ultimately limit their utility. As we saw earlier, Ecological Momentary Assessment, Experience Sampling Method, and thought sampling methods greatly improve ecological validity over traditional designs, but their incorporation of standardized, self-report data leaves them vulnerable to self-presentation bias, reactivity and retrospective recall.

DES attempts to control for the common errors in retrospective methods by collecting purely ecologically valid information at the moment it occurs. DES avoids the common pitfalls associated with other methods by collecting only qualitative data consisting of repeated samples. Each sample is then subjected to an intensive interview process designed to assure accurate and comprehensive understanding of inner experience, and minimize error due to presupposition or miscomprehension of reports. In DES, participants are asked to report their inner experience under precise conditions, without being led to focus on the previously selected aspects used in self-report measures. The careful interviewing techniques used in DES avoid the leading questions and retrospective biases typical in traditional assessments of psychopathology (Hurlburt, 1993). In this manner, DES exceeds the other ecologically valid methods in its ability to collect far more comprehensive, accurate and unbiased data about inner experience than has previously been possible.

Vermersch (1999) argued that inner experience can only be adequately understood by using techniques that maximize precision, while limiting the need for interpretation and assumptions on the part of the researcher. Optimally, an intensive and collaborative interviewing technique should be used. In this technique, the goal of the researcher should be to: "...help in the unfolding of the internal act making possible access to the lived experience..." (Vermersch, 1999, p. 35). The DES Method attains these ideal technical and relational guidelines.

Early attempts to understand inner experience through introspection have been widely discredited in psychology. Behaviorists argued that reports of inner experience are limited by the ability of the larger community to understand idiosyncratic individual meaning. By using careful, collaborative interviewing, DES is able to achieve collective understanding and agreement about the precise meaning of inner experience samples. In the DES method, the researcher sets aside assumptions and continues to interview a participant until a clear determination of exactly what the experience was and exactly how it was experienced is achieved (Hurlburt & Heavey, 2001).

In a review of criticisms of introspection, Hurlburt and Heavey (2001) described a split in psychology in which behaviorism and cognitive psychotherapy occupy opposite, but incorrect views. While behaviorists believed accurate reports of inner experience were almost impossible, cognitive psychotherapy assumed that inner experience could be easily obtained. In cognitive psychotherapy, when individuals report inner experience, the lack of clear communal understanding and the vulnerability to inaccuracies and assumptions argued by behaviorists is the ultimate result. By creating clear communal understanding, avoiding assumptions and minimizing vulnerability to

inaccuracy, DES overcomes the methodological barriers in early introspection attempts (Hurlburt & Heavey, 2001).

Hurlburt, Heavey, and Siebert (2006) recently proposed 15 guidelines to ensure that DES overcomes the methodological risks inherent in historical introspective methods. First, the responsibility to employ careful, reliable, and valid methodologies to examine inner experience in order to overcome the historical backlash against introspection is acknowledged. Second, the need for skepticism about the accuracy of participant reports to minimize the risk of error to the greatest extent possible is asserted. Third, DES expositional interviews should occur shortly after the beep to minimize retrospective errors. Fourth, there is a need for investigation of brief, specific, clearly defined moments to minimize semantic memory errors and self-schemas. Fifth, sampled moments must be of very brief duration, approximately one second, to allow participants to access detailed inner experience without relying on generalized presuppositions with regard to their inner experience. Sixth, we should minimize reactivity by keeping sampling procedures simple, open-ended, and as non-directed as possible in order to avoid disturbing ongoing inner experience. Seventh, we should maximize ecological validity by having participants sample in their natural contexts as they go about their daily activities. Eighth, we should minimize demand characteristics through the careful bracketing of presuppositions. Ninth, we should work toward shared understanding of reports of inner experience by being careful to explore adequately the meaning of the words used in reports rather than assuming understanding. Tenth, we should strictly avoid “why” questions to account for participant’s inability to accurately determine behavioral causation. Eleventh, we should abandon casual observations of inner experience as inadequate for obtaining valid information. Twelfth, we should ask

participants to merely describe inner experience as raw data, and should avoid participant interpretations of these reports. Thirteenth, there are limitations of introspection, including that it is inadequate for exploring all of the complexity of behavior and cannot be used to explore processing occurring outside of conscious awareness. More research is needed to determine which behaviors and processes cannot adequately be explored using introspection. Fourteenth, there is a critical need for prospective research to allow for examination of potentially unexpected characteristics of inner experience and to avoid potential biases based on theory-driven data collection. Finally, a nomological network should be used to allow for external testing of the construct validity of inner experience characteristics, and adequate examination of inconsistent findings, such as triangulation between reports of inner experience and physiological and behavioral findings. Hurlburt, Heavey, and Seibert (2006) designed these guidelines to allow for more rigorous standards for DES and alternative methodologies that examine reports of inner experience while minimizing the methodological errors inherent in historical introspective methods.

Although DES is an effective method of exploring inner experience, more research is needed to generate additional methodological criticisms of the technique. To date, there has been only one external critique of DES by Schwitzgebel (Hurlburt and Schwitzgebel, 2007). However, as interest in DES grows it is hoped that additional external methodological criticisms of the technique can be generated in order to further extend understanding of the strengths and limitations of this technique to a wider audience.

Schwitzgebel (Hurlburt & Schwitzgebel, 2007) generated six criticisms of introspection that he applied to DES. First, Schwitzgebel expressed concerns that inner

experiences may be too fleeting and rapidly altering to allow for their accurate capture, using the example of reading, in which rapid shifts in focus make moments too fluid to be captured accurately. However, Hurlburt (Hurlburt & Schwitzgebel, 2007) argued that these rapid shifts during reading largely occur outside of conscious awareness, and it is specifically what is in awareness that is the domain of interest in DES.

Second, Schwitzgebel (Hurlburt & Schwitzgebel, 2007) asserted that individuals pay less attention to their ongoing inner experience than to their external environment, potentially leading individuals to be unskilled at attending to and accurately reporting inner experience. However, Hurlburt (Hurlburt & Schwitzgebel, 2007) argued that DES asks only that individuals report on what is directly in their experience, regardless of whether that experience is internally or externally focused, and avoids asking participants to report on subtle or difficult internal or environmental phenomena, such as extremely subtle physiological processing or environmental changes that they may be unable to accurately attend to.

Third, Schwitzgebel (Hurlburt & Schwitzgebel, 2007) posited that we have limited conceptual categories for characterizing inner experience, thus limiting our ability to accurately capture the complexity of experience. However, Hurlburt and Heavey (2006) argued that DES expositional interviewing trains participants to differentiate carefully between experiences and works collaboratively with participants to reach a careful, shared understanding, thus attaining greater accuracy and detail than is possible from endorsement of self-report items, and effectively capturing highly complex inner experience.

Fourth, Schwitzgebel (Hurlburt & Schwitzgebel, 2007) expressed a concern that the act of attending to inner experience may interfere with the stream of consciousness.

Hurlburt and Heavey (2004) expressed this same criticism as a concern that the process of sampling breaks the flow of the “stream of consciousness” into artificially occurring instances. However, Hurlburt and Heavey (2004) posited that it is not yet known if awareness is actually experienced as a continuous flow or is, in fact, a collection of momentary awarenesses. Additionally, despite concerns that sampling may result in a disturbance of inner experience, Hurlburt and Heavey (2004) found that once participants are accustomed to the sampling task, they do not perceive the beep as disturbing or surprising and are able to accurately “freeze” and describe ongoing experience at the moment before the beep occurred. Hurlburt and Heavey (2004) also asserted that there is a potential for criticism of DES expressing concern that it is not possible to determine the extent to which the beep may disturb inner experience. However, by “freezing” experience at the last undisturbed moment before the beep, DES attempts to reduce the potential of the beep to disturb memory processes and distort accurate reporting, but the extent to and / or the circumstances in which this criticism is valid remains to be investigated (Hurlburt & Heavey, 2004).

Fifth, Schwitzgebel (Hurlburt & Schwitzgebel, 2007) expressed concern that reports of inner experience may be biased and vulnerable to situational and experimental demands. However, Hurlburt (Hurlburt & Schwitzgebel, 2007) countered by explaining that DES methodology controls for these potential biases by informing participants that they may discontinue at any time; emphasizing to participants that responses such as not knowing and not remembering are valued and legitimate responses; encouraging participant honesty; and emphasizing that DES is not seeking a particular answer to the question “what was in your experience at the moment of the beep?” Additionally, Hurlburt (Hurlburt & Schwitzgebel, 2007) expressed the need for interviewers and



interviewees to bracket presuppositions in order to avoid being biased by pre-existing theories about what inner experience may be like for a particular group of interviewees. Hurlburt (Hurlburt & Schwitzgebel, 2007) further expressed a value for exploratory studies that begin with data collection and formulate theoretical generalizations only after a substantial amount of data has been collected and analyzed, allowing the researcher to avoid presuppositions that may create experimenter or situational biases and potentially allowing for the discovery of previously unexpected phenomena. Hurlburt (Hurlburt & Schwitzgebel, 2007) proposed that the ideographic focus of DES allows for research that begins with the personal and specific as a core foundation upon which to build toward more general and theoretical knowledge, and expresses concern that by focusing only on the general and theoretical while ignoring the personal and individual, psychology has traditionally assumed knowledge of the personal without actually undertaking investigations that begin at the personal level.

Sixth, Schwitzgebel (Hurlburt & Schwitzgebel, 2007) posited the need for external verification of DES claims using alternate methodologies. Hurlburt (Hurlburt & Schwitzgebel, 2007) agreed with this need for external verification and advocated that research methodologies focused on experiential phenomena would be the most appropriate methods for obtaining this external verification. As research interest in DES continues to grow, external verification of DES claims is likely to be identified as a priority for the evolution of this methodology.

Aside from Schwitzgebel's (Hurlburt & Schwitzgebel, 2007) criticisms of DES discussed above, Hurlburt and Heavey (2004) also created and reviewed potential criticisms of the DES technique. For example, because the beep is random, there is a potential criticism that infrequently occurring experiences may not be captured.

However, in practice, participants often describe experiences that have traditionally been considered to be infrequent or non-existent, such as a lack of perceptual figure/ground phenomenon (Hurlburt, 1993b). Hurlburt and Heavey (2004) also discussed the potential criticism that the DES process may lead participants to be reflective, disturbing their natural state of awareness. DES carefully avoids leading questions and is not interested in a defined subject but rather in momentary experience as it occurs. This lack of interest in a specific topic or type of experience may minimize reflection, but nonetheless this criticism needs further examination. Finally, Hurlburt and Heavey (2004) discussed the potential criticism that participant reports may not be reliable. This criticism has been countered on two grounds. First, Hurlburt and Heavey (2002) found interrater reliability of the characteristics of inner experience to be far in excess of most widely used assessment measures. These findings will be reviewed in detail later in this section. Secondly, the careful, collaborative process used to investigate each sample and the option given to participants to skip samples they do not wish to report increases the likelihood that reports are reliable (Hurlburt & Heavey, 2004). DES may also be prone to self-presentation bias and reactivity, as are all attempts to understand inner experience. The avoidance of leading questions, options to skip threatening information, and lack of targeted interest (all experience is of interest—we do not request reports of only one type of content or experience) built into the DES method significantly reduce these methodological risks.

#### *Commonly Found Features of Inner Experience*

Hurlburt and his colleagues (Hurlburt, 1990, 1993) have observed that some features of inner experience are found frequently across participants, and we will describe those six features here. Although these characteristics provide a foundation from

which to describe inner experience, Monson and Hurlburt (1993) cautioned that experiences are not always clear, separate categories, but may blend from one category into another. Hurlburt and Heavey (2000) created a codebook identifying sixteen characteristics of inner experience to improve the reliability of the coding of inner experiences reported through DES. Each characteristic is defined as follows.

In inner speech, individuals experience inner words as though they were spoken aloud. In partially worded speech, individuals experience themselves to be inwardly speaking but some words are missing from the speech. In unworded speech, individuals experience themselves to be speaking in their own voice and the meaning of the speech is understood, but no actual words are in awareness. In worded thinking, words are experienced without the direct experience of inner speech, hearing, or images. In image experiences, individuals experience seeing something that is not actually present. In imageless seeing, individuals are aware of inwardly seeing, but do not actually see something. In unsymbolized thinking, a thought is in awareness without any particular words, images, or any other symbols. In inner hearing, individuals experience auditory phenomenon without hearing the same thing externally. In feeling, individuals experience affect that may be experienced mentally, physically, or both. In sensory awareness, there is a focus of attention on the sensory qualities of inner or outer experience. Finally, there are five “just doing” categories, in which the individual is involved in any activity without any other awareness. Multiple awareness occurs when at least two of these categorical experiences are simultaneously in awareness (Hurlburt & Heavey, 2000).

Using the codebook of experience categories, Hurlburt and Heavey (2002) tested the interrater reliability of the DES method. In this study examining inter-observer

reliability among the five most commonly occurring characteristics of inner experience: images, inner speech, unsymbolized thinking, feelings, and sensory awareness, Hurlburt and Heavey (2002) used three methods for examining inter-observer reliability: “sample-wise” reliability, which examines agreement between observers on the characteristics of individual samples; “participant-wise” reliability, which examines agreement between observers with regard to the frequency of characteristics of inner experience across participants; and “sample-average” reliability, which examines agreement between observers with regard to the characteristics of inner experience across samples. Overall, Hurlburt and Heavey (2002) found participant-wise reliability of .93, sample-wise reliability of .76, and sample-average reliability of .98, far exceeding the reliability of most commonly used measures, and demonstrating that the characteristics of inner experience can be reliably and consistently rated. Thus, DES interrater reliability exceeds that of most widely used assessment measures.

Although this brief review presents common characteristics of experience, it is critical to note that this is not a comprehensive list. Monson and Hurlburt (1993) describe sampling characteristics as “imprecise boundaries” (p. 25.) In exploring the landscape of inner experience, those characteristics provide a terminology for communicating about some of the frequent features of inner experience. However, much of the landscape of inner experience remains uncharted. As DES research continues, it is likely that new characteristics will be discovered and that existing ones will be refined.

Hurlburt, Koch and Heavey (2002) used DES to examine inner experience in individuals with high and normal speech rates. They found that participants with high speech rates had less inner speech, more complex inner experience, less feeling experiences and more just doing experiences than did individuals with normal speech

rates. This study demonstrates that DES can be used to determine qualitative differences in inner experience for individuals with externally observable behavioral differences.

### *Descriptive Experience Sampling of Bulimia Nervosa*

Chapter 1 provided an introduction to the history and characteristics of eating disorders in general and BN in particular; we observed that it would be desirable to know more about the inner experience of women with BN. Chapter 2 began by discussing methods of exploring inner experience, concluding that the DES method was one of the most effective methods of exploring inner experience to date. Now we turn to the intersection of those reviews, the application of DES to individuals with BN. We will show that DES has discovered valuable information about previously unknown qualitative differences in the inner experience of BN.

To date, there have been only four studies that have used the DES method to understand inner experience in eating disorders. These studies include one case study (Hurlburt, 1993a), one Master's Thesis (Hebert, 1991) that examined inner experience in anxiety but included one participant with BN, a Master's Thesis in which Doucette (1992) used DES to examine inner experience in five bulimic women, and a Master's thesis in which the present author (Jones-Forrester, 2006) examined inner experience in five bulimic individuals. A summary chapter of the Doucette (1992) thesis appears in Doucette and Hurlburt (1993). Each of these studies will now be reviewed.

Hurlburt (1993a) described the inner experience of a bulimic operating-room nurse named Ashley. Ashley's experience was profoundly complex and chaotic, becoming even more so during periods leading up to purging behavior. Ashley frequently experienced what Hurlburt called sensed awarenesses, a phenomenon rarely found in individuals without BN. In more typical experienced awareness one directly experiences

the ongoing awareness. By contrast, in sensed awareness, one knows that an awareness was ongoing and knows the details of that awareness, but the experience itself is outside of awareness. In sensed awareness, it is the knowledge that the experience is ongoing, rather than the experience itself, that is in awareness at the moment of the beep. This is a particularly unusual and somewhat difficult to define phenomenon that may be best understood using Ashley's own metaphor to describe this difference between experienced and sensed awarenesses.

Thoughts and feelings were "fish" in her awareness in the "aquarium." Many fish could be swimming around simultaneously in the aquarium (this is her metaphor for Multiplicity in Experience); each of these directly observed fish were one of Ashley's simultaneous experienced [sic] awarenesses. However, some of the fish in the aquarium were "under the rocks with only their tails exposed (that is, with only their "tails" in...awareness at the moment of the beep). These were the sensed thoughts or feelings: the "tail" that was visible from under the rock was the knowledge present in awareness that the particular thought or feeling was ongoing (Hurlburt, 1993a, p. 125).

Ashley's inner world was characterized by a chaotic, complex multiplicity of experience. While it is common for most individuals to report between one to three characteristics of experience at each sample, Ashley reported simultaneous experiences of up to 20 distinct thoughts and 10 distinct feelings at each sample.

The cognitive aspects of Ashley's inner experience included both multiple experienced unsymbolized thoughts, in which thoughts were in direct awareness without being verbalized or otherwise symbolized and multiple sensed unsymbolized thoughts, in

which there was an awareness of having ongoing unsymbolized thoughts outside of her direct awareness.

The affective aspects of Ashley's inner experience included both multiple experienced feelings and multiple sensed feelings. Ashley's affective experiences were predominantly negative, and an average of three to seven distinct feelings per sample were reported. She reported experiencing mostly separate simultaneous feelings, but occasionally perceived the feelings to be blended into one another. While some individuals without BN are able to clearly identify and describe emotions, Ashley had difficulty with this task. She was clearly able to recognize which emotions were being experienced, but found it difficult to describe exactly how she was experiencing these feelings. Ashley also reported experiencing frequent visual images, often of a fleeting nature. Overall, Ashley's inner world was chaotically complex, with multiplicity of both experienced and sensed awareness being the central characteristic (Hurlburt, 1993a).

Hebert (1991) used DES to examine inner experience in anxiety. By chance, that study included one case study of an anxious woman who was also bulimic. Hebert (1991) found that "Beth" experienced inner speech only in samples during periods of heightened stress and had no inner speech during samples collected during non-stressful periods. She also described occasional experiences of worded thinking, in which words were present in her awareness without being innerly heard or spoken. Like Ashley, Beth also experienced frequent multiple unsymbolized thinking, with as many as ten simultaneous thoughts occurring at a time. She also reported frequent thoughts characterized as criticisms of herself or others. In these, Beth reported being aware of categorizing individuals, behavior, or situations as "good" or "bad." Beth reported a high frequency of feelings, but also had difficulty describing the nature of her exact emotional

experiences, other than the experience of stress, which she was generally found easy to describe. Overall, Beth's inner world was characterized by multiple unsymbolized thinking, difficult to describe emotions, occasional visual images, and inner speech during stressful experiences (Hebert, 1991).

Doucette and Hurlburt (1993) used DES with five women with BN. Multiple simultaneous inner experience, ongoing sensed awareness, combined thoughts and feelings and incongruent bodily awareness were identified as a commonly shared traits among these five women with BN (Doucette, 1992; Doucette & Hurlburt, 1993) These multiple experiences included several simultaneous thoughts, feelings, combined thoughts and feelings, bodily awarenesses, or images. Multiple experiences also appeared to be related to increased bulimic pathology, with multiplicity increasing as symptoms worsen. However, the nature of this relationship is yet to be determined (Doucette & Hurlburt, 1993).

Sensed awareness was also very common across the bulimic individuals in the Doucette and Hurlburt (1993) study and is rare among non-eating disordered individuals interviewed using the DES method. As we have seen, sensed awareness is an ongoing experience, in which one knows the details of the experience, but the experience itself is outside of awareness. Thus, it is the knowledge that the experience is ongoing, rather than the experience itself that defines sensed awareness. Sensed awareness can manifest as sensed unsymbolized thinking, visual images, or feelings that are in awareness but are peripheral to the reported experience. Sensed awareness was described as remaining in the consciousness of these bulimic women while another experience was occurring. Doucette and Hurlburt (1993) describe sensed awareness as: "...in current awareness there is an active, ongoing knowledge of the existence of the outside-of-awareness



thought.” (p. 155) The women with more severe eating disorder pathology in this study reported sensed awareness experiences more frequently (Doucette & Hurlburt, 1993).

The bulimic women in the Doucette and Hurlburt (1993) study frequently experienced an inability to distinguish between their thoughts and feelings, and reported a far higher frequency of feelings (70%) than nonbulimic individuals (10-15%). Further, the women in these samples found it difficult to determine the differences between their affect and cognition and reported experiencing both simultaneously as one entity. This phenomenon was labeled thought/feeling and was described as a tendency for the bulimic individuals to: “think their feelings or feel their thoughts.” (p. 156) This confusion of thoughts and feelings, with affective thoughts or cognitive feelings, is uncommon in nonbulimic individuals (Doucette & Hurlburt, 1993).

These women also described occasional incongruent bodily awareness, in which their inner physical experience did not reflect outward bodily reality. Incongruent bodily awareness is a rarely reported experience outside of BN and may be an inner representation of bodily dissatisfaction. The women in this study also experienced occasional thoughts related to BN, with thoughts about food, weight and purging. However, these thoughts were relatively rare considering that negative self-evaluation related to body shape and weight is a necessary aspect of the BN diagnostic criteria (APA, 2000). Inner experience patterns in the bulimic women sampled included higher degrees of unsymbolized thinking, little inner speech and more feeling experiences, with predominantly negative affect, than is common in non-bulimic individuals sampled with the DES method. Although few DES eating disorder studies have been completed to date, these findings suggest that the exploration of inner experience may yield invaluable, previously undiscovered information about these disorders (Doucette & Hurlburt, 1993).

Jones-Forrester (2006) used DES with four women and one man with BN. Fragmentation of attention, sensory awareness, infrequent and poorly differentiated feelings, thought/feelings, preoccupation with weight, shape, or food, images, and lack of cognition were identified as commonly shared traits across participants. Fragmentation of attention, in which there was a distinct inability to directly focus on what for most non-bulimic individuals would be the center of awareness at the moment of the beep, was the most salient aspect of inner experience. This was a consistent, marked inability to sustain a clear, single focus averaging a frequency of 56 % across participants. This fragmentation of attention manifested in three primary ways: attention that was fragmented between multiple, separate phenomena; attention that was fragmented through focus on sensory detail rather than the important events in the environment; or attention that was so profoundly undifferentiated that it was fragmented beyond any recognizable features. The fragmentation of attention found in the Jones-Forrester (2006) study was strikingly consistent with the previous DES study of inner experience in BN (Doucette & Hurlburt, 1993), which found multiple inner experience to be the most salient feature of inner experience in BN, averaging 73% across participants (Doucette, 1992). Although they termed this phenomenon multiple inner experience rather than using the term fragmentation of attention, these terms both describe the same intertwining phenomena in which there is a lack of direct focus on what for most non-bulimic individuals would be the center of awareness at the moment of the beep.

Sensory awareness, in which participants were focused on the sensory characteristics of their internal or external environment, rather than being focused on what for most non-bulimic individuals would be central in awareness was also frequent, averaging 43% across participants. This sensory awareness manifested in two primary

ways, as focus on the sensory characteristics of bodily experiences or less commonly on the sensory characteristics of the external environment. The sensory awareness results in Jones-Forrester (2006) were quite consistent with the Doucette (1992) study, which found “bodily awareness” occurring at an average of 26% across participants. While the EDI-2 (Garner, 1991) suggests that individuals with BN may be insensitive to bodily sensations related to hunger and satiety, the frequency and intensity of sensory awareness found in the Jones-Forrester (2006) study actually suggests that individuals with BN may actually be hypersensitive to bodily sensations.

In contrast to the frequent affective experiences found in by Doucette and Hurlburt (1993), Jones-Forrester (2006) found that participants with BN actually demonstrated relatively infrequent and usually poorly differentiated feelings, that these infrequent feelings were often complex, bodily apprehended, and occurred at an average frequency of only 17% across participants. Consistent with the current eating disorder literature suggesting frequent negative affect in BN, Jones-Forrester (2006) found that when affective experiences did occur, they were more frequently negative than positive, with negative feelings accounting for 11% of the 17% average frequency of affective experiences across participants.

The bulimic participants in the Jones-Forrester (2006) study also experienced marked difficulty distinguishing between affect and cognition, an experience termed “thought/feeling.” In thought/feeling there was a marked pattern of participants feeling their thoughts, thinking their feelings, or experiencing a complex, inseparable, intertwined mass that was simultaneously experienced as affective and cognitive without any clearly differentiated boundaries. This thought/feeling phenomenon occurred at an average frequency of 13% across participants, a somewhat lower rate than was found by

Doucette and Hurlburt (1993), which recorded a frequency of 40% thought/feeling but still substantially higher than is observed in normal subjects, whose thought/feeling frequency is close to zero.

Preoccupation with weight, shape, or food that manifested variously as bodily sensations, feelings, images, thought/feelings, or thought/sensory awareness was also a salient feature of inner experience in BN in the Jones-Forrester (2006) study, occurring at an average frequency of 14% across participants, which is consistent with the Doucette and Hurlburt (1993) study.

The participants in the Jones-Forrester (2006) study also experienced visual images, qualitatively ranging from single, clear visual images to multiple, largely undifferentiated images, occurring at an average frequency of 23% across participants, a frequency consistent with Doucette and Hurlburt (1993).

While cognitive distortions and negative cognitive schemas are presumed to be common aspects of the inner experience of BN based on the current literature, Jones-Forrester (2006) found a striking lack of thinking overall, averaging a frequency of only 11% across participants, and with one participants having no cognitive experience. This finding is inconsistent with the Doucette and Hurlburt (1993) study, which found a median unsymbolized thinking frequency of 76% in their bulimic participants. While cognitive processing was undoubtedly occurring within these individuals, these participants remained strikingly unaware of their thought processes, and when cognition did occur, it was very complex, undifferentiated inner experience in which there were multiple, tangled, interwoven inner experiences with little experience of thought.

To summarize the key findings from each of these studies, Jones-Forrester (2006) and Doucette and Hurlburt (1993) found that the nature of inner experience in BN was

different, and in some cases, strikingly different than would be expected given the current BN literature. Specifically, fragmentation of attention was found to be the most prevalent aspect of inner experience of BN in both of these studies, but remains virtually unknown within the BN literature.

Sensory awareness was also a common feature of inner experience in both studies. However, despite studies of interoceptive awareness and perceptual sensory sensitivity, there is no direct focus on sensory awareness in the BN literature.

Jones-Forrester (2006) found affective inner experience to be characterized by relatively infrequent and poorly differentiated feelings, occurring at an average frequency of 17% across participants, whereas Doucette and Hurlburt (1993) found affect to be quite frequent, occurring at an average frequency of 71% across participants. However, both studies found difficulty distinguishing between affect and cognition, and multiple, complex, and bodily-apprehended feelings. There is almost no direct focus on infrequent or poorly differentiated feelings in the BN literature. The interoceptive awareness subscale of the EDI-2 (Garner, 1991) addresses a difficulty identifying affective cues but does not sufficiently capture the undifferentiated nature of feelings in the present study.

Both studies found support for a preoccupation with weight, shape, or food in BN, consistent with the assumption of this preoccupation as a key feature of BN in the current eating disorder literature. Jones-Forrester (2006) found a striking lack of cognition in the inner experience of BN, which was inconsistent with Doucette and Hurlburt (1993), who found an average frequency of 76% unsymbolized thinking. This finding is markedly inconsistent with the belief in the current literature that cognitive distortions play a key role in BN.

Overall, these studies demonstrate that it is possible to measure inner experience in BN directly, and that doing so yields previously unexpected results that may be clinically useful in informing future prevention and intervention efforts to address this profoundly disruptive disorder.

To provide insight into the richness of the idiographic data obtained using DES to explore BN, the inner experience of one of the five participants in the Jones-Forrester (2006) study will be described in detail. Jones-Forrester (2006) rated Vanina as the median case in terms of bulimic severity; she is thus the most “average” of the bulimic participants in the study, being neither in crisis nor in remission. Vanina, like all of the bulimic participants sampled, had fragmentation of attention, sensory awareness, infrequent and poorly differentiated affect, and preoccupation with weight, shape, or food. Fragmentation of attention generally manifested for Vanina as complex, multiple inner experiences, with up to six separate, simultaneous experiences occurring simultaneously. Vanina also experienced frequent sensory awareness, and these awarenesses were usually one aspect, if a quite complex one, of a larger, multifaceted experience. For example, in one sample Vanina had a blurry visual image of a cabinet with a box of saran wrap in it as well as two simultaneous sensory awareness: one sensory awareness of the shape and colors of the saran wrap box, and a separate simultaneous bodily sensory awareness of the cabinet behind her, that was experienced as bodily sensory knowing that the cabinet was behind her and that was apprehended as a sensation on the side of her neck and down her side, as if she were getting ready to turn towards the cabinet. Affective experiences were relatively infrequent for Vanina, and were quite complex, with feelings generally experienced physically with a clear bodily referent. Vanina also experienced thought/feelings, in which there was a fusing of affect

and cognition, such that thoughts were perceived affectively, affect was perceived cognitively, or elements of both were difficult or impossible to distinguish. For example, in one sample Vanina had overheard her sister talking to one of Vanina's bulimic friends about BN, Vanina experienced a feeling of resentment, which she experienced primarily in a small area in her solar plexus, and had a separate feeling of being bothered that she experienced primarily in the back of her brain and the top of the back of her neck. At the same time Vanina was nervous, but while the first two experiences seemed to be primarily or exclusively emotional, the nervousness was a thought/feeling consisting of a mixture of affect and cognition, and included a sharp, slightly nauseated feeling deep inside her stomach, in small area like a line, diffuse at the edges, going inwards but also included negative thoughts about her sister, like "does she think she's helping by judging me?" not in words but like a familiar chunk of an idea, so common or frequent that it didn't need to be thought explicitly. Vanina referred to this process as "code thought," a chunk of ideas, not in words, that she automatically understood without having to say it. Vanina also had many experiences of preoccupation with weight, shape, or food, with this preoccupation often having clearly distinct separate yet simultaneous components. For example, in one sample Vanina had six separate, simultaneous experiences including three images, one unsymbolized thought, one experience of bodily decision-making, and one feeling. In this sample Vanina was looking at her stomach and waist in the mirror and had three separate, simultaneous visual images: an image of the shape of her stomach in outline; an image of the contents of her stomach, seen as a mix of food colors meshed together, and she understood the colors green and brown in the stomach contents to represent what she had eaten that day (green for salad, brown for bread); and an image of her body as it appeared in the past. Vanina experienced this image of her body in the past

as projecting out from the back of her head, as if it were an image being projected out onto a film screen. These preoccupation images were also accompanied by a separate unsymbolized thought that if expressed in words would be that her stomach looked small compared to how much she had eaten that day, but no words were actually present. During the same sample, Vanina also experienced a separate, simultaneous recapping of what she had eaten that day, which was apprehended as a sensation in her stomach that was evaluating or weighing out what she had eaten that day. Finally, she also had an accompanying feeling of mild bodily surprise as she was noticing how small her actual waist appeared compared to how it appeared in the image of herself in the past. Therefore, Vanina's preoccupation with weight, shape, or food was clearly multi-dimensional, complex, and portrays several of the ways in which this preoccupation can be manifested. Overall, Vanina's inner world was characterized by complex fragmentation of attention, sensory awareness, infrequent and poorly differentiated affect, and a clear preoccupation with weight, shape, or food (Jones-Forrester, 2006).

These two chapters have served to provide a review of BN, DES, and the DES sampling of inner experience in BN. DES was shown to be an effective method of exploring inner experience and was shown to yield valuable new information about qualitative differences in inner experience for women with and without BN. The present study is a replication of the Doucette (1992; Doucette & Hurlburt, 1993) and Jones-Forrester (2006) studies reviewed above. In the present study, a group of bulimic participants was identified and the DES Method was used to collect data about the salient characteristics of their inner experience. The data collected is presented in an attempt to build upon the previously gained insights into the unique qualitative differences in inner experience of women with BN. Since there has been very little investigation of inner



experience in BN, it is hoped that this replication will yield greater insights into the nature of inner experience in BN and will allow us to further examine the extent to which the presumptions based on the extent literature accurately reflect the everyday experiences of individuals with BN.

Even though there have been two prior DES studies of BN, the present study is still designed to be largely exploratory, in keeping with Hurlburt's recommendation (in Hurlburt & Schwitzgebel, 2007) that the formulation of theoretical generalizations or hypotheses should take place only after a substantial amount of descriptive data has been confronted. This allows presuppositions and biases to be reduced and previously unexpected phenomena to be discovered. Exploratory design in psychology in general and in BN in particular is relatively rare but necessary to avoid being biased by pre-existing theories about inner experience in BN. Prior to the present study, only 12 individuals with BN have been examined using exploratory methods as careful as DES (Hebert, 1991; Hurlburt, 1993a; Doucette, 1992; Jones-Forrester, 2006); it seems quite premature to advance hypotheses about the nature of inner experience in BN.

The 12 individuals in previous DES BN studies have consistently demonstrated fragmented multiplicity as a salient aspect of inner experience, and it might be tempting, therefore, to hypothesize that the individuals in the present study will also have inner experience characterized by fragmented multiplicity. The present study specifically does *not* advance that hypothesis; instead, it brackets it. The present investigators of course know of these prior results—they themselves made part or all of the prior observations of BN. But rather than be captured by those observations, bracketing presuppositions requires that they cultivate an indifference to them; that they be equally satisfied if the new BN subjects do or do not evidence fragmented multiplicity. This position does not

imply that advancing hypotheses is a bad scientific practice, only that the *premature* advancing of hypotheses is bad practice. Hypotheses based on 12 individuals seems premature.

There are two other patterns that emerged in past DES studies: that sensory awareness is a highly salient component of inner experience in BN; and that affective inner experience that is undifferentiated, complex, or fused with cognition is a highly salient component of inner experience in BN. As with complex multiplicity, this study brackets those findings as well, the present investigators cultivate an indifference to replicating these results.

## CHAPTER 3

### METHOD

The current study was divided into three phases, the screening phase, the qualification phase, and the sampling phase. The participants, instruments and procedures to be used in each phase will be discussed.

#### Screening Phase

##### *Overview*

The Eating Attitudes Test (EAT-26; Garner, Olmstead, Bohr, & Garfinkel, 1982), a brief demographic questionnaire, and informed consent was administered to a large group of undergraduate psychology students within the first month of classes in the Fall 2006, Spring 2007, and Summer 2007 semesters at the University of Nevada, Las Vegas. Based on this initial screening, a subset of individuals identified as currently possessing or being at high risk for eating disorders were invited to enter the qualification phase of the present study.

##### *Participants*

Four-hundred and twenty undergraduate university students (254 women and 166 men, mean age = 19.39) who were present in class on selected days during the first month of the Fall 2007, or Spring 2007, or Summer 2007 semester introductory psychology classes at the University of Nevada, Las Vegas participated in the screening

phase of the present study. All students who participated in the screening phase were given psychology research participation credit, and there were no incomplete screening packages, such that all of the 420 students who completed the screening phase were included.

### *Instruments*

The Eating Attitudes Test (EAT-26; Garner, Olmstead, Bohr, & Garfinkel, 1982) is a brief (26-item) self-report questionnaire that consists of three subscales assessing self-report of dieting, BN and weight preoccupation, and oral control. The EAT-26 is appropriate for the assessment of AN, BN and partial syndrome eating disorders and was used in the 1998 National Eating Disorders screening program. After the 26 self-report items, the EAT-26 asks five yes-no questions regarding binge eating, purging, past history of eating disorder treatment, nonpurging compensatory behaviors, and suicidal ideation. Demographic information regarding sex, age, weight, height, and athletic involvement are also collected. The EAT-26 items are rated on 6-point Likert scales from *never* to *always*. Each item is then weighted from 0 to 3 based on symptomatic direction. Total scores range from 0 to 78, with higher scores indicating greater degrees of frequency and severity of eating disorder pathology. The clinical cut-off score based on standardization with nonpatient college students is 20. The EAT-26 has excellent psychometric properties, including .90 internal consistency and .89 test-retest reliability (Garner, et al, 1982; Banasiak, Wertheim, Koerner, & Voudris, 2001).

### *Procedure*

The researcher entered the classroom near the end of the class period, described the study briefly, and asked for volunteers to complete the EAT-26 and a brief demographic questionnaire there in the classroom. Volunteers, which were all those

present in the classrooms, received .5 research participation credits to meet a course requirement. Participants were asked to complete the screening phase package after the informed consent was explained and obtained. The EAT-26 was then scored. Participants scoring at or above the clinical cut-off of 20 on the EAT-26 were then contacted for participation in the qualification phase.

## Qualification Phase

### *Overview*

Participants who had been identified in the screening phase as having significant eating disorder pathology were contacted to participate in a more detailed, thorough assessment of their eating disorder pathology through the administration of an eating disorder, anxiety, and depression assessment battery as well as an eating disorder structured clinical interview. Participants who agreed to participate in this phase and who were found to be experiencing clinically significant BN symptoms in the qualification phase were then invited to participate in the sampling phase of the study.

### *Participants*

All 65 undergraduate students (55 women, 10 men, mean age = 20.21) from the University of Nevada, Las Vegas who were identified in the screening phase as experiencing clinically significant symptoms (EAT-26 score > 20) were contacted to be invited to participate in the qualification phase of the study. Of these 65 students identified in the screening phase as experiencing clinically significant symptoms, 30 agreed to participate in the qualification phase (26 women, 4 men, mean age = 21.47); 20 (15 women, 5 men, mean age = 19.20) did not return attempts to contact them either by phone or e-mail according to their stated preferred mode of contact on the EAT-26; 7 (7

women, mean age = 19.42) declined to participate when they were contacted; and 8 (7 women, 1 man, mean age = 18.75) initially stated they were interested when they were contacted and invited to participate, but then did not attend scheduled appointments, reschedule, or follow through on attempts to contact them to reschedule participation in the Qualification phase.

### *Instruments*

The Beck Depression Inventory - Second Edition (BDI-II; Beck, Steer, & Brown, 1996) is a brief (21-item) self-report measure for individuals aged 13 and above that takes 5 to 10 minutes to administer. The BDI-II assesses self-reported depression over the past 2-week period using DSM-IV diagnostic criteria. The items assess a spectrum of depressive symptoms including sadness, pessimism, suicidal ideation, and tiredness. The intensity of each symptom is measured on a four-point Likert scale, with higher scores indicating a greater degree of severity. The BDI-II total scores range from 0 to 63, with minimal depression represented in the 0 to 13 range, mild depression in the 14 to 19 range, moderate depression in the 20 to 28 range and severe depression in the 29 to 63 range. The BDI-II is the most widely used measure for depression and has excellent psychometric properties including .93 internal consistency and .93 test-retest reliability.

The Beck Anxiety Inventory (BAI; Beck & Steer, 1993) is a brief (21-item) self-report measure for individuals aged 17 and above that takes 5 to 10 minutes to administer. The BAI assesses self-reported anxiety symptoms over the past one-week period. The items measured on the BAI include anxiety-related physical sensations such as numbness and shakiness and affective anxiety-related experiences including fear and inability to relax. The intensity of each anxiety symptom is assessed on a four-point Likert scale with higher scores indicating higher subjective levels of anxiety. The BAI

total scores range from 0 to 63, with minimal anxiety in the 0 to 7 range, mild in the 8 to 15 range, moderate in the 16 to 25 range and severe anxiety in the 26 to 63 range. The BAI has been widely used in both research and clinical applications and has excellent psychometric properties including .92 internal consistency and .75 test-retest reliability.

The Eating Disorder Inventory - 3 (EDI-3; Garner, 2004) is a 91-item self-report measure for individuals aged 13 and above that takes 20 minutes to administer. The EDI-3 assesses self-report of eating disorder symptoms and related psychopathology across 12 subscales: drive for thinness, BN, body dissatisfaction, low self-esteem, personal alienation, interpersonal insecurity, interpersonal alienation, interoceptive deficits, emotional dysregulation, perfectionism, asceticism, and maturity fears; and includes six composite scores including the eating disorder risk, ineffectiveness, interpersonal problems, affective problems, overcontrol, and general psychological maladjustment. The EDI-3 also includes three validity scales including an inconsistency, infrequency, and negative impression scale to ensure the interpretability of EDI-3 responses. The EDI-3 uses a 6-point Likert scale to measure the frequency of eating disorder symptoms, with higher scores indicating higher levels of eating disorder pathology. The EDI-3 has been standardized on clinically diagnosed BN, AN, and eating disorder not otherwise specified patient groups.

The present study used the U.S. Adult Clinical norms for the BN diagnostic group sample. The EDI-3 BN (B) Scale uses the following interpretive clinical qualitative guidelines for individuals diagnosed with BN. Individuals scoring between a *T* score less than or equal to 27 or a percentile less than or equal to 3 are considered to be in the Low Clinical range, a range that is uncommon for individuals with BN. Individuals scoring between a *T* score of 28 to 47 or a percentile of 4 to 38 are considered to be in the Typical

Clinical range, a range that is associated with frequent binge-eating and purging thoughts and behaviors. Individuals scoring between a *T* score equal to or greater than 48 or a percentile equal to or greater than 39 are considered to be in the Elevated Clinical range, a range that is associated with high levels of bulimic psychopathology. Of the 13 participants who completed the DES phase of the present study, 10 fell within the elevated clinical range of the EDI-3 BN subscale, and 3 fell within the typical clinical range. Unlike the EDI-2, there are no non-patient college student female norms for the Bulimia scale of the EDI-3, and clinical norms were thus used as the norms for the present study. It is important to note that the present sample was drawn from a nonclinical population and thus, these qualitative ranges based on the clinical norms are likely to be conservative.

The EDI-3 has excellent psychometric properties including .94 reliability across diagnostic groups for the eating disorder risk composite, reliabilities ranging from the .80s to the low .90s across diagnostic groups for the Drive for Thinness, Bulimia, and Body Dissatisfaction scales, and with a .95 test-retest reliability for the Eating Disorder risk scales and a test-retest reliability and .93 for the Psychological scales.

The Eating Disorders Examination, 12th Edition (EDE; Fairburn & Cooper, 1993) is a structured clinical interview that takes about one hour to administer. The EDE contains four subscales assessing dietary restraint and concerns about eating, shape and weight. The EDE provides an overall rating of eating disorder severity as well as individual subscale scores on DSM-IV eating disorder diagnostic criteria over the past four-week period. Normative data is not provided for the EDE global score, but is available for each of the subscales. EDE items are rated in a 7-point Likert scale, with higher scores indicating greater eating disorder severity. The EDE is the most widely



used clinical interview for eating disorders and has excellent psychometric properties including .83 to .99 interrater reliability and .68 to .90 subscale internal consistency.

### *Procedure*

Participants identified as having clinically significant symptoms at the initial screening phase were invited to complete the interview battery. Informed consent was obtained and the battery was then administered. Those participants who received high scores on the EDI-3 BN subscale and the EDE were then invited to participate in the sampling phase. The BDI-II and BAI were used to assess comorbidity in participants with BN. Participants with scores above 20 on the BDI, and above 16 on the BAI were considered to have clinically significant comorbid psychopathology. The present study did not exclude participants due to existing comorbid conditions, as comorbidity is the norm in BN, but we used this information in the attempt to achieve a heterogeneous sample for the Sampling phase.

## Sampling Phase

### *Overview*

Participants who had been identified in the screening phase and confirmed in the qualification phase as having clinically significant bulimic symptoms were invited to participate in Descriptive Experience Sampling (DES).

### *Participants*

Thirteen undergraduate psychology students (13 women, mean age = 23.08) at the University of Nevada, Las Vegas who had clinically significant bulimic symptoms in the qualification phase agreed to participate in the final sampling phase of the study. Of the 30 participants in the qualification phase (26 women, 4 men, mean age = 21.47); 13

sampled (as detailed above); 3 (2 women, 1 man, mean age = 21.33); were disqualified as they fell within the low clinical range of the EDI-3 Bulimia scale; 1 woman, age 21 was disqualified as she had previously been bulimic but had ceased bulimic symptoms and shifted to a high degree of anorexia nervosa symptoms, was in crisis at the time of completing the qualification phase; and was thus referred to the student counseling center; 5 women, mean age = 18.60); initially expressed interest in participating in the sampling phase, but when they were contacted and invited to participate, they did not attend scheduled appointments, reschedule, or follow through on attempts to contact them to reschedule participation in the sampling phase. Additionally, 5 declined to participate in the sampling phase (4 women, 1 man, mean age = 22.20); and 3 (1 woman, 2 men, mean age = 18.33) agreed to participate in the sampling phase, and scheduled appointments, but then decided they no longer wished to participate before initiating their first sampling appointment.

### *Apparatus*

Participants were issued a small beeper with an attachable transistor-radio-type earphone, designed with an ear hook to secure the earphone in one ear, thus minimizing interference with the participant's activities while sampling. The beeper is programmed to emit a 700 Hz tone at random intervals. Participants were advised to adjust the beeper to a volume that is comfortable but clearly distinguishable and to stop the tone by pressing a small button on the beeper. The beeper generates tones at random intervals ranging from one minute to one hour, with an average of 30 minutes between tones. Participants were also issued a small pocket-sized notebook and were instructed to record notes on their inner experience when each tone occurred.

### *Procedure*

Participants who had been identified as having clinically significant BN symptoms at the initial screening phase, and who had those symptoms confirmed in the qualification phase, were invited to participate in the sampling phase of the present study. At the beginning of this phase, participants were advised of confidentiality and that they could discontinue the study at any time without penalty. Further, participants were told that if they had any inner experience that they were not be comfortable reporting, they could simply request that that particular sample be skipped.

Participants were then given the instructions for DES as described in detail in the Descriptive Experience Sampling section of Chapter 2. Briefly, these instructions were for participants to wear the beeper during their normal daily activities for a sufficient time to collect six samples (approximately 3 hours). Participants were asked to “freeze” their experience that was naturally ongoing at the last undisturbed moment before the beep occurred and record their experience in a notebook provided. Participants were then interviewed using the DES expositional interview method no longer than 24 hours after the samples were collected.

During the DES interviews, participants were carefully questioned in an attempt to obtain the most complete and accurate understanding possible of the nature of their experience at each sample. The sampling/expositional interviewing process was then repeated several days later for each participant, and then repeated again until there was a clear understanding of the salient characteristics of that individual’s experience across a sufficient number of samples. This typically involves six sampling / expositional interview sequences. After the DES process was completed, the present researcher reviewed each sample with Dr. Hurlburt to obtain interrater agreement on the

characteristics of inner experience described in each sample. The salient characteristics of each individual across all samples was then determined. Finally, the salient characteristics of the bulimic participants as a whole were determined. The samples are numbered according to day and order of sample so that the first day samples are numbered 1.1 to 1.6, the second day samples are numbered 2.1 to 2.6, and so on. All samples are presented as Appendix A in this dissertation.

## CHAPTER 4

### INTRODUCTION TO STRUCTURE OF SAMPLING RESULTS

The next eleven chapters will illustrate the nature of inner experience in each of the thirteen sampling phase participants. Of these thirteen participants, ten: Kaiyla, Carla, Vicky, Susan, Samantha, Hannah, Anne, Jane, Paula, and Jessica completed the full number of sampling days and thus have a full individual chapter. Three participants: Monica, Wendy, and Lily were unable to complete the full number of sampling days, and thus had their DES results combined in a single idiographic chapter.

Each of these participants demonstrated consistent efforts to communicate clearly and openly about their inner experience throughout the sampling interviews, and their efforts allowed us invaluable insight into their inner experience. Chapters 5 through 14 will provide a detailed examination of the inner experience of each participant; and Chapter 15 will provide a detailed examination of the combined experience of Monica, Wendy, and Lily.

With the exception of Monica, Wendy, and Lily, each of the individual chapters are presented in order of the severity of eating disorder pathology, from least to most severe, as measured by the EDI-3 Bulimia scale. Chapter 15 combines Monica, Wendy, and Lily's inner experience, and these three individuals vary in level of BN severity as measured by the EDI-3 Bulimia scale. Of the range of BN severity across participants in the present study, from least to most severe, Monica ranked second, Wendy ranked fifth,

and Lily ranked tenth. Each participant met full DSM-IV criteria full BN. After these ten individual chapters, and one combined idiographic chapter, Chapter 16 will provide the qualitative and quantitative results of the study by summarizing the commonalities and differences in experience across participants and their scores on the questionnaires and structured interviews.

## CHAPTER 5

### KAIYLA

Kaiyla was a 20-year-old university student at the time these samples were collected. She met the DSM-IV-TR (APA, 2000) criteria for BN and scored in the scored in the 14th percentile on the bulimia subscale of the Eating Disorders Inventory-3, placing her in the typical clinical range. She considered herself to be bulimic and was not in treatment at the time these samples were collected. Kaiyla volunteered for the study after it was presented in her undergraduate psychology class. A total of 36 samples were collected and discussed extensively over six sampling days during a 6-week period.

Kaiyla's inner world was generally populated by overlapping and simultaneous multiple phenomena. The individual strands of this multiplicity were generally straightforward and qualitatively neutral phenomena. Her inner experience was frequently sensory, and her sensory awareness was fairly evenly divided between attending to bodily and external sensory phenomena. She also talked to herself relatively often, and when this occurred it was exclusively in her own voice and was generally straightforward. Kaiyla occasionally had samples in which she was engaged in an activity without paying any particular attention to what she was doing. Her thinking, when it occurred, commonly included ongoing "tails" of thought processes, but was also occasionally single and straightforward.

Her feelings were relatively infrequent, but when they occurred they were generally straightforward and clearly differentiated. However, she did have some instances in which her feelings were intertwined with her sensory awarenesses or thoughts. Kaiyla's inner world also occasionally included a process in which she tried actively to block out sights and sounds in her environment. She very rarely had inner seeing, but on one occasion, she innerly saw and heard an image of the classroom setting that she was simultaneously actively trying to block out at the moment of the beep.

### Fragmented Multiplicity

Kaiyla experienced fragmented multiplicity of experience in 26 of her 36 samples (72%). Her multiple inner experiences generally included two to seven separate, simultaneous inner experiences at the moment of the beep. For example, in sample 4.3, Kaiyla was finishing her communication speech, apprehended as simultaneously innerly speaking the words she was typing while typing them. She could not remember the exact words she was saying to herself at the moment of the beep, but was typing the exact thing she was saying to herself, and synchronizing her vocalization to what she was typing. She also had a separate, simultaneous "big picture" unsymbolized thought process about what she was typing. That is, while she was typing and slowly speaking the typed words to herself, she was also actively keeping the gist of what she's writing in her awareness. She was also simultaneously feeling a good soreness deep in her bicep, tricep, and some of her shoulder muscles. She was also separately and simultaneously starting to feel hungry, apprehended as a sensation deep in her stomach that was difficult for her to describe other than to say that she was not full but not extremely hungry. The sensation was that her stomach did not have anything in it, although she knew that she was not empty



because she had just eaten breakfast. She also had a separate, simultaneous sensation of feeling speeded up, a sensation of being able to do things quicker, all over her body, in the muscles of her limbs that was somewhat difficult for her to describe other than metaphorically as though she had more arms to do more things. She also had a separate, simultaneous awareness of her thoughts' being jumbled, so that her thoughts, which were separate items on the list of things that she had to do were just popping up. This was apprehended as a cluster of ideas of what she had to do such as plug in her cell phone, print her assignment off, etc. However, these things were not separately and clearly articulated, but were instead just a cluster of inner speakings to herself, in her head, in her own voice. Thus, at the moment of the beep she had seven, separate, simultaneous phenomena in her awareness: a doing of the typing, and inner speaking of what she was typing, an unsymbolized "big picture" thought, a bodily sensory awarenesses of being sore, hungry, and speeded up, and a cluster of inner speakings of what she had to do.

### Sensory Awareness

Kaiyla experienced sensory awareness in 17 of her 36 samples (47%). In 9 of her 17 sensory awareness samples (53%), her sensory awarenesses were exclusively bodily, in 4 of her 17 sensory awareness samples (23.5%), her sensory awareness was exclusively external; and in 4 of her 17 sensory awareness samples (23.5%), she had two or more combined sensory awarenesses that included both bodily and external sensory phenomena.

Her bodily sensory awareness was generally multiple (6 of 9, 67%) and less frequently contained a single sensory awareness (3 of 9, 33%). In an example of her multiple bodily sensory awareness, sample 4.6, Kaiyla was speed-walking to class and

was aware of speed-walking, a bodily sensory awareness of soreness and tightness deep in the muscles of her upper, outer thighs. She also had a separate, simultaneous ongoing bodily sensory awareness of emptiness in her stomach, and a separate, simultaneous bodily sensory awareness of the temperature of the outside air on her skin. Therefore, at the moment of the beep she had three separate, simultaneous bodily sensory awarenesses, of soreness, hunger, and temperature, as well as a perceptual awareness.

In an example of her single sensory awareness, sample 3.6, Kaiyla was in the bathroom and the girl in the stall next to her was talking on her cell phone. She was hearing the woman in the next stall on the cell phone, but was not paying particular attention to what the woman was saying. She was simultaneously thinking to herself how weird it was to be on the cell phone in the bathroom, apprehended as a innerly saying “it’s kind of weird” to herself, in her own voice, just as if she said this aloud. She also had a simultaneous bodily sensory awareness of smiling at the humor of the situation.

In an example of external sensory awareness, sample 5.5, Kaiyla was writing a paragraph about questionnaires in her notebook and following the words by innerly saying the words to herself, at the pace she was writing, in her own voice, just as if she had said it out loud, but she was unable to recall the exact words she was innerly saying at the moment of the beep. She also had a separate, simultaneous sensory awareness of the noise of the overhead projector in her classroom.

In an example of sensory awareness samples which combined bodily and external sensory awareness, sample 3.3, Kaiyla was doing her math homework, writing the problem down but unable to concentrate. She had a separate, simultaneous feeling/ sensory awareness of hearing the sound of a truck’s beeping as it backed up. She had been counting the truck’s beeps but at the moment had withdrawn from counting the

number of beeps and was annoyed by the sound itself. This feeling/sensory awareness of the beeping was apprehended as hearing it as an annoying sound, and simultaneously feeling annoyed in her head, but did not have a separate bodily awareness of the annoyance. She also had a separate, simultaneous sensory awareness of smelling smoke and a separate, simultaneous but less central bodily sensory awareness of feeling her hair being blown into her face by the wind, and simultaneously brushing her hair aside as it was being blown into her face. She also had a separate sensory awareness of her papers being blown about by the wind. The math, sound, and smell were all equally in her awareness at the moment of the beep, with the hair and wind being present in awareness, but less central. Therefore, at the moment of the beep, Kaiyla had a combined bodily and external sensory awareness experience in which she had one bodily sensory awareness: her hair blowing in her face, two external sensory awarenesses: smelling smoke and the wind blowing her papers, and a feeling/sensory awareness of annoying noise.

Kaiyla also had one sample in which her sensory awareness was intertwined with perceptual awareness. This occurred in sample 6.6 in which she was getting up and bending over to grab her stuff, and had a sensory awareness of the grey-blue color of the table, and a separate, simultaneous sensory/ perceptual awareness of hearing students talking in the room. This phenomenon was apprehended as hearing what was being said (one student saying that his girlfriend lives in CA and he was going out to see her, and the other saying next time you should bring me with you), and simultaneously noticing the flamboyant characteristic of the voice of the student talking. These were not separable, differentiated phenomena, but instead was a single experience that existed somewhere between pure perceptual awareness of the voices and fully differentiated sensory awareness of the characteristics of the one voice.

### Inner Speech

Kaiyla experienced inner speech in 11 out of her 36 samples (30%). We have already seen two examples of inner speech above: her inner speech about the woman in the bathroom in sample 3.6 and her inner speaking about questionnaires in her notebook in sample 5.5, both in the sensory awareness section. In another example of inner speech, sample 2.3, Kaiyla was using the remote control to switch the TV channels without paying particular attention to doing so. She also had a separate, simultaneous perceptual awareness of looking over at the side of the chair, not noting anything in particular, just looking at the side of the chair. She also had a separate, simultaneous perceptual awareness of hearing her boyfriend's dog snoring and was innerly saying to herself "that's so annoying" in her own voice, in an annoyed tone, just as if she had said this aloud.

### Just Doing

Kaiyla also had samples in which she was doing something without any particular awareness at the moment of the beep; a phenomenon termed "just doing". This phenomenon occurred in 6 of her 36 samples (17%). We have already seen one example of "just doing" above: her TV channel switching in sample 2.3. In another example of just doing, in sample 1.4 Kaiyla was trying to put the beeper on her spandex gym shorts, and was not aware of anything particular about this but was just in the process of trying to do it at the moment of the beep.

## Unsymbolized Thinking

Kaiyla experienced unsymbolized thinking in 6 of her 36 samples (17%). Kaiyla's unsymbolized thinking occurred in three primary ways: as single thought processes (2 of 6, 33%); as multiple thought processes (2 of 6, 33%); or as unsymbolized thought processes which began before the moment of the beep and were known to be still ongoing in awareness at the moment of the beep (2 of 6, 33%).

In an example of her single unsymbolized thinking, in sample 1.6 Kaiyla was turning the keys to turn her car off that was apprehended as just doing this without noticing anything particular about it. She also had a separate, simultaneous perceptual awareness of seeing that her boyfriend's friend's car was parked in her spot, apprehended as seeing the nose of his car, with nothing particular about it in awareness. She also had a simultaneous unsymbolized thought process of wondering if her boyfriend was at home or at band practice.

In her one example of her multiple unsymbolized thinking, sample 1.3, Kaiyla was in the process of cleaning her room and at the moment of the beep she was sitting on the floor in her closet with an old box of letters next to her, opening up a letter. She was aware of seeing the name on the back of the letter, apprehended as an inner seeing of her friend Sadie, in her old study hall, in 8<sup>th</sup> grade. In this inner seeing, she was seeing Sadie from the front, standing up, so that she could see her from the head to the waist. This was a clear inner seeing, in color, and Sadie looked exactly as she did when Kaiyla had known her, wearing a plain white t-shirt with a pair of jeans, with her hair down. Kaiyla also had a separate, simultaneous cluster of unsymbolized thoughts including wondering what happened to Sadie, that the last time Kaiyla saw her she was pregnant and was going to get married, and move to the east side of town. This multiple unsymbolized

thought was apprehended as a cluster of thoughts with all of these parts. She also had a separate, simultaneous sensory awareness of the ridged texture her friend's handwriting on the envelope on her fingers, and a simultaneous sensory awareness of the glittery, circular sun sticker on the envelope.

In an example of her ongoing unsymbolized thoughts, in sample 4.4 Kaiyla was sending her speech to her e-mail, apprehended as a process of just doing this without anything particular about this in awareness. She also had a separate, simultaneous sensory awareness of hearing the people around her speaking loudly, not picking up on their words, but also not blocking them out, just hearing the voices around her. She also had a separate, simultaneous ongoing unsymbolized thought process about the things she still needed to get done. This was apprehended as an ongoing divided thought process of needing to go downstairs, make sure she had her rebel card, and print off her homework, all of these things were a chain of thoughts, with the portion focused on printing off her homework being more central in awareness, and the rebel card and going downstairs portions being less central in awareness. She was also innerly saying to herself "print off your homework," in her own voice, just as if she had said this aloud, and the thoughts about her rebel card and going downstairs in her awareness as unsymbolized thoughts that were not worded. She also had a separate, simultaneous bodily sensory awareness of "being on a high" that was apprehended as a bodily sensation that she could do things faster and walk quicker, in a clearly apprehended sensation of feeling speeded up in her body that was somewhat difficult for her to describe.

## Feelings

Kaiyla experienced feelings in 6 out of her 36 collected samples (17%). Kaiyla's feelings were generally single (5 of 6, 83%) and were qualitatively more straightforward and clearly differentiated than the affective experiences of the other participants with BN sampled. She had only one sample (1 of 6, 17%) in which her feelings were not well differentiated.

An example of her single, straightforward, clearly differentiated feelings occurred in sample 2.2 in which she was watching the scene in the movie *Jurassic Park* in which the main characters were getting saved. She was actively paying attention to the movie and was simultaneously feeling happy relief, which was apprehended as a sensation deep in the middle of her chest as if pressure had been lifted, and she had been holding her breath but was able to breathe again.

Her single example of not clearly differentiated feeling occurred in sample 4.1 in which she was looking at computer screen and re-doing her psychology homework by watching a simulation and diagnosing people, apprehended as just doing this activity without being aware of anything specific. She also had a simultaneous, separate mental awareness of going through a list of what she still has to do, which was apprehended as innerly saying "speech outline" as part of this list, in her own voice, just as if she said it out loud. She also had a separate, simultaneous ongoing feeling of being overwhelmed all over her head that was undifferentiated and very difficult for her to describe. She had been repeating in her head the things she had to do so that she would not forget and at the moment of the beep was on the speech outline part of that list.

Kaiyla also had samples in which her feelings were intertwined with sensory phenomena. For example, in sample 4.2, Kaiyla was trying to prepare a speech,

apprehended as actively engaged in reading the same thing over and over again on the computer screen, trying to comprehend what she's reading. She was not just reading it but was also simultaneously aware of trying to understand, and trying to actively focus on it. She also had a separate, simultaneous sensory awareness of the loud noise of the voices of people talking around her, apprehended as not picking up any specific words, just know where the talking is coming from, and hearing the loud noise of the voices. She also had a separate, simultaneous feeling/sensory awareness of being stressed that was apprehended as moving quicker, but also being scattered as though she had literally had too much caffeine. This feeling and intertwined sensory awareness was both in her head and body, and was apprehended as making her having faster thoughts, read quicker, and work quicker but also making her feel "all over the place." She also had a separate, simultaneous awareness of sequentially going through the list, apprehended as going through the list of things she has to do, including finishing up her homework, doing her speech, doing the references for her speech, studying, and this list remained active in awareness. She was mentally going through the list and was also innerly saying to herself "I'm almost done," in her own voice.

#### Active Suppression

In 6 of her 36 samples (17%) Kaiyla was engaged in a process of actively blocking out sights and sounds that were occurring around her, a phenomena that we termed "active suppression." For Kaiyla, this was not merely a passive "zoning out" and not paying attention to sights and sounds, but was instead an active process of suppressing, blocking out, purposefully-not-hearing sounds and purposefully-not-seeing sights occurring around her. This is not a characteristic of experience that has been



described in previous inner experience research, and thus far appears unique to Kaiyla. In this phenomenon, sights or sounds were occurring around her and she was actively and selectively blocking them out at the moment of the beep. This active suppression ranged on a continuum from clearly active total suppression to more subtle and less active suppression in which she was focused on the form rather than the contents or details of her environment. This active suppression process occurred in three primary ways: as actively suppressing sounds that appeared to be distressing to her (2 of 6, 33%), as actively suppressing sounds that appeared to be neutral to her (2 of 6, 33%); and as actively suppressing both sights and sounds (2 of 6, 33%).

In an example of active suppression in which she was actively avoiding sound that was causing her distress, sample 3.1, Kaiyla was looking at a student in her class, focused on his mouth. She had purposefully, actively, entirely blocked out what he was saying and was instead just zeroed in and watching his mouth move. She was seeing him from the left side of his face, and was aimed specifically at his mouth rather than at the other details of his face. Thus at the moment of the beep she had completely suppressed the sound of his voice and was instead just watching the movement of his mouth. This focus on his mouth was separate from her active suppression of the sound of his voice. She also had a simultaneous feeling of anger, a constricting bodily pressure pushing in on the center of her chest as though there were weight on her chest and also in her head. She was simultaneously innerly sighing to herself with an irritated tone, like grumbling to herself, that was not in words, but was a vocalized inner saying of “grrr” to herself, in her own voice, just as if she said this aloud.

In an example of active suppression of neutral sound, in sample 5.2 Kaiyla’s class had just finished and she was actively blocking the sound of the people getting up and

talking around her, so that she was not at all paying attention to the details of what is being said and could still hear the voices and chairs moving, without anything particular in her awareness about these. At the moment of the beep she could just hear them happen around her while she was actively trying to suppress them. Thus, at this moment, she had not entirely blocked out the sound around her, but had blocked out all salient details of the sound.

An example in which she was focused on the form but had suppressed the contents or details of her environment occurred in sample 6.5 in which she had partially suppressed both sights and sounds. In sample 6.5, Kaiyla was in class and had three separate, simultaneous suppression experiences. She was looking at the screen in the front of the classroom which was apprehended as seeing the format of the screen but not at all seeing the actual content or words on the screen. She also had a separate, simultaneous awareness that her instructor was talking, but she was not at all paying attention to or hearing what was being said, she was not paying any attention to the particular content of what he was saying but knew it was him speaking because she could recognize his voice. She also had a separate, simultaneous awareness of seeing other students out of her peripheral vision, but was not paying attention to any particular details about them. These three active suppression awarenesses are similar in that she was aware of the form but had blocked out all salient details so that she was unaware of the content of the sights and sounds around her. She could see the format of the screen but not the particulars, could hear the sound of her instructor's voice, but not the particulars, and could see the people around her, but not their particulars. Although this sample is on the relatively more subtle end of the active suppression continuum, it appears consistent with her active suppression in that she is successfully blocking out the details and content of

her environment in this sample but had not been able to actively suppress the visual or auditory form of her environment.

### Inner Seeing

Kaiyla had inner seeing in 3 of her 36 samples (8%). We have already seen one example of inner seeing above: her image of her friend in sample 1.3. In another example of inner seeing, sample 4.5, Kaiyla was sitting alone in the back of her classroom, and was seeing students around her in her peripheral vision, but was not looking at or noticing anything in particular. She could see them out of her peripheral vision but was not picking up any of their details. Instead, she was seeing everything but not paying attention to any details. She also had a separate, simultaneous awareness of recognizing the voices of the students and teacher talking, but was not noticing anything particular about that. She also had a separate, simultaneous inner seeing of her teacher's face, and the faces of the three other students in the room. In this inner seeing, Kaiyla saw her teacher and one student seated next to her, and they were apprehended as being clearer than the faces of the other students in the image. The one student in the innerly seen image was seated next to the teacher, in  $\frac{3}{4}$  view and with the student on the right and teacher to the left. This was a moving image, in color, and the two other students seen in the image were sitting down and talking, but were not as detailed as the other student and teacher in the image. Talking was part of the actual scene that was occurring in the room, but the innerly seen image had the same exact sound as the actual voices she could hear in the room. This was an innerly seen image of the scene that was actually happening in front of her. However, she had purposefully, actively suppressed the details of the sights and sounds in her external environment, so that she had entirely withdrawn from the

scene in front of her, and was instead completely focused on the imaged scene in her awareness.

## Discussion

Kaiyla was our least severe BN participant as measured by the EDI-3 Bulimia scale. Fragmented multiplicity was the most salient aspect of Kaiyla's inner experience. The majority of Kaiyla's samples (72%) contained an average of two to five distinct, simultaneous experiences. Overall, Kaiyla's inner experience was characterized by complex, multiple characteristics with frequent perceptual and sensory awarenesses, as well as frequent inner speech and affective experiences. She also had samples in which she had unsymbolized thinking, and inner seeing. Kaiyla also demonstrated a phenomenon of inner experience that we termed "active suppression" in which she appeared to be purposefully, actively suppressing the details of the sights and sounds in her environment. This process of active suppression was usually applied to sounds but also occurred with visual information. This phenomenon appears unique to Kaiyla and has not been reported in our other participants with BN, nor has it been reported in other non-bulimic sampling participants. Unlike most of the other participants with BN, Kaiyla did not have any samples in which she was consciously attempting to interfere with, or disconnect from ongoing phenomena related to weight, shape, food, appearance, or BN-related behaviors.

Kaiyla had feelings in 17% of her samples, and her feelings were generally more differentiated and straightforward than those of other participants with BN that we have sampled. However, she did have one affective experience in which she felt "overwhelmed" and was unable to determine how this feeling of being overwhelmed was

in her awareness at the moment of the beep. While this is necessarily speculative, it may be that her relatively higher ability to differentiate emotion may impact her relatively lower bulimic pathology as measured by the EDI-3. However, to date, the directionality of this potential relationship is unknown.

## CHAPTER 6

### CARLA

Carla was an 18-year-old university student at the time these samples were collected. She met the DSM-IV-TR (APA, 2000) criteria for BN and scored in the 25th percentile on the bulimia subscale of the Eating Disorders Inventory-3, placing her in the typical clinical range. Carla volunteered for the study after it was presented in her psychology class. She considered herself to be actively bulimic and was not in treatment at the time these samples were collected. A total of 25 samples were collected and discussed extensively over seven sampling days during an approximately 6-week period. The relatively greater detail of Carla's inner experience required significantly more interview time per sample than did many of our interviews with other participants with BN, making the number of samples we were able to collect somewhat lower.

Carla's inner world was complex, highly detailed, and sensory. Her attention was generally fragmented between two to six multiple directly apprehended phenomena, but was sometimes divided between *both* directly apprehended inner experience and slight ongoing sensory awareness "tails" of inner experience. Carla's directly apprehended sensory awareness was usually bodily, complex, and intensely detailed. Her sensory awareness also included instances in which she was sensorily aware of how she was bodily positioned. Carla talked to herself quite often and her inner speech was generally

single and straightforward. However, she did have one sample in which her inner speech was apprehended as a multiply aspected “ball” of inner speech in which she was simultaneously saying four simultaneous things to herself in an irritated tone.

Carla’s inner seeing was quite frequent, and when it occurred it was generally complex and intensely detailed. Her thinking, when it occurred, was unsymbolized, relatively evenly split between single, straightforward thoughts and complex, multiple, simultaneous, and sometimes conflicting thoughts. Carla also had an ongoing mental awareness of her location. Although this awareness was very slight, it was directly apprehended, so that in at least 20% of her samples, Carla’s attention was divided between whatever was occurring in her awareness and on monitoring where she was physically located. Carla very rarely had emotional experiences, and when she did, they were complex and poorly differentiated.

#### Fragmented Multiplicity

Carla had fragmented multiplicity of experience in 23 of her 25 samples (92%). Her multiple experiences were profoundly complex and included from two to six separate, simultaneous experiences at the moment of the beep. Her fragmented multiplicity occurred in two distinct ways: as multiple, separate but simultaneous straightforward phenomena that were directly experienced (13 of 25, 52%); and as multiple phenomena that included ongoing awareness, which was clearly apprehended but only indirectly experienced (12 of 25, 48%).

In an example of her directly experienced multiple experience, sample 2.3, Carla was looking at the phrase “social and cultural issues” in her textbook. This looking was apprehended as a perceptual awareness of the words and a simultaneous sensory

awareness of the blackness of the letters, as well as a separate, simultaneous sensory awareness of the sensation of her fingertips against the keys on her keyboard. In this complex sensory awareness she was both feeling the raised dots of the *F* and *J* keys against her index finger tips and the coolness of the keys against the rest of her fingertips. She was also somehow aware of the actual letters underneath each of her fingertips—the *A* under her left pinkie, the *S* under her ring finger, and so on. She also had a separate, simultaneous visual sensory awareness of her laptop on her lap and her legs up on the coffee table, a position that was apprehended as being comfortable by implication. That is, she was not directly feeling this comfortableness at the moment of the beep, but understood that the bodily position that she was seeing implied that she is comfortable. Therefore at the moment of the beep she had six simultaneous phenomena in her inner experience: a perceptual awareness of the words in her textbook, four sensory awarenesses (of the blackness of the letters, the coolness of the keys, her fingertips against keys, and the raised dots of the letters, and the single sensory awareness of her legs implying comfort).

In an example of her multiplicity that included ongoing indirect experience, sample 6.2, Carla was flipping through TV channels and was on the movie *Educating Rita*. At the moment of the beep she was unsymbolizedly judging the movie, apprehended as a complex, simultaneous series of unworded thoughts that if in words would be: I don't know that, it's an old movie, I don't want to watch that, it doesn't look interesting, apprehended as unsymbolized thought processes. She also had a separate, simultaneous bodily sensory awareness of her thumb's pushing down on the TV remote control button. She also was simultaneously hearing her phone make a text message alert noise and was innerly saying "Who's that?" to herself, in her own voice, in an excited



tone, but she was not separately feeling excited. She also had a separate, slight ongoing awareness of where she was sitting, apprehended as a kinesthetic awareness that she was sitting differently than she was before. Thus, at the moment of the beep she had four simultaneous phenomena in her inner experience: a complex unsymbolized thought process of judging the movie, a sensory awareness of her thumb's pushing down the remote control buttons, an inner speaking, and an ongoing sensory awareness of how she was sitting.

### Sensory Awareness

Carla experienced sensory awareness in 20 of her 25 samples (80%). We have already seen two examples of sensory awareness above: the four sensory awarenesses (of the blackness of the letters, her fingertips against the keys, the raised dots of the letters, and her legs implying comfort in sample 2.3, and the sensory awareness of her thumb pushing the remote control and separate ongoing slight sensory awareness of how she was sitting in sample 6.2. Carla's sensory awareness was primarily bodily (12 of 20, 60%), less commonly external (5 of 20, 25%), and occasionally (3 of 20, 15%) she had samples that included both bodily and external sensory awareness.

Carla's bodily sensory awareness were occasionally single (5 of 12, 42%) and more often multiple (7 of 12, 58%). However, even when her bodily sensory awareness was single, it was rarely straightforward and was most commonly quite complex. In an example of her single, straightforward bodily sensory awareness, sample 7.4, Carla was talking to her friend Sam on the phone, actively paying attention to what Sam was saying. At the moment of the beep Sam had turned his attention from Carla to, apparently, his brother and had said, "What the hell?" in a sarcastic tone to his brother. Carla was just

listening to that. She also had a separate, simultaneous bodily sensory awareness of comfort in her whole body as she was lying in a comfortable position on pillows on her floor. This sensory awareness of her comfort was very similar to her implied comfort in sample 2.3, and her awareness of how she was sitting in sample 6.2 above. She was also simultaneously innerly saying “I don’t want to move” to herself, in her own voice, just as if she had said this aloud. She also had a separate, idly simultaneous perceptual awareness of the middle shelf in her bedroom. She also had a separate, very slight, simultaneous ongoing mental awareness of where she was in her room. Thus, at the moment of the beep, her bodily sensory awareness of comfort was relatively straightforward.

In an example of her complex single bodily sensory awareness, sample 3.1, Carla was at work in the bakery and was packaging French rolls into a bag, apprehended as a kinesthetic sensory awareness of her body’s packaging the rolls. She knew that her mind would kick in when she reached the point where the weight of the rolls in the bag reached the right amount, but at the moment of the beep she was just sensorily aware of packaging the rolls. She was also simultaneously innerly saying to herself “I’ll finish this” (referring to the packaging of the rolls as part of what she had to complete of her bakery tasks), in her own voice, just as if she had said this aloud, but the remainder of the tasks to be finished were not in her awareness at the moment of the beep. She also had a separate, simultaneous complex sensory awareness of her section (the bakery area) of the grocery store, she saw the bakery in front of her but was completely unaware of the surroundings of the grocery store outside of her bakery area. Metaphorically, it is as if there is a mist around the outside of her area such that if a customer crosses into her area they will come out of the mist and she will see them, but there were not any customers in

her area so she was just seeing the bakery and was completely unaware of the surrounding areas of the store. Therefore, although her bodily sensory awareness of packing the rolls was a single bodily sensory awareness at this moment, it was a complex in that it was not purely kinesthetic, but instead bodily with a known but not directly experienced awareness that her mind would activate once the rolls reached a certain weight. She also had a complex perceptual/sensory awareness that was simultaneously occurring in her experience. This was not a simple felt single bodily sensory awareness, but instead included quite complex phenomena.

Another example of her single complex bodily sensory awareness occurred immediately after sample 3.1 (just described). In sample 3.2 Carla was in the bakery and was externally hearing the Justin Timberlake song “Cry Me A River” played over the store loudspeakers. Simultaneously, she was innerly hearing just the vocal track of the song playing along in Justin’s voice, but she was supplying the words so that at the moment of the beep the external and internal words were in sync. However, if she failed to remember the words (which was not occurring at moment of the beep) then the external and internal hearing would become out of sync. She also had a simultaneous still clear inner seeing of Justin Timberlake from the waist up, looking slightly to the right, apprehended as seeing him in color, just as he appeared in the video. Approximately 70% of her awareness was on this external hearing, inner singing/hearing, and inner seeing of Justin Timberlake. The remaining 30% of her awareness was occupied with a profoundly complex single bodily sensory awareness of the bagels she was arranging on a tray. Although this bodily sensory awareness only occupied 30% of her awareness at the moment of the beep, this was a profoundly complex and highly detailed bodily sensory awareness of the numbness of her hands moving the bagels, the doughy ice particles from

the frozen bagels creating pressure that was pulling her nails and pulling on the first layer of skin on her fingertips as she is moving the bagels, and the simultaneous sensory focus on the doughy ice particles sticking in the tiny creases of her fingertips. Furthermore, she had a bodily sensory awareness of the ice crystals on her palms; however, she was particularly focused at the moment of the beep on the detailed sensory awareness of the crystals in the creases of her fingertips. Therefore, at the moment of the beep she had a perceptual awareness of the song, a doing of inner hearing in which she was synchronizing or matching the song, an inner seeing, and a strikingly complex single bodily sensory awareness of the sensation of the doughy ice crystals of the bagels as she was arranging them. This is a sample that illustrates that for Carla, even when sensory awareness is single and occupying only 30% of her awareness, it remains profoundly detailed and complex.

In an example of her multiple bodily sensory awareness, sample 1.4, Carla was on the phone with her father and was feeling irritated/frustrated, which was simultaneously apprehended as a feeling in her head and a separate, simultaneous bodily sensory awareness of stiffening across her whole back (but somewhat more focused in the spine area). She also had a simultaneous bodily sensory awareness of wanting to hang up, apprehended as her hands wanting to make the hang-up motion to her phone, and a simultaneous bodily sensory awareness of making a sour face, and of her mouth's being slightly open as if she's starting to say something but really has nothing to say. She also had a separate, slight ongoing sensory awareness of the weight and texture of her backpack on her lap. At the moment of the beep, neither Carla nor her father were speaking, and she was entirely focused on this feeling, these three multiple sensory awarenesses (of her hands, face, and mouth), and this separate ongoing sensory

awareness of her backpack. Carla's multiple sensory awarenesses in this sample were similar to other participants who occasionally focused on the sensory details of an experience apparently to avoid something that was potentially distressing to them. Note that at the moment of the beep, she was entirely focused on the feeling and sensory aspects rather than on the content of the conversation.

Carla's external sensory awarenesses, though less common than her bodily sensory awareness, were also quite complex. For example, in sample 4.1 she was at work and was surrounded by the mess in her bakery department. At the moment of the beep she had a multiple, complex, detailed inner seeing of the mess in her bakery work area (pink and yellow crushed sprinkles on the floor, piece of chocolate dessert that had been stepped on that was lying on the tile by the silver table, loaf of bread half sliced in the slicing machine with bread crumbs lying around it). Despite a great deal of effort, it was not possible for her (or us) to distinguish if these were multiple separate visual images or differentiated aspects of the same visual image, but seemed somewhere in between these two options. This multiple complex visual image(s) was an example of sensory awareness in that she was particularly aware of the contrasts (the dark brown of the smashed cake against the light gray floor) and colors (the pinkness and the yellowness of the sprinkles) of the different components of the mess. The power of the level of detail seemed very strong—it was not merely that the seeing was detailed, but rather that the detailedness impacted her, impinged on her somehow. She was simultaneously innerly speaking to herself in an angry/pissed-off/irritated tone. This inner speech included saying to herself, in her own voice “are you serious?” “how could she leave this mess?” “who does this?” and “Aaaaahhh!” All of these inner speakings occurred “in a ball,” in her own voice, in an irritated tone, as if were saying them aloud, with the “Aaaaahhh!”

speaking being slightly more pronounced. All, or at least fragments thereof, occurred simultaneously. These multiple inner speakings entirely captured her anger/pissed-off/irritation; that is, she was *not* experiencing anger or pissed-offness or irritation. Her body was tensed, apparently as a result of the emotional process, but that tenseness, like the emotion itself, was not in her awareness at the moment of the beep. She was also standing in the bakery with the mess in front of her (a fact of the universe), but the seeing of the external world was not in her awareness at the moment of the beep. Instead she was focused on this multiple complex visual image(s) with sensory awareness details, and multiple complex inner speech.

Carla also had samples that included both bodily and external sensory awareness. For example, in sample 5.2 Carla was reading her textbook and simultaneously typing out the words she was reading, just typing with no cognitive process occurring in awareness and also no awareness of the actual words she was typing. It was as though the words were going from the book to her fingers without the words or their meanings passing through her awareness. She also had a simultaneous thematic awareness of observing herself doing the typing quickly, a bodily sensory awareness of her brain and hands moving fast. She also had an external sensory awareness of the sound of the *Hannah Montana* show in the background; the sound was “flowing along” in a simplified extraction of the pitch of the characters’ talking; neither the words nor their meanings were in awareness at the moment of the beep (although she thought she could later stop and process the words/meanings if she so chose). Thus, at the moment of the beep, she was doing the typing, had a bodily sensory awareness of her brain and hands, and an external sensory awareness of the pitch of the TV voices all occurring simultaneously.

## Inner Speech

Carla had inner speech in 12 of her 25 samples (48%). We have already seen four examples of inner speech above: saying “who’s that?” in sample 6.2; saying “I don’t want to move” in sample 7.4; saying “I’ll finish this” in sample 3.1; and the complex multiple inner speech in sample 4.1. Carla’s inner speech was generally straightforward and was multiple and complex on only one occasion (in sample 4.1 discussed in detail above). In another example of her inner speech, sample 2.1, she was innerly saying “I need to buy hangers” to herself, in her own voice, just as if she had said this aloud. Although this was the main focus of her awareness (60%), she also had a simultaneous perceptual awareness of what was in front of her that included the black shirt that brought on this statement, the bed with shirts spread out on it, etc. that occupied 40% of her awareness. Her bedroom door was open and her family was there, but she had entirely withdrawn from that, and instead was solely focused on this inner speech and perceptual awareness.

## Just Doing

Carla also had instances in which she was doing an activity more or less on “auto-pilot” so that it was in her awareness but she was not actively engaged in it at the moment of the beep, a phenomenon termed “just doing.” She had just doing phenomena in 2 of her 25 samples (8%). We have already seen one example of just doing above: her textbook reading in sample 5.2. In another example, in sample 7.2 Carla was on the computer editing her My Space account and at the moment of the beep she was typing in the authentication characters relatively automatically. She was not paying particular attention to the typing, but was just doing it. She also had a simultaneous unsymbolized

thought of what she would change next on her account. She also had a separate, simultaneous perceptual awareness of hearing the TV football announcer say "...Buffalo is actually..." without the context of this phrase being in her awareness. That is, she heard those three words and didn't know what they meant. Her sense was that she was, outside of her awareness, monitoring the announcer's tone of voice; if he were to become excited, then she would shift her attention in the direction of the TV. She also had a separate, slight ongoing mental awareness of her location, in which she knew where she was in her house.

### Inner Seeing

Carla had an inner seeing in 8 of her 25 samples (32%). We have already seen two examples of inner seeing above: the image of Justin Timberlake in sample 3.2, and the complex mess in sample 4.1. Carla's inner seeing was generally quite complex (5 of 8, 62.5%), but was sometimes a relatively straightforward, single inner seeing (3 of 8, 37.5%).

We have already seen one example of her complex inner seeing: her multiply aspected inner seeing of the mess in the bakery in sample 4.1. In another example of her complex inner seeing, sample 4.2, Carla had a slight feeling of being currently lightheaded and was also simultaneously reliving a past experience in which she was lightheaded. The recalled past experience of being lightheaded was apprehended as a sequence of complex inner seeings that were moving very rapidly in sequence. In this sequence, she innerly saw her mother taping her fingers that were bleeding, then saw the particular blueness of the bandage tape, then saw herself appearing lightheaded (seen from the perspective of looking directly at herself as her mother was bandaging her



fingers), and then saw herself slumped over the fire extinguisher at work (seen from the back, from waist up with her arms dangling over the fire extinguisher). The sequence of inner seeings above was seen from the perspective of looking through her eyes, but the portion in which she was slumped over the fire extinguisher was also separately and simultaneously apprehended from her mother's perspective, that is, was a view of how Carla thought she must have looked to her mother. This visual image sequence was apprehended as moving rapidly, as though she were flashing back to this event and reliving it, but it was difficult for her to distinguish if she was reliving the physical sensations of being lightheaded from when that happened, or if this was entirely just visual without the physical sensation. She also had a separate, simultaneous slight lightheadedness in the front of her head. This present lightheadedness occupied approximately 10% of her awareness with the remaining 90% of her awareness on the inner seeing of the recalled lightheaded incident.

We have also seen one example of her straightforward inner seeing: her seeing of Justin Timberlake in sample 3.2. In another example of her straightforward, single inner seeing, sample 6.3, she was in her room and had a bodily sensory awareness of pushing her books under her table, apprehended as a stretching sensation in the surface of her back, lower neck, arms, and shoulders. She also had a simultaneous perceptual awareness of the physical act of the books being pushed under the table. She also had a separate, simultaneous slight inner seeing of the books that were stacked off to her side. This was a clear image of the stack of books, organized from largest to the smallest book. She also had a very slight ongoing mental awareness of where she was sitting in her room at the moment of the beep.

## Unsymbolized Thinking

Carla experienced unsymbolized thinking in 5 of her 25 samples (20%). We have already seen two examples of unsymbolized thinking above: her complex unsymbolized thought process of judging the movie in sample 6.2, and her thought about her My Space account in sample 7.2. She had two kinds of unsymbolized thoughts: single, straightforward thought processes (3 of 5, 60%) and complex, multiple thought processes (2 of 5, 40%).

In an example of her single, straightforward unsymbolized thinking, sample 7.3, Carla was talking to her friend Sam on the phone, explaining the story of what had happened to her early in the day (seeing their friend Walter's Dad in Vons). The actual talking appeared to be happening automatically and was not particularly in her awareness—it seemed to be an automatic accompaniment of her simultaneous reliving of the incident, an example of happening of speaking. At the moment of the beep she was reexperiencing being in the aisle at Von's, innerly seeing of the dairy products and Walter's dad ahead of her as if seen from the perspective of her eyes. In this image she could see her hands text messaging Walter, could see Walter's Dad checking his phone, and could see him looking towards her, all in a compressed, speeded-up form. She was also simultaneously actively engaged in hanging up her tank tops, apprehended as just doing this without anything particular about the activity in her awareness. She also had a separate, simultaneous unsymbolized thought that she needed more hangers. She also had a separate, very slight, simultaneous ongoing mental awareness of her location, in which she knew she was in her room and where she was in her house.

An example of her complex unsymbolized thinking was sample 6.4. Before the beep Carla had read a text message that said "what should we talk about?" and at moment

of the beep she had hit Reply and had a perceptual awareness of her blank, white text screen in her peripheral vision. Simultaneously she was unsymbolizedly trying to think of how to reply. She also had a separate, simultaneous unsymbolized thinking that she was not trying very hard to think of how to reply because she was watching the show *Beauty and the Geek* on the TV. Thus, at the moment of the beep she was having two conflicting unsymbolized thought processes: one of trying to think of a reply and one of knowing that she was not trying hard enough, each occurring simultaneously at the moment of the beep.

#### Mental Awareness of Location

In 5 of her 25 samples (20%) Carla was engaged in a process of actively knowing where she was physically located, a phenomenon we termed “Mental Awareness of Location.” In this phenomenon, a slight portion of her awareness was actively cognitively aware of where she was. This is not a phenomenon that has been described in previous inner experience research, and thus far appears unique to Carla. Whereas most individuals know where they are located in space, the cognitive tracking of this is rarely in their conscious awareness, for Carla this knowing remains slightly but actively in her awareness. We have already seen four examples of her mental awareness of her location above: in samples 7.4, 7.2, 6.3, and 7.3.

In the remaining example, sample 7.1, Carla was unloading the silverware from the dishwasher basket, and was innerly saying to herself, “It’ll be easy to tell these knives apart” in her own voice, just as if she said this aloud (referring to the new knives they had just purchased). She also had a simultaneous unsymbolized thought that she would ask her mother when she got home if they could put the old knives away. She also had a

simultaneous inner seeing of a single knife pointing straight down, and she could see the side of the handle with three silver dots. This was a clear inner seeing and she was particularly focused on the three dots. She also had a separate, simultaneous sensory awareness of the noise of the plastic bag that her sister was scrunching up. She also had a separate, very slight mental awareness that she was in the process of cleaning to get rid of the mess in the kitchen. She also had a separate, slight ongoing mental awareness of where she was, in which she knew where she was in her house, but also on another level knew where she was in Las Vegas. This awareness of her location was present to her immediately at the moment of the beep; that is, it was not merely a general understanding of where she was but rather was an in-awareness, specific, thematic (but small) thinking/monitoring of her physical location.

### Feelings

Carla experienced feelings in 2 of her 25 collected samples (8%). We have already seen one example of her feelings above: her feeling of irritation/frustration in sample 1.4. Overall, feelings were relatively rare in her inner experience. Of the two feeling samples she had, none were straightforward and clearly differentiated. Instead, they were complex, undifferentiated. She also had one sample (4.1) in which she was innerly speaking to herself in an angry/pissed-off-irritated tone but the actual feeling of being angry, or pissed off, or irritated was not at all in her awareness at the moment of the beep. She did not have any instances in which her feelings were fused with cognitive or sensory phenomena.

In her remaining feeling sample, sample 1.2, Carla was in her English class and prior to the moment of the beep she had made a sarcastic comment that her teacher had

reacted to. At the moment of the beep she was innerly saying to herself (referring to her teacher) “She probably hates me right now” in her own voice, as if she had said it aloud. She also had a complex simultaneous, somewhat undifferentiated feeling of disappointment/not caring, apprehended as a single feeling in her head with two separate parts, a disappointed part and a not caring part, that were intertwined. She also had a separate simultaneous ongoing simplified version of the chalkboard at which her eyes were aimed. There were classroom notes written in yellow chalk on the board, but instead of seeing those notes, she had a sensory awareness of yellow smudges, as if her visual processor was not processing all the visual information and thus was presenting an indistinct visual view of the board.

### Happening Of Speaking

Carla had “happening of” experiences in 1 of 25 collected samples (4%). In “happening of” experiences, there is no direct focus on the particular activity; rather the activity appeared to be happening automatically without being actively directed by her. We have already seen her one example of happening of above: her happening of speaking in sample 7.3.

### Discussion

Our 25 samples with Carla over the course of six weeks gave us insight into her profoundly complex multiple inner world. Fragmented multiplicity was the most salient aspect of Carla’s inner experience. In fact, only 2 of her 25 collected samples (8%) were *not* multiple. Her multiple inner experience was profoundly complex and often intensely detailed. Aside from her consistently multiple inner experience, she also had frequent

samples (12 of 25, 48%) in which her multiplicity included both directly apprehended phenomena and aspects of sensed but not directly experienced phenomena at the moment of the beep. The quality of Carla's fragmented multiplicity is consistent with our other participants with BN. However, her multiplicity occurs at a somewhat higher frequency than does multiplicity in our other participants with BN.

Carla's inner experience was also strikingly sensory. Her sensory awareness was usually apprehended bodily and was less commonly external. This sensory awareness was often intensely detailed, and the level of this detail is abundantly clear in sample 3.2 in which she is not merely feeling the sensation of ice crystals from the bagels, but is feeling the doughy individual crystals pulling on the first layer of her fingertips and caught in the individual creases of her fingertips as they bend in working to arrange the frozen bagels on a tray. This is a far more detailed level of sensory awareness than merely feeling the cold or numbness of her hands or the texture of the bagels. It is a profoundly detailed sensory apprehension that is clearly apprehended at a very intense level at the moment of the beep. This detailed sensory awareness is also strongly apparent in sample 2.3 in which she was not merely typing, but also had a simultaneous sensory awareness of the blackness of the letters, as well as a separate, simultaneous bodily sensory awareness of her fingertips against the keys on her keyboard. In this complex bodily sensory awareness she was not only feeling the sensation of the keys against her fingertips, but was separately and simultaneously feeling the sensation of the raised dots of the *F* and *J* keys against her index finger tips and the cool feel of the rest of the keys against the rest of her fingertips, as well as sensing the actual letters underneath each of her fingertips—the *A* under her left pinkie, the *S* under her ring finger, and so on. For

Carla, at this moment, typing is not merely typing, but is a markedly and separately intensely detailed sensory experience.

Carla also had one sample in which she was focusing on the sensory aspects of an experience apparently in order to avoid something that is distressing in her immediate environment, as was the case in sample 1.4. Carla's overall sensory awareness, as well as this moment of focusing on the sensory aspects of a situation in order to avoid potentially distressing aspects of her immediate environment, and her occasional fusion of sensory awareness with perceptual awareness or thought, are strongly consistent with our other participants with BN. However, for Carla, sensory awareness occurs at a somewhat higher frequency and slightly higher level of detail than many of our participants with BN.

Carla's inner speech was also similar to inner speech in our other participants with BN, but again occurred at a somewhat higher frequency than did inner speech in our other participants with BN. Her inner seeing was relatively complex overall, and occasionally intensely complex, as was the case in her very detailed and multiple inner seeing of the mess in sample 4.1. This is consistent with the inner seeing of our other participants with BN. Her unsymbolized thinking was also consistent with our other participants with BN.

Carla had a common to her, but quite unusual characteristic of inner experience that we termed "Mental Awareness of Location" in which she was cognitively aware of her physical location at a slight but directly in her awareness level in several of her beeps. This characteristic of inner experience appears to be unique to Carla and has not been reported either in our participants with BN or in sampled nonbulimic individuals.

Carla's feelings were largely undifferentiated, and therefore somewhat consistent with the affective experiences of our other participants with BN. However, her feelings occurred at a somewhat lower frequency and were never fused with cognitive or sensory experiences as were the emotions of many of our other participants with BN.

Unlike most of our participants with BN, Carla did not have any samples in which her attention was focused on phenomena interfering with ongoing weight, shape, food, appearance, or BN-related behaviors. Her "happening of" experience was consistent with our other participants who had happening of experiences.

Overall, Carla's inner world was fragmentedly multiple, complex, and sensory. She also had occasional instances in which there was a slight ongoing phenomenon in her awareness that was clearly sensed but not directly experienced, as though it were being consciously held in her awareness until she would return to actively engage with it. Carla's multiplicity, sensory awareness, inner speech, unsymbolized thinking, and undifferentiated feelings are all quite consistent with the inner experience of our other participants with BN. While it is likely that these characteristics of her inner experience interact with her bulimic symptomatology, the exact nature of this interaction remains unknown. Carla also had high levels of comorbid depression, and anxiety.



## CHAPTER 7

### VICKY

Vicky was a 22-year-old university student at the time these samples were collected. She met the DSM-IV-TR (APA, 2000) criteria for BN and scored in the 39th percentile on the bulimia subscale of the Eating Disorders Inventory-3, placing her in the elevated clinical range. Vicky considered herself to be bulimic and identified herself as having had several periods of remission and exacerbation in the past several years. She was not in treatment for BN at the time these samples were collected. Vicky volunteered for the study when she was contacted after an initial screening in her introductory psychology class. A total of 29 samples were collected and discussed extensively over seven sampling days during a seven-week period.

As we shall see, Vicky's inner world was complex, with multiple overlapping, usually visual phenomena occurring simultaneously. Her inner seeing was strikingly complex and often included multiple, simultaneous, separate, distinct innerly seen phenomena. Vicky also had inner seeing experiences in which she was actively trying to control ongoing images. She occasionally had inner seeing in which there was no background.

Vicky frequently experienced sensory awarenesses, evenly split between being bodily and being externally apprehended. Her sensory awareness was also sometimes intertwined with her thoughts. Her thoughts were sometimes worded, but were more

frequently complex and unsymbolized. When Vicky talked to herself, her inner speech was generally clear, straightforward, and in her own voice. However, on two occasions, her inner speech was complex, multiple, or repeated as though it were literally an ongoing innerly spoken echo. Vicky rarely had samples in which she was engaged in actively interfering with ongoing phenomena related to weight, shape, food, appearance, or BN-related behaviors, however, when this occurred, it was qualitatively negative and directly related to her eating disorder behavior at the moment of the beep.

Vicky's feelings, which were rare, were neither clear nor directly apprehended. Vicky generally had difficulty distinguishing between her thoughts and feelings, and had only two emotional experiences that were clearly distinguishable from her thoughts, both of which were feelings of bodily apprehended anxiety.

### Fragmented Multiplicity

Vicky experienced fragmented multiplicity of experience in 25 of her 29 samples (86%). These multiple experiences frequently but not exclusively contained one or more experiences of inner seeing, (a phenomenon that will be discussed in greater detail below). Before discussing inner seeing specifically, we outline the complex, fragmented nature of Vicky's experience as a whole. Vicky's inner world was so strikingly characterized by fragmented multiplicity that only 4 of her 29 samples (14%) contained a singular, non-fragmented focus of experience. Her fragmented, multiple experiences were often quite complex and included up to nine distinct, multiple, simultaneous inner experiences at the moment of the beep.

For example, in sample 6.1 Vicky had just got off work and was walking through a casino looking for a taxi. At the moment of the beep she had a sensory awareness of the

bright whiteness of the lettering of the word “monorail” and the purpleness of the background on an overhead sign, and was also mentally aware of the meaning of the sign—that it pointed to the monorail. This sensory awareness and separate mental awareness of the meaning of the monorail sign was the most salient thing in her awareness. However, she also had multiple inner seeings, four of these inner seeings were apprehended as simultaneously occurring in three-dimensional space on a rusty-orange background, and were coming rapidly toward her and then rotating out again to start over and come toward her again; two of these inner seeings were apprehended as separate, simultaneous pictures that were not in rotation. In one of the four rotating innerly seen phenomena, she was thinking “find taxi” to herself, which was apprehended as innerly seeing a still picture of a taxi stand that appeared identical to the taxi stand at the Hard Rock Hotel. In another two of the four simultaneous rotating inner seeings, she had two separate, simultaneous lemur pictures, with no background, just cut-out images of the two individual lemurs (she been talking to her boyfriend about Australopithecus from her anthropology notes as being related to lemurs, but had withdrawn from the conversation, and instead had these two separate, simultaneous visual images of animated lemurs from the movie Madagascar). In the fourth of these rotating visually imaged phenomena, she had a separate, simultaneous inner seeing of the Australopithecus picture she had seen in her anthropology class that was apprehended as being exactly like the picture she had seen in class of Australopithecus with a prehistoric-looking background. Thus, she had four separate inner seeing experiences: a picture of the taxi stand, two separate lemur images, and one separate Australopithecus picture that were three-dimensional, and occurring on a rusty-orangey background. These three inner seeings were apprehended as

rapidly approaching her and then rotating out again to start over and come toward her again.

In addition to these four rotating inner seeings, Vicky also had two separate, simultaneous inner seeings which were not part of this rotation process. In one of these, she was separately and simultaneously seeing the character sequence “4.5 mya” (with mya referring to million years ago). The “mya” was seen to be in white lower case letters and the “4.5” was in white block numerals. This 4.5 mya inner seeing was in the center of her visual field and was not rotating with the other inner seeings. In the other of these non-rotating inner seeings, she was innerly seeing a still picture of a taxi stand that appeared identical to the taxi stand at the Hard Rock Hotel. This inner seeing was a duplicate copy of the rotating taxi stand image, and was without any words or inner speech. Thus there was one taxi stand picture that was in rotation with the rest of the multiple inner seeings, but was also apprehended separately and simultaneously, like a still, identical copy, that was apprehended as not in rotation and was innerly seen in the back of her head. She also had a separate, simultaneous worded thought process of needing to walk fast to find a taxi. She was aware of the words “walk fast, find taxi”, but was unable to say if these words were symbolized. However, she knew that the words were not in images, not in inner speech, and they appeared to be just a worded thought that didn’t appear to be spoken or said, she just knew the words to be there. She had been talking with her boyfriend on the phone, and he was talking at the moment of the beep, but she had withdrawn from the conversation entirely. Instead she was entirely occupied with her multiple inner experience.

In summary, this is a strikingly complex multiple inner experience, with nine separate, simultaneous inner experiences: six inner seeings, one sensory awareness, one

unsymbolized thought, and one worded thought, all occurring separately and simultaneously at the moment of the beep.

In another example of multiplicity, sample 3.2, Vicky was innerly seeing photographs of her parents, which was apprehended as first seeing a photograph of her mother off to the left facing to the right and then seeing a photograph of her father a bit to the right but overlapping with the photo of her mother, with her father facing to the left, so that they seemed to be facing each other. These images were of actual photographs that Vicky had taken. Neither imaged photos had borders around them; they were seen as glossy prints that one might get from the photo store, and seen as one laid on top of the other so that they overlapped. These inner seeings faded away quickly off to the left. She also had a separate, simultaneous inner seeing of herself and her mother arguing in front of the window in her living room when she was 18. In this image, Vicky and her mother were having a physical argument: her mother was on the left with her hands raised up, and could be seen clearly, as though most of the light was falling on her, and Vicky was on the right, doing something with her hands, but she was not as clear in the picture, was in darker space. This inner seeing experience also appeared as a photograph, although no such photo actually existed in fact Vicky and her mother had never had a physical argument such as the one depicted in this image. In the inner seeing, her mother was wearing a flamboyant, dark red outfit that she does not own and would not wear in actual life; furthermore, the window, with the blinds drawn, seemed to stand out in the image. Vicky was also separately but simultaneously having two unsymbolized thought processes, apprehended as wondering why her sister gets so upset about these things when they're insignificant, and wondering if that's what Vicky herself was like when she was 18. These thoughts apprehended as being contained in two visually imaged spherical

shapes. These spheres were apprehended as containing these thoughts, and appeared to have something fluid within them. These spheres were seen to be side by side in a space below the space that the images occupied. Thus, she had seven simultaneous, distinct phenomena occurring at the moment of the beep: five separate, simultaneous, distinct inner seeings: of her mother, her father, herself and her mother, and of the two spheres, and two separate, simultaneous unsymbolized thoughts that were apprehended as occurring within these visually imaged spheres.

While these multiple, complex inner experiences may appear to be qualitatively overwhelming, they were quite common for Vicky. In fact, she very rarely had straightforward and simple inner experience, and when this did occur, it appeared qualitatively very unusual and relatively insignificant for her. For example, on her third day of sampling, she told us that she had difficulty knowing what to write down about two experiences that appeared relatively meaningless to her, saying:

“I had 6 beeps but 2 of them I just had a hard time writing out so I’m just going to go to the one I could actually write stuff about...for some reason there were 2 beeps in the middle that were just like...I don’t know unless you want to hear them...”

When we asked her if she could clarify what was difficult for her about reporting this experience, she went on to report a sample that was relatively straightforward. In this sample, 3.3, Vicky was innerly seeing the cats that she had had growing up, a Siamese cat and a Persian cat. This was apprehended as a floating picture of the two cats together in her peripheral vision. In this inner seeing experience the cats were together with the short haired cat sitting and the long-haired cat standing on all fours as if it was going to walk. This was a static inner image of the cats, not lifelike, but as if she were seeing a magazine

picture of the cats where everything was cropped off except the cats. There was nothing else in the inner seeing experience besides the cats, on a pale beige colored background. She was also separately, and simultaneously innerly seeing the word “Cat”, and this was apprehended as on the right side bottom of her field of vision, in plain typed text, in fuchsia color, with a capital C on the cat. Therefore, this was a relatively simple, straightforward experience with two separate inner seeings, which was clearly quite distinct from the complex, multiple inner seeings that characterized many of Vicky’s inner experiences. When we reflected that her description of sample 3.3 did not seem difficult after she had identified it as being difficult for her she said:

“I don’t know it was hard, it was just like...on most of these I can write down like several things that were going on or whatever and this one I couldn’t I was like what was I thinking about it was just the cat kind of a thing...this beep and the next one were just kind of like very...I didn’t feel like there was anything to it, my first two and last two beeps had lots going on, but in the middle two there was just not much going on.”

It appeared that Vicky was almost apologetic about this relatively more simple experience, suggesting that for her, one or two simple, straightforward aspects of inner experience at the moment of the beep did not actually count as “experience” when compared to what inner experience is normally like for her, which is strikingly multiple and complex. These samples where experience is uncomplicated demonstrate that Vicky was capable of describing uncomplicated experience—that is, it did not seem that the complexity of her experience was merely the result of a reporting style that favored complexity.

## Inner Seeing

In the discussion of Vicky's salient fragmented multiplicity of experience above, it is clear that inner seeing is a strikingly common aspect of her fragmented experience. In fact, inner seeing was the second most salient aspect of Vicky's inner experience, accounting for 24 of her 29 experiences (83%). Vicky's inner seeing was often, but not exclusively multiple. Of her 24 inner seeing experiences, 15 (62.5%) were multiple and 9 (37.5%) were singular. However, even her single inner seeing experiences were strikingly complex.

An example of multiple inner seeing occurred in sample 2.3. Vicky's mind was racing as though she were having a million simultaneous, overlapping thoughts, although she was actually aware of only 30 or 40 thoughts. Each of these 30 to 40 separate thoughts were apprehended as a visual image of a sentence (e.g. "Finish my homework"; "Get to work on time") printed on banners the size of fortune cookie banners, with the banners being bent and curving, much as actual cookie fortunes would be. At the moment of the beep these banners were weaving in and out among each other, each with one task that she had to do printed on it. Vicky could not see all of the words of all the sentences at the moment of the beep because sometimes she saw the back of a banner, and sometimes she saw just part of a banner because it was bent. These 30 to 40 visually imaged banners were seen to be white with black printing, some were quite bent and some were straighter. Although Vicky could read only a few of the banners (5 or 6), and those only partially, she simultaneously saw perhaps 30 or so more of them in the background. All of these were apprehended as being in motion, as if they were swimming around in some kind of fluid like water or thin gel. The fluid had a light purple color, as if it was illuminated by black (ultraviolet) light. The banners themselves were not



illuminated by the black light, only the fluid in which they were swimming. The whole banner-swimming phenomenon was experienced as her mind racing, as not being able to hold on to any thought long enough to read it/think it. Along with the banner images, Vicky also had a separate, simultaneous feeling of nervousness, apprehended as a bodily sensation of tension along her whole back and the back of her shoulders and neck, and a mental feeling of needing to move faster. She had also simultaneously just walked into the bookstore, and as she entered, her eyes fell on the snack stands that were at the end of the cash register aisles. However, she didn't recognize them as snack stands: she saw only patches of bright colors (reds, blues) and shapes (triangles, and rectangles). Later she could say that the colors came from the chip and snack packages, but she was not aware of that at the moment of the beep. She could also later say that the triangles and rectangles came from the patterns that the wire racks made from her perspective: the triangles were not part of any individual rack but were the result of seeing one rack in front of the next. However, that recognition of the source of the triangles/rectangles was not present at the moment of the beep; at the moment of the beep she had only a sensory awareness of the shapes of the triangles and rectangles. In summary, this sample was characterized by 30 to 40 separate, complex, multiple, simultaneous visually imaged phenomena, a feeling of nervousness that was apprehended both bodily and mentally, and a separate, simultaneous visual sensory awareness.

Although this sample was strikingly complex, it was by no means unusually complex for Vicky. In another sample (4.2), it had been a long time since the last beep, and she was in process of turning down the volume on the beeper and had a visual image of the word "Down." This visual image was apprehended as a large Capital D with the rest of the letters in lower case, in white on a black background. She also had multiple,

separate, simultaneous thoughts about what she should do about the long time between beeps. These thoughts included: “Should I turn it [the beeper] off? Should I take a shower before the next beep?” and other similar thoughts. These 6 to 10 thoughts were each apprehended as a separate, simultaneous visual image of a small, thin streamer. Each streamer had the words of a sentence as if typed on it, but the streamers were so thin they could only hold the text (unlike the fortune-cookie banners in Sample 2.3, where the banners were wider than the text). Words on the streamers were typed so that Vicki would have to turn her head to read them; that is: these thoughts were seen to exist but were not all actually entirely understood at the moment of the beep. These streamers seemed to be hanging down on the same black background, and wiggling, moving as if slightly blown by a fan, with a foggy haze over them so that they were difficult to see clearly, although the writing on each streamer itself was clear. In addition to these complex simultaneous inner seeings at the moment of the beep, she also had a separate, simultaneous feeling of anxiousness, apprehended as a bodily sensation of a squeezing knot in the top of her stomach, something like a cramp, and tightness in her shoulders; she was also separately, simultaneously saying to herself “ugh” in her own annoyed inner voice, just as if she had said it aloud. She also had a separate, simultaneous bodily sensory awareness of her finger on the knurled volume control as she was turning the beeper down. Therefore, Vicky had one clear, singular visual image of a word, 6 to 10 separate, simultaneous hazy inner seeings of streamers, a feeling of anxiousness, an inner speaking, and a bodily sensory awareness all occurring simultaneously at the moment of the beep.

Vicky also had experiences in which she actively attempted to control inner seeings at the moment of the beep. For example, in sample 5.4 Vicky was lying on her

back with her eyes closed and her stomach hurting. She was actively trying to move her stomach out away from her body, as if this would somehow ease the pain, trying to distance her stomach from herself so it didn't hurt. This phenomenon was apprehended as innerly seeing herself lying there with her stomach separate from her, above her and to the left. In this inner seeing she saw her stomach as a grey-colored right-triangular box that she knew to be her stomach, but that was disembodied and not attached to her, but instead hovering above her and to the left. She also had a separate, simultaneous awareness that with this image she was actively trying to move her stomach in the inner seeing farther away up and to the left on a straight line away from her, trying to move it farther down this line so it would hurt less. Vicky also had a separate, simultaneous inner seeing of a rectangular region that was inserted in the bottom of the image of herself above. In this rectangular region she had pictures going through that she knew depicted the options of why her stomach hurt (Did I eat something? Not eat something? What did I eat? Too much? Too long ago? Etc.), but these pictures were scrolling through the rectangular region so quickly they couldn't be clearly apprehended. She also had a separate inner seeing of the word "hurt" next to this rectangular region.

Therefore, at the moment of the beep, Vicky had three separate, simultaneous inner seeings (of herself with the disembodied stomach, of the rectangular region of options about why her stomach hurt, and of the word "hurt"), a doing experience of actively trying to move the stomach image in order to alleviate her pain, and this scrolling rectangular region included a self-reflexive, interference about why her stomach hurt that she understood to be related to binging and waiting too long to purge.

This process of actively attempting to manipulate in-process inner seeings also occurred in sample 6.3. In this sample, Vicky had a moving visual image of an orangutan

jumping up on a plywood box in front of a caregiver; the box had lush green around it, and there was a dark blurry spot in the inner seeing where the caregiver would go. She also had a separate, simultaneous thought of what the caregiver would look like, apprehended as a “mush” of several inner seeings of caretakers in the back of her head that were not clearly differentiated. She knew this mush of visual images had Jane Goodall, the Crocodile Hunter, and other caregivers she had seen on Animal Planet, and she understood this to be a process of figuring out what the caregiver would look like so she could insert it into the orangutan picture. She had a separate, simultaneous sensory awareness of the greenness of this inner seeing. In addition, she was separately and simultaneously wondering what the orangutan feels when he’s jealous (referring back to something she had read in her anthropology notes). This wondering was apprehended as an in-process thought of putting this together, in the back of her head, in inner speech, just as if she were saying this aloud “I wonder what that feels like?” spoken in her own voice, but this was in the background and only slightly in awareness at the moment of the beep. Thus, at the moment of the beep, Vicky had an in process inner seeing with a black spot, a separate, simultaneous mixed caregiver inner seeing that served to answer what should go in the black spot in the in-process inner seeing, a sensory awareness of the green color of the in process inner seeing, and an in process thought with inner speech experience of wondering about the jealousy of the orangutan.

An example of singular inner seeing occurred in sample 2.2. In this sample, Vicky was watching a video on research for autistic kids, and could maybe still hear the video in the background, but at the MOB had withdrawn her attention from the video and instead had an inner seeing of looking into a classroom. The classroom in this inner seeing resembled a combination of her 2<sup>nd</sup> grade classroom and the one she had just seen on the

video, and she could see people in the image, but was not focused on them. Instead, she was “zoomed in” on the teacher figure on the left side of this innerly visual scene, as though she were watching a movie and was zooming in on the teacher. Her attention was apprehended as moving toward the left part of the inner seeing and zooming in on the teacher figure, who was wearing brown suit. At the moment of the beep, she was not noticing anything specific about the teacher, but apprehended her more as a combination of teachers from her past. The teacher in the inner seeing was apprehended as being plain, older, and had big, brown, poofy hair. Vicky knew her to resemble how her teachers would have looked when she was young, as though she took what she knew of her own teachers and mashed them all together into this one innerly seen person. This innerly seen experience was also apprehended as having a sepia yellow tint, as though there was a wash of sepia yellow all over the image, as if it was an old picture. In addition, this inner scene was apprehended as being rectangular, with clearly defined edges, and with darkness around the picture, but she was only focused in on the teacher. Vicky apprehended this innerly seen experience as staying in one place, and with her focus moving toward it. Therefore, this singular inner seeing was not simply a static, single, visual phenomenon. Instead, it was a complex, moving, innerly seen experience that involved an almost sensory awareness of the sepia yellow that Vicky understood to convey the age of the picture, and an understanding of this innerly seen teacher as being an amalgam of her previous teachers, and a sense of “zooming in” such that the picture existed at a fixed point, with her inner seeing moving towards it. Thus, while Vicky’s inner seeing experiences are largely multiple, even her singular innerly seen phenomena are very complex.

## Sensory Awareness

Vicky experienced sensory awareness in 21 of her 29 samples (72%). Her sensory awarenesses were equally bodily and external (57% and 57% of her sensory awarenesses respectively), and these awarenesses were usually one aspect, if a quite complex one, of a simultaneous larger, multifaceted experience. We have seen three examples of sensory awareness above: the shapes of the bookstore racks in sample 2.3, her finger on the knurled volume control knob in sample 4.2, and the greenness of the orangutan inner seeing in sample 6.3. Sensory awareness will now be discussed in greater detail.

For example, in sample 7.2 Vicky had a bodily sensory awareness of itchiness on her back and was simultaneously innerly seeing her back from the top of her shoulder blades to the middle of her back, in the mirror. In this visual inner seeing, she could not see the mirror or her head, but she knew this to be an inner seeing of her back in the mirror, and the tattoo on her back was in the center of her awareness. She was especially focused in on the water in her tattoo, and it was the water area in the tattoo that was itching. This phenomenon was apprehended as knowing that the tattoo itself was itching, not just that the itch was in the water area of the tattoo. She also had a separate, simultaneous bodily sensory awareness of the awkward twistedness of her body as she reached for the itch. She had also had a separate, simultaneous perceptual awareness of the channel number on the TV screen, and was wondering what else was on TV, apprehended as a worded thinking “wonder what else is on,” which had the rhythm of being spoken but there was no inner sound to it, was not inner speech or inner hearing, and was only faintly in awareness. In summary, at the moment of the beep Vicky had a complex inner experience in which there were two separate, simultaneous bodily sensory

awarenesses (itchiness and twistedness), and an inner seeing, as well as a faint perceptual awareness and process of worded thinking.

While this example involved bodily sensory awareness, Vicky also had samples in which her sensory awareness was externally focused. For example, in sample 7.1, she had been watching TV but had withdrawn from paying attention to the plot at the moment of the beep and now had a sensory awareness of the orange color of the prison jumpsuit that the character on the TV screen was wearing. She also had a separate, not-particularly-vivid inner seeing of peanut butter in a large, metal, cartoon-like-in-its-size spoon, with a deep, round bowl and a bent, curved handle, about the size of an ice cream scoop. In this inner seeing, she could see a hand holding the spoon that she presumed to be her hand and could see the fridge and kitchen counter in the background of this inner seeing. Additionally, she had a separate, simultaneous thinking that she needed to get measuring spoons, which was apprehended as saying to herself, "I need to get measuring spoons." This inner speech was apprehended as being literally (rather than metaphorically) in the back of her head, in her own voice, but this inner speech was not particularly pronounced and seemed muted at the moment of the beep. She also had a separate, simultaneous thought about the discrepancy between the spoon in her inner seeing and the measuring spoons she needed to get, which was apprehended as paying attention to the size of the spoon in the image and knowing that the spoons in the image did not fit the needing to get measuring spoons. In summary, at the moment of the beep Vicky had one external sensory awareness, an inner seeing, inner speech, and an unsymbolized thought process about the discrepancy in spoon sizes.

## Unsymbolized Thinking

Vicky experienced thoughts that occurred without words, inner seeing, or other types of awareness (the phenomenon that we call unsymbolized thinking) in 10 out of her 29 samples (34%). These thoughts ranged from fairly simple and straightforward (6 of 10, 60%) to quite complex and multiple (4 of 10, 40%). For example, in sample 6.1, discussed in the multiplicity section above, Vicky had a straightforward unsymbolized thought of knowing the meaning of the word “monorail” that was one aspect of a larger, complex and multiple inner experience.

In sample 3.4 Vicky was watching her friend Sarah peel a pink label off of a green bottle, and had a sensory awareness of the pinkness of the label color and multiple separate, simultaneous related unsymbolized thoughts that expressed: When is Sarah going to hit the spot where the glue would leave a white spot on the bottle? I know it's not going to all come off. I wonder if Sarah's going to make it all the way. I know she's not. There's no way you can make it all the way. There's always that part that sticks. Is she going to take it all off? Is she going to start scratching at the white part or is she just going to leave it there? Is she even worried about it? Does she even care or is she just messing with the bottle? These thoughts were apprehended as occurring literally in the back of her head, although she was not paying particularly close attention to them at the moment of the beep.

## Inner Speech

Vicky experienced inner speech (inner words experienced as though she had spoken them) in 10 out of her 29 samples (34%). For example, in sample 6.2 she was looking for her foot pedal to turn on the light in her dark room, and was noticing that



everything was black (her foot, pants, the room, the pedal). This noticing was apprehended as a sensory awareness of blackness and simultaneously saying to herself “Oh that’s cool” (that everything is black) in her own voice, just as if she had said this aloud. She also had a separate, simultaneous inner seeing of her foot that was apprehended as appearing exactly like her actual foot feeling around for the pedal. She was also simultaneously thinking “where’s the light?” apprehended as innerly seeing these words written out and with quotation marks, overlapped over her imaged foot, in a single image so that she could see these individual words were large and white, and her innerly seen toes were sticking out over the words, and this imaged foot appeared exactly as her real foot that was feeling around with for the light pedal. This experience was typical of her inner speech experiences, which occurred exclusively in the context of being one aspect of a larger, more complex multiple inner experiences.

#### Interfering Phenomena

Vicky had four samples (4 of 29, or 14%) in which she was consciously attempting to interfere with, or disconnect from, an ongoing process related to food, weight, shape, appearance, or BN-related behaviors (bingeing or purging) at the moment of the beep. For example, in sample 1.2 Vicky had a gross feeling and was separately scared about gaining weight. The gross feeling was separately apprehended as a bodily sensory awareness of nausea deep and high in her stomach, underneath her rib cage, and a separate, simultaneous bodily sensory awareness of dull itching in the back of her throat that did not feel connected to the nausea, but that she also associated with the gross feeling. The scared of gaining weight feeling was simultaneously apprehended as a bodily sensation of her stomach hurting, of being elevated as though all of the scared

feelings were piled up at the top of her head, an inch or two inside her head. The scared feeling was partly in her stomach and partly in her head but not in between. This scared feeling also included a an interference in which she was not merely feeling the above sensations but also had simultaneous random, negative, overlapping, irrational thoughts about gaining weight rapidly running through her head and sitting jumbled inside the top of her head behind where her eyebrows end. These thoughts were apprehended as being scrolled out in visually seen words, like a ticker tape in her head, but she was unsure exactly what words were in her awareness at moment of the beep. Thus, at the moment of the beep, she had two simultaneous bodily sensory awarenesses, and an interference process that was apprehended as a thought/feeling of fear and multiple overlapping thoughts.

### Worded Thinking

Worded thinking experiences, in which Vicky experienced words without the direct experience of innerly speaking, hearing, or seeing them, occurred in 3 of her 29 samples (10%). For example, in sample 6.1 (discussed in detail in the multiplicity section above), she had six inner seeings, one sensory awareness, one unsymbolized thought, and a worded thought of needing to walk fast to find a taxi, with the words “walk fast, find taxi” in her awareness at the moment of the beep. She was clearly aware of these words, but they were not innerly seen, nor in inner speech, nor in inner hearing. She just knew these words to be present at the moment of the beep.

## Thought/Feelings

Vicky had three samples (3 of 29, or 10%) in which cognitive and affective elements were fused so that thoughts were perceived affectively, affect was perceived cognitively, or elements of both were difficult or impossible to distinguish, a phenomenon we termed thought/feelings. For example, in sample 2.1 Vicky was pushing open the door of the library, and at the moment of the beep she was simultaneously noticing that the door she was pushing was heavy, and noticing that the automatic door beside her was open, and knowing that she could have gone out that door. This “noticing” included the ideas that she could have gone out the other door or could have avoided the heavy door, that she could have saved herself the hassle, which were apprehended as multiple thought/feelings, not in words, but all smashed together, which if in words would have been “why did I do it,” “could have avoided it,” “why bother with the hassle.” These multiple thought/feelings were simultaneously apprehended as multiple thoughts all smashed together, intertwined with a feeling of disappointment that was apprehended as a subtle feeling of reprimanding herself and a bodily feeling of her shoulders dropping. At the moment of the beep she also had a separate, simultaneous bodily sensory awareness of pushing against the heavy door, and that she had to give more force to it, and an external sensory awareness of the bright blueness of the sky reflected in the bottom of the doorway. Additionally, she had a separate, simultaneous unsymbolized thought that was not in words, but if it was would be “wow it’s nice outside”. She was also innerly seeing the word “UGH” in neutral grey on a grey background, with spiky edges, appeared in big, 3-dimensional, cartoon-like lettering, which took up most of her head space, occupying the size of her forehead. Therefore, at

the moment of the beep, she had complex, multiple thought/feelings, two sensory awarenesses, an unsymbolized thought, and an inner seeing experience.

### Thought/Sensory Awareness

Vicky had three samples (3 of 29, or 10%) in which cognitive and sensory elements were blended together so that thoughts were perceived sensorially, sensation was perceived cognitively, or elements of both were difficult or impossible to distinguish. We call this failure to distinguish thoughts and sensations thought/sensory awareness. For example, in sample 5.2 Vicky was talking on the telephone with her boyfriend, making fun of him about losing so many bracelets, and was saying aloud, “Oh, you’ve lost so many bracelets!” with the beep coming during the word “bracelets.” This talking seemed to be “just coming out,” and was not particularly salient in her awareness. She was also simultaneously innerly seeing how he lost it that was apprehended as an inner seeing of a basketball court, consisting of a slab of concrete with dirt and rocks around it, and with his bracelet was sitting on a big rock on the side of the court. The bracelet was the main focus of her attention; it was seen to be bigger, thicker, and shinier than the real bracelet actually was. She could see other gold jewelry on the rock, but his bracelet was much bigger and brighter. She could also see the posts and backboard of the basketball goal, and people in the background, but they were too far away to make out any details. The imaged scene took place at dusk, and she had a sensory awareness of the blue-black and hazy dusk color of the background of the inner seeing. In real life she was making fun of her boyfriend, laughing, but at the same time there is part of her that is aware that he might make fun of her too because she had lost jewelry, too. This was apprehended as a simultaneous thought/sensory awareness of her body being tensed up, as if she were

bodily twisting away in the expectation that he would say something bad about her. That thought/sensory awareness process was happening in a thin space above and around the three dimensional inner seeing of the basketball court, but was not itself an inner seeing experience. This expectation that he would say something bad about her was not experienced affectively, but instead was an intertwining of sensory and cognitive phenomena with no directly experienced affect.

### Feeling

In the thought/sensory awareness section above, an experience which many may have experienced affectively was experienced in an entirely sensorily and cognitively intertwined manner without affect. In fact, affective experiences were relatively rare for Vicky, occurring in only 2 of her 29 samples (7%), and when these feelings did occur they were one small aspect of a much larger, multiple experience. For example, in sample 4.2 (discussed in detail above in the inner seeing section), Vicky had a feeling of anxiousness that was apprehended as a bodily sensation of a squeezing knot in the top of her stomach, something like a cramp, and tightness in her shoulders that was one aspect of a larger complex multiple experience including one clear, singular inner seeing of a word, 6 to 10 separate, simultaneous hazy visual inner seeings of streamers, an inner speaking, and a bodily sensory awareness all occurring simultaneously at the moment of the beep.

### Happening Of Speaking

Vicky had two “happening of speaking” experiences (2 of 29, or 7%) in which there was no focus at all on the particular speaking that was occurring; rather the

speaking appeared to be happening automatically without being actively directed by her. We have seen one example above: in sample 5.2, discussed in the thought/sensory awareness section, Vicky was saying to her boyfriend, “Oh, you’ve lost so many bracelets!” The words were just happening—coming out on their own, as if unguided by Vicky. In the other instance, in sample 3.1 Vicky had three fingers on her friend’s wrist as she had learned to do in massage school to reduce nausea. She was saying to her friend, “If you have a hangover you can press here,” but this saying was on auto-pilot, not entering her awareness at all. She was, in fact, speaking at the moment of the beep, but was not actively directing the speech; instead, it was coming out of her automatically. Her awareness was primarily occupied with an inner seeing of her Chinese medicine teacher at that massage school. In this experience she was innerly seeing, her teacher standing in front of a whiteboard, and this inner seeing picture had a white border around it and was seen against a black background. The inner seeing was seen to be receding away from her to the left side so that more of the black background was getting uncovered as the picture receded. Vicky also had a separate, simultaneous inner seeing of the word “hangover” in block letters, soft lavender color, no background, and had a separate, simultaneous inner seeing of the number “3” in text, lighter lavender, with the top side of the “3” being flat, rather than curved (“3”) or bubbled. These three inner seeings were apprehended as separate and overlapping, so that the teacher image was seen first, then the hangover, then the 3 in a somewhat simultaneous, overlapping, circular motion. She also had a separate, simultaneous thinking about massage school, and a separate, simultaneous thought about her hands being far bigger than her friend’s. These thoughts were not in words, were apprehended as being in the back of her head,

and were only slightly in awareness. She was also separately and simultaneously looking at her fingers on his wrist, but this was only slightly in awareness.

## Discussion

Vicky's 29 collected samples gave us insight into her complex, multiple inner world, which was both unique and strongly consistent with previous findings of the inner experience of women with BN. The high level of sensory awareness and multiplicity of her overall experience, while uncommon among non-bulimic individuals, are the norm for women with BN that we have sampled. Vicky's lack of differentiation between affect and cognition, and between sensory awareness and cognition, as well as her conscious interference with ongoing process related to food, weight, shape, appearance, or BN-related behaviors, and happening of experiences are also relatively common in our sampled population.

While Vicky did demonstrate a level of unsymbolized thinking and inner speech that was somewhat higher than the majority of our previously sampled bulimic population, it is not markedly higher. However, the strikingly high degree of inner seeing experiences, most of which were multiple or complex, were unique to Vicky and were less common among other individuals with BN that we have sampled. We did not search for multiplicity; we simply asked "what was in your awareness at the moment of the beep?" For Vicky, the answer to that question was most commonly that what was in her awareness was profoundly multiple in nature and often visual. What is "normal" for Vicky is an inner world populated by an intensely high number of simultaneous experiences, in some cases up to 30 or 40 separate, simultaneous visual experiences with additional, simultaneous non-visual phenomena in a less than one second time frame.

When we asked Vicky if this was overwhelming for her, she appeared quizzical. It is not overwhelming but absolutely normal for her. In fact, it was the relatively simple, singular experiences that were unusual and seemingly insignificant for her.

While Vicky's multiple experiences, inner seeings, sensory awareness, fusing of affect and cognition, fusing of sensory awareness and cognition, interfering phenomena, happening of experiences, and relatively rare directly experienced affective experiences may interact with her bulimic symptomatology, there is no way of determining the potential directionality of this interaction. There was nothing in the current BN literature that examines how this unique complexity may impact bulimic symptomatology, but it is likely that an increased understanding of these potentially interacting factors could make an important contribution to our understanding of the development and maintenance of bulimic symptomatology. Vicky's complex, multiple inner world demonstrates the need to carefully set aside presuppositions so that we can reach the realization that it is in fact possible to simultaneously experience far more than we may have previously thought, and that this multiplicity may have something important to tell us about the nature of inner experience in women with BN.



## CHAPTER 8

### SUSAN

Susan was a 21-year-old university student at the time these samples were collected. She met the DSM-IV-TR (APA, 2000) criteria for BN and scored in the 39th percentile on the bulimia subscale of the Eating Disorders Inventory-3, placing her in the elevated clinical range. Susan volunteered for the study after seeing the study advertisement on the psychology subject pool website. She considered herself to be actively bulimic and was not in treatment at the time these samples were collected. A total of 21 samples were collected and discussed extensively over four sampling days during an approximately 9-week period. Susan withdrew from the study due to travel commitments before the ideal number of samples were collected but gave her permission for the results of her samples to be used in the study.

Susan's inner world was complex, with overlapping, simultaneously occurring phenomena. While these overlapping phenomena were often directly in her experience, she also had several instances in which her attention was divided between directly apprehended phenomena and slight, ongoing, present-as-"tails"-but-not-directly-experienced phenomena. Her inner world was frequently sensory, and her sensory awareness was almost exclusively bodily apprehended. Susan's thinking was generally straightforward, but she sometimes had multiple thought processes or thoughts that were

ongoing, so that the “tails” of thoughts were present in her awareness but were not being directly thought at the moment of the beep.

Susan’s feelings were generally ambiguous in that they were not clearly felt, but were instead sensed but not directly experienced, or were intertwined with sensations and thoughts, or were multiple, conflicting emotions that she was unable to differentiate between. However, she did sometimes (38% of the time) have feelings that were clear, single, and straightforward. Susan rarely had samples in which she was consciously attempting to control or interfere with ongoing phenomena related to weight, shape, food, appearance, or BN-related behaviors, but when this did occur, it did not appear to be qualitatively distressing to her.

### Fragmented Multiplicity

Susan experienced fragmented multiplicity of experience in 12 of her 21 samples (57%). Her multiple experiences included from two to eight separate, simultaneous experiences at the moment of the beep and happened in two distinct ways: as multiple, separate but simultaneous straightforward phenomena that were directly experienced (7 of 12, 58%); and as ongoing awareness, which was clearly apprehended but only indirectly experienced (5 of 12, 42%).

In an example of her directly experienced multiple experience, sample 3.2, Susan was staring at the piles of her psychology notes in front of her and was trying to determine the most efficient way to organize her psychology notes. This was apprehended as complex, tumbling unsymbolized thought processes of separate and simultaneous multiple options including trying to figure out how to file them, what to do,

if they should be organized by dates, academically, by subject, chronologically, or if she should not bother doing it at all.

In an example of her indirectly experienced multiple experience, sample 3.1, Susan had a bodily sensory awareness of being cold, which was simultaneously apprehended as a bodily shivering and a stinging sensation all over the surface of her body, a sensory awareness of her teeth chattering, and of goose bumps halfway up the skin on both of her arms, and of tightness in her jaw and shoulders. She was also in the process of standing up to get a sweater, apprehended as just actively engaged in doing this, without anything particular in her awareness about this. She also had a slight perceptual awareness of her computer screen on which she was looking up a number on the screen to call her professor. She also had a separate, simultaneous ongoing thought process that she had to remember to go back to looking for this number when she returned from getting the sweater. Thus, while she was directly apprehending this complex bodily sensation of coldness and the perceptual awareness of her computer screen, she was not directly thinking the thought of needing to remember to return to look for the number, but was instead holding this thought indirectly but actively in her awareness so that she could return to thinking it once she retrieved the sweater. Hurlburt (1993a) has referred to this kind of holding a thought in awareness as a “tail” of a thought.

#### Sensory Awareness

Susan experienced sensory awareness in 11 of her 21 samples (52%). We have already seen one example of sensory awareness above: the bodily sensory awareness of coldness in sample 3.1. Susan’s sensory awareness was primarily bodily (10 of 11, 91%)

but she did have one sample (1 of 11, 9%) that included both bodily and external sensory awareness. She did not have any sampled instances in which her sensory awareness was exclusively externally focused.

Susan's bodily sensory awareness ranged from single, straightforward bodily sensory awareness (7 of 11, 64%) to relatively complex multiple bodily sensory awareness (4 of 11, 36%). In an example of single, straightforward bodily sensory awareness, sample 2.1, she was tapping an improvised rhythm on the corner of a box under her desk with her foot. This improvised rhythm making was in sync with a song she was listening to online. She was also reading an article online, skimming along on auto-pilot to cross-reference facts for a speech project she was working on.

In an example of multiple bodily sensory awarenesses, sample 1.4, Susan had a bodily sensory awareness of not being able to see out of her right eye, and a simultaneous unsymbolized thought process of needing to do something to adjust in order to see out of her right eye. She also had a separate, simultaneous bodily sensory awareness of pain in her neck and back and a separate, simultaneous undifferentiated bodily sensory awareness of her head aching. At the moment of the beep she was also drawing parallelograms for her math homework, but this was completely outside of her awareness. Instead, she was just focused in on the three bodily sensory awarenesses and one unsymbolized thought.

In her one example that included both bodily and external sensory awareness, sample 1.5, Susan was sensing a dry, pasty thirstiness in her mouth. She was also actively reaching for her water bottle and this action was in her awareness. She also had a separate, simultaneous external sensory awareness of the song she was listening to on the radio. She also had a feeling of hatred for the guy on *eBay* who had threatened to sue her,

and this was apprehended as an ongoing feeling. She also had a separate, simultaneous unsymbolized thought process of wondering why her class grades weren't posted online yet.

### Unsymbolized Thinking

Susan experienced unsymbolized thinking in 10 of her 21 samples (48%). We have already seen four examples of unsymbolized thinking above: the multiple thoughts about her psychology notes in sample 3.2, the thought that she had to remember to go back to looking for a number in sample 3.1, the thought of adjusting for her eye in sample 1.4, and the thought about grade posting in sample 1.5. Her unsymbolized thoughts occurred in three primary ways: as single thought processes (6 of 10, 60%), as multiple thought processes (2 of 10, 20%), and as ongoing sensed but not directly experienced thought processes (3 of 10, 20%).

In an example of her single unsymbolized thinking, sample 4.4, Susan was standing in front of her suitcase thinking that she did not want to pack; there were no symbols or any other features in her awareness.

We have already seen one example of her multiple unsymbolized thinking in sample 3.2. In another example, sample 4.2, Susan was at the department store perfume counter, and said out loud "I feel really bad asking her for help" to her friend (referring to asking the perfume counter clerk for help the second time). She also had an ongoing sense of dissonance about an unexperienced feeling of guilt and mild aggression/frustration toward the clerk. She apprehended this dissonance as being aware that these feelings were ongoing and in conflict with each other, without the feelings themselves being directly in her experience other than as a mild bodily discomfort experienced

separately as tightness in her chest and a slight churning in her stomach. She was unable to differentiate if this sensation was guilt or aggression/frustration. She also had a separate, simultaneous multiple unsymbolized thought process that the clerk should be helping her; that the clerk was just folding boxes; that she shouldn't have to ask for help; and that she felt bad about pulling the clerk away from what she was doing. Thus, at the moment of the beep, she appeared to have an experience in which there may have been guilt, frustration, and aggression but the feelings themselves were underground so that it was qualitatively difficult to know if this was an affective experience, a sensation, both, or neither for her at the moment of the beep, but there was an experienced sense of dissonance and bodily discomfort related to this meta-feeling.

In an example of her ongoing sensed but not directly experienced unsymbolized thinking, sample 4.1, she was brainstorming what to buy her brother for his birthday. This was apprehended as an ongoing sensed unsymbolized thought process in which she was not thinking of any specific gift items, but was also not thinking about nothing. Instead, she experienced a string of ongoing cognitive waitings for a specific idea about what to get him to emerge.

### Feelings

As discussed in the introduction to the present chapter, Susan's feelings were commonly ambiguous and were less commonly clear and straightforward. She had some degree of emotional experience in 8 of her 21 collected samples (38%). We have already seen one example of her feelings above: her feeling of hatred in sample 1.5. We have also seen one sample (4.2 above) in which her feelings were so underground that it was not

possible to determine if they were felt, sensed, both, or neither at the moment of the beep other than as producing an experienced mild bodily discomfort.

Susan's feelings were clear, single, and well-differentiated on only three occasions (3 of 8, 37.5%). The remaining five feeling samples (62.5%) were qualitatively more complex. This complexity did not follow a distinct pattern, but instead reflected an emotional world that was relatively ambiguous. For Susan, feelings were less commonly clear emotional events, and were instead sometimes sensed but not directly experienced; sometimes ambiguous and poorly defined, and sometimes multiple, intertwining, conflicting experiences. Her straightforward feelings will be discussed first, followed by examples of her relatively more complex emotional world.

In an example of her single, clear, differentiated feelings, sample 2.5, Susan was in her speech class and was reading a sentence in a magazine, apprehended as actively reading along somewhat slowly to herself, in which she was just actively engaged in reading without what she was reading being voiced or symbolized in any way. At the moment of the beep, a student in her class was giving a speech; he said a word just as she had read the same word. At the time of the interview, she couldn't remember the exact word but was sure that this word was in her awareness at the moment of the beep. She was not particularly paying attention to the entire speech he was giving but her attention had caught on this word. She also had a simultaneous single, differentiated feeling of excitement in reaction to this having heard and read the same word at exactly the same time, apprehended as a bodily sensation of a downward flop in her stomach.

While the above sample demonstrated that she was capable of having clear, straightforward feelings, the majority of her feeling samples were far less well defined. For example, in sample 4.2 (discussed in its entirety in the Unsymbolized Thinking

section above), Susan had a sense of dissonance that was ongoing at the moment of the beep and was related to her unexperienced conflicting feelings. She was not directly feeling guilt or anger or mild aggression/frustration, but was instead sensing a dissonance related to these unexperienced conflicting feelings. Thus, at the moment of the beep, she was not actually directly *feeling* anything. Instead, she had a sensed dissonance and mild bodily discomfort related to these unexperienced, conflicting feelings.

On two occasions on the first sampling day (samples 1.1 and 1.5 respectively), her feelings were also quite ambiguous. However, it is difficult to know if this was due to the relatively ambiguous nature of her emotional inner experience or if it was due to a lack of familiarity with the sampling task on the first day. In another example that is relatively ambiguous, sample 2.3, Susan had a sensory awareness of simultaneously tapping her toe in time to the rhythm of the song she was listening to, and trying to inhibit her foot from tapping at unnecessary times outside of the rhythm. She also had a bodily sensory awareness of clicking her right thumbnail against her teeth, and had a slight feeling of satisfaction related to the sensation of her thumbnail against her teeth. This experience was relatively ambiguous in that, while she identified this satisfaction as an emotional reaction to the sensation of her thumbnail, it appeared to be intertwined with the sensation itself rather than being a separate, simultaneous, clearly experienced emotion. Thus, in this sample, the ambiguity in her emotions may have been due to the boundaries between sensation and emotion being relatively indistinct for her.

Susan also had one sample in which her emotional ambiguity was due to experiencing multiple, simultaneous, conflicting, not clearly differentiated emotions. This occurred in sample 3.4, in which she had lost track of her friend who was visiting her and had a complex flood of six to eight separate, simultaneous feelings including concern,



shock, confusion, humor but she was unable to exactly distinguish between all of these emotions at the moment of the beep. She also had a separate, simultaneous slight unsymbolized thought process about him being missing. Thus, at the moment of this beep she was *not* separately and simultaneously feeling concern, and then shock, and then confusion, and then humor, but was instead experiencing all of these simultaneously and was unable to differentiate between them although she knew that each of these emotions were contained within the complex flood.

#### Thought/Feelings

Susan occasionally had samples in which her feelings were intertwined with and undifferentiated from cognition. She had these thought/feelings in 3 of her 21 samples (14%). For example, in sample 1.3, Susan had a bodily sensory awareness of her nose running. Simultaneously, she was innerly saying to herself, “are we drinking at Fred’s tonight?” in her own voice, just as if she had said it aloud. This inner speech was apprehended as rehearsing saying this to herself in preparation to say it out loud to her boyfriend. She also had a separate, simultaneous thought/feeling of annoyance related to her boyfriend’s trying to ask her about her Adderall. This annoyance was apprehended as a simultaneous feeling of annoyance in her head and an intertwined thought process of recognizing that this was what he was trying to ask her about. She also had a separate, simultaneous ongoing thought/feeling of annoyance that was apprehended as an annoyance process that was very familiar to her, in which she was beginning to feel annoyed and had an intertwined, simultaneous thinking that she needed to be selective about what she would allow herself to get annoyed about.

### Interfering Phenomena

Susan had Interfering Phenomena in 2 of her 21 samples (9%). For example, in sample 1.2, she was smelling her boyfriend's French fries, a powerful sensory awareness, and had a simultaneous thought/feeling of annoyance about her boyfriend's trying to force her eat them. This thought/feeling was apprehended as a conflicting, self-reflexive, interfering thought and feeling process about how good they smelled and how irritating it was that he was trying to force her to eat them.

### Nothing in Awareness

Susan had nothing in her awareness at the moment of the beep in 2 of her 21 samples (9%). For example, in sample 4.3 she was sitting outside in the grass, but had absolutely nothing in her awareness, not her surroundings, not anything internally. She was simply blank at the moment of the beep.

### Inner Speech

Susan had inner speech in only 1 of her 21 samples (5%). We have already seen this example of inner speech above: in sample 1.3. In this sample, she was innerly saying to herself, "Are we drinking at Fred's tonight?" in her own voice, just as if she had said it aloud. She apprehended this inner speech as a rehearsal in preparation for saying this aloud to her boyfriend. She also had a separate, simultaneous bodily sensory awareness of her nose running; a separate, simultaneous thought/feeling of annoyance; and a separate, simultaneous ongoing thought/feeling that she was beginning to become annoyed, and needed to be selective about what she would allow herself to become annoyed by.

## Discussion

Susan's inner world was characterized by fragmented multiplicity; 42% of the time, this multiplicity included ongoing phenomena that were clearly apprehended but only indirectly experienced. She also had frequent sensory awareness, which was primarily bodily apprehended. Her sensory awareness was generally single, but she occasionally experienced quite complex multiple bodily sensory awareness. Susan's unsymbolized thinking was also generally single, but was occasionally multiple, and sometimes included thoughts which were ongoing and sensed but not actively and directly thought at the moment of the beep. Susan had single and clearly differentiated feelings less than half of the time (38%). Instead, her feelings were generally ambiguous in that they were sensed but not directly experienced, or intertwined with sensations or thoughts. On one occasion, she had a flood of multiple, intertwined, conflicting emotions that she was unable to distinguish between. She also had occasional experiences in which her feelings were undistinguishable from thoughts. Susan rarely had Interfering Phenomena, and when this occurred it did not appear to be particularly distressing for her.

Overall, Susan's inner world was fragmentedly multiple. She frequently had ongoing phenomena in her awareness that were clearly sensed but not directly experienced, as though it were being consciously held in her awareness until she would return to actively engage with it (the phenomenon Hurlburt (1993a) and Doucette and Hurlburt (1993) called "tails"). While most non-bulimic individuals would have clearly apprehended inner experience, Susan had both clearly apprehended inner experience, and experience which was being held in suspension, conscious and clearly apprehended, but only indirectly experienced at the moment of the beep. Susan's multiplicity, sensory

awareness, feelings, interfering phenomena, and pattern of sensed ongoing experience is strongly consistent with the inner experience of our other participants with BN. While it is likely that these characteristics of her inner experience interact with her bulimic symptomatology, the exact nature of this interaction remains unknown. Susan also had high levels of comorbid depression, anxiety, and ADHD that could be speculated to contribute to the complexity of her inner world. While comorbid mood and anxiety disorders are very common in individuals with BN, there is relatively little research on the potential impact of ADHD symptoms on bulimic symptomatology. However, this particular constellation of comorbidity did not appear to make her phenomenological inner world significantly different from the other individuals with BN whom we have sampled.

## CHAPTER 9

### SAMANTHA

Samantha was a 20-year-old university student at the time these samples were collected. She met the DSM-IV-TR (APA, 2000) criteria for BN and scored in the 39th percentile on the bulimia subscale of the Eating Disorders Inventory-3, placing her in the elevated clinical range. She considered herself to be bulimic and was not in treatment at the time these samples were collected. Samantha volunteered for the study after reading the study advertisement on the university psychology subject pool website. A total of 36 samples were collected and discussed extensively over seven sampling days during an 8-week period.

Samantha's inner world frequently included overlapping phenomena, and was strongly visual. While her inner seeing was generally clear, it was sometimes self-focused and distorted, so that she innerly saw herself as far larger than she actually is. Her inner world also commonly included thinking. While her thinking was usually straightforward and unsymbolized, it was sometimes multiple. Although this was quite rare in her inner experience, her thoughts were occasionally worded. When Samantha talked to herself, which was quite frequently, her inner speech was clear and straightforward.

When Samantha had feelings, which was relatively frequently, it was markedly difficult for her to describe exactly how she experienced them. Although she had frequent feelings, she less commonly had instances in which her feelings were undistinguishable

from her thoughts. Samantha rarely consciously interfered with ongoing processes related to food, weight, shape, appearance, or BN-related behaviors (bingeing or purging), however, when this did happen it was generally distressing for her. Her inner experience was also markedly non-sensory. In fact, she had only one sensory awareness experience in all of her collected samples.

### Inner Seeing

Samantha experienced inner seeing in 16 of her 36 samples (44%). Her inner seeing experiences were predominantly (13 of 16, 81%) clear, single, and accurate. However, she had three samples (3 of 16, 19%) in which her innerly seen images were self-focused, inaccurate, and inconsistent with reality. In an example of her single and accurate inner seeing, in sample 2.1 Samantha had been thinking about what she was going to pack for Thanksgiving dinner, and at the moment of the beep she was innerly seeing herself wearing a black and white polka dot dress. This was a clear, still inner seeing of herself sitting at the Thanksgiving dinner table with other people around. She was also simultaneously innerly saying to herself something like “Oh, I could bring that dress,” in her own voice, but she wasn’t sure of the exact words at the moment of the beep.

In an example of her self-focused inaccurate inner seeing, in sample 6.4 Samantha was unsymbolizedly thinking that she could lose some weight and was interfering with this ongoing process by innerly seeing herself as appearing far larger than she actually is in reality. In this innerly seen image, her body was bigger and heavier all over, and she was seeing herself from head to toe, from the front, wearing jeans and a black sweatshirt. In this inner seeing Samantha was standing up with her hands at her sides, and she saw

herself straight on. She also had a separate, simultaneous thought/feeling of sadness in her body and head that was clearly in her experience at the moment of the beep but very difficult for her to describe.

### Fragmented Multiplicity

Samantha experienced fragmented multiplicity of experience in 16 of her 36 samples (44%). Her multiple inner experiences generally included two to four separate, simultaneous inner experiences at the moment of the beep. For example, in sample 3.3 Samantha was feeling guilty because she had eaten a piece of cheese, apprehended as a somewhat difficult to describe heavy sensation in her upper body and arms inside her body. She was also simultaneously innerly seeing an inaccurate image of herself, her whole body, from the front, a still, color image seen from an external perspective as if she were looking at herself from the front. The seen Samantha was wearing a black and white striped shirt and a black jacket and was not an accurate picture of herself in that she saw her body as fatter than she actually is. She also had a simultaneous but less central to awareness unsymbolized thought process that she could have done without the piece of cheese she had just eaten, but this thought process was mostly captured by her inaccurate inner seeing of herself. However, this inner seeing did not entirely capture the “could have done without the piece of cheese” thought-there was still a small part of it left over that was apprehended as this slight unsymbolized thought process. She also had a separate, simultaneous sad/uncomfortable feeling that was undifferentiated and far less salient to her than her guilt feeling but was still in her awareness at the moment of the beep. Therefore, she had a feeling of guilt, an inaccurate inner seeing, a slight unsymbolized thought process, and a separate sad/uncomfortable feeling, all related to an

ongoing feeling of guilt and an inaccurate seeing of herself as a means of interfering with this ongoing guilt about having eaten a piece of cheese.

### Unsymbolized Thinking

Samantha experienced unsymbolized thinking in 14 of her 36 samples (39%). We have already seen two examples of unsymbolized thinking above: the thought that she could lose weight in sample 6.4, and the thought that she could have done without cheese in sample 3.3. Samantha's unsymbolized thinking was predominantly single (10 of 14, 71%) but was occasionally multiple (4 of 14, 29%). In an example of her single unsymbolized thinking, in sample 3.1 Samantha was painting her nails, and had an unsymbolized thought that, if it were in words, might have been "don't get it on your fingers."

In an example of her multiple unsymbolized thinking, in sample 1.1 Samantha had received a text message from her boyfriend earlier that he had a family emergency and at the moment of the beep she had an unsymbolized thought process of wondering how he was doing that was apprehended as going through a series of overlapping possibilities of how he was doing and what had happened. At the moment of the beep she was aware of a thought process of being worried about him in that she was thinking multiple worrisome thoughts, and thinking about him crying. However, she was not feeling worried, but only had this thought process with nothing else in her awareness.

### Inner Speech

Samantha experienced inner speech in 12 out of her 36 samples (33%). We have already seen one example of inner speech above: in sample 2.1. Samantha's inner speech



was exclusively clearly apprehended, straightforward, and directly related to what was happening in her immediate environment. For example, in sample 4.1 she was studying for a psychology test and was looking over the section on phobias. At the moment of the beep, she was reading a list of phobias and was simultaneously innerly saying “Brantophobia, the fear of storms,” to herself, in a low tone, just as if she had said it aloud, with nothing else in her awareness.

### Feelings

Samantha experienced feelings in 12 out of her 36 collected samples (33%). Her feelings were generally single (8 of 12, 67%) but were occasionally multiple (4 of 12, 33%). We have already seen one example of feelings above: her guilt and sad/uncomfortable feeling in sample 3.3. Samantha’s feelings were relatively more common in inner experience than several our other participants with BN but were consistent with our other participants in terms of being clearly apprehended but undifferentiated and markedly difficult for her to describe.

In an example of single feelings, in sample 2.2 Samantha remembered she forgot to call a friend back and was saying “Oh shit! I forgot to call him back” out loud. She also had a simultaneous feeling of guilt, which was apprehended as a sensation in her head and to a somewhat lesser degree in her body, but it was very difficult for her to describe exactly how these feelings were apprehended other than that it was a guilty feeling in her head and body that was clearly apprehended but difficult to describe in detail.

In an example of multiple feelings, in sample 5.5 Samantha was looking at apartments to rent on line, and was seeing the prices in the list of apartments on the

computer. She also had a simultaneous unsymbolized wondering where she would be able to find an affordable place that was not in a bad location. She also had two separate, simultaneous feelings, one of being stressed and one of being overwhelmed/worried. The stressed feeling was apprehended as a bodily heaviness in her chest, arms, torso and back, on the surface of her body, both in the front and back. The overwhelmed and worried feeling was apprehended as a feeling in her head that was clearly apprehended but undifferentiated and very difficult for her to describe.

#### Thought/Feelings

Samantha had experiences in which her feelings were both undifferentiated and intertwined with cognition so that her thoughts and feelings were impossible to distinguish. These thought/feelings occurred in 3 out of her 36 samples (8%). We have already seen one example of thought/feeling above: the sadness thought/feeling in sample 6.4. In another example of thought/feeling, sample 7.1, Samantha was at work and innerly saying to herself, in her own voice, “I hope I’m not getting sick” just as if she said it aloud. She also had a simultaneous very faint thought/feeling of stress in her head associated with hoping that she was not getting sick.

#### Interfering Phenomena

In 5 out of Samantha’s 36 samples (14%), her inner experience was engaged in consciously attempting to interfere with, or disconnect from an ongoing process related to food, weight, shape, appearance, or BN-related behaviors. We have already seen two examples of this above: in her weight-focused phenomena in sample 6.4; and her complex reaction to having eaten cheese in sample 3.3.

In another example, in sample 4.2 Samantha had a thought/feeling of wanting to go make herself throw up, apprehended as a thought process that she would feel happier if she threw up and a simultaneous, intertwined slight feeling of unhappiness, that was apprehended in her head, and understood as her being generally unhappy with her body. This thought/feeling was clearly apprehended at the moment of the beep but very difficult for her to describe. This thought/feeling, although identified as “unhappiness” had no experientially felt valence; that is, it was neither negative nor positive. She also had a separate, simultaneous bodily sensory awareness of nausea as though she were going to vomit, but the sensation of nausea was a minor part of her experience at the moment of the beep. She also had a separate, simultaneous inaccurate inner seeing of herself standing sideways with a different, thinner body, seen from the head to the knees, but appearing thinner than she actually was, and wearing a black dress. Therefore, she had a thought/feeling that she would be happier if she vomited and a slight feeling of unhappiness that was present in her awareness but was not apprehended as having either a particular positive or negative valence, as well as a slight sensory awareness, and an inaccurate inner seeing experience all occurring simultaneously at the moment of the beep.

### Worded Thinking

Samantha had worded thinking in 2 of her 36 samples (5%). In one of these, sample 5.3, her worded thinking was clear and fully articulated. In this sample, Samantha was making a list in her head of everything she had to do and was thinking about finals. Before the beep she had been making a sequential mental list of everything she had to do. At the moment of the beep she was still in the process of making this sequential list and

was saying in inner speech, “Oh! And finals, too, on top of everything” in her own voice, in her head in an exasperated tone. The process of making a list in her head was apprehended as listing in words everything she had to do. The words in this list were clearly apprehended, but were not spoken nor heard nor seen. She also had a separate, simultaneous head and bodily feeling of stress, a heavy, weighty pressure on her shoulders, chest, back, and upper body. This bodily sensation of stress was simultaneously apprehended as being in the front and back, heaviness both on the surface and deeper down, and in her head. However, it was somewhat difficult for her to express how this feeling in her head other than that it was a feeling of being stressfully overwhelmed.

In her other worded thinking sample, 7.4, her experience was only partially worded. In this sample, Samantha was making a list of things to do and at the moment of the beep she was thinking about what homework assignments she needed to complete. This thought process included thinking of the paper she needed to write and of the extra credit that was due the next day that she would have to complete that night. Some of these thoughts were in words, concepts, and images. The paper part of this thought process was apprehended as an inner seeing of her computer screen. The extra credit part was apprehended as an understanding of the concept of extra credit, and also simultaneously apprehending the actual words “extra credit” and “tomorrow,” but it was difficult for her to describe exactly how these words were apprehended. She also had a separate, simultaneous feeling of stress that was apprehended as a heavy sensation more on the surface but also deep down on her shoulders and chest, front, and also a heavy sensation in her head that was somewhat difficult for her to describe but made her feel cluttered in her mind. All of these things were simultaneously ongoing in her mind, but at

the moment of the beep the paper, extra credit, and stress were the entirety of the clutter in her inner experience.

### Inner Hearing

Samantha innerly heard something in two of her 36 samples (5%). For example, in sample 3.6 she was hearing a song in her head and was singing along to it out loud. In her other inner hearing sample, 6.5, Samantha was innerly hearing the chorus of the song “Welcome to the Black Parade” in her head, just as if she were listening to the CD externally.

### Sensory Awareness

Samantha experienced bodily sensory awareness in only 1 of her 36 samples (3%). We have already seen her one example of sensory awareness above: the nausea in sample 4.2 in the interfering phenomena section above. Sensory awareness will now be discussed in greater detail. Samantha had markedly fewer sensory awareness experiences than our other participants with BN. In fact, while she only had one sensory awareness sample, the sensory awareness that she experienced in this sample was in itself only slightly in her awareness. To reiterate, in sample 4.2 she had a thought/feeling that she would be happier if she threw up, an inaccurate seeing of herself, and a simultaneous slight bodily sensory awareness of nausea as though she were going to vomit but the sensation of nausea was a minor part of her experience at the moment of the beep.

## Discussion

Inner seeing and fragmented multiplicity were the most salient aspects of Samantha's inner experience. Her inner seeing, although generally accurate, was occasionally distorted in a manner consistent with her body-image distortion. Her multiple samples, while still fragmented, contained two to four simultaneous inner experiences, making them less fragmentedly multiple than the inner experience of our other participants with BN (but still much more fragmented than most nonbulimic samples). Her unsymbolized thinking was generally single but occasionally multiple; and she occasionally had completely or partially worded thoughts. Her inner speech was generally clearly apprehended and directly related to her immediate environment. When Samantha experienced feelings, they were generally single but occasionally multiple, and were always clearly in her experience at the moment of the beep but markedly undifferentiated and very difficult for her to describe. Occasionally, her feelings were intertwined with thoughts. While Samantha had interfering phenomena in only 14% of her samples, when this did occur it was qualitatively distressing to her on all but one occasion. Additionally, all but one of her interfering phenomena samples were clearly and directly related to BN symptomatology, such as experiences of guilt about eating, seeing herself as far larger than she actually is, feeling guilty about not being at the gym, thinking she would be happier if she threw up, and thinking she could lose weight. While our other participants had more variable interfering phenomena samples, Samantha's sample content in this regard appeared to be far more directly related to her bulimic symptoms.

Overall, Samantha's inner experience was clearly visual, fragmented, multiple, and emotional. Although inner seeing was salient in her awareness, what she sees was not

always an accurate representation of reality. Instead, it occasionally becomes intertwined with her concerns with weight, shape, food, or appearance so that she innerly sees her own body in a negative and distorted manner, and tries to interfere with its ongoing processes. Her feelings were consistent with our other participants with BN in that they were undifferentiated and not clearly and directly experienced. However, her relative lack of sensory awareness was somewhat inconsistent with our other individuals with BN. It is possible to speculate that her multiplicity, inaccurate inner seeing, undifferentiated emotion, all interact with her bulimic symptomatology, but the exact nature of this interaction is unknown.

## CHAPTER 10

### HANNAH

Hannah was a 37-year-old university student and delivery truck driver at the time these samples were collected. She met the DSM-IV-TR (APA, 2000) criteria for BN and scored in the 49th percentile on the bulimia subscale of the Eating Disorders Inventory-3, placing her in the elevated clinical range. Hannah considered herself to be bulimic and had been so for several years. She was not in treatment at the time these samples were collected. Hannah volunteered for the study after reading the study advertisement on the university psychology subject pool website. A total of 44 samples were collected and discussed extensively over eight sampling days during a 5-week period.

Hannah's inner world was strikingly complex, with several separate, overlapping phenomena occurring simultaneously. On a few occasions, Hannah's overlapping inner experience contained individual elements which were in themselves further overlapping. On these occasions, her inner experience became so fragmented that parts of it appeared to break off and further fragment. This fragmentation occasionally manifested as single thought process that contained several distinct, separate, simultaneous aspects, and occasionally manifested as multiple undifferentiated feelings or thought/feelings with clear and distinct aspects.



Hannah's inner experience was also markedly sensory. Her sensory awareness was generally bodily apprehended, but she also commonly had samples in which she had multiple sensory awarenesses, some of which were bodily and some of which were external. Hannah also had occasional samples in which she was intently focused on sensory aspects of her inner experience as an apparent way to avoid something distressing in her surroundings.

Hannah rarely had feelings, and when she did they were profoundly complex, undifferentiated, and were never clearly and directly experienced. She also had difficulty distinguishing between her thoughts and feelings, and between her thoughts and her sensory awareness. For Hannah, feelings were expressed in her tone of voice or in her bodily tension, so that she recognized her feelings at the moment of the beep without clearly and directly *feeling* them. Hannah rarely interfered with ongoing phenomena related to food, weight, shape, or appearance; however, when this occurred, it was generally multiply layered, complex, and qualitatively quite negative for her.

### Fragmented Multiplicity

Hannah experienced fragmented multiplicity of experience in 26 of her 44 samples (59%). Her multiple inner experiences generally included two to six separate, simultaneous inner experiences at the moment of the beep. For example, in sample 8.2 Hannah was driving her truck and had a sensory awareness of the salty taste of the sunflower seeds in her mouth and a separate, simultaneous sensory awareness of the vibrating of her legal pad that was sitting on the steering wheel. She also had a separate, simultaneous thought/sensory awareness that the trailer parked in front of her was in a bad state of repair. This thought/sensory awareness was apprehended as simultaneous

thinking and visually noting the sensory details of the trailer including that the trailer gate was broken, that its lift gate was broken, that there were holes showing in the floor, that it was old, that it was “crapped out.” She also had a separate, simultaneous implied trace of unsymbolized thinking about the parental investment theory that she had read about in her psychology notes. This was apprehended as an ongoing trail of an unsymbolized thought that occurred before the beep and was still ongoing at the moment of the beep, and included several components of a thought about the parental investment theory, including that she did not like the theory, that it was going to be on the test; that it sounded made up; that it wasn’t in her book. This complex, multi-layered thought was not in words or symbolized in any other way, she just knew that was what she was thinking. Therefore, at the moment of the beep Hannah had a multiple experience that simultaneously included two separate sensory awarenesses, a thought/sensory awareness, and a complex multi-layered unsymbolized thought.

While the majority of Hannah’s multiple experiences included relatively equally fragmented attention, she also had one experience in which multiplicity occurred in the background of a primary experience. This occurred in sample 7.3, in which Hannah had a bodily sensory awareness of coolness on her face and the top of her head from the breeze from the ceiling fan. This sensory awareness of coolness occupied approximately 90% of her awareness. However, the remaining 10% of her awareness was on a separate, simultaneous thinking of what jeans to wear. This awareness was apprehended as an inner seeing of the back pocket of the jeans she had decided to wear, and an ongoing thought of what jeans to wear for the weather, that was apprehended as an ongoing list of details about the jeans she owns, what fabrics they are, and other related but undifferentiated thoughts about jeans. While this inner seeing of the pocket and multiple

unsymbolized thought about jeans occupied only 10% of her awareness, it serves as a clear example that even when 90% of her attention is focused, the remaining 10% is capable of being fragmented and multiple.

### Sensory Awareness

Hannah experienced sensory awareness in 26 of her 44 samples (59%). We have already seen two examples of sensory awareness above: the salty taste and separate vibration sensation in sample 8.2, and the breezy coolness in 7.3. Sensory awareness will now be discussed in greater detail. Hannah's sensory awareness occurred in two ways, bodily and external: in 15 of her 26 sensory awareness samples (58%), her sensory awarenesses were exclusively bodily, in 4 of her 26 sensory awareness samples (15%), her sensory awareness was exclusively external; and in 7 of her 26 sensory awareness samples (27%), she had two or more sensory awarenesses that included both bodily and external sensory phenomena. Her bodily sensory awareness samples were generally (10 of 15, or 67%) single experiences but occasionally (5 of 15, or 33%) involved multiple separate bodily sensory awarenesses. In summary, sensory awareness and multiplicity were equal in frequency and were the most salient aspects of Hannah's inner experience. Hannah's sensory awareness was generally bodily, less commonly included both bodily and external sensory awareness, and was less frequently exclusively external.

An example of a sample that included both bodily and external sensory awareness occurred in sample 4.1, in which Hannah was sitting on the floor of her living room looking at a Google Earth type satellite picture of Asia on her company's newsletter. She had an externally focused sensory awareness of the greenness of the satellite picture and how close each of the labeled places (Beijing, Bangkok, Thailand) were to each other.

She also had a separate, simultaneous bodily sensory awareness of the itchiness of the rug on the back of her thighs.

While this is a relatively straightforward example of combined sensory awareness, Hannah also had three combined sensory awareness samples in which her attention was fragmented in a markedly avoidant manner. For example, in sample combined sensory awareness appeared to serve an avoidant function. For example, in sample 3.2 Hannah was in her pickup truck with her boyfriend and had a bodily sensory awareness of the cold air conditioning on her face and neck, and a separate, simultaneous external sensory awareness of the sound of her boyfriend's voice. She was not listening to what he was saying at all, but instead was only aware of the sound of his voice droning on, which she likened to the "wa wa wa wa" of the teacher in the Charlie Brown cartoon movies.

Another example of this avoidant combined sensory awareness occurred in sample 7.5. In this sample, Hannah was on the phone with her ex-boyfriend, who was angrily berating her. At the moment of the beep she had entirely withdrawn from the actual content of what he was saying, and was instead solely focused on two sensory awareness: the cramping in her hand and neck (apprehended as a stiffness and tightness deep in the muscles of her left neck and shoulder) and the angry, cracking sound of his voice as he was yelling at her. She was also separately and simultaneously actively watching the movie *Father of the Bride* and paying attention to what was happening in the movie.

In both these combined sensory awareness examples, she was focused on the sensory aspects of phenomena in what appeared to be an avoidant manner. Rather than focusing on the content of what was being said, or her affective reaction to being berated,

she was instead exclusively focused on a relatively less salient sensory aspect of this experience in what appeared to be an attempt to avoid focus on these more salient but threatening aspects.

The majority of Hannah's bodily sensory awareness contained a single, bodily sensation, but she occasionally had multiple bodily sensory awarenesses as well. An example of her single bodily sensory awareness occurred in sample 8.6. Hannah was actively watching Carlos Mencia doing stand up comedy on television, and had a bodily sensory awareness of laughing. An example of multiple bodily sensory awareness occurred in sample 2.5, in which Hannah was lying on her stomach and her boyfriend was rubbing her shoulders and back. She simultaneously had a bodily sensory awareness of the callused strength of his hands, and a separate bodily awareness of the scratchy roughness of his hands on her left shoulder. She also had a separate, simultaneous bodily sensory awareness of the soothing feeling in her shoulders (the effect of the rubbing). Thus, Hannah had three separate, simultaneous bodily sensory awarenesses at the moment of this sample.

Less commonly, Hannah had sensory awareness experiences which were exclusively focused on external sensory phenomena. For example, in sample 4.6 Hannah was watching a movie with Jennifer Lopez in it, but at the moment of the beep she had withdrawn her attention from the movie's plot and instead had zeroed in on the ringlet shape of Jennifer Lopez's curls. Hannah was simultaneously wondering to herself if she could have ringlets like that in her own hair, which was apprehended as an unsymbolized thought process.

## Unsymbolized Thinking

Hannah experienced unsymbolized thinking, a phenomenon in which thoughts occurred without words, images, or other types of awareness in 14 of her 44 samples (32%). We have already seen three examples of unsymbolized thinking above: the multiple parental-investment-theory thought in sample 8.2, the multiple-jeans thought in sample 7.3, and the wondering about curls thought in sample 4.6. Unsymbolized thinking will now be discussed in greater detail.

Hannah's unsymbolized thoughts ranged from fairly simple, straightforward thoughts to quite complex multiple thoughts. An example of relatively straightforward unsymbolized thinking occurred in sample 2.3. Hannah was sitting on the couch and was listening to a Net Zero commercial. She had an unsymbolized thought of wondering how much cheaper Net Zero was than Cox cable. This was apprehended as a clear thought that was not in words or in symbols; she just knew that was what she was thinking.

In sample 6.3, an example of her complex, multiple unsymbolized thinking, Hannah was peering down into her purse, seeing its contents, and thinking a multiple-aspected thought that if broken apart into its aspects would include: there's a lot of crap in here; it's a new purse; there shouldn't be that much crap in here; I've only had it for a week. Those aspects were not separable; they were all aspects of one thought. That is, they were not merely implied by the thought, but were somehow present in the complexly aspected thinking. She also had a separate, simultaneous perceptual awareness of ironically laughing in her head at the irony of having that much crap in her purse after owning it for only a week.

Hannah also had unsymbolized thinking experiences in which there were a series of thoughts that were implied and layered into experience at the moment of the beep. For

example, in sample 5.6, she was eating a cup of sugar-free jello. This was apprehended as a knowing that she should have eaten it quickly because it was now melted from being held in her hand and was hard to keep on the spoon. However, this knowing had a multiplicity of interfering aspects including knowing what foods would be acceptable for her to eat, knowing how many calories each had, and knowing the nutritional value of the jello. These aspects were all were somehow part of the same knowing thought. They were not differentiated, but they were not merely implied, either. Therefore, at the moment of the beep she had an ongoing multiple thought process that was not a single, clearly differentiated thought process. Instead, even though there was one unsymbolized thought, that thinking had several implied thoughts imbedded within it, as though she had a series of ongoing tails within a thought.

### Feelings

Hannah experienced feelings in 7 out of her 44 collected samples (16%). These feelings were affectively significant for her but were not apprehended in the straightforward, direct manner in which most healthy, non-bulimic individuals experience emotion. Instead, Hannah's feelings were profoundly complex, undifferentiated, and were *never* clearly and directly experienced. In Hannah's inner world, emotions were indirectly experienced when they were experienced at all. While the majority of her feelings were single, she also had one multiple feeling experience. In summary, her feelings were typically not clearly and directly *felt*. Instead, her feelings were experientially implied at the moment of the beep by the tone of voice, bodily tension, eye rolling, etc. without the feeling itself being clearly and directly experienced.

An example of Hannah's samples in which her emotions were present but not directly experienced occurred in sample 6.1. Hannah was sitting in her hot pickup truck wishing that her boyfriend would hurry up and come back with the keys to turn on the air conditioner. This was apprehended as a bodily sensory awareness/ thought/feeling of hotness, of wanting the key to the ignition so that she could turn on the air conditioner, and of exasperation. These aspects all seemed to be part of one complex sensory awareness/thought/feeling, and were not in any way separated. This exasperation was no more clearly differentiated than the other features of this experience; she described this exasperation as feeling irritated at the lack of the key, and "rolling her eyes inside of her head," but it was difficult to say if this eye rolling and feeling were in her awareness at the moment of the beep or if this feeling was present but was an unexperienced exasperated process fueled by her hotness and wanting the key to be in the ignition.

Hannah also had instances in which her emotion was carried primarily by the tone of her voice without the emotion itself being directly in her awareness. For example, in sample 4.4 she was cleaning up and had emptied her work bag out on the table. She was picking through the contents to throw away the gum wrappers and other trash. At the moment of the beep she was angrily looking at a perfume bottle among the other contents. However, Hannah doubted that she was actually experiencing the anger at the moment of the beep, although there was no question that she was having an angry reaction to the perfume bottle that occupied her experience during this moment. Part of this experience was a very quick, apparently well-practiced, innerly spoken dialogue with herself about what she should do with the perfume, something like: "I don't like this perfume"; "I should throw it away"; "But I can't throw it away"; "it was a gift"; "it was from Violet"; "but I don't even like Violet"; "So why have you kept this?" These spoken



aspects were experienced to be occurring at a normally spoken rate of speed, but they happened so fast that Hannah could not identify where in that long series the beep came. Therefore, she did not actively experience any emotion at the beep, but the contents of the dialog and the tone of her inner speech reflected anger at herself for carrying this stuff around.

A similar experience occurred in sample 6.6. Prior to the moment of the beep, Hannah's boyfriend had asked her if she was going to go with him to his high school reunion. She had told him she would go with him if she lost 20 pounds; he replied that she couldn't do it. At the moment of the beep she was innerly saying to herself, "If you only knew how crazy I could get! I could drop 20 pounds by next month!" in her own voice, just as if she said it aloud, in a cocky, rude, pissed-off tone of voice. Although Hannah was expressing a cocky pissed-off-ness with her inner tone of voice, she was not directly feeling cocky or pissed-off at the moment of the beep. In both sample 6.1 and 6.6, Hannah had an experience with clearly affective significance that were present but undifferentiated and possibly not directly experienced in her awareness.

An example of multiple feelings occurred in sample 2.2. Hannah was trying to give her boyfriend a check for her college tuition, which, in her absence the day before, he had paid. He wouldn't take the check, which had launched a sudden, very strong, experience of simultaneous, overlapping emotions including disgust, irritation rage, and fury. This multiple, overlapping affective experience was apprehended as a "bowl of emotions" in which she had several, simultaneous, overlapping feelings in her whole being, feelings that were clearly apprehended but very difficult for her to describe. This set of feelings was understood to be an old, well-practiced reaction to the undesirability

of “being owned” by a man. She was completely engaged in the multiple, overlapping feelings at the moment of this sample, with nothing else in her awareness.

### Thought/Feelings

Hannah occasionally had experiences in which cognitive and affective elements were fused so that thoughts were perceived affectively, affect was perceived cognitively, or elements of both were undifferentiated or extremely difficult to distinguish. This inability to distinguish thoughts and feelings, a phenomenon termed thought/feelings, occurred in 6 out of her 44 samples (14%). We have already seen one example of thought/feeling above: the hotness sensory awareness/thought/feeling in sample 6.1. Thought/feelings will now be discussed in greater detail.

For example, in sample 7.1, Hannah had multiple thought/feelings about how she might be able to get her boyfriend to agree to go to the movie *No Reservations* with her. He had already said he did not want to go to and she was anxiously and repeatedly thinking/ feeling what she could do to get him to go to the movie: they could go downtown, go to the Golden Gate to get shrimp cocktail, go to Neonopolis to see the movie. This was apprehended as a group of multiple thought/ feelings, in which she had an ongoing awareness of this group of ideas of what she wanted to do. In the next sample, 7.2, Hannah had ongoing multiple thought/feelings about how she would be able to get him to go to the movie with her. These multiple thought/feelings were apprehended as being the exact same group of ideas that she had in 7.1 but that were now being repeated more often, and were thought/felt more desperately.

### Thought/Sensory Awareness

Hannah occasionally had experiences in which cognitive and sensory elements were fused so that thoughts were perceived sensorially, sensation was perceived cognitively, or elements of both were undifferentiated. This inability to differentiate thoughts and sensations, termed thought/sensory awareness, was relatively rare, occurring in 2 out of her 44 samples (4%); we include discussion of it because of its similarity to thought/feelings. For example, in sample 5.5, Hannah was thinking/sensing that she was too bloated/too fat to wear the jeans she was wearing. This experience was an inextricable combination of a bodily sensation and thinking, as if the sensation of snugness carried the thought of being too bloated, or, equally, as if the thought of being too bloated carried the sensation of snugness. That is, this was *not* a simultaneous sensation and thinking; it was a single experience that was at once both a sensation and a thinking. Simultaneously she also had an ongoing, self-reflexive knowing about all her jeans, including which jeans would be appropriate for what she weighs at any given time, which was apprehended as a known/implied series of tailed unsymbolized thoughts.

### Interfering Phenomena

In 6 out of her 44 samples (14%), Hannah was consciously attempting to interfere with, or disconnect with an ongoing process that was related to food, weight, shape, appearance, or BN-related behaviors (bingeing or purging). We have already seen three examples of this above: her multiply aspected thoughts about jello in sample 5.6, her angrily-toned inner speech about weight loss in sample 6.6, and her thought/sensation of being too fat for her currently worn jeans and ongoing knowing about which jeans would be appropriate at each of her weights in sample 5.5.

In another example, in sample 5.1 Hannah was hungry and shaky, a sensation like vertigo. This hungry/shaky/ vertigo was apprehended as a single bodily sensation. She also had a separate, simultaneous unsymbolized thought process that she needed to get more coffee to avoid eating. She also had a separate, simultaneous sensory awareness of the sound of the Tour de France that was on TV, which was apprehended as hearing the noise of it and the French accents of the reporters, but she was not particularly paying attention to that. Therefore, she was *both* feeling hungry/shaky/vertigo, and attempting to control this hunger by thinking she needed to get more coffee in order to avoid eating.

### Inner Speech

Hannah experienced inner speech in 3 out of her 41 samples (7%). We have already seen one example of inner speech above: her angrily-toned inner speech about weight loss in sample 6.6. In another example, in sample 4.5 Hannah's boyfriend was watching a movie, but she was not at all paying attention to the movie, instead, she was innerly saying to herself, in her own voice, "I wonder what I'm missing on Lifetime [TV] right now," just as if she had said this aloud.

### Worded Thinking

Worded thinking, in which Hannah had words that were directly in her experience but were not in inner speech, hearing, or inner seeing, occurred in 1 of her 44 samples (2%). This occurred in sample 6.2 in which Hannah was waiting for the air conditioner in the truck to come on. This was apprehended as a worded thought, with one word after the other "when is the A/C going to kick in." This was not in inner speech, nor inner hearing, nor images, and not in a voice. Instead, it was just a worded thought. She also had a

separate, simultaneous bodily sensory awareness of being hot, and was simultaneously hearing her boyfriend talking about some guy in the gym with a marine corps division t-shirt, which was apprehended as a sensory awareness of the sound of his voice without paying particular attention to the content of the conversation.

### Inner Seeing

Hannah had an inner seeing experience in 2 of her 44 samples (4%). We have already seen one example of inner seeing above: the back pocket in sample 7.3. In the other example, sample 6.4 she had an unsymbolized thought of needing to brush her hair out, and was separately and simultaneously innerly seeing the ends of her hair. In this inner seeing, her hair looked looking frizzy, and she could see the red hue of her bleached hair. This inner seeing was apprehended as a square in which she could see the chunk of hair going straight down, like the chunk that hangs out from her work ball cap, with a clear, clearly defined border along the square, and with the frizzy hair filling in the border.

### Discussion

Hannah's 44 collected samples gave us insight into her complexly multiple and sensory inner world. During the 5-week course of sampling, Hannah was working full-time as a semi-truck driver while attending school part-time. Her duties as a truck driver would appear to require a high level of attention to detail in order to maintain safety and negotiate particularly complex maneuvers while delivering large loads. However, her attention was strikingly fragmented even during those samples in which she was at work and actively engaged in carrying out these maneuvers.

Hannah's multiple, fragmented inner experience, like that of many other individuals with BN, included instances in which her multiplicity was implied but not directly experienced at the moment of the beep. We saw examples of this type of fragmentation above: the snugness of the jeans in sample 5.4, and the purse in sample 6.3. What is particularly interesting about Hannah's multiple, fragmented inner experience is that it was occasionally so profoundly fragmented that this multiplicity is, in itself, was undifferentiated. While most individuals with BN have fragmented multiple inner experience, Hannah's experience was occasionally so fragmented that their separate aspects become layered or implied such that they are clearly in her awareness but only indirectly experienced at the moment of the beep.

As such, Hannah's complex, multiple experiences were consistent with previous findings of the inner experience of women with BN. In particular, the overall salience of multiplicity and sensory awareness was strongly consistent with the inner experience of other individuals with BN, as were her relatively infrequent feelings, and fusing of affective experiences with sensory and cognitive experiences. The salience of interfering phenomena related to weight, shape, food, appearance, or BN-related behavior in her samples was also consistent with our sampled population. Hannah's relatively high degree of unsymbolized thinking was somewhat inconsistent with our previous sample, but not inconsistent with our current sample. However, her inner speech, worded thinking, and inner seeing experiences occurred at a somewhat lower rate relative to our sampled population.

In summary, Hannah's inner experience was characterized by multiple, fragmented, occasionally undifferentiated attention, and was often sensory. Her emotions were often undifferentiated, and her inner world included many experiences in which

phenomena that would be singular for most non-bulimic individuals became fused with another, unrelated phenomenon, as occurred in her thought/feeling, and thought/sensory awareness samples.

While the above characteristics of Hannah's inner experience may be presumed to interact with her bulimic ideation and behavior, there is no way of determining the potential directionality of this interaction. There was nothing in the current BN literature that examines how this unique combination of multiplicity and complexity may function in the development or maintenance of BN, but an increased understanding of these potentially interacting factors may yield new developments in individualized and group intervention and prevention efforts.

## CHAPTER 11

### ANNE

Anne was a 19-year-old university student at the time these samples were collected. She met the DSM-IV-TR (APA, 2000) criteria for BN and scored in the 49th percentile on the bulimia subscale of the Eating Disorders Inventory-3, placing her in the elevated clinical range. Anne volunteered for the study after it was presented in her psychology class. She considered herself to be actively bulimic and expressed that she had never before discussed her BN symptoms with anyone, nor was she in treatment at the time these samples were collected.

Before the start of the first interview, Anne expressed concern about discussing her inner experience, and worried that her samples would be negative. The primary researcher thoroughly discussed her concern and explained informed consent, her ability to skip beeps she would be uncomfortable discussing, and re-emphasized that the decision to proceed with sampling was entirely up to her, but that it was very important to us that she feel comfortable, and that any decision she made would be respected. The primary researcher and advisor then spoke to Anne together and again emphasized that she was the owner of her experience, that she should feel entirely empowered to make any decision she felt comfortable with about whether or not to proceed, and that she could withdraw at any time. We also oriented her to the interview process, and agreed (as was arranged during the qualification phase) to audiotape but not videotape interviews, as was



her request. She then said that she would be willing to try the first beep to see what the interview would be like. We completed the first beep and then had a discussion about her experience of interviewing, her comfort level, and if she would like to proceed or would prefer not to proceed, and she said that she would like to proceed. We then repeated this check-in process after the second, third, and fourth beeps, and again at the end of the first sampling interview, and again reminded her of her rights and our respect for any decision that she made. Anne decided to proceed with sampling, and we continued to check-in to monitor her comfort level throughout sampling. A total of 37 samples were collected and discussed extensively over eight sampling days during an 8-week period.

Anne's inner experiences at the moment of the beep were often overwhelming and distressing. Her inner world was strikingly complex, with several disparate, overlapping phenomena occurring at the same time. She very rarely, for example, had one clear, directly experienced thought; instead, she had multiple simultaneous, overlapping thoughts. The individual strands of these multiple thoughts occasionally continued on in a sensed-to-be-ongoing but only incompletely thought manner.

Anne rarely had feelings in her experience. When she did have feelings they were not clearly apprehended; instead, they were chaotic, overlapping, or overwhelming. Anne also had difficulty distinguishing between her thoughts and feelings; sometimes she seemed to feel her thoughts and also to think her feelings. On occasion, Anne had a bodily emotional process that was itself ongoing but outside her experience at the moment of the beep; when the beep sounded, and she "took stock" of her situation, she could see that she was indeed acting emotionally even though the feeling itself was not at all present in her awareness at the moment of the beep.

Anne's confusion between thoughts and feelings also showed itself when her experience was most complex. At such times, a complex maelstrom of thoughts might be understood to *be* the feeling of stress, tension, or hopelessness. That is, for Anne, the experience of "feeling" stressed, tense, or hopeless was actually the experience of multiple overlapping thoughts with absolutely *no* emotion in experience.

### Fragmented Multiplicity

Anne experienced fragmented multiplicity of experience in 20 of her 37 samples (54%). Her multiple experiences included up to 19 separate, simultaneous experiences at the moment of the beep. For example, in sample 2.1 Anne was going through a list of things she had to do, and one of the things on this list was that she had to call her brother to ensure he would be home to pick up her sister. She was innerly seeing herself, just her face, seen from the front, with the phone on her left ear, talking to her brother. This inner seeing was clear and in color, and in this inner seeing Anne was saying, "Are you going to be home around 3:30 to make sure you get our sister?" in her own voice, just as if she had said this aloud. This inner seeing was central in her awareness, but she also had simultaneous awarenesses of a half-dozen things she had to do, including studying, picking up her cousin and dropping him off at the airport, and so on. These things were apprehended as multiple simultaneous unsymbolized thought processes that were apprehended as being literally in the back of her mind.

Anne's multiple fragmented experiences were often unpleasant. For example, in sample 7.1 Anne was "feeling stressed" about an upcoming test. "Stressed" was Anne's characterization of a half-dozen separate, simultaneous thought processes, including hoping that she can get everything done, hoping that she won't blank out on the test,

hoping that she'll pass it, and hoping that she would remember most of the reading that she did. That is, Anne was *not* feeling stressed and in addition also had multiple thoughts; the multiple thoughts *were* the stress. Anne also had a separate, simultaneous sensation of tiredness that was apprehended as a bodily sensation of heaviness on the surface of both eyelids.

Sample 7.2 was another example of unpleasant multiply-aspected experience. Anne was “feeling tension” about her homework; this tension was Anne’s characterization of 18 separate, simultaneous thought processes that were triggered by the looking at an assignment sheet that listed pages that she had to read and wondering if she would be able to get this work done in a short amount of time. None of these thought processes were in words. A few seconds before the beep, Anne had read the first assignment on the list; then she continued actively to think about that assignment while she read the second assignment. Then she kept actively in mind the first and second assignments while she read the third assignment. With each newly read assignment, she kept active separate thoughts about all the previous assignments until finally there were all 18 (one for each of the 18 items on the reading assignment list) multiple, separate, simultaneous active thought processes in her awareness. Then the beep occurred. Anne also had a separate, simultaneous headache that was apprehended as a bodily sensation of pain pressing down between her eyes.

Thus, while most non-bulimic individuals might experience “feeling tension” or “feeling stressed” as a single affective experience, for Anne, stress or tension referred not to affective experience but to profoundly fragmented and multiple cognitive experiences.

## Sensory Awareness

Anne experienced sensory awareness in 15 of her 37 samples (40%). We have already seen two examples of sensory awareness above: the tiredness in 7.1 and the headache in 7.2. Her sensory awareness was overwhelmingly bodily (92%) and was on one occasion both bodily and external (8%). She did not have any sampled instances in which her sensory awareness was exclusively externally focused.

Most of her sensory awareness involved a single bodily sensation. For example, in sample 4.4 Anne was talking to a coworker about Shakespeare and was saying “The Tempest was the only play I could actually understand.” She also had a simultaneous aching deep in the vertebrae of her neck.

An example of multiple bodily sensory awarenesses occurred in sample 2.6. Anne was sleepy and was innerly seeing her bed from the perspective of standing at the foot of her bed. This inner seeing was clear and accurate except that she did not see the rest of the room, but just innerly saw the bed. She also experienced a heavy tiredness in her eyes that were closing, and a simultaneous seen field of blackness as her eyes closed. Anne simultaneously experienced a headache, a sensation of pressure between her eyes, pressure moving inward. Therefore, she had two separate, simultaneous bodily sensory awarenesses, an external sensory awareness, as well as an inner seeing at the moment of the beep.

Sample 5.2 was the one occasion in which she had both bodily and external sensory awareness. Anne was with her friend Joe and was experiencing a bodily hunger, an empty and growling sensation deep in her stomach. She also had a separate, simultaneous hearing of Joe’s chewing. She also had a separate, simultaneous interfering unsymbolized thought process that she did not want to eat, apprehended as knowing that

she did not want to eat and that she should not be hungry. The two parts of this thinking were apprehended as being features of a single thought process. The part that she should not be hungry was understood to be recognizing that she had had a snack a few hours ago, but that recognition was not in her awareness; rather it is the context or background of her thought. Thus, she had both a bodily and an external sensory awareness, and a separate, simultaneous unsymbolized thought process of self-reflexively attempting to interfere with or control her hunger.

### Thought/Feelings

In 7 out of her 37 samples (19%), Anne had experiences in which cognitive and affective elements were intertwined and undifferentiated or extremely difficult to differentiate, a phenomenon termed thought/feelings. Her thought/feeling samples were commonly multiple (71%) and were less commonly singular (29%). Anne's thought/feelings will now be discussed in greater detail.

An example of her multiple thought/feelings occurred in sample 6.3 in which Anne was in the act of text-messaging a friend, but this was occurring on auto-pilot and was not at all in her awareness. Instead, at the moment of the beep, she experienced two "me's." One of those "me's" was profoundly complex and was apprehended as a horrible/ selfish/disgusted-with-herself bodily sensation at the core of her chest—her heart's being squeezed inwards, deep in her chest. Intertwined with, and undistinguishable from, this bodily feeling was a complex multiple thought that might be expressed: I could be better; Why am I being this way? He [her boyfriend] deserves better; I unfairly complain at him; I push him to spend more time with me; He tries his best; I don't appreciate it but I should; He deserves better; He deserves someone who

doesn't push and complain. Therefore, this horrible/ selfish/disgusted-with-herself "me" was a maelstrom that was both cognitive and emotional and was profoundly complex and chaotic. Anne was in actuality standing in front of a mirror, and this "me" that was horrible/selfish/disgusted-with-herself somehow also knew at the moment of the beep that she was unable to look at herself in the mirror.

At the same time, Anne's other "me," which was, in comparison to the first "me," less chaotic, was whispering to herself in inner speech, "You're being selfish"; this comment was aimed at the first "me," which was understood to be hearing those words. The "me" that was doing this whispering was apprehended as being better, and the "me" that was hearing was apprehended as being selfish/horrible/disgusted. At the same time, Anne was innerly saying to herself, in her own words, "He deserves better." This saying was understood as being said by the entire Anne, not just one of the two "me's." Thus, at the moment of the beep she had a multiple complex and conflicted series of thought/feelings of being horrible/selfish/disgusted with herself that were apprehended both bodily and mentally, and two multiple inner speakings without any clear affective inner experience.

An example of a non-multiple thought/feelings occurred in sample 2.4. Anne was annoyed that her phone kept ringing while she was trying to study. She apprehended this annoyance as an inner seeing of her phone flying across the floor, the result of herself having thrown it with her right hand. She innerly saw the phone as viewed through her own eyes; and she simultaneously had some kinesthetic sense of throwing it. However, there is apparently no other apprehension of the annoyance. Thus, in this sample she had an inner seeing with a bodily sensation, which was annoyance. It was not the case that

she experienced annoyance *and* saw an image of the phone being thrown; instead, the phone being thrown *was* annoyance.

In both her multiple and single thought/feeling experiences, Anne demonstrates a clear pattern of having no clear direct access to her feelings. In fact, samples in which she was actually feeling an emotion were relatively rare and will be discussed in the next sections to provide a clear contrast to her thought/feeling experiences.

### Feelings

Anne experienced feelings in 2 out of her 37 samples (5%). Her feelings, besides being relatively rare, were also markedly chaotic. As was seen in the thought/feeling section above, her feelings were often intertwined with, and indistinguishable from thoughts. When she did have feelings that were distinguishable from thoughts, these feelings were relatively more straightforward but still complex and not clearly apprehended emotional experience. Additionally, as will be discussed in the immediately subsequent feeling fact of body section, her emotions occasionally manifested in her body without being directly felt.

In her one example of relatively straightforward emotional experience, sample 3.4, she was talking to her mother about selling property owned in the family, and was innerly saying to herself, “They [some of the family members who would profit from the sale] don’t deserve the money,” as if rehearsing this before she says it aloud to her mother. Her inner speaking was experienced as being in her own voice, just as if she would have said it aloud, in a cold tone of voice. She also had a simultaneous feeling of mild disgust at the selfish family members. However, this disgust was very difficult for her to describe except to say it was in her head.

In her one example of somewhat more complex emotional experience, sample 4.2, Anne had two feelings of guilt, guilt about failing to reach her parents' goals for her and separately guilt that her parents have done much for her and she can't do enough for them. These two feelings of guilt were apprehended as two strong sensations of heaviness, both separately but simultaneously occurring in her chest, and both apprehended as a sensation of her heart being squeezed inwards, with nothing else in her awareness. Before the beep she had been thinking about being unable to meet her parent's expectations, but at the moment of the beep she had withdrawn from this thought entirely and was just feeling these two guilty disappointments.

#### Feeling Fact of Body

In 2 of her 37 samples (5%), Anne had an experience in which she had an ongoing affective state without the emotion itself being specifically in her awareness, a phenomenon referred to as "feeling fact of body." For example, in sample 4.5, Anne was listening to her friends and was frustrated. This frustration was apprehended as tracking their conversation while saying to herself, in her own voice, in a frustrated tone, "Geez! Come on! Hurry up!" that she understood as wanting them to hurry so that she could get to class. However, this frustration was not directly experienced, even though it was expressed in her inner voice. She also had a separate, simultaneous bodily sensation of tiredness, apprehended as a sensation of sleepy heaviness, all over her body but predominantly in the front of her body.

In her other feeling fact of body example, sample 4.3, Anne was thinking about getting her research project done quickly. This was apprehended as a worded thought process in which the words "I need to get this done quickly" were in her awareness but



she was not saying, hearing, or seeing them. Instead, the words just seemed to be in her awareness in the front of her head. She was also staring at the computer screen and wanting it to hurry up. Her legs were shaking and her feet were jiggling in impatience, but she was not directly feeling impatience at the moment of the beep. Thus, at the moment of the beep, she had a worded thought process, a perceptual awareness of the computer screen, and a feeling fact of body of impatience, which was apprehended as her legs and feet shaking without directly feeling impatient at the moment of the beep.

### Inner Speech

Anne experienced inner speech in 9 out of her 37 samples (24%). We have already seen four examples of inner speech above: the innerly talking to her brother in 2.1; the innerly talking to her two “me’s” in 6.3; the innerly talking to her mother in 3.4; and the innerly talking to her friends in 4.5. In another example, in sample 1.3 Anne was studying and she had been reading about plants and trying to understand what she was reading. This was apprehended as having withdrawn from the reading and innerly saying to herself a shortened, simplified version of the words she had just read. She was innerly putting what she had read into her own words and repeating them to herself, in her own voice, in a soft, calm tone, just as if she were reading the same words aloud, while simultaneously trying to understand what she was reading.

### Unsymbolized Thinking

Anne experienced unsymbolized thinking in 11 of her 37 samples (30%). We have already seen two examples of unsymbolized thinking above: the multiple thoughts

of what she had to do in 2.1 and the self-reflexive, interfering thought process in 5.2. Anne's unsymbolized thinking was predominantly multiple and occasionally single.

An example of Anne's multiple unsymbolized thinking occurred in sample 5.1. In this sample, she had her arms full of books and folders, and in her experience were a bodily sensation of pain in her right forearm and multiple simultaneous unsymbolized thoughts. These thoughts included wanting to set down her books, not wanting the folders she was looking at for her presentation, knowing which type of file she wanted for her presentation, needing to go over to the library to punch holes in her presentation, and needing to walk back and hand her presentation in. These multiple simultaneous thought processes were not in words or in images, but there was no question that she was thinking these things simultaneously at the moment of the beep.

An example of Anne's single unsymbolized thinking occurred in sample 4.1. In this sample, she had a worded thought process of the word schizophrenia, apprehended as the concept of the word schizophrenia coming quickly to her and simultaneously saying this word to herself, in her own voice, just as if she had said it out loud. She also had a separate, simultaneous unsymbolized thought process in which she recalled a scene from the television show *Dirt* where the character with schizophrenia is talking to his cat and the cat is talking back; this recollection was not in words or images but was nonetheless present to her at the moment of the beep. Thus, she had a worded thought of schizophrenia, an inner saying of "schizophrenia", and an unsymbolized thought process about the TV show *Dirt*, all occurring simultaneously at the moment of the beep.

### Inner Seeing

Anne had an inner seeing in 6 of her 37 samples (16%). We have already seen two examples of inner seeing above: the phone in sample 2.4 and the bed in sample 2.6. In another example, sample 4.6, Anne was listening to her friend talk about working out on an elliptical machine being better than working out on a treadmill because women's breasts get smaller on the treadmill. Simultaneous to the listening to and comprehending what her friend is saying, she was more focused on an inner seeing of the gym they go to. This was a clear inner seeing of the room with the elliptical exercise machines in it; there were no people in the imaged exercise room.

### Interfering Phenomena

Anne was consciously attempting to control or disconnect from an ongoing process related to food, weight, shape, appearance, or BN-related behaviors (bingeing or purging) in 4 out of her 37 samples (11%). We have already seen one example of Interfering Phenomena above: her hunger, not wanting to eat, and hearing her friend chewing in sample 5.2. In sample 2.2 just prior to the beep, her friend Jack had been telling her about a photo of a very obese woman. At the moment of the beep Anne was innerly saying, "I'd rather die than be that fat." This inner speaking had an emphasis on die and fat, and was experienced as being in her own voice, just as if she had said this aloud. She also had a separate, simultaneous inner hearing of Jack saying, "There was this one fat lady; she must have weighed 400 pounds." This inner hearing was a replaying of an earlier part of their conversation; it was heard to be just the same as she had heard it a few minutes earlier. She was innerly hearing both Jack's and her own words, although

the replaying seemed to be in some way telegraphic, as if only the important words were actually being said.

#### Nothing in Awareness

Anne had two instances in which there was nothing in her awareness at the moment of the beep. This occurred in 2 of her 37 samples (5%). For example, in sample 8.5, she was walking with her friends. She knew her friends were still talking but at the moment of the beep had withdrawn from both the sound and the meaning of their conversation entirely and was just “spacing out” with nothing in her awareness.

#### Worded Thinking

Anne also had two experiences of worded thinking, (3 of 37, 8%). We have already seen two of her examples of her worded thinking above: her thinking of the word “schizophrenia” in sample 4.1, and her thinking “I need to get this done quickly” in sample 4.3.

In her final worded thought sample, 7.3, Anne was feeling hopeless, depressed, and tired of being stressed, and was thinking about why should she even care. This was apprehended as multiple thoughts in her mind: that she was going out on the weekend; that it was going to be her birthday; that her mother was being strict; that finals were coming up; about her job; that she has a bill she needed to pay; that she needed to go talk to someone about her paycheck. Some of these thoughts were in words and the others were unsymbolized. Her thoughts about her job and that she needed to pay a bill were apprehended as worded thinking in the front of her head: “I have to go to the SSC building to talk to someone about my paychecks” and “I need to find their number and

call them.” These worded thoughts were apprehended as being in the front of her head, and in the back of her head she had the remainder of these multiple, separate simultaneous unsymbolized thoughts. She also had a feeling of hopelessness that was apprehended as a sense of so many things going on, without emotion, and that all of these things were going on in her mind but she was aware of not caring about these things. At the moment of the beep, she knew she had to get these things done but did not experience herself as having any emotion or caring about any of these things.

### Inner Hearing

In one of her 37 samples (3%), Anne internally heard something without being able to hear it externally, a phenomenon termed inner hearing. This occurred in sample 2.2, discussed in its entirety in the interfering phenomena section above. In this sample, Anne was innerly saying, “I’d rather die than be that fat.” She was also simultaneously innerly hearing her friend Jack saying: “There was this one fat lady; she must have weighed 400 pounds.” However, this inner hearing was complex in that it was a telegraphic replaying of an earlier part of their conversation, in which only the important words were actually heard.

### Discussion

Fragmented multiplicity was the most salient aspect of Anne’s inner experience. Her multiple samples ranged from containing two to containing up to 19 simultaneous phenomena at the moment of the beep. While holding up to 19 simultaneous phenomena in awareness may appear distressing to the external observer, it was unquestioningly normal for her. While most non-bulimic individuals would apprehend “feeling tension”

as one or two affectively or physiologically apprehended experiences, for Anne, “feeling tension” is a complex, multilayered experience in which thoughts are added one on top of the other until 18 separate thoughts are ongoing and simultaneously and equally in her awareness at the same time, while she also had a separate, simultaneous bodily sensation of pain. Therefore, multiplicity is not at all surprising for her. It is simply the most salient aspect of her inner world and not seen as at all unusual to her.

Overall, Anne’s inner experience was characterized by complex, multiple phenomena with frequent sensory awareness. She also had frequent inner speech, and unsymbolized thinking. Less commonly, she had inner seeing, and interfering phenomena. She rarely had nothingness, worded thinking and inner hearing phenomena. Anne’s sensory awareness was almost exclusively bodily. Her feelings were relatively rare and largely undifferentiated. While she did have frequent thought/feeling samples, she had few experiences in which she was clearly and directly *feeling* her feelings at the moment of the beep. Instead, her affective inner experience was largely undifferentiated, and was occasionally fused with cognition or bodily expressed but not directly experienced at the moment of the beep. Her fragmented, multiple inner world is likely to interact with her bulimic symptomatology. In addition, Anne also had a moderate degree of comorbid depression, which was relatively surprising given the qualitatively distressing nature of her moment-by-moment inner experience.

## CHAPTER 12

### JANE

Jane was an 18-year-old university student at the time these samples were collected. She met the DSM-IV-TR (APA, 2000) criteria for BN and scored in the 58th percentile on the bulimia subscale of the Eating Disorders Inventory-3, placing her in the elevated clinical range. Jane considered herself to be bulimic and was not in treatment for BN at the beginning of sampling, but entered outpatient treatment after our sixth sampling day. She entered inpatient treatment approximately three months after completing sampling. Jane volunteered for the study after viewing the study advertisement on the psychology subject pool website. A total of 48 samples were collected and discussed extensively over nine sampling days during a six-week period.

As we shall see, Jane's inner world was complex, with overlapping phenomena occurring simultaneously and with a strong visual component. While her inner seeing was sometimes clear and straightforward, it also included innerly seen phenomena in which the background was sensed but not clearly apprehended. Scenes in her visually apprehended inner world were also sometimes shadowed, not fully detailed, or completely blurred.

Jane's sensory awareness was usually bodily and often quite complexly detailed. When she had feelings, which was somewhat infrequent, she was rarely able to have clearly and directly apprehended emotions. Instead, Jane had feelings that were not

clearly apprehended and were strikingly difficult for her to describe. However, she was able clearly to distinguish between her thoughts and emotions, and did not have any samples in which these were intertwined. On one occasion, Jane had a feeling of jealousy that she apprehended as experiencing her boyfriend's rather than her own emotions. She also had two samples in which she had ongoing, complex cyclones of negative "out of control" feelings at the moment of the beep.

When Jane talked to herself, this experience was generally quite clear, but sometimes was apprehended as occurring simultaneously in both inner speech and inner hearing so that she had difficulty distinguishing between these phenomena. While Jane almost exclusively innerly spoke in her own voice, she had one sample (5.4) in which she was simultaneously speaking in both her own voice, and in her "eating disorder voice" that was apprehended as being both part of and somehow separate from herself. Jane rarely consciously attempted to interfere with an ongoing process related to food, weight, shape, appearance, or her BN-related behaviors, however, when this occurred, it was qualitatively quite negative and distressing for her.

### Fragmented Multiplicity

Jane experienced fragmented multiplicity of experience in 25 of 48 samples (52%). These multiple experiences frequently but not exclusively contained inner seeing, but also included non-visual innerly experienced phenomena. Her multiple inner experiences generally included two to four separate, simultaneous inner experiences at the moment of the beep. For example, in sample 3.4 Jane had a perceptual awareness of looking at a plate of tortas on her kitchen counter. Simultaneously, she innerly saw Clara, the lady that comes to assist her mother every week. In this inner seeing Clara was



standing in the kitchen at a 45 degree angle and was smiling at Jane. She saw Clara from the front, from the waist up. Jane also had a separate, simultaneous undifferentiated negative feeling. She knew this feeling to be negative, but it was entirely undifferentiated and she was unable to discern what emotions it may have included. This negative feeling was clearly in her awareness, but was very difficult for her to describe or put into words. She also had a separate, simultaneous, bodily apprehended feeling of mild anxiety all over her body. Thus, at the moment of the beep, she had four separate, simultaneous phenomena in inner experience: a perceptual awareness of the tortas, an inner seeing of Clara, an undifferentiated negative feeling, and a bodily feeling of anxiety.

### Inner Seeing

Inner seeing occurred in 26 of Jane's 48 experiences (54%). We have already seen one example of inner seeing above: her inner seeing of Clara in sample 3.4. Jane had five primary types of inner seeing: clear inner seeing (15 of 26, 58%), inner seeing with either no background or no clearly defined background (2 of 26, 8%), inner seeing that was shadowed (2 of 26, 8%), inner seeing that was not fully detailed (3 of 26, 11%), and blurred inner seeing (4 of 26, 15%). These idiographic characteristics of Jane's innerly seen world were not mere artifacts of her style of communication about her innerly seen world, but represented clearly distinct ways in which her inner seeing was experienced. Examples of each of these will be discussed.

In an example of her clear inner seeing containing only one innerly seen phenomenon, sample 1.4, Jane had a clear, still inner seeing of a picture of Nicole Ritchie sitting in a chair with her left leg crossed over her right, drinking a frappuccino with a straw. Jane innerly saw this picture from the front, and it was apprehended as identical to

seeing a picture of her from a magazine, but she could not see the edges of the picture, as though this picture filled her entire visual space.

In an example of her clear inner seeing containing multiple inner seeings, sample 2.5, Jane was remembering the last show she played with her band, apprehended as a clear moving inner seeing of herself putting the microphone to the drummer's mouth so that she could sing the upcoming part in the song. She could see the small bar with the drum set with the drummer, seen from the perspective of her own eyes standing to the drummer's left, and could see her own gloved hand holding the microphone to her drummer. Jane also had a separate, simultaneous, clear moving image of herself standing behind the cymbals of the drum set as though she were looking at herself through the cymbals. These images were apprehended as seeing and hearing what had happened that had a quality of reliving this experience, but with no other feelings, thoughts, or other phenomena in her awareness. Therefore, at the moment of the beep Jane had two separate, simultaneous, clear, moving inner seeing experiences that were apprehended as visually reliving this experience without separately cognitively, affectively, or otherwise reliving it.

In an example of her inner seeing without a clearly defined background, sample 2.2, Jane was looking for her keys and simultaneously really wanting to find her keys. This was apprehended as a clear inner seeing of her green Care Bear keychain, just as if she was looking at the Care Bear in her head. She was seeing only the green Care Bear on her keychain without seeing the keys themselves and with no background to the image. However, the image of the Care Bear had an experienced sense of a background space around it, which Jane sensed in her experience, but was unable to actually visually see at the moment of the beep. Therefore, in this inner seeing, the lack of clear apprehension

was due to Jane's experienced sense of the image having space around it without being able to clearly and directly see this background.

In an example of her shadowed inner seeing, sample 2.1, Jane had an image of Elvis's face standing in shadows so that she could not see the details of his face, but his hair and chin were clear so she knew it was Elvis. Simultaneously she was hearing him singing the song "Only You" just as if she were hearing the song sung aloud. Thus, in this inner seeing, the image of Elvis was not clearly and fully detailed, and whereas his hair and chin were clearly apprehended, the remaining details of his face were in shadows.

In another example of her shadowed inner seeing, sample 3.1, Jane had a moving visual image of the class she was on her way to. She saw the professor standing in the middle of the front of the class giving a lecture, seen from the perspective of where she normally sits in the class, but with no sound in the image. She also had a separate, simultaneous bodily sensory awareness of the bass of the song she was listening to pounding in the right side of her head. As she experienced this bodily sensory awareness of pounding, she had a simultaneous inner seeing of the pounding of the bass creating a black shadow in her visual field, passing over her professor image. She also had a separate, simultaneous undifferentiated feeling of stress. Thus, at the moment of the beep, she had two separate, simultaneous inner seeings, of a moving image of her professor giving a lecture but without sound, and of an innerly seen black shadow passing over the professor, as well as a bodily sensory awareness and feeling of stress.

In an example of her not fully detailed inner seeing, sample 2.4, Jane had an inner hearing of a song in her head, and was on the line of the song "She's Deadly," just as if she were listening to it aloud. She also had a simultaneous inner seeing of the album

cover of the song she was innerly hearing, apprehended as a realistic image of the whole album cover, with the band in black and white, and with black around it, as it appears on the actual image, but without all of the details that exist on the actual album cover filled in.

In an example of her blurred inner seeing, sample 9.1 Jane had a blurry inner seeing of the inside of the Caesar's Palace Forum Shops, and this image was filling her whole visual space. She was also simultaneously innerly saying to herself, "I have to be there at 4:00," in her own voice, just as if she had said this aloud.

### Sensory Awareness

Jane experienced sensory awareness in 13 of her 48 samples (27%). We have already seen one example of sensory awareness above: her bodily pounding sensation in 3.1. Jane's sensory awareness occurred in two ways, bodily and external: in 8 of her 13 sensory awareness samples (62%), her sensory awarenesses were exclusively bodily; in 3 of her 13 sensory awareness samples (23%), her sensory awareness was exclusively external; and in 2 of her 13 sensory awareness samples (15%), she had two or more sensory awarenesses that included both bodily and external sensory phenomena.

Her bodily sensory awareness samples were generally (5 of 8, 62.5%) single experiences, but occasionally contained (3 of 8, or 37.5%) multiple separate bodily sensory awarenesses. In an example of her single bodily sensory awareness, sample 4.2, Jane had a clear moving inner seeing of a group of the Oompa Loompas from the *Charlie and the Chocolate Factory* movie doing a dance, similar to how they appeared in the scene of the movie; this image occupied her whole visual field. She also had a separate, simultaneously bodily sensory awareness of tiredness all over her body. In an example of

her multiple bodily sensory awareness, sample 6.5, Jane had a bodily sensory awareness of dryness in her eyes, and a separate, simultaneous sensory awareness of her left leg stinging from a cut on her leg.

In an example of her external sensory awareness, sample 3.5, Jane had an external sensory awareness of the bright whiteness of the license plate of the car in front of her, and was separately and simultaneously innerly saying the word “Utah” from the license plate of the car in front of her, and was accenting the second syllable, just as if she had said it aloud. She also had a separate, simultaneous feeling of sarcasm, apprehended both in the tone of her voice and in her body.

In an example of a sample that included both bodily and external sensory awareness, sample 4.3, Jane had a bodily sensory awareness of pressure in her head moving from inside out in her head. She also had a simultaneous feeling of nervousness and anxiety, in her head and slightly all over her body, apprehended as a sensation of pressure both moving from the outside of her body in and from the inside of her body out. She also had a separate, simultaneous mild sensory awareness of the redness of the picture she was looking at. Therefore, at the moment of the beep she had two separate, simultaneous sensory awarenesses: a bodily sensory awareness of pressure in her head and an external sensory awareness of redness, as well as a separate, simultaneous feeling of nervousness and anxiety that was apprehended as a separate bodily apprehended pressure.

### Feelings

Jane experienced feelings in 14 of her 48 samples (29%). We have already seen four examples of her feelings above: her undifferentiated negative feeling in sample 3.4,

her undifferentiated stress in sample 3.1, her feeling of sarcasm in 3.5, and her feeling of nervousness and anxiety in sample 4.3. Jane had three distinct idiographic ways of experiencing feelings. She had single clear emotional experiences (4 of 14, 29%), single emotional experiences that were complex and difficult to describe (8 of 14, 57%), and multiple emotional experiences that were complex and difficult to her to describe (2 of 14, 14%).

In an example of her single feelings, sample 9.4, Jane was asking her psychologist “Does it look like I cried?” out loud, and had a separate, simultaneous feeling of nervousness, apprehended as a clearly differentiated bodily sensation of shakiness in her head and in her stomach.

In an example of her single complex and difficult to describe feelings, sample 7.4, Jane was looking at Hotmail page screen where she was about to write a message to her boyfriend, apprehended as innerly saying “Baby I’m home” in her own voice, which was the message she was about to type, and was separately, simultaneously innerly hearing herself say this. She also had a simultaneous feeling of missing her boyfriend that was apprehended as both in her head and body, but it was very difficult for her to describe the details of this feeling. Thus, at the moment of the beep, she was missing her boyfriend, and this missing was in her awareness, but she was unable to describe the details of this feeling of missing beyond saying. She apprehended this feeling as being both her body and head at the moment of the beep, but this description did not appear fully to capture the complexity of the experience.

In another example of her single complex and difficult to describe feelings, sample 7.2, Jane had an imagined conversation with her boyfriend in which he was asking her if she was going to a show tomorrow, and she was innerly saying to him, “I’m

probably going with Ella” in her own voice, with a reassuring tone that she understood to mean that he did not have to worry. She was unsure if she had just said this, or had both said and heard all of these words at the moment of the beep. She also had a simultaneous feeling of jealousy, the jealousy he would feel when asking her about her plans, experienced in her head and body that was clearly experienced but difficult for her to describe other than that this was somehow his jealousy and not her jealousy. Thus, at the moment of the beep, she had clear inner speech, but her feeling of jealousy was complex and difficult for her to describe in detail. She was able to say that this feeling was apprehended as being in her head and body, and that it was clearly experienced. However, she was unable to provide details as to how this experience of feeling *his* rather than her own jealousy was exactly in her awareness in a detailed manner at the moment of the beep.

In an example of her multiple complex and difficult to describe emotional experiences, in sample 5.3 Jane was feeling nervous about the exam she was about to take, apprehended as a pressure in her head and a simultaneous hyper and restless sensation all over her body. She also had a separate, simultaneous anxious feeling in her head, apprehended as a pressure pushing outwards all over her body, and a simultaneous pressure pushing outwards and forming a knot in her stomach. She also had a separate, simultaneous ongoing unpleasant out of control feeling, apprehended as a separate, simultaneous complex cyclone of hyperactivity in her body. This out of control feeling encompassed that she had eaten, that she was unprepared for the exam, that she had a fight with her boyfriend. None of these things were clearly and directly cognitively in her awareness at the moment of the beep but were all contributing to this ongoing feeling of being out of control. Therefore, at the moment of the beep she had three separate,

simultaneous emotional experiences: a nervous feeling that was apprehended as a pressure in her head and a simultaneous bodily sensation hyperactivity; an anxious feeling that was apprehended as pressure pushing outwards all over her body; and an ongoing out of control feeling that was complex and clearly experienced, but very difficult for her to describe in detail at the moment of the beep.

### Inner Speech

Jane experienced inner speech in 11 of her 48 samples (23%). We have already seen four examples of her inner speech above: her inner saying of “I have to be there at 4:00,” in sample 9.1, her inner saying of “Utah” in sample 3.5, her inner saying of “Baby I’m home” in sample 7.4, and her inner saying of “I’m probably going with Ella” in sample 7.2. Jane’s inner speech was generally clear and straightforward (8 of 11, 73%), but it was occasionally (3 of 11, 27%) difficult for her to be sure whether she was innerly hearing, innerly speaking, or both simultaneously.

In an example of her clear inner speech, sample 3.3, Jane was at the gas station looking at the woman in front of her while Jane was waiting to put gas in her car. Jane was innerly saying to herself “Are you passing or not?” in a slightly impatient tone, just as if she had said it aloud. However, there was no experienced impatience.

In an example of her inner speech that was difficult to distinguish from inner hearing, and appeared to include elements of both, sample, 7.1, Jane was imagining a conversation with her Mother, apprehended as an experience of her Mother saying “Is there anything wrong?” and Jane saying “No everything’s fine,” but both of these seemed to be in Jane’s own voice. These were clearly apprehended at the moment of the beep but she was unable to distinguish if these were in inner speech, inner hearing, or both in inner



speech and simultaneously in inner hearing at the moment of the beep. She also had a simultaneous undifferentiated still inner seeing of her Mother's face which was not clearly detailed other than that she was looking sad while she asked Jane this, but there was no sound in this inner seeing.

Jane had one sample (sample 5.4) in which her inner speech was apprehended as being in her "eating disorder voice." Jane had a clear inner seeing of her boyfriend's face, looking over his own left shoulder. She was also separately, simultaneously looking at herself in the mirror, focusing on her stomach (an instance of sensory awareness) was simultaneously feeling fat. She also was innerly saying to herself, in the right back side of her head, "you should take some diet pills." This experience of inner speech was in her own voice, but this voice was apprehended as being her "eating disorder voice" that is both herself and somehow separate from herself, but it was not possible for her to say more about the characteristics of this voice. She also was separately, simultaneously singing a song by The Meteors out loud, and was on the line "Little Red Riding Hood."

### Unsymbolized Thinking

Jane experienced unsymbolized thinking in 5 of her 48 samples (10%). These thoughts were generally clear, single, and straightforward but were less clearly apprehended on one occasion. In an example of her clear and straightforward unsymbolized thinking, sample 4.6, Jane was entering the lab and saw the outer door of the lab and the lab next door open and had an unsymbolized thought of wondering why the doors were open with nothing else in her awareness.

In her one example in which her unsymbolized thinking was less clearly apprehended which occurred in sample 1.6, Jane was thinking something about how

much she admired her Mother, and that it was cool that she takes care of herself. She knew this was generally the content of what she was thinking, but was unsure of the exact details of this thought at the moment of the beep.

### Interfering Phenomena

Jane interfered with, or disconnected from ongoing processes related to food, weight, shape, appearance, or BN-related behaviors in 5 of her 48 samples (10%). We have already seen one example of this above: her “eating disorder voice” in sample 5.4. In another example, sample 7.3, Jane was innerly saying to herself “don’t fuck this up” in her own voice, just as if she had said this aloud. The “this” that this referred to was the awareness that she looked skinny. She also had a simultaneous sensory awareness of looking at herself in the mirror, focused in on her stomach. She was also simultaneously hungry, apprehended as a bodily sensation of hunger in her stomach that was experienced as both positive in that it meant that her body would eat its own fat, and negative in that it meant that she was hungry and would rather that she had not eaten and was still not hungry. Therefore, at the moment of the beep, Jane was focused on her stomach and was telling herself not to do anything that would interfere with looking skinny while she was separately and simultaneously self-reflexively evaluating her hunger.

### Inner Hearing

Jane internally heard something in 4 of her 48 samples (8%). For example, in sample 2.4 she was innerly hearing a song in her head, and was on the line of the song “She’s Deadly,” just as if she were listening to it sung aloud. She also had a simultaneous inner seeing of the album cover of the same song, apprehended as a realistic image of the

whole album cover, with the band in black and white, and with black around it, as it appears on the actual cover but without all of the details filled in.

## Discussion

Jane's 48 collected samples gave us insight into her complexly multiple and often innerly seen world. Her multiple, fragmented inner experience, was quite consistent with the inner experience of other bulimic participants. However, her very salient inner seeing was somewhat atypical, in that it occurred with one other participant, Vicky, but occurred with far less frequency in our other participants with BN. However, Jane's inner seeing also had unique characteristics. In particular, while she had examples of clear single inner seeing, she also had inner seeing that had no background or no clear background, inner seeing that was shadowed or not fully detailed, and inner seeing that was blurry in appearance at the moment of the beep.

The salience of sensory awareness in Jane's inner experience was also strongly consistent with the inner experience of other individuals with BN. Her feelings, when they occurred were markedly consistent with our other participants with BN in that they were largely complex and very difficult for her to describe. However, unlike our other participants with BN, Jane did not have any instances in which her emotions were indistinguishable from cognitive or sensory phenomena.

Jane's inner speech was generally consistent with our other participants with BN, but was somewhat atypical on the one occasion in which her inner speech was apprehended as occurring in her "eating disorder" voice; as well as on the occasions in which her inner speech was intertwined with inner hearing. Jane's interfering phenomena occurred at a somewhat lower rate relative to our other participants with BN. However,

when this phenomenon did occur, it was clearly consistent and strongly related to her bulimic pathology.

In summary, Jane's inner experience was characterized by multiple, fragmented, occasionally undifferentiated attention, and was often innerly visual or sensory. Her emotions were often complex, multiple, and were occasionally ongoing at the moment of the beep. When Jane began sampling, she was not in treatment for her BN but was clearly distressed. She entered outpatient treatment after our sixth sampling day, and entered inpatient treatment approximately three months after completing sampling. It is not possible to know the extent to which treatment may have impacted the nature of her inner experience, but the sampling experience was clearly very meaningful and had a profound impact for her. On one occasion, she told the DES investigators (Dr. Hurlburt and Sharon Jones-Forrester) that she had never trusted anyone more and that she felt that we knew her better than anyone. While these were only 48 very brief moments of her life, the impact of having someone truly listen to and attempt to accurately, clearly, and thoroughly understand these moments had unmistakable meaning for her.

## CHAPTER 13

### PAULA

Paula was a 19-year-old university student who volunteered for the study after it was presented in her psychology class. She met the DSM-IV-TR (APA, 2000) criteria for BN and scored in the 86th percentile on the bulimia subscale of the Eating Disorders Inventory-3, placing her in the elevated clinical range. She considered herself to be actively bulimic and was not in treatment at the time these samples were collected. A total of 36 samples were collected and discussed extensively over six sampling days during an approximately 9-week period.

Paula's inner world was complex, with several overlapping, commonly negatively focused phenomena occurring simultaneously. She frequently had feelings in her inner experience, and her feelings were generally complex, overlapping, distressing, and sometimes conflicting. She also had difficulty distinguishing between her feelings, thoughts and sensations. Paula's thinking was frequent, and usually straightforward, but occasionally included multiple, overlapping or conflicting thoughts.

Paula's inner world also included occasional inner seeing, and when this happened, her inner seeing was almost always clear. However, on one occasion, she had an experience that she apprehended as visual without actually directly seeing anything. Paula talked to herself fairly often, and when this occurred it was always emotional, and in her own voice.

Paula's inner world was occasionally sensory, and her sensory awareness was generally complex, overlapping, and always apprehended bodily. Within her inner experience, Paula occasionally consciously interfered with, or disconnected from ongoing process related to food, weight, shape, appearance, or BN-related behaviors, and when this occurred, it was either comparative or qualitatively distressing to her.

### Fragmented Multiplicity

Paula experienced fragmented multiplicity of experience in 21 of her 36 samples (58%). Her multiple experiences included from two to 13 separate, simultaneous experiences at the moment of the beep. In a low-multiplicity example, sample 1.1, Paula was listening to her friend Martha talking about her boyfriend, and at the moment of the beep she was also unsymbolizedly thinking that she did not like the way Martha was acting, and that what Martha was saying made her sound kind of egotistical and conceited. This was apprehended as a single unsymbolized thought. She also had a separate, simultaneous feeling of sadness that was not about anything specific, and that was apprehended in her head. Thus, at the moment of the beep, Paula had three phenomena in her awareness: a perceptual awareness of listening to her friend, a single unsymbolized thought, and a separate, simultaneous feeling at the moment of the beep.

In a profoundly multiple example, sample 1.3, Paula was in the break room at work watching *Dancing with the Stars*. At the moment of the beep she was feeling sad and depressed, which was apprehended as a single feeling in her head. She was also, in awareness, seeing the couple dancing on the screen and was simultaneously wishing she could be like the girl who was dancing. She also had several separate, simultaneous but overlapping thought/feelings about her mom that were not in words, but included the

concepts that her mother does not care about her, had not called her since her graduation, had only text messaged her for her birthday two days after her birthday, had kicked her out when she was 15 because her stepfather did not want her in the house, that she (Paula herself) is not good enough, and that her mother makes her feel that she will never be good enough. These six simultaneous thought/feelings were apprehended as a chain reaction, each thought/feeling triggering another, but the previous thought/feeling remaining in awareness. She also had a separate, simultaneous thought/feeling overlapping multiplicity that her mother told her she could not be a dancer, that she would not be able to go to college, that she would not graduate high school, and that she would never amount to anything. These four overlapping thought/feelings were apprehended as a simultaneous cascade of thoughts and a separate, simultaneous inner seeing of her mother asking her why she was going to dance class since she would not be able to do it. In this inner seeing Paula was hearing her mother saying these things, and this was apprehended as a clear inner seeing of her mother from the front, in their living room, with her mother being angry and saying these things to her so that she was both seeing and hearing her mother saying these things. Therefore, at the moment of the beep Paula had thirteen phenomena in her awareness including a complex single feeling of being sad and depressed, a perceptual awareness of the television program, ten simultaneous overlapping thought/feelings about her mother, and an inner seeing with sound experience.

### Feelings

Paula experienced feelings in 19 out of her 36 collected samples (53%). Although feelings were frequent in her inner experience, her emotions were relatively complex and

were apprehended in three primary ways: as single, straightforward feelings (6 of 19, 32%); as multiple feelings (9 of 19, 47%); and as conflicted feelings (4/19, 21%). In an example of single, straightforward feelings, sample 4.1, Paula's math class and had just reviewed a section and she understood it. At the moment of the beep she had a feeling of excited happiness in her head and body, all over her body, head to toe, front and back, with nothing else in her awareness.

In an example of multiple feelings, sample 1.2, Paula was thinking that she needed to get a good grade on her communications midterm because her scholarship depends on it. This was apprehended as innerly saying to herself, in her own voice, "I need to do good." She also had separate, simultaneous multiple feelings of being nervous and scared and anxious and sad. These were slashes of mixed emotions occurring one after another in rapid succession, with each emotion apprehended simultaneously as a feeling in her body and chest and as a sensation of her heart pounding and her body feeling anxious and paralyzed from her waist up. Thus, she was not experiencing a single bodily feeling with multiple aspects (nervous, scared, anxious, and sad) but instead was experiencing nervousness, fear, anxiousness, and sadness separately and simultaneously, with each of these feelings being bodily apprehended in her body (particularly in her chest), and separately and simultaneously as a bodily sensation of being anxious and paralyzed from the waist up.

While the series of emotions in the previous sample were all negative, Paula also had examples in which she had conflicting positive and negative feelings. For example, in sample 6.4, Paula had simultaneous feelings of anger, sadness, and love, which were apprehended as mixed emotions in her head. The anger was the most prominent feeling in her awareness, but the feelings of sadness and love were also simultaneously in her



awareness. She also had a separate, simultaneous thought/feeling about her boyfriend that was apprehended as being angry at him, in the front of her head, and wishing she could get him motivated.

### Thought/Feelings

Paula frequently had experiences in which cognitive and affective elements were intertwined and undifferentiated. She had thought/feelings in 12 out of her 36 samples (33%). We have already seen two examples of thought/feeling above: the ten overlapping thought/feelings in 1.3 and the angry thought/feeling in 6.4. Paula's thought/feeling samples were predominantly multiple (9 of 12, 75%). However, even her single thought/feeling experiences were generally complex.

In an example of her multiple thought/feelings, sample 4.2, Paula had chosen to write about organ harvesting for her class, and was wanting to know more about it. This was apprehended as an unsymbolized thought process of having a void in her that this knowledge would fill up, that was somewhat undifferentiated and difficult for her to describe. She also had a separate, simultaneous thought/feeling of being disturbed that included being grossed out, feeling bad for the people it was happening to, and wanting to know how it could happen. This thought/feeling was apprehended as several different aspects that were mixed together and combined to create one feeling of disturbance that was undifferentiated and somewhat difficult for her to explain. She was also simultaneously aware of being intrigued, but it was difficult for her to determine if this was separable from the feeling of being disturbed. Thus, for Paula, at the moment of the beep, the experience of being disturbed is not a single phenomenon but instead includes multiple aspects.

In an example of single thought/feeling phenomena, sample 3.6, Paula had just heard her manager was fired and had a single thought/feeling of wondering why he was weirdly fired and simultaneously feeling angry which was apprehended as a cloudy feeling in her head that she understood as an angry mad thought. This thought/feeling was apprehended in the front of her head, but she was not bodily angry, and it was very hard for her to describe the anger other than as an angry, clouded, undifferentiated thought/feeling. Therefore, although this is a single thought/feeling it is not a clear undifferentiated phenomenon for her. In fact, Paula had only one single thought/feeling that was uncomplex. This occurred in sample 3.2 in which she was worried about a sick friend, which was apprehended as a feeling of worry in her head and a simultaneous unsymbolized thought process of hoping he was ok.

#### Feeling/Sensory Awareness

Paula also had one occasion (1 of 36, 3%) had in which her feelings and sensations were intertwined and undifferentiated; a phenomenon termed feeling/sensory awareness. This occurred in sample 3.1 in which she was at Mt. Charleston and was looking at/admiring the trees. This was experienced as a single process of sensorily noticing how big the space was, noticing the quiet, sensing the impact the trees were having on her, and simultaneously feeling energized, smaller, lighter, and happy. Thus, she was not having a bodily sensory awareness and a separate feeling of being energized and happy, instead, she was sensorily aware of the size, quiet, and impact of the space and an inseparable intertwined feeling of being energized, smaller, lighter, and happy.

## Unsymbolized Thinking

Paula experienced unsymbolized thinking in 9 of her 36 samples (25%). We have already seen three examples of unsymbolized thinking above: the thought about her friend Marta in 1.1, the thought of needing to do well on her communications exam in 1.2, and the knowledge void in 4.2. Paula's unsymbolized thinking was predominantly single and straightforward (6 of 9, 67%) but on three occasions (3 of 9, 33%) included multiple or multiple and conflicting thought processes.

In an example of her straightforward unsymbolized thinking, sample 3.4, Paula had taken her last test of the semester and had an unsymbolized thought process of being relieved that her test was over and a simultaneous bodily sensory awareness of being clear, relaxed, and like pressure was lifted off that was apprehended as a sensation of her body feeling lighter.

In an example of multiple and conflicting unsymbolized thought processes, sample 6.5, Paula was worried about her grades in her classes and was feeling stressed and frustrated. This was apprehended as an unsymbolized thought process about being afraid of failing, and about being afraid that she's going nowhere, that were a mix of thoughts, in her head without any simultaneous feelings of fear. Thus, although she was thinking about being afraid of failure, and thinking about being afraid that she's going nowhere, she was not separately or simultaneously feeling afraid. She was aware of these concepts but they were not in words. She was also separately and simultaneously innerly saying to herself "I put all of my effort into something and yet I'm going nowhere," in her own voice, just as if she had said this aloud. She also had a separate, simultaneous unsymbolized thought process of knowing that she was working herself up for no reason. She also had a separate, simultaneous feeling of being stressed/frustrated, in her head, but

that was somewhat difficult for her to describe. Therefore, at the moment of the beep had conflicting and multiple simultaneous unsymbolized thought processes of failure and knowing that she was working herself up for no reason, as well as an experience of inner speech and a feeling of frustrated stress.

### Inner Seeing

Paula had an inner seeing in 8 of her 36 samples (22%). We have already seen one example of inner seeing above: the inner seeing of her mother in 1.3. In another example, sample 4.4, Paula had been talking to friends about the past, and had an inner seeing of a photograph of herself with her group of 6 friends together in the quad taken in her sophomore year of high school, with herself in the middle. This was apprehended as an exact innerly seen copy of a photo she had taken. She was not innerly seeing the edges of photo, but had a still inner seeing as if she were actually looking at this photograph except that it appeared foggier than the actual photograph.

While the majority of her inner seeing was clear and straightforward, Paula also had one inner seeing that was largely undifferentiated. This occurred in sample 2.3 in which she was in English class writing a sentence on her essay about being an outsider. In this sample, she was writing about an experience of being an outsider when she was younger, when she got picked on when she was 10 or 11 because she was overweight, and a group of girls decided to beat her up because they didn't like how she looked. This was apprehended as an experience of this past incident unfolding as though she could see it but she did not have a clear, differentiated inner seeing. Instead, she had an inner seeing experience that was undifferentiated and apprehended in the back of her head as an inner seeing without seeing, in that there was something that was experientially visual about

this experience even though she was not actually seeing anything, a phenomenon called imageless seeing. She also had a separate, simultaneous sense of remembering this scene and was experiencing the emotions associated with this scene. This experience was apprehended as multiple thought/feelings in her head, as though she were re-experiencing the actual scene and was simultaneously feeling hurt, sad, confused, and scared and having a swirl of thoughts of being confused and not understanding why this was being done to her. Therefore, while most of her inner seeing was clearly experientially *seen*, she also had one experience in which she apprehended a scene visually without actually clearly and actively *seeing* it at the moment of the beep.

### Inner Speech

Paula experienced inner speech in 7 out of her 36 samples (19%). We have already seen two examples of inner speech above: the needing to do well on her exam inner speech in 1.2, and the innerly talking about her feeling of failure in 6.5. Paula's inner speech was exclusively emotional in content. For example, in sample 5.2 Paula was mad at her friend, which was apprehended as innerly yelling in her head "Why am I still her friend?" and simultaneously "Why do I pretend to be her friend?" in her own voice, just as if she yelled this aloud. She also had a simultaneous bodily and mental feeling of anger, apprehended as a sensation of chest being tense, but more aware of innerly yelling in her head at the moment of the beep.

### Sensory Awareness

Paula experienced sensory awareness in 6 of her 36 samples (17%). We have already seen one example of sensory awareness above: the relief in sample 3.4. Paula's

sensory awareness was exclusively bodily and she did not have any sampled instances in which her sensory awareness was externally focused. This bodily sensory awareness ranged from single, straightforward bodily sensory awareness (2 of 6, 33%) to relatively complex or multiple bodily sensory awareness (4 of 6, 67%).

In an example of single, straightforward bodily sensory awareness, sample 3.5, Paula had been listening to a girl's conversation about her boyfriend's dying and was simultaneously aware of hearing the conversation and having a shocked reaction about it. This was apprehended as a bodily sensory awareness of shock and a separate, simultaneous feeling of being shocked by the content of the conversation. Thus, she was not merely feeling shocked in her body, but was instead feeling mentally shocked by the content of the conversation, and had a separate, simultaneous bodily sensory awareness of the shock. In an example of complex multiple sensory awareness, in sample 6.2 Paula was feeling sick which was apprehended as an unsymbolized thought process that she was not feeling well, and six separate, simultaneous bodily sensory awarenesses: of shakiness in her body, all over her body, head to toe, front and back; of a bodily sensation that she was going to throw up, apprehended as a sensation in the inside of her stomach and back of her throat; of a wave of dizziness; of light headedness, of coldness, and of clamminess. Thus, she was not merely thinking that she was not feeling well and apprehending six sensory aspects of a single ill sensation. Instead, she was thinking that she was not feeling well, and had six distinct, separate, simultaneous bodily sensations existing in parallel so that the bodily sensation of shakiness was separate from the bodily sensation that she was going to vomit, and was separate from the bodily sensation of dizziness, and was separate from the bodily sensation of light headedness, and so on. Therefore, at the moment of the beep, Paula had an unsymbolized thought process and six

simultaneously occurring related bodily sensory awarenesses of being ill (shakiness, nausea, dizzy, light headed, cold and clammy).

### Interfering Phenomena

Paula consciously attempted to interfere with, or disconnect from, ongoing phenomena related to weight, shape, food, appearance, or BN-related behaviors in 6 out of her 36 samples (17%). We have already seen one example above: her visual and affective reliving of an incident of getting picked on for her weight in sample 2.3. In another example, sample 5.3, Paula was depressed and eating. The depressed portion of this experience was apprehended as a single sunken/sad/lost feeling (all one feeling) that was both in her body and in her head, with no specific location, and that was somewhat difficult for her to explain. She also had a separate, simultaneous awareness of comfort from eating, apprehended as a bodily sensory awareness of sudden, brief splurts of happiness and warmth (temperature), in her body and head that fades the depressed feeling but does not make it go entirely away. Thus, at the moment of the beep, Paula was *both* feeling depressed, and her experience of comfort from eating was interfering with, but not entirely alleviating this feeling of depression.

While she had some brief, partial respite in the above distressing experience, the immediately following sample, 5.4, was distressing without any relief. In sample 5.4 Paula was feeling depressed, apprehended as feeling sad, alone, and worthless, in her head, and also had a separate, simultaneous saying to herself in an angry tone “You need self-control” and “You’re fat”, in words, in her own voice, just as if she said these things aloud. She also had a separate, simultaneous bodily sensory awareness of her body’s being swollen that was apprehended as deep in her whole body, as if she were swollen

head to toe. Thus, at the moment of the beep, Paula was feeling depressed, and was simultaneously disconnecting with this process by consciously engaging in a process of innerly verbally criticizing herself and attending to her bodily swollen sensation.

### Inner Hearing

Paula had only one experience of inner hearing in her collected samples (1 of 36, 3%). In sample 5.5 At Paula was at the bookstore thinking about the title of a book, apprehended as a memory of her friend telling her a part of the Sleeping Beauty story from Grimm's Fairy Tales in which she was innerly hearing her friend's voice telling her part of the story, just as if she were telling her the story aloud. She also was separately and simultaneously actively engaged in scanning the bookshelves looking for this book. She was not saying the title, or symbolizing the title, just actively scanning the shelves looking for this title.

### Nothing in Awareness

Paula had one instance in which there was nothing in her awareness at the moment of the beep. This occurred in sample 4.5, in which she was staring off into space. Her eyes were open but she was not seeing or paying attention to anything and there was nothing in her awareness at the moment of the beep.

### Discussion

Fragmented multiplicity was the most salient aspect of Paula's inner experience. Her multiple samples contained from two to 13 simultaneous phenomena at the moment of the beep. Paula also had more frequent affective experience in her awareness than



many of the bulimic individuals we have sampled with. While directly apprehended feelings were relatively frequent in her experience, she also had samples in which her feelings were conflicted, multiple, or intertwined with cognitive or sensory phenomena. Although Paula appeared to have more direct access to her emotions than our other participants with BN, this access appeared to be more distressing than comforting for her. In fact, in her entire 36 samples, only 9 (25%) contained neutral or relatively positive content, and the remaining 27 (75%) were qualitatively negative or distressing in content.

Overall, Paula's inner experience was characterized by complex, multiple phenomena with frequent feelings, thought/feelings, unsymbolized thinking, inner seeing, and inner speech. Less commonly, she had bodily sensory awareness and samples in which there was interference with ongoing phenomena related to weight, shape, food, appearance, or BN-related behaviors. She rarely but occasionally had perceptual awareness, inner hearing, doing, and blank phenomena. Paula's inner experience is clearly fragmented, multiple, and emotional. Her inner world is strikingly negative, and her moments of positive or neutral awareness are disturbingly rare. While it is likely that these characteristics of her inner experience interact with her bulimic symptomatology, the extent and directionality of this interaction remain unknown. Even in the samples in which there is clear and active bulimic behavior content at the moment of the beep, as was the case in sample 5.3 in which she was depressed and eating, or in sample 5.4 in which she was depressed and innerly criticizing herself while simultaneously feeling swollen, these do not occur in the absence of significant negative affect. Thus, it is possible to speculate that her significant comorbid depression may be playing a role in her current bulimic symptomatology. While comorbid mood disorders are very common in individuals with BN, the marked salience of negative content and negative affect in

Paula's samples appear to be significantly in excess of what we have seen among other individuals with BN who have comorbid depression.

## CHAPTER 14

### JESSICA

Jessica was a 22-year-old university student at the time these samples were collected. She met the DSM-IV-TR (APA, 2000) criteria for BN and scored in the 89th percentile on the bulimia subscale of the Eating Disorders Inventory-3, placing her in the elevated clinical range. Jessica considered herself to be bulimic and was not in treatment for BN at the time these samples were collected. Jessica volunteered for the study after viewing the study advertisement on the psychology subject pool website. A total of 17 samples were collected and discussed extensively over five sampling days during a nine-week period. Although we generally collect six samples per sampling day, Jessica had many instances in which her inner experience was so overwhelmingly complex that she was unable to complete the sampling task. Thus Jessica's sampling procedure apparently served to filter out the most complex features of her inner experience.

Jessica's inner world was complex, with several simultaneous overlapping phenomena. Although her inner experience that we were able to directly observe was strikingly multiple, it is likely that Jessica's inner world was more strikingly multiple and overlapping than we were able to understand, as she frequently had beeps in which her inner world was so overwhelmingly complex that she was unable to report on it. Her

inner world was frequently sensory, and her sensory awareness was equally bodily and externally apprehended. On occasion, her sensory awareness contained a marked dividing of her attention so that 100% of her attention was focused on one aspect of her environment (i.e. a visual sensory awareness), and another 100% of her attention was simultaneously focused on another aspect of her environment (i.e. a heard sensory awareness.)

Jessica's thinking was frequent, and generally unsymbolized. Her unsymbolized thoughts were fairly evenly divided between single and multiple, overlapping thoughts. On occasion, her multiple thoughts were apprehended as profoundly multiple, jumbled, and not clearly or fully articulated. Although her thinking was usually unsymbolized, Jessica occasionally also had partially worded thoughts. Jessica also had frequent inner seeing. When they occurred, these inner visual experiences were fairly evenly divided between single and clear inner seeing, and multiple, overlapping, and occasionally indistinct inner seeing. She also frequently talked to herself, and her inner speech was divided between single, straightforward experiences of innerly talking to herself, and experiences in which her inner speech was apprehended as complex, overlapping, speeded, or containing divided voice streams.

Jessica's feelings were relatively uncommon, and when they occurred, they were never clearly defined. Instead, they ranged from single, relatively indistinct, bodily apprehended emotions, to multiple, overlapping, combinations of emotions. Jessica's emotions, when they occurred, were also commonly intertwined with, and inseparable from her thoughts.

## Fragmented Multiplicity

Jessica experienced fragmented multiplicity of experience in 12 of her 17 samples (71%). Her multiple inner experiences generally included 2 to 12 separate inner experiences occurring simultaneously at the moment of the beep. Coupled with the fact that Jessica reported that she had several beeps that she was unable to record due to the overwhelming complexity of her inner experience, therefore the samples we were able to collect with her actually underestimate the complexity of her fragmented multiplicity of inner experience.

Jessica's most complexly multiple sample (that she was able to capture) was sample 3.2. She was watching the TV show *Scrubs*, a scene in which a skinny blonde female doctor walked in to a room and all of the male doctors froze and stared at her. Jessica had a partially worded thought process that if it were fully worded would be, "Why is it that movies and TV shows always have blonde skinny girls for guys to stare at?" At the moment of the beep, in this partially worded thought, the words "blonde," "skinny," "guys," and "stare" were apprehended in inner speech, in her own voice, as if she had said these words aloud, and were apprehended as being in the front of her head. The remainder of the words from this thought were apprehended as being also in inner speech, in her own voice, but quieter and in the back of her head. These two voice streams were not in a temporally organized stream; that is, it seemed that the front voices were not synchronized to the back voices. Thus, if these inner speakings were coordinated they would be saying one thing, "Why is it that movies and TV shows always have blonde skinny girls for guys to stare at?" but at the moment of the beep they are not coordinated but are instead two separate and simultaneous streams of partially worded inner speakings. She also had separate, simultaneous multiple unsymbolized

thought/recollections of movies and TV shows in which blonde skinny girls were featured. There were perhaps 8 or 10 of these simultaneous thoughts/recollections, apprehended as a jumble of not fully articulated thoughts that somehow existed in a pile or heap outside and behind her head. Thus, at the moment of the beep, Jessica had 12 multiple simultaneous phenomena in inner experience. She was actively watching TV, had a partially worded thought process in inner speech, and 8 to 10 separate, unsymbolized thought process all occurring simultaneously in her awareness at the moment of the beep.

In an example of her relatively less complex but still multiple inner experience, sample 1.1, Jessica was in class wondering about hypnosis. This wondering was apprehended as having about four separate, simultaneous innerly spoken questions: “Could I be hypnotized?” “Does it work?” “How do they do it?” “Would I remember what I said?” She was innerly saying these questions to herself, in her own voice, but these thoughts were apprehended as being much faster than she would be able to say them aloud, and as though her own voice were speeded up. These inner speakings were experienced as coming at her from four separate directions; there was no motion implied, and she could not say which thought came from which direction. These inner speakings were also apprehended as being in English rather than in her native Russian tongue and in her voice, but without the accent that characterizes her aloud English. She also had a separate, simultaneous unsymbolized suspicious wondering how her professor could be so sure that hypnosis does not work. She also had a slight perceptual awareness of the girls in front of her in class talking, of the overhead projector, of her professor, and of the board in the front of the class. Thus, Jessica had four separate, simultaneous inner

speaking as well as a separate, simultaneous unsymbolized thought all occurring simultaneously in her experience at the moment of the beep.

### Sensory Awareness

Jessica experienced sensory awareness in 8 of her 17 collected samples (47%). We have already seen one example of sensory awareness above: her awareness of the bright blue of Joan's vest and the cigarette lighter in sample 4.2. Her sensory awareness will now be discussed in greater detail. Jessica's sensory awareness was evenly split between bodily (3 of 8, 37.5%) and external (4 of 8, 50%) sensory awareness, and she also had one sample (1 of 8, 12.5%) that included both bodily and external sensory phenomena. Her sensory awarenesses were almost exclusively multiple, and only one was a single sensory awareness. Within her external sensory awareness, Jessica had two occasions (2 of 7, 28.5%) that contained a striking pattern of divided attention so that her sensory focus was 100% on one aspect of her sensory awareness in one modality, and 100% of another sensory awareness in another modality. Examples of each of these characteristics of her sensory awareness will now be provided.

In an example of her bodily sensory awareness, in sample 3.3 Jessica was eating, and had just bitten into an orange, the spray from which had gotten into her nose. At the moment of the beep she had a bodily sensory awareness of the stinging sensation of the orange in her nose and two other simultaneous bodily sensory awarenesses: of smelling the orange and tasting it in her mouth. She also had a nice feeling of something like happiness that was related to her sister making fun of her and laughing at her in a nice way as she was making faces in reaction to having orange in her nose. This nice feeling was clearly apprehended but was difficult to describe other than as an "inner smile." She

also had a slight perceptual awareness of the table in front of her and her sister sitting across from her.

In an example of her external sensory awareness, in sample 4.2 Jessica was listening to her friend Joan who was off to her left side talking and also looking at her friend Lisa who was in front of her. At the moment of the beep she was simultaneously hearing what her friend Joan was saying, and had a sensory awareness of the bright blue of Joan's vest and a separate sensory awareness of the cigarette lighter Joan was holding up. She also had a simultaneous thought/feeling that what Joan was saying (that she is neat and in her tendency to tidy up had accidentally taken Lisa's lighter) was funny (in a nice way). This thought/feeling of nice/funniness was aimed more at what Joan did than at what she is saying, and was clearly present to her at the moment of the beep, but it was difficult for her to determine exactly how this was apprehended at the moment. She also had a separate, simultaneous slight perceptual awareness of Lisa who was standing in front of her.

In an example of a sample that included both bodily and external sensory awareness, in sample 2.1 Jessica had a sensory awareness of her hair, apprehended as a bodily sensation of feeling the hair pulling against her fingers and a simultaneous external sensory awareness of looking at the details of the split ends in her hair. She also had a separate, simultaneous inner seeing of two mountain climbers, seen from the side, climbing left to right, with one climber in the front leading the other and they were joined together by ropes, with mountains and snow all around them. She knew one to have a red jacket and one to have a blue jacket, and that both had their hoods up, but was unsure which climber was wearing which jacket at the moment of the beep. This was a clear, still



inner seeing. She also had a separate, simultaneous slight perceptual awareness of her sweater, and of her teacher talking.

As noted above, Jessica also had two external sensory awarenesses in which her focus was strikingly divided. This occurred in sample 5.1 in which she was staring at the blanket on her bed and had an external sensory awareness of the array of multiple bright colors and a simultaneous external sensory awareness of the texture of the blanket. She also had a separate, simultaneous awareness of actively trying to hear what her mother and sister were saying in the next room, apprehended as actively focusing on listening to them. However, for Jessica, at the moment of this beep, her sensory awareness was *not* divided between these three things. Instead, she apprehended this experience as having 100% of her visual focus was on the color and texture of her blanket, and 100% of her hearing focus on the listening.

Another example of this divided focus phenomenon occurred in sample 5.3 in which Jessica was on the phone with a friend and was lying on her stomach on the bed, leaning well off the bed with her head hanging down nearly touching the floor. At the moment of the beep, she had an external sensory awareness of her hair surrounding her face that was simultaneously apprehended as seeing the curliness and color of her hair that surrounded her upside-down face. She was also separately, simultaneously tracking what her friend was saying. Again, as in sample 5.1, her attention was not truly divided between these three things, but instead was 100% focused on each aspect simultaneously.

### Unsymbolized Thinking

Jessica had unsymbolized thinking in 5 of her 17 samples (29%). We have already seen two examples of unsymbolized thinking above: her multiple TV show thoughts in

sample 3.2, and her thought about her professor in sample 1.1. Her unsymbolized thinking was fairly evenly divided between single (3 of 5, 60%) and multiple (2 of 5, 40%) unsymbolized thoughts

In an example of her single unsymbolized thinking, sample 4.4, Jessica was sitting outside with her friend Lisa and was listening to Lisa's saying that if she had a business she would never work on Christmas or New Year's. This was apprehended as looking at Lisa and actively tracking what she was saying. She also had a simultaneous clear unsymbolized thought process of wondering if she had her own business if she would have holidays. This thought process was apprehended as occurring on her right hand side, but was outside of her head.

The process of having thoughts and inner seeings outside of her head, as described above in sample 4.4, occurred in three of Jessica's samples. For example, she also had thoughts outside and behind her head in sample 3.2 (discussed above in the fragmented multiplicity section). This also occurred in sample 1.2, (to be discussed below), in which she had an inner seeing that was apprehended as occurring behind her, on the back right-hand side of her head.

We have already seen one example of her multiple unsymbolized thinking above: the 8 to 10 simultaneous, jumbled, not fully articulated thoughts in sample 3.2. In another example, sample 1.2, Jessica was in class where they had been discussing hypnosis. At the moment of the beep, she expressed that she could not be sure of exactly what was in her awareness. She thought that she may have had several unsymbolized thought processes about whether you can erase bad memories, how you can distinguish between true and false memories, how you can be sure of what you remember, past memories of her boyfriend, how you can be sure you remember 100% correctly. These thoughts

seemed to be present but were markedly jumbled together at the moment of the beep, and she was unsure if any of these thoughts were worded. She also thought that she had an inner seeing in her head of her ex-boyfriend, seen from the waist up and wearing a red shirt, but this was not a clear image. She seemed to be looking at this image forwards but the image was in the back right hand side, behind her head. However, she was unsure if this inner seeing was in her awareness or not at exactly the moment of the beep.

### Partially Worded Thinking

Aside from her unsymbolized thinking, Jessica also had 2 of her 17 samples (12%) samples in which her thinking was partially worded. We have already seen both examples of her partially worded thinking above: in samples 3.1 and 3.2. To review, in both of these samples, Jessica was watching TV at the moment of the beep, and had a partially worded thought about what she was watching, in which certain words were articulated, and the others were apprehended and present in her awareness but not fully articulated at the moment of the beep.

### Inner Seeing

Jessica had inner seeing in 5 of her 17 collected samples (29%). We have already seen two examples of inner seeing above: her inner seeing of two mountain climbers in sample 2.1; and her potential inner seeing of her ex-boyfriend in sample 1.2, of which she was unsure if it was in her awareness at exactly the moment of the beep. Jessica's inner seeing occurred in three primary ways: as single, clear inner seeing (2 of 5, 40%), as single inner seeing with indistinct elements (1 of 5, 20%), or as multiple inner seeing with indistinct elements (2 of 5, 40%).

In her remaining inner seeing sample, 5.2, Jessica was looking on her digital camera at a snapshot of her and her boyfriend from a recent trip to Chicago. She was just taking in this picture. She also had multiple separate, simultaneous, overlapping inner seeings in her head that were not clear or distinct, but were apprehended as several snapshots with edges. She was not able to say exactly how many of these innerly seen snapshots were in her awareness at the moment of the beep, but there were more than five. Each of these innerly seen snapshots represented a mental picture (as opposed to an actual picture she had taken) of different places she had been on the trip, but they were fuzzy and indistinct. She also had a separate, simultaneous, slightly clearer visual image of herself and her boyfriend standing closely next to each other, next to the sink, seen from the back, from the perspective of standing behind her, with Jessica on the left in the image, and this clearer image was of an event that actually took place (as opposed to the mental images above). She also had a separate, simultaneous bodily sensation of happiness that was apprehended as a bodily sensation deep in her stomach, all over her stomach, that was approximately volley ball sized. Although this feeling was clearly apprehended at the moment of the beep, it was very difficult for her to fully describe.

### Inner Speech

Jessica had inner speech in 4 of her 17 samples (23%). We have already seen two examples of her inner speech above: in sample 1.1 and sample 3.2. In another example, sample 1.9, Jessica was on her knees angrily stuffing clothes into a bag, apprehended as a bodily sensation of stuffing the clothes into the bag in an angry manner. She was also simultaneously innerly saying to herself, “Why do I have all of these clothes, I don’t wear them, they take all this space, there are so many of them” that was apprehended as one

long thought, in inner speech, in an angry tone. She was not feeling angry at the moment of the beep; instead, her inner speaking and stuffing clothes into the bag were the anger, without the anger itself being directly experienced.

### Feelings

Jessica experienced feelings in 3 of her 17 samples (18%). We have already seen two examples of her feelings above: her “nice” feeling in sample 3.3, and her bodily sensation of happiness in sample 5.2. In her remaining feeling sample, 2.4, Jessica was in class and had several thought/feelings (it was not possible for her to say how many but somewhere around 10), that she perceived as several chaotic unworded thought/feelings in her head, all jumbled together so that none were clearly separable, but she knew them to be related to what she had to do, the papers that were due, the final exam, wanting her teacher to shut up, wanting the class to be over, and that she was going to be late to her sampling appointment. She also had a simultaneous thought/feeling of wanting to leave in her head that was apprehended as a vague urge to get up and leave the class. She also had a separate, simultaneous complex feeling of nervousness/worry/anxiety that simultaneously contained all of these emotional elements (nervousness, worry, and anxiety) in an intertwined manner, and this feeling was apprehended as a bodily sensation of her stomach turning upside down. She also had a separate, simultaneous perceptual awareness of her teacher in the front of the room.

### Thought/Feelings

Jessica had 3 out of her 17 sampled experiences (18%) in which her feelings were intertwined with cognition, so that her thoughts and feelings were impossible to

distinguish. We have already seen two examples of thought/feeling above: the thought/feeling of nice funniness in sample 4.2, and the approximately 10 chaotic, jumbled unworded thought/feelings and separate thought/feeling of wanting to leave in sample 2.4. In her remaining thought/feeling sample, 4.3, Jessica was feeling full and heavy. The heaviness was apprehended as a bodily sensory awareness of her stomach's being simultaneously bloated, and a separate bodily sensory awareness of a ball of heaviness pulling downwards on the front surface of her stomach. She also had a separate, simultaneous sensation of fullness, which was separately apprehended as a bodily sensation of bloating in her stomach. She also had a separate and simultaneous complex, intertwined thought/feeling of self-criticalness that included being guilty and not very happy, that was clearly present to her at the moment of the beep but very difficult for her to describe.

## Discussion

Fragmented multiplicity was the most salient aspect of Jessica's inner experience. Despite the apparent profound complexity of her samples, it is likely that Jessica's reported samples were on the simple end of her complex multiplicity continuum. Jessica's reports during the sampling meetings indicated that she had several beeps in which her inner experience was so complex that she was simply unable to complete the sampling task—she didn't know where to begin to describe the beeped experience. We discovered this after noting that Jessica had sampling days in which she had not collected a full six samples, when we asked her about this, she said that she skipped those samples because she was unable to write down what was in her awareness because it was so profoundly chaotic that it was impossible for her to focus on it sufficiently to understand

it herself, let alone attempt to put it into words and translate it to us, she simply could not focus on it.

During Jessica's fragmented multiplicity, she usually could say that this aspect was more central to her awareness, whereas that other aspect was less central; she could usually assign rough percentages, such as 60% of her awareness was focused on A, 30% on B, and 10% on C. In this way she was similar to most other subjects who have multiple experiences.

However, she had some moments where this division of attention into parts that added to 100% simply did not adequately characterize her experience. In these instances she experienced herself as aiming her entire attention at one thing, and, separately, aiming her entire attention at another thing. For example, at sample 5.1, Jessica was primarily focused on the blanket—its color and texture as she was staring at it; and yet, at the same time, she was also primarily focused on the conversation that her mother and sister were having. It was as if 100% of her attention was on the blanket, and 100% of her attention was on the conversation. So questions such as, “Are you paying more attention to the blanket or to the conversation?” simply don't do justice to Jessica's experience: she is in fact both more paying attention to the blanket and paying more attention to the conversation.

Jessica's unsymbolized thinking was quite consistent with that of our other participants with BN, in that it included both instances of fairly clear, single thinking, and instances in which her thinking was complexly multiple. Also consistent with our other participants, Jessica had two instances in which her unsymbolized thinking was distressingly multiple and included up to 10 multiple unsymbolized thoughts at the

moment of the beep. She also had samples that contained partially worded thinking, a phenomenon that occurred in only three of our other participants with BN.

Jessica's inner seeing was also strongly consistent with our other participants with BN it was occasionally clear but often multiple, overlapping, and indistinct. Additionally, her inner speech was also consistent with our other participants with BN in that it was occasionally clear and single, but was more often multiple and complex. When Jessica had emotions in her inner experience, they were not clearly defined, and were occasionally indistinguishable from cognition, which is again consistent with our other participants with BN. Unlike most other individuals with BN studied using DES, Jessica did not have any samples in which she was consciously attempting to control, or disconnect from, ongoing phenomena related to weight, shape, food, appearance, or BN-related behaviors.

Overall, Jessica's inner world was fragmentedly multiple, profoundly complex, and sensory. Although we were unable to gain insight into the more complex end of the continuum of her inner experience, even this relatively simple end is strikingly complex. It is possible to speculate that this fragmented multiplicity and sensory awareness, as well as her indistinct overlapping feelings play an active role in her bulimic symptomatology. Jessica also had relatively high levels of comorbid anxiety, and moderately high levels of comorbid depression, which could be speculated to potentially intensify the complexity of her inner world.



## CHAPTER 15

### MONICA, WENDY, AND LILY

Of the 13 women who participated in the sampling phase of the present study, 3 were unable to complete the full number of sampling days but, nonetheless, agreed to have their results included in the study. Results of these three participants: Monica, Wendy, and Lily, will be discussed in this chapter. Although each of these women was unable to complete the full number of sampling days, their results are strongly consistent with our other participants with BN. However, it should be noted that within the DES interviewing process, the first sampling day is considered a training day, and results collected on that day should be considered tentative. With that caveat in mind, the idiographic characteristics of each of these participants will be presented, followed by a discussion of their group DES results.

Monica was a 48-year-old university student at the time these samples were collected. She met the DSM-IV-TR (APA, 2000) criteria for BN and scored in the 21st percentile on the bulimia subscale of the Eating Disorders Inventory-3, placing her in the typical clinical range. Monica volunteered for the study after it was presented in her psychology class. She considered herself to be actively bulimic and was not in treatment at the time these samples were collected. A total of 4 samples were collected and discussed extensively over one sampling day. Monica was attending school full-time and also working full-time and withdrew from the study,

stating that she felt unable to make the time commitment necessary to complete the full number of sampling days.

Wendy was an 18-year-old university student at the time these samples were collected. She met the DSM-IV-TR (APA, 2000) criteria for BN and scored in the 39th percentile on the bulimia subscale of the Eating Disorders Inventory-3, placing her in the elevated clinical range. Wendy volunteered for the study after seeing the study advertisement on the psychology subject pool website. She considered herself to be actively bulimic and was not in treatment at the time these samples were collected. A total of 5 samples were collected and discussed extensively over one sampling day. Wendy withdrew from the study, stating she had earned her necessary subject pool participation credits and was uninterested in earning additional credits by continuing with sampling.

Lily was an 18-year-old university student at the time these samples were collected. She met the DSM-IV-TR (APA, 2000) criteria for BN and scored in the 49th percentile on the bulimia subscale of the Eating Disorders Inventory-3, placing her in the elevated clinical range. Lily volunteered for the study after hearing about it from her roommate Wendy (above), who had seen the study advertisement on the psychology subject pool website. She considered herself to be actively bulimic and was not in treatment at the time these samples were collected. A total of 7 samples were collected and discussed extensively over two sampling days. Like her roommate Wendy, Lily withdrew from the study after stating she had earned her necessary subject pool participation credits and was uninterested in earning additional credits by continuing with sampling.

Prior to discussing their participant subgroup results, a brief idiographic profile of each of these women will be provided. Monica's inner world during our brief time with her was complexly multiple, with two to twelve distinct, simultaneous overlapping phenomena occurring at the same moment. Within this overlapping inner world, Monica talked to herself, and her inner speech was complex, overlapping, sometimes conflicting. Her inner speech also included interference with ongoing phenomena related to food, weight, shape, appearance, or BN-related behaviors. When she had sensory awareness in these collected samples, it was exclusively bodily. Monica did not have many thoughts during our sampling with her, but when thoughts did occur, they were multiple, unrelated, and simultaneous. Monica had only one feeling during our sampling with her, and did not have any instances in which her emotions were undistinguishable from her thoughts. Thus, Monica's inner world during our brief sampling with her, was largely one of overlapping inner speech, with little sensory awareness or thoughts, and very little emotion.

Wendy's samples were also complexly multiple, with two to twenty distinct, simultaneous phenomena occurring at the same moment. Wendy's multiple inner experience during our brief sampling with her, was filled with interfering phenomena. Wendy did not have any clearly apprehended feelings in these samples, and she had emotion that was undistinguishable from her thought on only one occasion. Her inner experience during these samples was not usually sensory, but when she did have sensory awareness it was multiple and bodily apprehended. Wendy's samples also included experiences of innerly speaking to herself and innerly seeing something.

Lily's inner world was also complexly multiple, with two to six separate, simultaneously occurring phenomena. Lily's inner experience during our brief sampling

with her was filled with inner thoughts and inner speakings that largely revolved around interference with ongoing phenomena related to food, weight, shape, appearance, or BN-related behaviors. Her feelings within the context of these collected samples were occasionally clear, but were more often complex, ongoing, and undistinguishable from her thoughts. Lily's inner experience during these samples was not often sensory, but when sensory awareness did occur it was bodily apprehended. She also had samples in which she innerly saw or innerly heard something at the moment of the beep.

### Fragmented Multiplicity

Monica, Wendy, and Lily's inner experience included a high level of fragmented multiplicity. Monica experienced fragmented multiplicity of experience in 3 of her 4 samples (75%), and her multiple experiences ranged from two to twelve separate, simultaneous experiences at the moment of the beep. Wendy experienced fragmented multiplicity in 3 of her 5 samples (60%), and her multiple experiences ranged from two to twelve separate, simultaneous experiences at the moment of the beep. Lily experienced fragmented multiplicity in 6 of her 7 samples (86%), and her multiple experiences ranged from two to six separate, simultaneous experiences at the moment of the beep.

In an example of relatively straightforward and few multiple phenomena, in sample 1.3 Monica's ears were hurting, apprehended as a throbbing movement sensation in both of her ears, but somewhat stronger in her right ear. She also had a separate, simultaneous unsymbolized thought that she had forgotten her antibiotics. She also had a separate, simultaneous feeling of happiness-relief-elation to be out of the movie theatre so that she could get on with her life. This was simultaneously apprehended as a thought that, if in words, would have been "great I can get back to studying" but it was not in

words at the moment of the beep, and a simultaneous feeling of lightness and moving quickly. At the moment of the beep, happy, relieved, and elated were apprehended as separable aspects of the same thing, experienced as being happy the movie was over so that she can get back to her studies, and a sense of airiness and moving quickly down the stairs which was part of the happy, relieved and elated feeling. Thus, at the moment of the beep, Monica had four simultaneous phenomena occurring at the same time: a sensory awareness of throbbing in her ears, a thought that she forgotten her antibiotics, a thought that she could get back to studying, and a feeling of happiness-relief-elation.

In an example of multiple overlapping inner experience, in sample 1.3 Lily had multiple overlapping thoughts of what she wanted to eat at the dining commons. This experience started as a detailed, visual image of the salad bar, then added a visualization of the ice cream station across the aisle from the salad bar, added a saying to herself “I hope they have ice cream in her own voice, in an excited tone, and then became a multiplicity of separate, rapid, overlapping unsymbolized thoughts about each individual item of food that might be at the food court that she wanted to eat: cheeseburger, french fries, apple pie, meat loaf, lasagna, etc., etc. She also had a bodily sensation of hunger, apprehended as a bodily sensation of weakness and hunger all over her body, deep down, in the front and back, head to toe, hungry all over. She also had a separate, slight ongoing tail of awareness that was apprehended as a thought/feeling of unhappiness about the appearance of her hair. Thus, at the moment of the beep she had multiple overlapping simultaneous unsymbolized thoughts, inner seeings, and inner speech, a bodily sensory awareness, and an ongoing thought/feeling of unhappiness.

In an example of profoundly multiple inner experience, in sample 1.5 Wendy was “scattered” which she apprehended as having 15 to 20 separate, simultaneous

unsymbolized thoughts. Some of these thoughts were about what she had to do, what she had already done, and what it would be like to come to the sampling appointment, that she had to pick someone up at the airport that she didn't know and that would be awkward, that she had to go to Financial Aid and what she would need to ask them at the Financial Aid office. However, none of these unsymbolized thoughts were clearly differentiated. Instead, they were all jumbled together at the moment of the beep with nothing else in her awareness. Thus, at the moment of the beep, Wendy was simultaneously thinking 15 to 20 distinct, separate unsymbolized thoughts, all of which were clearly experienced, and none of which were clearly differentiated at the moment of the beep.

### Interfering Phenomena

Each of these three women also experienced samples in which they were consciously attempting to interfere with, or disconnect from ongoing processes related to food, weight, shape, appearance, or BN-related. Monica experienced this phenomenon in 2 of her 4 samples (50%), Wendy experienced this in 2 of her 5 samples (40%), and Lily experienced this in 5 of her 7 samples (71%). We have already seen one example of interfering phenomena above: Lily's multiple overlapping thoughts of what she wanted to eat at the dining commons in sample 1.3. In this sample, Lily was bodily weak and hungry, and had a thought/feeling of unhappiness about her hair, but instead of her primary focus being on her hunger, weakness, or unhappiness, it was on the multiple, highly detailed, overlapping thoughts and visualizations of what she wanted to eat.

Although Lily's sample 1.3 was a not particularly distressing example of interfering phenomena, it was more common among these three women that these

phenomena were relatively more qualitatively distressing. For example, in sample 1.2 Monica was innerly speaking the interwoven polyphonic inner speakings that had started in her first sample 1.1; apparently those thoughts had been racing through her mind continuously since before the previous beep 15 minutes earlier. She was having the exact same thoughts, in inner speech, as she had in the previous sample including saying to herself “what am I am the movies?” “she’s thin, I wish I was like that,” “I should be studying,” “can’t wait until I finish school so I can relax,” “I don’t have time for the movies,” “I need to lose weight,” “can’t wait to go home to have the pound cake,” “what are you thinking? You just finished popcorn, you shouldn’t be eating for like a year.” At the same time, a new set of inner speakings had been added to this chaotic jumble of inner speech. These new inner speakings, which were also apprehended as simultaneously being said to herself in her own voice, included “I have to stop these thoughts,” “I have to concentrate on the movie,” “I’ve got to get this under control,” “Am I ADHD?” “I have to go to a therapist,” “This is irrational,” “I have to get this under control,” “I’m exhausted just from thinking,” and “I can’t stay focused.” These new competing inner speakings were apprehended as being somehow stronger than the set of thoughts that had continued from the previous beep, but all are still simultaneously ongoing in her awareness at the moment of the beep. She was still at the movies, but that was not at all in her attention. Therefore, Monica was *both* having multiple, uncoordinated, streams of speaking to herself related to eating, weight, food, and what she needed to do, and was separately and simultaneously attempting to control these thoughts through separate and simultaneous competing streams of inner speaking.

In another example, in sample 1.4 Wendy was feeling “gross,” as though she had eaten way too much and needed to throw up, which was apprehended as a bodily sensory

awareness of her stomach expanding and pushing out against her abdomen from the inside, and a separate, simultaneous bodily sensory awareness of the taste of vomit in her throat. She did not actually taste vomit at the moment of the beep but had a sensory awareness of knowing how it would taste. Thus, at the moment of the beep, she was both feeling full and aware of wanting to vomit to control or end this sensation.

In another example, in sample 1.4 Lily was innerly saying to herself, “That cheeseburger was really greasy; should I make myself throw up to save myself a stomach ache?” in her own voice, just as if she said this aloud. She also had a separate, slight ongoing tail of awareness that was apprehended as a thought/feeling of unhappiness about the appearance of her hair. After the beep, she did have a bodily sensation in her stomach, but this had not yet started at the moment of the beep. Therefore, at the moment of the beep, Lily was not actually having a stomach ache, but was instead engaged in thinking she should vomit in order to avoid a potentially impending stomach ache.

### Unsymbolized Thinking

Monica experienced unsymbolized thinking in 1 of her 4 samples (25%), Wendy experienced unsymbolized thinking in 3 of her 5 samples (60%), and Lily experienced unsymbolized thinking in 5 of her 7 samples (71%). We have already seen three examples of unsymbolized thinking above: Monica’s thoughts about antibiotics and returning to her studying in sample 1.3, Lily’s overlapping thoughts about what to eat in sample 1.3, and Wendy’s 15 to 20 scattered unsymbolized thoughts in sample 1.5. When unsymbolized thinking occurred among these three women, their thinking occurred in three distinct ways: as single unsymbolized thoughts (4 of 9, 44%), as multiple



unsymbolized thoughts (3 of 9, 33%), or as ongoing tails of unsymbolized thinking (2 of 9, 22%). Each of these characteristics of unsymbolized thinking will be discussed.

In an example of single unsymbolized thinking, in sample 2.1 Lily had an unsymbolized thought of missing her boyfriend and wishing he would come back soon. She also had a simultaneous feeling of missing him and wanting him to come back that was apprehended as a bodily sensation of excited tingling all over her body, on the surface, and deep down. She also had a separate, simultaneous feeling of boredom, apprehended as a bodily sensation on the surface of her entire body of her body being slouched downwards. She was also simultaneously saying “I’m really bored, I hope I can find a good song” and was saying this out loud, but also separately and simultaneously innerly saying this to herself, in her own voice, just as if she had said this aloud.

We have already seen all three examples of multiple unsymbolized thinking above. To review, in Monica’s sample 1.3, she had two separate, simultaneous unsymbolized thoughts (that she had forgotten her antibiotics and that she could return to studying), in Lily’s sample 1.3 she had a series of multiple separate, rapid, overlapping unsymbolized thoughts about what she would eat, and in Wendy’s sample 1.5, she had 15 to 20 scattered unsymbolized thoughts.

In an example of ongoing tails of unsymbolized thinking, sample 1.5, Lily was innerly saying to herself, “My paper looks good but does the conclusion need to be longer,” in her own voice, just as if she had said this aloud. She also had a separate, slight ongoing tail of awareness that was apprehended as an unsymbolized thought of distress about the appearance of her hair. Lily estimated that the paper part occupied perhaps 90% of her awareness; and the ongoing appearance unsymbolized thought occupied perhaps 10% of her awareness. While this thought was of distress about the appearance

of her hair, it was not at all emotional, but was instead a slight, ongoing unsymbolized thought that she was unhappy about the appearance of her hair. This ongoing thought was present in the first and second samples with Lily, and then reemerged as a slight ongoing thought in this fifth sample with her.

### Inner Speech

Monica experienced inner speech in 2 of her 4 samples (50%), Wendy experienced inner speech in 1 of her 5 samples (20%), and Lily experienced inner speech in 6 of her 7 samples (86%). We have already seen five examples of inner speech above: Lily's inner speech about ice cream in sample 1.3, Monica's multiple, interwoven inner speakings in sample 1.2, Lily's inner speech about the cheeseburger in sample 1.4, her inner speech about finding a good song in sample 2.1, and her inner speech about her paper in sample 1.5. When inner speech occurred among these three women, their inner speech occurred in two distinct ways: as single inner speech (6 of 9, 67%), or as multiple inner speech (3 of 9, 33%). Each of these characteristics of inner speech will be discussed.

Wendy's sample 1.1 is an example of single inner speech. Prior to the beep, Wendy had been talking to her roommate about where they would eat, and they had decided on Panda Express, which she thought was unhealthy, bad for you, etc. but this was not in her awareness at the moment of the beep. Instead, the entirety of her awareness at the moment of the beep was on innerly saying to herself "There goes 5 more pounds," in her own voice, in a disgusted tone. She was not experiencing a feeling of disgust at the moment of the beep, but recognized her tone to convey disgust.

In an example of multiple inner speech, sample 1.1, Monica was at the movie *Diehard*, but at the moment of the beep she had entirely withdrawn from the movie and was innerly saying multiple, separate, but simultaneous but also sequential things to herself. The experience was something like polyphonic music: the several voices start at different times but overlap, and then, asynchronously, die out and are replaced by another or several more voices. Thus, there may be a dozen or so inner speaking in play, but not all of those are being spoken at the same time. These sayings included “what am I am the movies?” “she’s thin, I wish I was like that” (referring to actress in the movie), “I should be studying,” “can’t wait until I finish school so I can relax,” “I don’t have time for the movies,” “I need to lose weight,” “can’t wait to go home to have the pound cake,” “what are you thinking you just finished popcorn, you shouldn’t be eating for like a year.” Each of these was experienced as if being spoken in her own voice, much as if she had spoken them aloud. Thus, at any given moment, there were three or four separate inner speakings, all in her own voice, being spoken simultaneously and all of which were apprehended as separable but woven together.

### Feelings

Monica experienced feelings in 1 of her 4 samples (25%), Lily experienced feelings in 2 of her 7 samples (29%), and Wendy did not experience any clearly apprehended feelings in her samples. We have already seen two examples of feelings above: Monica’s feeling of happiness-relief-elation in sample 1.3 and Lily’s feelings of missing her boyfriend and boredom in sample 2.1. In their brief sampling period, feelings did not occur often for Monica and Lily, and were non-existent in Wendy’s inner experience. However, when feelings did occur, they were relatively well differentiated. In

another feeling example, in sample 2.2 Lily was innerly hearing herself say “My communication class is cancelled tomorrow-yes” and she had a simultaneous feeling of happiness that was apprehended as a bodily sensation of tingling and of her muscles tightening all over her body, and deep within her body.

### Thought/Feelings

Wendy experienced thought/feeling in 1 of her 5 samples (20%), Lily experienced thought/feeling in 3 of her 7 samples (43%), and Monica did not have any samples in which her feelings were intertwined with, and undistinguishable from her thoughts. We have already seen two examples of thought/feeling above: Lily’s thought/feeling of unhappiness about her hair the occurred in both sample 1.3 and 1.4. For Wendy and Lily, thought/feelings occurred in two ways: as single thought/feelings (1 of 4, 25%), and as ongoing thought/feelings (3 of 4, 75%).

Wendy’s sample 1.2 is an example of single thought/feeling. Prior to the beep, Wendy had been looking up ways to control her anxiety, and at the moment of the beep she had an unsymbolized thought that diazepam is the best option for her and a simultaneous thought/feeling of relief and happiness that was simultaneously apprehended as a bodily sensation of relaxation in her legs and a simultaneous, intertwined thought of relief and relaxation.

In an example on ongoing thought/feeling, sample 1.2, Lily had an unsymbolized thought that her hair looked terrible and a simultaneous thought/feeling in her head of being uncomfortable with her whole appearance. She was also separately, simultaneously saying to herself “My hair looks terrible, hopefully I can find a cute shirt and put on nice

makeup so no one notices”, apprehended as saying this to herself, in her own voice, with this worded thought being more strongly aimed at the make up.

### Sensory Awareness

Monica experienced sensory awareness in 1 of her 4 samples (25%), Wendy experienced sensory awareness in 1 of her 5 samples (20%), and Lily experienced sensory awareness in 1 of her 7 samples (14%). We have already seen these three examples of sensory awareness above: the throbbing in Monica’s ears in sample 1.3, Lily’s bodily sensation of weakness and hunger in sample 1.3, and Wendy’s bodily sensation of her stomach expanding and pushing out against her abdomen and the sensation of vomit in her throat in sample 1.4. Each of these three sensory awareness experiences were bodily apprehended, and there were no samples of external sensory awareness among these three women during our sampling.

### Inner Seeing

Wendy experienced inner seeing in 1 of her 5 samples (20%), Lily experienced inner seeing in 2 of her 7 samples (29%), and Monica did not have any inner seeing experiences. We have already seen one example of inner seeing above: Lily’s dining commons visualizations in sample 1.3. In another example, sample 1.1, Lily had multiple, overlapping thoughts in inner speech in which she was saying about five different things to herself: “My hair looks terrible,” “I look terrible,” “I don’t know what to do with my hair,” “Maybe I should put it up,” “I can’t wait to get it done on Friday,” in inner speech, in her own voice, and these inner speakings were overlapping, fast, and simultaneous. She was also simultaneously was innerly seeing herself from the chest up, with smooth,

shiny, and blonder hair that was curled under. This was a clear, still inner seeing that represented how she would look once she got her hair done, which from her perspective was better than she looks to herself at that moment. She also had a perceptual awareness of looking at her hair in the mirror and being just about to pin it up. She also had an ongoing trail of unhappiness that was apprehended as an unsymbolized thought process of being unhappy with her appearance.

While the inner seeing in the above sample served a comparative purpose for Lily, inner seeing also occurred without serving any comparative purpose. For example, in 1.3, prior to the moment of the beep Wendy had been staring at a classmate's Pepsi can, and at the moment of the beep she had a clear inner seeing of a Pepsi can, seen from the perspective of her own eyes, and a simultaneous unsymbolized thought of wanting to go outside to have a cigarette and how good the cigarette would taste with the Pepsi.

## Discussion

Monica, Wendy, and Lily were each unable to complete the full number of sampling days, and their results should therefore be interpreted with caution. Since DES generally considers the first sampling day to be a training day, any results emerging from this day may not yield as high a fidelity account of their inner experience as may have emerged from continued sampling days. However, bearing this caveat in mind, their inter-individual and intra-individual sampling results are strongly consistent with the other participants with BN who completed the full number of sampling days. Specifically, like the other 10 women whose individual chapters have just been presented, Monica, Wendy, and Lily also have frequent fragmented multiple inner experience. Within the context of their brief sampling period, in their inner experience, they did not

focus their attention on a single phenomenon, instead, their inner experience, like the inner experience of the other 10 women with BN sampled in the present study, was filled with multiple, simultaneous, overlapping phenomena. Also consistent with the other individuals with BN with whom we have sampled, interference with ongoing processes related to food, weight, shape, appearance, or BN-related behaviors was a consistent aspect of inner experience, and when this occurred it was qualitatively distressing and appeared directly related to their bulimic symptomatology.

The unsymbolized thinking among Monica, Wendy, and Lily was also representative of our other participants with BN in that it was multiple and complex, and included ongoing trails of thoughts. Their inner speech and inner seeing was also consistent with our other participants with BN in that they were generally single and straightforward, but were occasionally multiple, overlapping, and simultaneously occurring.

Monica, Wendy, and Lily also shared emotional characteristics of our other participants with BN in that feelings were not always well differentiated and were sometimes undistinguishable from their thoughts. Sensory awareness was not markedly common among these three women, a finding inconsistent with our other participants, and when sensory awareness did occur it was bodily apprehended. However, sensory awareness is often not reported on the first sampling day, and may take participants some period of time to identify and communicate clearly about. It is possible to speculate that with additional sampling, their sensory awareness would likely have emerged and paralleled the sensory awareness of our other participants with BN, in that it would be frequent and primarily but not exclusively bodily.

While it would have been ideal to be able to sample with these three participants for a longer period of time, their brief sample period provides evidence that the salient characteristics of inner experience among women with BN appear to be consistent with even a relatively short sampling period. It is likely that their complex multiple inner experience with little emotion and complex overlapping thoughts may interact with their bulimic symptomatology, but the precise nature of this interaction is currently unknown. Monica, Wendy, and Lily ranged in their bulimic severity from the typical to elevated clinical range and also ranged in their level of comorbid depression and anxiety in that Monica had minimal depression and anxiety, Wendy had moderate depression and severe anxiety, and Lily had moderate depression, and mild anxiety. It is possible to speculate that the severity of their bulimic pathology and comorbid depression and anxiety may have impacted their inner experience, but there does not appear to be a qualitative difference in their sampled inner experience to support this speculation.



## CHAPTER 16

### ACROSS-PARTICIPANT RESULTS

This study has two primary types of results: the idiographic characterizations of single participants (discussed in Chapters 5 through 15) and the across-participant characterizations of inner experience in BN to which we now turn.

Within the across-participant characterizations, this study has again two kinds of results: those that come from our DES investigation and those that come from assessment measures. We will discuss the DES across-participant results first.

#### Across-Participant DES Results

DES is primarily an idiographic examination of the inner experience of individuals. In the present study we have therefore presented an idiographic portrait of the inner experience characteristics of each of our participants one participant at a time, in Chapters 5 to 15. We did not particularly describe each woman's BN; instead we described the moment-by-moment inner experience, whatever it might be, of 13 women with BN. Therefore, Chapter 5 was about Kaiyla, Chapter 6 was about Carla, and so on. Now we examine all our BN subjects' experiences together for commonalities across participants. Such examination may lead us to discover some characteristics of inner experience among individuals with BN.

That is, the across-participant examination might be expected to remove some of the idiosyncratic qualities of each individual participant while allowing the general qualities of individuals with BN to emerge. Of course, our subjects had features in common other than BN; they were all students, for example, and all young adults. However, we have considerable experience sampling the inner experience of students and young adults; our task in this chapter is to allow characteristics to emerge that apply to several or all of our BN subjects but that are not typical of other DES subjects.

The most frequent across-participants characteristics of inner experience as discovered by DES are summarized in Table 1. This table presents the percentage frequencies with which each of these characteristics occurred for each subject. The mean per-participant frequencies in Table 1 were calculated for each participant by dividing the number of samples in which each characteristic occurred with that participant's total number of collected samples. The mean frequencies of each characteristic listed in Table 1 are unweighted means that were calculated by adding the mean per-participant frequencies for each characteristic and dividing by the total number of participants. Because individuals may experience two or more different characteristics in some samples, the percentages may not sum to 100. Table 1 is organized according to frequency, from most to least frequent characteristic of inner experience. Exceptions were made to this organizational rule when grouping related characteristics or highlighting individual characteristics would facilitate clarity of presentation. Specifically, thought/sensory awareness and feeling/sensory awareness were grouped with the sensory awareness category, thought/feeling experiences were grouped with the feeling category, and inner speech was grouped together with the unsymbolized thinking category because these types of experiences were thematically related. Table 1 presents

each participant in order of their level of BN severity as determined by the Bulimia scale of the EDI-3, from least to most severe. The nature of each frequently occurring characteristic across participants will now be discussed.

Table 1

Frequency of Inner Experience Characteristics (in percentages)

P/C	FM	SA	T/S	F/S	U	IS	I	F	T/F	IP	N
Kaiyla	72	47	0	5	17	30	8	17	3	0	0
Monica	75	25	0	0	25	50	0	25	0	50	0
Carla	92	80	0	0	20	48	32	8	0	0	0
Vicky	86	72	10	0	34	31	83	7	10	14	0
Wendy	60	20	0	0	60	20	20	0	20	60	0
Susan	57	52	0	0	48	5	0	38	14	9	9
Samantha	44	3	0	0	39	33	44	33	8	14	0
Hannah	59	59	4	0	32	7	4	16	14	14	0
Anne	54	40	0	0	30	24	16	5	19	11	5
Lily	86	14	0	0	71	86	29	29	43	71	0
Jane	52	27	0	0	10	23	54	29	0	10	0
Paula	58	17	0	3	28	19	22	53	33	17	3
Jessica	71	47	0	0	29	23	29	18	18	0	0
Mean	67	39	1	0.6	34	31	26	21	14	21	1.3

Note: P/C = Participant/Characteristic; FM = Fragmented Multiplicity; SA = Sensory Awareness; T/S = Thought/Sensory Awareness; F/S = Feeling/Sensory Awareness; U = Unsymbolized Thinking; IS = Inner Speech; I = Inner Seeing; F = Feelings; T/F = Thought/Feeling; I = Interfering Phenomena; N = Nothing

### *Fragmented Multiplicity*

The most salient characteristic of our participants with BN as a group was that none of them (0 of 13) had a straightforward, simple focus on important characteristics of their environments, as do most individuals without BN. We refer to this lack of focus as fragmented multiplicity. This characteristic is a “fragmentation” of attention, in which individuals do not focus their attention on a single aspect of their inner experience. Instead, their attention is divided among multiple distinct, simultaneously occurring phenomena in their inner experience.

The inner experience of *every one* of the study participants was multiply fragmented. This multiplicity of experience occurred in three distinct ways: as relatively low levels of multiplicity, with two to four distinct, separate, simultaneous phenomena in inner experience, as profoundly multiple inner experience, with 5 to 20 distinct, separate, simultaneous phenomena in inner experience, and as multiple simultaneous inner experience that included both apprehended phenomena and “tails” of sensed but not directly experienced phenomena.

Samantha and Jane experienced relatively low levels of multiplicity (by comparison to the other BN subjects; their multiplicity was still far higher than typically found in non-BN individuals) in which they had two to four distinct, separate, simultaneous phenomena in inner experience at the moment of the beep. However, the remaining 11 participants had relatively higher levels of multiplicity in which they had anywhere from 2 to 20 separate, simultaneous phenomena in their momentary inner experience. The majority of our participants (all except Paula, Jessica, Monica, and Wendy) also had samples in which they had *both* multiple inner experience that was directly apprehended and simultaneous inner experience that was sensed but not directly

apprehended at the moment of the beep, a phenomenon referred to as “tails.” Each of these types of fragmented multiplicity includes a lack of single focused attention on what would normally be central in awareness in non-bulimic individuals.

For Samantha and Jane, attention was divided between two to four separate, simultaneous phenomena, including inner seeing, inner speech, feelings, sensory awarenesses, and unsymbolized thoughts. Samantha and Jane experienced fragmented multiplicity in 44% and 52% of their samples respectively making them both the participants with the lowest frequency of multiple inner experience as well as the participants with the least multiple inner experiences.

Despite their somewhat lower levels of fragmented multiplicity, both Samantha and Jane’s multiple inner experience remained quite complex. For example, in sample 4.2, described in its entirety in Chapter 9, Samantha had a complex, difficult to describe thought/feeling of wanting to throw up and also had a simultaneous, intertwined slight feeling of unhappiness. She also had a separate, simultaneous bodily sensation of nausea, as well as a separate, simultaneous inaccurate inner seeing of herself. Therefore, she had a thought/feeling that she would be happier if she vomited, a slight feeling of unhappiness, as well as a slight sensory awareness, and an inaccurate inner seeing experience all occurring simultaneously at the moment of the beep. Although she had only four simultaneously occurring phenomena in her momentary experience in this sample, these four phenomena were strikingly complex and not clearly differentiated.

This complexity also occurred for Jane. For example, in sample 4.3, described in its entirety in Chapter 12, Jane had a bodily sensory awareness of pressure in her head moving from inside out in her head. She also had a simultaneous feeling of nervousness and anxiety, in her head and slightly all over her body, apprehended as a sensation of

pressure both moving from the outside of her body inward and from the inside of her body outward. She also had a separate, simultaneous mild sensory awareness of the redness of the picture she was looking at. Therefore, at the moment of the beep she had three separate, simultaneous phenomena in her inner experience: a bodily sensory awareness of pressure moving from the inside out, a separate, simultaneous feeling of nervousness and anxiety apprehended as pressure moving both from the outside of her body inward and from the inside of her body outward, as well as a separate, simultaneous external sensory awareness of redness. Thus, while her attention was fragmented between only three phenomena, these phenomena were themselves quite complex.

The remaining 11 study participants experienced relatively higher levels of fragmented multiplicity, in which their attention was divided between 2 to 20 separate, simultaneous phenomena at the moment of the beep. The frequency of fragmented multiple inner experience for these remaining 11 participants ranged from 54 to 92%. This profoundly fragmented multiplicity sometimes included multiple unsymbolized thoughts, multiple inner seeings, multiple inner speakings, or multiple thought/feelings. Although it is perhaps helpful to discuss this fragmented multiplicity according to its form (i.e. multiple thoughts, images, inner speech, or thought/feelings) doing so should not overshadow the primary point: it is the multiplicity itself, rather than the specific form that is striking. For these women, inner experience is profoundly fragmented and multiple, with a markedly infrequent singular focus. Each of these presentations of profound multiplicity will be discussed, but even within these phenomenon-specific forms of multiplicity, there is complexity. It is rarely just multiple thoughts, but multiple thoughts with simultaneous sensory awareness. It is rarely just multiple inner seeing, but

multiple inner seeing with simultaneous inner speech, and so on. Multiplicity is a particularly complex phenomenon.

In an example of multiple unsymbolized thoughts, sample 7.2, as was discussed in its entirety in Chapter 11, Anne was “feeling tension.” However, this “tension” did not contain the experience of emotion, but was instead 18 separate, simultaneous unsymbolized thought processes, each related to a separate reading assignment she had to complete. Aside from these 18 separate, simultaneous unsymbolized thoughts, she also had a separate, simultaneous headache that was apprehended as a bodily sensation of pain pressing down between her eyes. Therefore, at the moment of the beep, Anne had 18 simultaneous unsymbolized thoughts, as well as a bodily sensory awareness of pain.

While Anne’s multiple unsymbolized thoughts above were clear and well defined, there were also instances in which profoundly multiple unsymbolized thoughts were present in awareness but not clearly defined. For example, in sample 1.5, discussed in its entirety in Chapter 15, Wendy was “scattered,” which she apprehended as having 15 to 20 separate, simultaneous unsymbolized thoughts about what she had to do. These multiple thoughts were apprehended as being jumbled together and clearly in her experience, but not clearly differentiated at the moment of the beep.

In an example of multiple inner seeing, sample 4.2, discussed in its entirety in Chapter 7, Vicky had an inner seeing of the word “Down.” This visual image was apprehended as a large Capital D with the rest of the letters in lower case, in white on a black background. She also had 6 to 10 multiple, separate, simultaneous thoughts that were each innerly seen of a small, thin streamer. Aside from these 6 to 10 visually imaged streamers, she also had a separate, simultaneous feeling of anxiousness, apprehended as a bodily sensation of a squeezing knot in the top of her stomach,



something like a cramp, and tightness in her shoulders; she was separately, simultaneously saying to herself “ugh” in her own annoyed inner voice, just as if she had said it aloud. She also had a separate, simultaneous bodily sensory awareness of her finger on the knurled volume control as she was turning the beeper down. Therefore, at the moment of the beep, Vicky had one clear, single inner seeing, 6 to 10 separate, simultaneous hazy inner seeings of streamers, a feeling of anxiousness, an inner speaking, and a bodily sensory awareness all occurring simultaneously at the moment of the beep.

In an example of multiple inner speech, in sample 4.1, described in its entirety in Chapter 6, Carla had a complex, intensely detailed inner seeing of the mess in her bakery department, that also had components of sensory awareness in which she was seeing the contrast in the colors of the mashed food items that were components of the mess. She also had a simultaneous feeling of being angry/pissed off/irritated, that was apprehended as multiply simultaneous complex inner speakings, in her own voice, including “are you serious?” “how could she leave this mess?” “who does this?” and “Aaaaahhh,” with the “Aaaaahhh” part being slightly more pronounced. These inner speakings were apprehended as occurring “in a ball,” in an irritated tone, as if were simultaneously saying these things aloud.

In an example of multiple thought/feelings, in sample 1.3, discussed in its entirety in Chapter 13, Paula had a single feeling of sadness and depression, a wishing she could be like the girl who was dancing on *Dancing with the Stars*, six separate, simultaneous overlapping thoughts/feelings about her mother’s not caring about her (apprehended as a chain reaction), four separate, simultaneous thought/feelings about her mother’s not believing in her abilities (apprehended as a simultaneous cascade of

thoughts), and a separate, simultaneous inner seeing of her mother asking her why she was going to dance class. Therefore, at the moment of the beep Paula had 13 phenomena in her awareness including a complex single feeling of being sad and depressed, a perceptual awareness of the television program, ten simultaneous, overlapping thought/feelings about her mother occurring in two streams (six thought/feelings about her mother's not caring about her and four thought/feelings about her mother's not believing in her abilities), and an inner seeing with sound experience.

The final characteristic of fragmented multiplicity is inner experience that included both directly apprehended phenomena and "tails" of sensed but not directly experienced phenomena. For example, in Hannah's sample 5.5, discussed in its entirety in Chapter 10, Hannah was thinking/sensing that she was too bloated/too fat to wear the jeans she was wearing. This experience was an inextricable combination of a bodily sensation and thinking, as if the sensation of snugness carried the thought of being too bloated, or, equally, as if the thought of being too bloated carried the sensation of snugness. Simultaneously she also had a sensed ongoing tail of knowing about all of her jeans, including which jeans would be appropriate for what she weighs at any given time. This knowing was apprehended as a known/implied series of tailed unsymbolized thoughts. Thus, at the moment of the beep, Hannah had *both* a directly apprehended thought/sensory awareness of snugness and bloating, and a separate, simultaneous, sensed, ongoing series of unsymbolized thoughts about which jeans would be appropriate for her weight at different times.

In another example that included both directly apprehended phenomena and "tails" of sensed but not directly experienced phenomena, Carla's sample 6.3, discussed in its entirety in Chapter 6, Carla was in her room and had a bodily sensory awareness of

pushing her books under her table, and a simultaneous perceptual awareness of the physical act of the books being pushed under the table. She also had a separate, simultaneous slight inner seeing of the stack of books, as well as a very slight ongoing mental awareness of her location in her room at the moment of the beep. This mental awareness of her location was ongoing, began in sample 6.3, and then occurred in an ongoing, continuous manner in her samples 7.1, 7.2, 7.3, and 7.4. Thus, at the moment of the beep (6.3), Carla had *both* directly apprehended sensory awareness, perceptual awareness, and inner seeing, and a sensed ongoing unsymbolized thought process of mentally tracking her location.

In summary, each of these participants is characterized by having as their most salient aspect of inner experience a fragmented multiplicity in which their attention is divided between several complex, simultaneous phenomena. At times, this complexity included both directly apprehended and sensed but only slightly or indirectly apprehended experience. While most individuals without BN maintain focus on only one or two simultaneously occurring phenomena at any moment, these women are characterized by a particularly fragmented inner world, in which their attention is profoundly divided and it is rare that they are able to maintain a clear and single focus. The phenomenon of fragmented multiplicity is quite striking both in its complexity and in its potential implications for BN symptomatology.

This multiplicity, despite its obvious salience, may actually be an *underestimate* of the complexity of inner experience in women with BN, as exemplified by our interviews with Jessica, discussed in Chapter 14. The across-sample mean of Jessica's fragmented multiplicity is 71%. However, when examined within samples, her mean number of fragmented multiplicities was 7 per sample, and her multiple inner experiences

ranged from 3 to 13 separate, simultaneous experiences per sample. It is thus particularly striking that the collected samples for Jessica were in fact on the relatively simple end of her complex multiplicity continuum. Even on the occasions in which she had 13 separate, simultaneous experiences in her awareness, she was experientially, for her, not having her most complex experience. She had several beeps in which her inner experience was so multiple, and so complexly chaotic, that she was unable to complete the sampling task. Given that her inner experience was strongly consistent with our other participants with BN; it is possible that this was also true for others. That there may have been points at which their inner experience was so fragmented that they were unable to capture it at all.

### *Sensory Awareness*

Sensory awareness, in which participants are experientially focused on the sensory qualities of bodily phenomena or external phenomena, was the second most salient characteristic of our BN participants as a group. Each participant has some level of sensory awareness, and most were highly sensory. The lowest frequency of sensory awareness among our bulimic participants was 3% (Samantha in Table 1), and the highest frequency was 80% (Carla); the mean frequency of sensory awareness across participants was 39%.

Across participants, of the total samples that included one or more sensory awareness, 78% of these sensory awarenesses samples were purely bodily, an additional 15% were purely external sensory awarenesses, and 8% included *both* bodily and external sensory awareness. Of the 13 participants in the present study, 5 had exclusively bodily sensory awareness (Samantha, Paula, Monica, Wendy, and Lily), and the remaining 8 had bodily sensory awareness in the majority of their sensory awareness

samples but also had samples in which their sensory awareness was external or both bodily and external.

Bodily sensory awareness occurred in two distinct ways for the majority of our participants (11 of 13, 85%): as single bodily sensations and as multiple bodily sensations. However, two of our participants, Carla and Hannah, also had an infrequently occurring, distinct third characteristic of sensory awareness, in which they were focused on sensations in order to avoid something that was distressing to them.

In an example of single bodily sensory awareness, in sample 4.5, discussed in its entirety in Chapter 8, Susan had a bodily sensation of pain in her toe, and was simultaneously seeing that her toe was bleeding.

In an example of relatively non-complex multiple bodily sensory awareness, in Jessica's sample 3.3, discussed in its entirety in its entirety in Chapter 14, she had just bitten into an orange and had a bodily sensory awareness of stinging from the orange spray which had gotten into her nose, and two other simultaneous bodily sensations: of smelling the orange and tasting it in her mouth. She also had a nice feeling related to her sister making fun of her in reaction to having orange in her nose, but this feeling was difficult to describe other than as an "inner smile." She also had a slight awareness of seeing the table in front of her and her sister sitting across from her. Thus, at the moment of the beep, she had three separate, simultaneous bodily sensory awarenesses: the sensation of stinging, the smell, and the taste of the orange.

In an example of complex multiple bodily sensory awareness, Carla (sample 2.3, discussed in its entirety in Chapter 6) was looking at a phrase in her textbook as she was typing. She had a separate, simultaneous complexly multiple sensory awareness of the sensation of her fingertips against the keys on her keyboard as she was typing. In this

complex multiple bodily sensory awareness she was both feeling the raised dots of the *F* and *J* keys against her index finger tips and the coolness of the keys against the rest of her fingertips. She was also somehow aware of the bodily sensation of the actual letters underneath each of her fingertips—the *A* under her left pinkie, the *S* under her ring finger, and so on. She also had a separate, simultaneous external visual sensory awareness of the blackness of the letters in what she was reading, and of the position of her body, a position that was apprehended as implying comfort. Thus, at the moment of the beep, she had three bodily sensory awarenesses (of the raised dots of the letters against her fingertips, the coolness of the keys, and the details of the letters on the keys against her fingertips). She also had two external sensory awarenesses (of the blackness of the letters, and her implied comfortable position), as well as a separate, simultaneous awareness of seeing what she was reading.

While sensory awareness was predominantly bodily, and was exclusively bodily in 5 of the participants, the remaining 8 participants did also have samples in which their sensory awareness was external, and samples that contained both external and bodily sensory awareness. When external sensory awareness occurred, it was generally single, but was occasionally multiple. In an example of single external sensory awareness, in Kaiyla's sample 5.5, discussed in its entirety in Chapter 6, she was writing in her notebook and simultaneously innerly saying the words she was writing to herself, and has a separate, simultaneous sensory awareness of the noise of the overhead projector in her classroom.

In an example of multiple external sensory awareness, in 4.3 Hannah was copying a list of cognitive errors from her psychology class onto index cards for later study, and had a sensory awareness of the powder blue color of the index cards and a simultaneous

sensory awareness of the loudness of the movie playing in the background. She was not watching the movie, or paying attention to the meaning of the loudness, but was merely noticing the loudness of it.

We have already seen three examples of samples containing both bodily and external sensory awareness above: Carla's complex, multiple bodily and external sensory awareness in sample 2.3; Carla's multiple bodily and external avoidant sensory awareness in sample 1.4; and Hannah's multiple bodily and external avoidant sensory awareness in sample 7.5. In another example of samples containing both bodily and external sensory awareness, in Jane's sample 4.3, discussed in its entirety in Chapter 12, Jane had a bodily sensory awareness of pressure in her head moving from inside out in her head, a simultaneous feeling of nervousness and anxiety, and a separate, simultaneous external sensory awareness of the redness of the picture she was looking at.

In summary, each of these participants shared a strongly sensory inner world, in which there was a powerful focus on the sensory characteristics of their bodies, and to a lesser extent, a focus on the external sensory characteristics of their environment or simultaneous bodily and external sensory awareness. However, for two of our participants, Carla and Hannah, this intense focus on the sensory rarely, but occasionally allowed them to avoid something potentially distressing to them. With the exception of Samantha, who had only 3% sensory awareness, each of the present study participants experienced a high level of sensory awareness, which at times included very complex, fragmented, and intensely detailed focus on internal bodily sensations, and minute sensory aspects of their external environment.

### *Thought/Sensory Awareness and Feeling/Sensory Awareness*

Thought/sensory awareness and feeling/sensory awareness were both relatively rare among participants in the present study. Only two study participants, Vicky and Hannah experienced thought/sensory awareness, and an additional two participants, Kaiyla and Paula, experienced feeling sensory awareness. In referring to Table 1, only two participants in the present study, Vicky and Hannah, had experiences in which their thoughts and sensations were so intertwined that they were indistinguishable, a phenomenon termed thought/sensory awareness. This phenomenon was relatively common for Vicky, occurring in 10% of her total collected samples, and was less common for Hannah, occurring in only 4.5% of her total collected samples. None of the 11 other study participants experienced this phenomenon. In an example of thought/sensory awareness, in Hannah's sample 5.5, discussed in its entirety in Chapter 10, Hannah was thinking/sensing that she was too bloated/too fat to wear the jeans she was wearing. This experience was an intertwined thought and bodily sensation that was clearly apprehended but she could not say if the sensation of snugness carried the thought of being too bloated, or, equally, as if the thought of being too bloated carried the sensation of snugness. That is, this was *not* a simultaneous sensation and thinking; it was a single experience that was at once both a sensation and a thought. She also had a separate, simultaneous ongoing series of unsymbolized thought about all of her jeans and which jeans would be appropriate for what she weighed at any given time.

In referring to Table 1, only two participants in the present study, Kaiyla and Paula, had experiences in which their sensory awareness was fused with, and inseparable from feeling. None of the other participants in the study experienced this phenomenon, and it was in fact, relatively rare for Kaiyla and Paula, occurring at a frequency of 5.5%



and 3% respectively. In an example of feeling/sensory awareness, in Kaiyla's sample 4.2, discussed in its entirety in Chapter 5, she was trying to prepare a speech, and was actively engaged in reading the same thing over and over again on the computer screen, trying to comprehend what she's reading. She also had a separate, simultaneous sensory awareness of the loudness of the voices of people talking around her, and a separate, simultaneous feeling/sensory awareness of being stressed. This feeling/sensory awareness of stress was apprehended as moving quicker, but also being scattered as though she had literally had too much caffeine. This feeling and intertwined sensory awareness was both in her head and body, and was apprehended as making her having faster thoughts, read quicker, and work quicker but also making her feel "all over the place." She was also separately and simultaneously cognitively going through a list of things she had to do and was innerly saying "I'm almost done."

### *Unsymbolized Thinking*

Unsymbolized thinking, in which there is a thought without words, images, or any other types of symbols, was the third most salient feature of inner experience across participants. The lowest frequency of unsymbolized thinking among the present study participants was 10% (Jane in Table 1), and the highest frequency was 71% (Lily); the mean frequency of unsymbolized thinking across participants was 34%.

Unsymbolized thinking occurred in two distinct ways for the majority of our participants (10 of 13, 77%): as single unsymbolized thoughts and as multiple unsymbolized thoughts. However, three participants, Kaiyla, Susan, Hannah, and Lily, also had occasional ongoing unsymbolized thoughts, in which they had "tails" often consisting of a series of ongoing, unsymbolized thoughts that were only slightly in their awareness at the moment of the beep. Single, straightforward unsymbolized thoughts

were the most commonly experienced form of unsymbolized thinking across participants, accounting for 54% of the total. Multiple unsymbolized thoughts accounted for 37%, and ongoing unsymbolized thoughts accounted for only 8% of the total unsymbolized thoughts across participants.

In an example of single unsymbolized thinking, in her sample 2.4, Hannah was watching a commercial for an album called Buzz Ballads, and was wondering if the album was on I-Tunes. This wondering was clearly present in her awareness, and was not in words, images, or symbolized in any other way.

In an example of multiple unsymbolized thinking, in her sample 8.1 Anne had an imagined inner experience of being on a beach in which she could innerly see the sunset over the beach, and could hear the waves and could feel the water up to her ankles, which she apprehended as feeling both warm and cool at the same time. She was innerly seeing this from the perspective of standing in the water looking over the beach; and it was a very vivid and clear experience for her, as though she were actually there. She also had multiple, separate, simultaneous unsymbolized thoughts. A thought about school was central, and then she had four or five or more simultaneous unsymbolized thoughts “webbed out” from that including turning in her assignments, what was going on in school, getting done classes, and what she still has to do.

In an example of ongoing unsymbolized thinking, in her sample 3.5 Kaiyla was on the phone with her friend, apprehended as listening to the sound of her friend’s voice as a cue to when it would be her turn to talk. She was getting the gist of what her friend was saying but was not paying particular attention to the words. She also had a separate, simultaneous slight awareness of her seeing her book open in front of her. She also had a slight, separate, simultaneous tailed, ongoing unsymbolized thought of waiting for her

class to start. She was not actively thinking about the class starting, but knew this slight, ongoing unsymbolized thought to be present in her awareness.

In summary, while the majority of unsymbolized thinking across participants was characterized by clear, single thoughts, thinking was also frequently multiple and complex, and was occasionally apprehended to be sensed and ongoing at the moment of the beep. However, there was some across participant variability in terms of how unsymbolized thinking was experienced. For example, 100% of Jane's unsymbolized thinking was characterized by single thoughts, and 100% of Monica's unsymbolized thinking was characterized by complex, multiple thoughts. In addition, only Kaiyla, Susan, Hannah, and Lily experienced ongoing unsymbolized thinking. For the remainder of study participants, unsymbolized thinking was largely single and straightforward, and occasionally multiple and complex without any ongoing sensed thoughts.

### *Inner Speech*

Inner speech, in which individuals apprehend words as though they were said aloud, was quite common among participants with BN in the present study. The lowest frequency of inner speech was 5% (Susan in Table 1), and the highest frequency was 86% (Lily in Table 1); the mean frequency of inner speech across participants was 31%.

When inner speech occurred, it was predominantly made up of clear, single inner speaking (80% of the total inner speech samples across participants), and was less frequently (20% of the total inner speech samples across participants) made up of clear, multiple innerly spoken words. Of the 13 participants in the present study, 3 had exclusively single inner speech (Wendy, Susan, and Samantha) and 1 had exclusively multiple inner speakings (Monica).

In an example of clear, single inner speech, sample 3.2, Anne was innerly saying to herself “Should I call Cindy and Amir?” in her own inner voice, just as if she had said this aloud. This question carried the implication that she would call them to go to the movies, but the specifics of that implication were not present in her experience.

In an example of clear, multiple inner speaking, sample 2.4, Vicky was walking out of the bookstore and was trying to determine if she was thirsty, which was apprehended as a simultaneous series of inner speakings including: “Is my throat dry?” “Is my mouth was dry?” and “Is my stomach empty?” Each of these questions was occurring simultaneously in her own voice. She also had an inner seeing of this checklist (made up of the questions she was asking herself). This innerly seen checklist was unquestionably seen but was not particularly clear--she just knew that was what was on the checklist. She was also separately and simultaneously seeing a student with a red beard and the big, red wall that was behind him and off to the left. At the moment of the beep Vicky also had an unsymbolized thought that he looked familiar. The main part of her visual attention was in noticing the sensory qualities of the redness of his beard and the redness of the wall. She also had a separate, simultaneous bodily sensation of pain, apprehended as a constant aching deep in her back, near her kidneys. Thus, at the moment of the beep, she has three simultaneous inner speakings, an inner seeing, an unsymbolized thought, two external sensory awarenesses (the redness of the beard and the redness of the wall), as well as a bodily sensory awareness of pain.

Whereas inner speech was generally clear and straightforward across participants, this phenomenon was occasionally quite complex. When this complex inner speech occurred it took four distinct forms: multiple inner speech (as outlined above); inner speech that was partially worded and divided, which happened in only one sample for

one participant (Jessica); inner speech that was apprehended as occurring in a voice somehow separate from or other than one's own, which happened on one occasion each for Anne and Jane; and inner speech that was intertwined with inner hearing, which happened on three occasions for Jane and did not occur in the inner experience of any of our other participants. Each of these examples, while rare, show that inner speech can occasionally be far more complex than merely talking to oneself at the moment of the beep.

In Jessica's one complex, partially worded inner speech sample, sample 3.2, discussed in its entirety in Chapter 14, she was watching a TV show scene in which a skinny blonde female doctor walked in to a room and all of the male doctors froze and stared at her. At the moment of the beep, Jessica had a partially worded thought that, if fully worded would be, "Why is it that movies and TV shows always have blonde skinny girls for guys to stare at?" However, she was innerly saying the words "blonde," "skinny," "guys," and "stare" in her own voice, in the front of her head, and the remainder of the words from this thought were apprehended as being also innerly spoken in her own voice, but quieter and in the back of her head. These two separate voice streams were simultaneous but were not at all coordinated and instead were apprehended as two completely separate and simultaneous streams of partially worded inner speakings. She also had 8 to 10 separate, simultaneous unsymbolized thoughts related to this innerly spoken idea.

Anne and Jane each experienced one complex inner speech sample in which they perceived themselves to be speaking in a voice that was somewhat different from, or separate from, their selves. For example, in Anne's sample 6.3, discussed in its entirety in Chapter 11, she had one "me" that was profoundly chaotic, and the other "me" which was

innerly whispering “You’re being selfish” to her first “me.” She was also separately and simultaneously innerly saying with her entire self (as opposed to her two separate “me’s”) “He deserves better.” In another example, sample 5.4, discussed in its entirety in Chapter 12, Jane was innerly saying “you should take some diet pills,” and this inner speech was apprehended as being said in her “eating disorder voice” that is both herself and somehow separate from herself.

Jane was our only participant to have inner speech that was intertwined with, or difficult to differentiate from inner hearing, and she had this occur in three of her collected samples. For example, sample 7.4, discussed in its entirety in Chapter 12, Jane was about to e-mail her boyfriend, and was innerly saying “Baby I’m home” in her own voice, and simultaneously innerly hearing herself say this. She also had a separate, simultaneous feeling of missing her boyfriend.

In summary, inner speech was common in the inner experience of our participants with BN, and while it was generally single and clear, it was occasionally multiple, but rarely became quite complex, either due to being partially worded, spoken in a voice other than one’s own, or intertwined with inner hearing. While these complex inner speakings were relatively rare, occurring in the inner experience of only 3 of the 13 participants in the present study (Jessica, Anne, and Jane), they illustrate the potential complexity of inner speech among individuals with BN.

### *Inner Seeing*

In inner seeing, participants have a visual inner experience. All but 2 (Monica and Susan) of the 13 participants in the present study experienced innerly seen phenomena. Inner seeing was thus quite common in the inner experience of the individuals with BN in the present study, occurring at a mean frequency of 26% across participants. The

frequency of inner seeing ranged from 0% (Monica and Susan in Table 1) to 83% (Vicky in Table 1).

When inner seeing occurred it was usually experienced as seeing a single, clear image (87% of the total inner seeing samples across participants), but was occasionally experienced as multiple, overlapping innerly seen phenomena (13% of the total inner seeing samples across participants). Of the 11 participants who experienced inner seeing, 7 had exclusively single inner seeing (Kaiyla, Wendy, Samantha, Hannah, Anne, Lily, and Paula) and 4 (Carla, Vicky, Jane, and Jessica) had samples in which they had multiple, overlapping images.

In an example of clear, single inner seeing, sample 5.5, Jane had been studying the New Jersey Plan, but at the moment of the beep she had entirely withdrawn from that and had a single, clear inner seeing of a woman standing in front of a carriage, wearing a white dress, from the 1800's. This inner seeing filled her entire visual space and there was nothing else in her awareness.

While the majority of clear, single inner seeing experiences were quite straightforward, Samantha, Paula, and Jane also had instances in which their single images were quite complex. For Samantha, this complexity occurred in 3 inner seeing samples in which she was seeing herself inaccurately. For example, in her sample 6.4, discussed in its entirety in Chapter 9, Samantha had an unsymbolized thought that she could lose some weight and was innerly seeing an image of herself from head to toe, that was deeply inaccurate in the sense that she was much larger than she actually is. For Paula, this complexity occurred in one sample (2.3), discussed in its entirety in Chapter 13, in which she was reliving an incident of being picked on for her weight when she was 10 or 11. In this sample, Paula experienced a reliving of this incident that was

apprehended as undifferentiated and in the back of her head, as though she were innerly seeing the scene without seeing it. There was something that was experientially visual about this experience even though she was not actually seeing anything, and this was thus an experience of imageless seeing. She also had multiple thought/feelings related to the reliving of this imageless scene. For Jane, this complexity existed in four distinct ways: as inner seeing with no clearly defined background, as shadowed inner seeing, as not fully detailed inner seeing, and as blurred inner seeing. Examples of each of Jane's distinct, complex visual phenomena were discussed in detail in Chapter 12.

In an example of multiple, overlapping inner seeing, in Jessica's sample 2.2 she was walking across campus and had several, overlapping, one on top of the other indistinct, fuzzy inner seeings of a girl from her class. These images were apprehended as being of the same girl but on different days, in different positions, wearing different things, and were apprehended as still, snapshot images. She was also seeing this girl in her actual external environment and was simultaneously unsymbolizedly wondering if this girl would recognize her. She was also separately and simultaneously trying to fix her coffee cup lid so she could balance it, and was holding her cigarette which interfered with her attempt to fix the coffee lid. She also had a slight perceptual awareness of the people and sky and buildings around her.

In summary, inner seeing was common in the inner experience of our participants with BN. Although their inner seeing was commonly single and clear, it was also occasionally made up of multiple, overlapping innerly seen phenomena. While single innerly seen phenomena were clear and straightforward for most participants, Samantha, Paula, and Jane also had rare instances in which their single innerly seen phenomena were quite complex. Thus, inner seeing is a relatively common experience in the inner



experience of the individuals with BN whom we have sampled and while these visual phenomena are generally clear, they can also be strikingly complex.

### *Feelings*

Feelings were the sixth most salient characteristic of inner experience across participants, and all but one participant (Wendy) had some level of affective inner experience. The frequency of feelings ranged from 0% (Wendy in Table 1) to 53% (Paula in Table 1); the mean frequency of feelings across participants was 21%.

Across participants, of the total samples that included feelings, 73% of these samples included qualitatively negative emotional experiences and 27% included positive or neutral emotions as judged by the investigators. Of the total feeling samples, 79% were single emotional experiences and 21% were multiple emotional experiences. However, whether feelings were single or multiple at the moment of the beep, the affective inner experience of each of the 12 participants who experienced feeling samples was predominantly complex. There are several different ways this affective complexity occurred, a few examples will be provided.

In an example of clear, straightforward emotional inner experience, in her sample 6.1, Kaiyla was on the computer in the library, was feeling irritated, which was apprehended as a mild bodily sensation of constriction in her chest. She was engaged in sitting at the computer looking something up, apprehended as a active process of skimming through the material on the screen with the intent of finding the search terms “bibliographies,” “plan views” and “illustrations,” she was not articulating these words in awareness, but was just actively skimming for these terms.

In an example of single, complex emotional experience, sample 6.6, discussed in its entirety in Chapter 10, prior to the moment of the beep, Hannah’s boyfriend had asked

her if she was going to go with him to his high school reunion. She had told him she would go if she lost 20 pounds; and he had replied that she couldn't do it. At the moment of the beep she was innerly saying, "If you only knew how crazy I could get! I could drop 20 pounds by next month!" She was saying this to herself in a cocky, rude, pissed-off tone of inner voice, but she was not directly feeling cocky or pissed-off at the moment of the beep. Thus, Hannah had an experience with clearly affective significance, and the emotions were expressed in her tone of voice, but she was not clearly and directly *feeling* this emotion.

In an example of relatively straightforward multiple feelings, in Paula's sample 3.3 she was fighting with her boyfriend, and was feeling annoyed. This feeling of annoyance was apprehended as a bodily sensation of pressure in her head. She also had a separate, simultaneous feeling of being angry that was apprehended in her body and head. This anger was experienced as a sensation of shaking, all over body and head. She also had two separate, simultaneous unsymbolized thought processes that she loves/cares about him and was wondering why she was so angry.

In an example of complex multiple feelings, in Jane's sample 6.3 just before the beep, Jane's teacher had joked "You have to remember this word AARP in rhymes with harp", and at the moment of the beep Jane had a bodily sensory awareness of smiling, and a complex, difficult to define feeling of funniness in reaction to this statement being funny. She also had a separate, simultaneous ongoing jumble of negative feelings in her body, that was apprehended as feeling very bad, feeling anxious, feeling like she had to keep moving, and feeling that she did not want to be there. This jumble of feelings was sensed and ongoing but only indirectly in her experience at the moment of the beep.

In summary, each participant, with the exception of Wendy who did not have any clear feeling experiences, shared some level of difficulty with clearly and directly *feeling* their emotions. Instead, their emotions were frequently complex, multiple, poorly differentiated, and often bodily apprehended. Additionally, feelings were occasionally conflicting, and often ambiguous. Finally, feelings were predominantly qualitatively negative or distressing.

### *Thought/Feeling*

Undifferentiated fusion of thoughts and feelings, a characteristic termed “thought/feelings” was the seventh most salient characteristic of inner experience across participants. Thought/feelings are the experience of having thoughts and feelings that are experientially so powerfully fused so that the affective and cognitive aspects of these experiences were indistinguishable. Thought/feelings were experienced by all but three of the present study participants. The frequency of thought/feelings ranged from 0% (Monica, Carla, and Jane in Table 1) to 43% (Lily); the mean frequency of thought/feelings across participants was 14%. The total thought/feelings samples were evenly divided between single and multiple thought/feelings. The majority (75%) were qualitatively negative as opposed to positive or neutral (25%) in emotional valence as judged by the investigators. Thus, whether these fused thoughts and feelings were single or multiple at the moment of the beep, the majority were complex and emotionally negative. Examples of the range of thought/feeling experiences will be provided.

In an example of clear, single, positive or neutral thought/feelings, sample 4.2, discussed in its entirety in Chapter 14, Jessica was simultaneously hearing what her friend Joan was saying, and had a sensory awareness of the bright blue of Joan’s vest and a separate sensory awareness of the cigarette lighter Joan was holding up. She also had a

simultaneous thought/feeling reaction that what Joan was saying (that she is neat and in her tendency to tidy up had accidentally taken their Lisa's lighter) was nicely funny (in a nice way). This awareness of nice/funniness was aimed more at what Joan did than at what she is saying, and was clearly present in Jessica's awareness, but it was difficult for her to determine exactly how this was apprehended at the moment. She also had a separate, simultaneous slight perceptual awareness of her friend Lisa who was standing in front of her.

In an example of clear, single, negatively valenced thought/feeling, sample 3.6, discussed in its entirety in Chapter 13, Paula had just heard her manager was fired and had a thought/feeling of anger and wondering why this had happened. This angry wondering was apprehended as an intertwined simultaneous thought process of thinking its weird, wondering why he was fired, and feeling angry. This angry wondering was apprehended as an indistinguishable cloudy thought/feeling in the front her head.

In an example of multiple, positive or neutrally valenced thought/feeling, sample 6.1, Anne had a bodily sensation of relaxation, all over her body, and a separate, simultaneous thought/feeling of giddy excitement about school being over, as well as a bodily sensation of smiling attached to the giddiness and excitement.

In an example of multiple, negatively valenced thought/feelings, 2.4, discussed in its entirety in Chapter 14, Jessica was in class and had approximately 10 separate, simultaneous, chaotic unworded thought/feelings in her head that were apprehended as all jumbled together so that none were clearly differentiated or separable, but she knew them to be related to what she had to do, the papers that were due, the final exam, wanting her teacher to shut up, wanting the class to be over, and that she was going to be late to her sampling appointment. She also had a separate, simultaneous thought/feeling of wanting

to leave in her head that was apprehended as a not particularly differentiated urge to get up and leave the class. She also had a separate, simultaneous complex feeling of nervousness/worry/anxiety that was also undifferentiated but contained all of these emotional elements (nervousness, worry, and anxiety), and this feeling was apprehended as a bodily sensation of her stomach turning upside down. She also had a separate, simultaneous perceptual awareness of her teacher in the front of the room. Thus, at the moment of the beep, Jessica had two complex, jumbled thought/feeling processes (of what she had to do and of wanting to leave her class), as well as a separate, simultaneous complexly multiple feeling and a perceptual awareness all occurring simultaneously in her awareness.

In summary, each participant, with the exceptions of Monica, Carla, and Jane, who did not have any clear thought/feeling experiences, had some experience of having thoughts and feelings which were experientially so powerfully fused so that the affective and cognitive aspects of these experiences were indistinguishable. When thought/feeling experiences occurred across participants, they commonly contained a qualitatively negative or distressing tone, without the emotions themselves being clearly and separately apprehended as distinct from their simultaneous associated thoughts at the moment of the beep.

### *Interfering Phenomena*

Ten of the 13 participants in the present study (all except Kaiyla, Carla, and Jessica) had samples in which they were consciously attempting to interfere, alter, control, examine, or disconnect with an ongoing process that was related to food, weight, shape, appearance, or BN-related behaviors (bingeing or purging). This interfering phenomenon was highly variable across participants, ranging from 0% (Kaiyla, Carla,

and Jessica in Table 1) to 71% (Lily in Table 1), and occurred at a mean frequency of 21%. The 21% mean frequency of interfering phenomena was primarily attributable to its high rate of occurrence among three participants (Monica 50%; Wendy 60%; and Lily 71%), the remaining 7 participants who experienced interfering phenomena did so at a substantially lower rate of frequency (13% mean frequency across these seven participants).

Before turning to the specific examples from each of these ten participants, it is useful to develop a rough understanding of what does and does not count as an interfering experience.

Example 1a (*not* interfering): I experience myself to be hungry, manifested by an emptiness in my stomach.

Example 1b (interfering): I experience myself as bending over to put pressure on my stomach emptiness as a way of reducing my hunger.

Example 1a is simply a sensory awareness of hunger with no interference: hunger is happening and I am noticing it. In Example 1b, by contrast, I am not experiencing the hunger directly, but rather I am experiencing myself as interfering/controlling/manipulating my hunger.

Example 2a (*not* interfering): I'm looking in the mirror noticing that I'm too fat.

Example 2b (interfering): I'm thinking I should hang a shirt over the mirror so I don't see my fatness.

In Example 2a I'm merely noticing. In Example 2b I'm aware of myself manipulating or controlling my noticing.

Here is an example from each of the ten participants who experienced this phenomenon, arranged in the order shown in Table 1.

Monica: In sample 1.2, discussed in its entirety in Chapter 15, Monica was innerly speaking a simultaneity of interwoven polyphonic inner speakings that had begun in a sample from 15 minutes earlier and were continuing to race through her mind. These inner speakings included saying to herself: “What am I doing at the movies?” “She’s thin, I wish I was like that,” “I should be studying,” “Can’t wait until I finish school so I can relax,” “I don’t have time for the movies,” “I need to lose weight,” “Can’t wait to go home to have the pound cake,” “What are you thinking? You just finished popcorn. You shouldn’t be eating for like a year.” Now, at the moment of this beep, a new set of inner speakings had been added to the mix: “I have to stop these thoughts,” “I have to concentrate on the movie,” “I’ve got to get this under control,” “Am I ADHD?” “I have to go to a therapist,” “This is irrational,” “I have to get this under control,” “I’m exhausted just from thinking,” and “I can’t stay focused.” Thus Monica was *both* having multiple, uncoordinated, streams of speaking to herself related to eating, weight, food, and what she needed to do, and was also separately and simultaneously attempting to manipulate/control these streams of speaking through separate and simultaneous competing streams of inner speaking.

Vicki: In sample 5.4, discussed in its entirety in Chapter 7, Vicky was lying on her back with her eyes closed. Her stomach was hurting, and she was actively trying to move her stomach out away from her body, as if this would somehow ease the pain, trying to distance her stomach from herself so it didn’t hurt. She innerly saw herself lying on her back with her stomach, a grey-colored right-triangular box that she knew to be her stomach, disembodied and not attached to her but instead hovering above her and to the left. Therefore, at the moment of the beep, Vicky was actively trying to move an *image* of her stomach in order to alleviate her pain.

While Vicky's attempting to move the image of her stomach to alleviate her pain is a clear example of interference, within this sample she also had a separate, simultaneous inner seeing of a separate box on the bottom of her stomach image; through this separate box passed images that depicted the options of why her stomach hurt (Did I eat something? Not eat something? What did I eat? Too much? Too long ago? etc.), but these pictures were moving so quickly they couldn't be clearly apprehended. Thus, at the moment of the beep, she was attempting to interfere with her pain *both* by attempting to move her imaged stomach, and by self-reflectively inner seeing of rapidly moving images about why she might have been experiencing this pain.

Wendy: In sample 1.4, discussed in its entirety in Chapter 15, Wendy was feeling gross, as though she had eaten way too much and needed to throw up, which was apprehended as a bodily sensory awareness of her stomach expanding and pushing against her abdomen from the inside, and she was also simultaneously imaginarily tasting vomit in her throat in recognition that that would stop her bodily sensation of fullness. Thus, Wendy is not merely feeling full, but is aware of what she needs to do (vomit) to end the fullness.

Susan: At sample 1.2, discussed in its entirety in Chapter 8, Susan was experiencing an intense sensory awareness of the smell of her boyfriend's French fries. Simultaneously, she had a thought/feeling of annoyance about her boyfriend's trying to force her eat them, apprehended as a conflicting thought process and feeling about how good they smelled and how irritating it was that he was trying to force her to eat them. Therefore, she was both experiencing the pleasurable sensation of the smell of the French fries, and was separately, simultaneously interfering with this through engaging in a



competing, conflicting thought/feeling process of annoyance about how good they smelled and how annoyed she was at her boyfriend's attempts to force her to eat them.

Samantha: At sample 4.2, discussed in its entirety in Chapter 9, Samantha was feeling slightly unhappy with her body, an inner seeing of herself standing sideways with a different, inaccurately thinner body. Simultaneously, Samantha had a thought/feeling of wanting to vomit, that she would be happier if she threw up. Thus, Samantha was not merely feeling unhappy with her body but was attempting to interfere with this unhappiness though wanting to vomit.

Hannah: At sample 5.1, discussed in its entirety in Chapter 10, Hannah was feeling hungry, which manifested itself as the bodily sensation of low blood sugar/shaky/vertigo. She was also simultaneously, unsymbolizedly thinking that she needed to get more coffee to avoid eating. Therefore, she was *both* feeling hungry, and attempting to control this hunger by thinking she needed to get more coffee in order to avoid eating.

Anne: At sample 5.2, discussed in its entirety in Chapter 11, Anne was hungry, apprehended as an empty and growling sensation deep in her stomach. She was also simultaneously thinking that she had had a snack earlier and should not be hungry and that she did not want to eat. Thus, Anne was *both* hungry and cognitively attempting to control or interfere with this sensation of hunger through a separate, simultaneous competing thought process about why she should not be experiencing this sensation.

Lily: In sample 1.4, discussed in its entirety in Chapter 15, Lily was saying to herself "That cheeseburger was really greasy. Should I make myself throw up to save myself a stomach ache?" Thus, at the moment of the beep, Lily was not actually having a stomach ache, but was instead thinking that she should vomit to avoid a potentially impending stomach ache.

Jane: In sample 7.3, discussed in its entirety in Chapter 12, Jane was innerly saying to herself “don’t fuck this up” in her own voice, just as if she had said this aloud. The “this” that this referred to was the awareness that she looked skinny. She also had a simultaneous sensory awareness of looking at herself in the mirror, apprehended as being intensely focused in on her stomach. She also had a separate, simultaneous, bodily sensation of hunger in her stomach that was experienced as both positive in that it meant that her body would eat its own fat, and negative in that it meant that she was hungry and would rather that she had not eaten and was still not hungry. Thus, at the moment of the beep, Jane was focused on her stomach and was telling herself not to do anything that would interfere with looking skinny while she was separately and simultaneously engaged in a self-reflexive evaluation of her hunger as being positive in that it meant her body was eating itself, and negative in that she would have preferred that she could both not eat and not experience the sensation of hunger.

Paula: At sample 5.3, discussed in its entirety in Chapter 13, Paula was depressed (a sunken/sad/lost feeling both in her body and in her head, with no specific location, that was somewhat difficult for her to explain) and was eating. She had a separate, simultaneous awareness of comfort from eating, apprehended as sudden, brief “splurts” of happiness and warmth (temperature) in her body and head that faded the depressed feeling but did not make it go entirely away. Thus, at the moment of the beep, Paula was *both* feeling depressed, and her experience of comfort from eating was interfering with, but not entirely alleviating this feeling of depression.

In summary, in each of these experiences, attention was not merely aimed at the individual experience, but was initially aimed outward and was then simultaneously or reflexively aimed back at managing, monitoring, or interfering with an ongoing process

related to food, weight, shape, appearance, or BN-related behaviors that were specifically in awareness at the moment of the beep. Most individuals without BN engage in straightforward bodily sensations, straightforward tasting of food, straightforward and accurate inner feelings of themselves, or straightforward (if not always positive) experiences related to their weight. For the ten individuals with BN in the present study who did experience interfering phenomena, these experiences related to weight, shape, food, appearance, or BN-related behaviors appear to be often experientially difficult so that, while experiencing these ongoing phenomena, they engage in multiple, simultaneous, in-experience attempts to interfere with these ongoing processes.

#### *Nothing In Awareness*

There were rare occasions in which there was nothing in awareness at the moment of the beep. This was the second least common characteristic of inner experience across participants, occurring at a mean frequency of only 1.3%. In fact, of the 13 participants in the present study, only three (Susan, Anne, and Paula in Table 1) had this phenomenon in their collected samples.

In an example of this phenomenon, sample 4.3, discussed in its entirety in Chapter 8, Susan was sitting outside on the grass, but had absolutely nothing either internally or externally in awareness. It was, in fact, a reality that she was sitting outside, but neither this, nor any other phenomena were in her awareness at the moment of the beep.

In summary, while this occurs rarely, the phenomenon of having absolutely nothing in awareness does occur, and demonstrates that DES allows for a sensitive delineation of the absence, as well as the presence of inner experience.

## Assessment Results

The present study aimed to examine inner experience among individuals with BN. These individuals were identified using a three-phase study design. In the screening phase, 420 undergraduate university students were screened for potential eating disorder risk using the Eating Attitudes Test (EAT-26; Garner, et al., 1982). Individuals identified as having clinically significant eating disorder risk as measured by the EAT-26 were then invited to participate in the qualification phase of the study. In the qualification phase, 30 undergraduate university students completed an in-depth BN assessment battery consisting of the Eating Disorder Inventory - 3 (EDI-3; Garner, 2004) questionnaire and the Eating Disorders Examination, 12th Edition structured clinical interview (EDE; Fairburn & Cooper, 1993). This qualification battery was designed to assure that the 13 subjects entering the sampling phase of the study had clinically significant levels of BN as measured by state of the art psychometric instruments. At the same time as this BN assessment battery was administered, the possibility of comorbid depression and anxiety were assessed using the Beck Depression Inventory - Second Edition (BDI-II; Beck, Steer, & Brown, 1996) and the Beck Anxiety Inventory (BAI; Beck & Steer, 1993).

Tables 2 and 3 show the BN assessment results for each individual who participated in the sampling phase, and Table 4 shows the depression and anxiety assessment results for each individual who participated in the sampling phase. Table 2 presents the EDI-3 percentile results along with the means and standard deviations for each subscale. The EDI-3 Bulimia scale is the most clinically relevant objective assessment measure in the present study; participants in Table 2 are therefore arranged in increasing order of EDI-3 Bulimia scale scores, from least to most clinically elevated; and the remaining Tables 3 and 4 will follow this same order. Although the EDI-3

Bulimia scale is the measure of primary interest in the present study, participant performance across each of the additional 11 core EDI-3 subscale scores: drive for thinness, body dissatisfaction, low self-esteem, personal alienation, interpersonal insecurity, interpersonal alienation, interoceptive deficits, emotional dysregulation, perfectionism, asceticism, and maturity fears will also be briefly discussed.

The EDI-3 Bulimia scores ranged from the 14<sup>th</sup> to the 89<sup>th</sup> percentile across participants, these results are by comparison to clinical BN patient norms in which an EDI-3 percentile score less than or equal to 3 on the EDI-3 Bulimia scale falls within the Low Clinical range, a percentile score of 4 to 38 falls within the Typical Clinical range; and a percentile score greater than 39 falls within the Elevated Clinical range. Thus three of our subjects were in the Typical Clinical range, whereas 10 were in the Elevated Clinical Range.

Table 2 Assessment Results for EDI-3 Subscales (Percentiles)

Participant	B	DT	BD	LSE	PA	II	IA	ID	ED	P	A	MF
Kaiyla	14	67	12	9	5	5	4	38	7	56	17	78
Monica	21	50	9	1	2	3	13	10	2	87	60	41
Carla	25	59	51	41	74	47	68	88	76	95	85	22
Vicky	39	86	39	32	41	59	68	64	76	68	72	22
Wendy	39	86	54	59	64	53	80	68	67	87	85	67
Susan	39	32	71	82	87	3	84	86	97	39	52	35
Samantha	39	86	54	35	41	21	44	26	67	68	66	67
Hannah	49	96	94	35	6	31	80	1	43	62	33	35
Anne	49	76	61	77	59	75	50	34	84	82	81	96
Lily	49	50	21	27	47	53	44	55	63	77	22	90
Jane	58	96	51	59	99	97	91	95	93	95	81	93
Paula	86	76	86	82	99	92	99	90	96	33	60	67
Jessica	89	86	61	86	69	75	68	79	67	50	77	99
Mean	20.15	25.46	30.07	12.53	14.30	10.92	12.30	18.46	11.00	17.61	14.46	14.23
S.D	4.70	2.36	7.18	6.02	8.25	7.15	5.61	9.05	6.41	3.94	4.03	8.05

Note. B = Bulimia; DT = Drive for Thinness; BD = Body Dissatisfaction; LSE = Low Self-Esteem; PA = Personal Alienation; II = Interpersonal Insecurity; IA = Interpersonal Alienation; ID = Interoceptive Deficits; ED = Emotional Dysregulation; P = Perfectionism; A = Asceticism; MF = Maturity Fears

In examining Table 2, EDI-3 Bulimia scale scores range from the 14<sup>th</sup> to the 89<sup>th</sup> percentiles. Of the 13 participants in the present study, 10 (Vicky, Wendy, Susan, Samantha, Hannah, Anne, Lily, Jane, Paula, and Jessica) fell within the elevated clinical range of the EDI-3 Bulimia scale; 3 (Kaiyla, Monica, and Carla) fell within the typical clinical range; and none fell within the low clinical range. Thus all the subjects who participated in the sampling phase of this study had at least a typical clinical level of BN symptomatology as measured by the EDI-3 Bulimia scale; the average sampling-phase participant ( $M = 20.15$ ,  $SD = 4.70$ ) was measured to have an elevated level of BN.

While the EDI-3 Bulimia scale is of primary interest, Table 2 also presents the assessment results of the additional 11 clinical scales of the EDI-3 across participants. As with the EDI-3 Bulimia scale, clinical range interpretive guidelines were also used for each of the remaining 11 core subscales. Overall, drive for thinness and body dissatisfaction across participant results fell within elevated and typical clinical ranges respectively (DT  $M = 25.46$ ,  $SD = 2.36$ ; BD  $M = 30.07$ ,  $SD = 7.18$ ). Results for the remaining 9 psychological scales of the EDI-3 across participants were all within the typical clinical range, with the exception of the Maturity Fears scale, which was in the elevated clinical range ( $M = 14.23$ ,  $SD = 8.05$ ).

In summary, Table 2 demonstrates that there was a range of BN symptomatology across participants as measured by the EDI-3 Bulimia scale, from the typical to elevated clinical level. Despite this range of BN symptomatology as measured by the EDI-3 Bulimia scale, there were no significant differences in individual DES results between the 3 participants with relatively less BN symptomatology, and the 10 remaining participants with relatively more BN symptomatology as measured by the EDI-3 Bulimia scale. Additionally, there were clinically typical levels of low self-esteem, personal alienation,

interpersonal insecurity; interpersonal alienation; interoceptive deficits, emotional dysregulation, perfectionism, and asceticism across participants and relatively higher clinically elevated scores on the maturity fears scale across participants.



Table 3

Assessment Results for EAT-26 and EDE Subscales (Percentiles)

Participant	EAT-26	EDE-R	EDE-E	EDE-S	EDE-W
Kaiyla	98	35	33	67	99
Monica	99	18	54	90	99
Carla	99	87	75	91	99
Vicky	97	96	98	91	99
Wendy	99	90	95	90	99
Susan	99	96	86	75	99
Samantha	94	93	79	67	98
Hannah	99	87	91	91	99
Anne	99	87	86	86	99
Lily	99	67	91	59	99
Jane	99	98	98	89	99
Paula	98	87	97	93	98
Jessica	99	93	93	93	99
Mean	41.92	4.70	4.33	5.33	5.41
S.D.	10.38	1.02	1.09	0.58	0.50

Note. EAT-26= Eating Attitudes Test; EDE-R = Eating Disorder Examination (EDE) Restraint; EDE-E = EDE Eating Concern; EDE-S = EDE Shape Concern; EDE-W = EDE Weight Concern

Table 3 presents the EAT-26 and EDE subscale percentile results along with the means and standard deviations for each subscale. The EAT-26 is one of the most widely used assessment tool to screen for eating disorder risk. In examining table 3, the EAT-26 scores ranged from the 94<sup>th</sup> to the 99<sup>th</sup> percentile across participants. Thus, all of the subjects who participated in the sampling phase of this study had a very high level of eating disorder risk as measured by the EAT-26 ( $M = 41.92$ ,  $SD = 10.38$ ).

Table 3 also presents the Eating Disorders Examination (EDE) subscale scores for each of the four EDE subscales: restraint; eating concern; weight concern; and shape concern. Higher scores on each subscale indicate higher levels of eating disorder severity in each measured domain. The EDE subscale scores for the EDE restraint scale (EDE-R) range from the 18<sup>th</sup> to the 98<sup>th</sup> percentile across participants ( $M = 4.70$ ,  $SD = 1.02$ ). Thus, there was wide variability in the extent to which individuals in the present study endorsed behaviors consistent with dietary restriction. Of the 13 participants in the present study, 10 were above the 80<sup>th</sup> percentile on dietary restraint; and the remaining 3 (Kaiyla, Monica, and Anne) scored below the 70<sup>th</sup> percentile; consistent with lower levels of restraint. There were no qualitative differences in DES results for the 3 participants with lower reported levels of restraint as compared to those with higher levels. Of the four EDE subscales, the restraint scale is most likely to be variable in individuals with BN, who tend to demonstrate significant behavioral variability in their overall patterns of dietary restraint. For example, individuals with BN may engage in complete dietary restraint between binge episodes; may eat normally between episodes; or may have any number of other self-reported eating patterns impacting their EDE restraint scale scores.

The EDE Eating Concern (EDE-E) subscale scores range from the 33<sup>rd</sup> to the 98<sup>th</sup> percentile across participants ( $M = 4.33$ ,  $SD = 1.09$ ). Of the 13 participants in the present

study, 11 were at or above the 75<sup>th</sup> percentile on this scale; and only two (Kaiyla and Monica) were below this range, at the 33<sup>rd</sup> and 54<sup>th</sup> percentiles respectively. The pattern of relatively lower levels of eating concern reported by these two participants is consistent with their relatively lower levels of BN symptomatology as measured by the EDI-3 Bulimia subscale. Thus, there were relatively high levels of eating concern overall among participants in the present study, with the exception of Kaiyla and Anne, for whom this was not a self-identified concern. Although these two individuals had lower levels of eating concern as measured by the EDE-E, their DES results did not qualitatively differ from the 11 individuals with higher eating concerns.

The EDE Shape Concern (EDE-S) subscale scores range from the 59<sup>th</sup> to the 93<sup>rd</sup> percentile across participants ( $M = 5.33$ ,  $SD = 0.58$ ). Of the 13 participants in the present study, 10 were at or above the 75<sup>th</sup> percentile on their self-reported level of shape concern. Of the remaining 3 participants, Kaiyla and Samantha were at the 67<sup>th</sup> percentile on this subscale, and Lily was at the 59<sup>th</sup> percentile. While Kaiyla's relatively lower level of shape concern may be consistent with her relatively lower levels of self-reported BN symptomatology as measured by the EDI-3 Bulimia subscale, Samantha and Lily's lower shape concern scores are somewhat more surprising. It is possible to speculate that the relatively lower self-reported concern about shape for these two individuals may be impacted by the extent to which they perceive themselves as having already achieved their desired ideal shape, but the exact nature of this pattern is unclear. However, as was true with both the Eating Disorders Examination (EDE) restraint and eating concern subscale differences among participants reported above, there were no substantial qualitative differences in DES scores for those higher or lower in self-reported shape concern.

The EDE Weight Concern (EDE-W) subscale scores range from the 98<sup>th</sup> to the 99<sup>th</sup> percentile across participants ( $M = 5.41$ ,  $SD = 0.50$ ). Thus, there was a consistent and very high level of weight concern across participants in the present study.

In summary, Table 3 demonstrates that there were uniformly high levels of eating disorder risk and weight concern across participants as measured by the EAT-26 and EDE-W respectively; and somewhat more variable levels of restraint, eating concern, and shape concern, as measured by the ERE-R, EDE-E, and EDE-S subscales. Despite the variability across these three measures, there were no substantial qualitative differences in individual DES results between the participants with relatively less and relatively more self-reported restraint, eating concern, and shape concern.

Table 4

Assessment Results for BDI-II and BAI (Percentiles)

Participant	BDI-II	BAI
Kaiyla	36	53
Monica	12	33
Carla	97	99
Vicky	55	49
Wendy	82	95
Susan	99	99
Samantha	79	66
Hannah	12	29
Anne	95	58
Lily	79	66
Jane	99	97
Paula	99	86
Jessica	93	53
Mean	24.07	18.76
S.D.	15.42	11.04

Note. BDI-II = Beck Depression Inventory-II; BAI = Beck Anxiety Inventory.

Table 4 presents the Beck Depression Inventory (BDI-II) and Beck Anxiety Inventory (BAI) percentile results along with the across participant means and standard deviations for each measure. The BDI-II and BAI are among the most widely used instruments for assessing depressive and anxiety symptoms in clinical practice. In examining Table 4, the BDI-II scores ranged from the 12<sup>th</sup> to the 99<sup>th</sup> percentile across participants ( $M = 24.07$ ,  $SD = 15.42$ ). Of the 13 participants in the present study, three (Kaiyla, Monica, and Hannah) endorsed symptoms consistent with minimal comorbid depression; one (Vicky) endorsed symptoms consistent with mild comorbid depression; four (Wendy, Samantha, Lily, and Jessica) endorsed symptoms consistent with moderate comorbid depression; and five (Carla, Susan, Anne, Jane, and Paula) endorsed symptoms consistent with severe levels of comorbid depression as measured by the BDI-II. Thus, there was wide variability in the relative presence of comorbid depressive symptoms across participants. Whereas 9 of 13 (69%) participants endorsed at least moderate levels of comorbid depression, 4 of 13 participants (31%) had only mild or minimal levels of comorbid depression as measured by the BDI-II. Despite the heterogeneity of comorbid depressive symptoms among these 13 participants, there were no qualitative differences in DES results among participants with low vs. high levels of comorbid depression.

The BAI scores ranged from the 29<sup>th</sup> to the 99<sup>th</sup> percentile across participants ( $M = 18.76$ ,  $SD = 11.04$ ). Of the 13 participants in the present study, two (Monica, and Hannah) endorsed symptoms consistent with minimal comorbid anxiety; six (Kaiyla, Vicky, Samantha, Anne, Lily, and Jessica) endorsed symptoms consistent with mild comorbid anxiety; one (Paula) endorsed symptoms consistent with moderate comorbid anxiety; and four (Carla, Wendy, Susan, and Jane) endorsed symptoms consistent with severe levels of comorbid anxiety as measured by the BAI. Thus, comorbid anxiety was

relatively less common than was comorbid depression across participants. Of the 13 participants in the present study, 62% endorsed only minimal or mild comorbid anxiety symptoms, and only 38% endorsed moderate to severe levels of comorbid anxiety as measured by the BAI. Despite the variability of comorbid depressive and anxiety symptoms across participants in the present study, there was no qualitative difference in DES results between participants with low vs. high comorbid anxiety.

In summary, Table 4 demonstrates that there was a wide range of depressive and anxious comorbidity across participants as measured by the BDI-II and BAI. Despite this range of comorbid symptomatology, there were no qualitative differences in individual DES results between those with low vs. high comorbid depressive or anxious symptoms. This is consistent with the BN literature as a whole, in which comorbid depressive and anxious heterogeneity is the norm.

In completing the qualification phase of the present study, non-patient norms were used for the EAT-26, BDI-II, and BAI assessment measures; and BN norms were used for the EDI-3 and Eating Disorders Examination subscales. The present study replicates Jones-Forrester (2006) and used the same assessment protocols with one important exception. While Jones-Forrester (2006) used the EDI-2 (Garner, 1991) non-clinical norms for college women, the present study used the newer version of this test, the EDI-3 (Garner, 2004), which does not have separate college female norms, providing only norms gathered from clinical populations diagnosed with an eating disorder. Given that the current sample was drawn from a non-clinical university population, the BN clinical norms used in the present study represent more conservative criteria than did the EDI-2 female college population norms used in Jones-Forrester (2006).

Thus, using the “gold standard” assessment measures, it was determined that there was a clinically significant level of BN symptomatology across participants as measured by the EDI-3 Bulimia scale. The EDI-3 assessment results also revealed clinically significant levels of BN correlates as measured by the EDI-3 including low self-esteem, personal alienation, interpersonal insecurity; interpersonal alienation; interoceptive deficits, emotional dysregulation, perfectionism, asceticism, and maturity fears across participants. There was a very high level of eating disorder risk as measured by the EAT-26. The EDE revealed high levels of eating disorder risk and weight concern across participants, and relatively more variable levels of restraint, eating concern, and shape concern. Finally, comorbid depression and anxiety was prevalent in many, but not all, of the study participants. Comorbid depressive symptom endorsement was substantially more common than was comorbid anxiety symptom endorsement, in that 69% of participants endorsed moderate to severe levels of depression as measured by the BDI-II, whereas only 38% endorsed moderate to severe comorbid anxiety. While the above assessment instruments have clear clinical utility for measuring the nature and severity of BN symptoms and associated comorbid depressive and anxious symptomatology, it is striking that the across participant DES results hold to be very robust and consistent across participants despite both commonality and significant variations in assessment-level across participant results.



## CHAPTER 17

### DISCUSSION

There has been very little focus on the moment-by-moment inner experience of individuals with BN in the extant literature. The present study aims to examine directly the inner experience among individuals with BN potentially to illuminate phenomenology that may help build our understanding of BN. This discussion will compare the results of the present study to previous DES studies of individuals with BN and to previous DES studies of these phenomenological characteristics in non-clinical populations and will compare and contrast these results with the extant BN literature. This will be followed by a brief discussion of the assessment methods used in the present study and their limitations. Finally, the limitations of the present study and potential implications for future inquiry will be discussed.

#### Comparison of DES and Bulimia Literature Results

##### *Fragmented Multiplicity*

The inner experience of all 13 participants in the present study was strikingly fragmented. In the majority of their samples, these women experienced a marked division of attention and inability to maintain clear and single focus on what for most individuals would be the center of attention. This fragmentation meant that inner experience was extremely divided, sometimes between two separate, simultaneous phenomena, but

sometimes so strikingly fragmented that there were up to 20 separate, distinct simultaneous phenomena in awareness at the moment of the beep. For the women in the present study, inner experience is intensely fragmented, and is occasionally (as was identified with Jessica) so overwhelmingly complexly fragmented that it is literally impossible for them to capture.

The inner experience of *every one* of the study participants was multiply fragmented. The lowest frequency of multiple experience among our BN subjects was 42% (Samantha in Table 1); the mean frequency was 67%. By way of comparison, the stratified sample of students from the same university reported by Heavey and Hurlburt (2008) found the mean frequency of multiple experience to be 4%, a percentage so small as not to be mentioned in their 2008 report. This is a huge difference: the bulimic subject with the *lowest* frequency of multiple awareness had ten times as frequent multiple awareness as the average in a non-bulimic population.

By contrast to the results from the non-BN population above, the extreme salience of fragmented multiplicity found among the participants in the current study is strongly consistent with previous DES studies of inner experience in individuals with BN. Jones-Forrester (2006), which the present study replicates, found the mean across-BN-participant frequency of multiplicity to be 56%. Doucette (1992; Doucette & Hurlburt, 1993) also used DES and found the mean frequency of multiplicity to be 73% across participants. Although Doucette (1992) termed this phenomenon “multiple inner experience,” this phenomenon was the same as what we are calling fragmented multiplicity in that they both describe a fragmentation of attention and lack of single, direct focus on what for most non-bulimic individuals would be in the center of awareness at the moment of the beep.

Although this fragmented multiplicity is by far the most salient aspect of inner experience across participants, it is likely that for at least some individuals with BN, as was the case with Jessica, inner experience may be so profoundly multiply fragmented that it is virtually impossible to capture this complexity at the moment of the beep. It is thus possible to speculate that the present results may represent a slight underestimate of the nature of fragmented multiplicity in the inner experience of women with BN.

The salience of fragmented multiplicity within the inner experience of women with BN in the present study is particularly striking both in its consistency with previous DES studies of inner experience among women with BN and for the fact that fragmented multiplicity has never been identified using other methods among individuals with BN. Jones-Forrester (2006) reviewed the BN literature and found no mention of fragmented multiplicity using any other methods of inquiry; there is still no mention at the present time. While other methods such as self-report and structured clinical interviews may not be sufficiently sensitive to capture this phenomenon, given the extreme salience of fragmented multiplicity across all participants with BN that we have examined using DES, and given that this fragmentation is likely to have significant implications for the etiology and maintenance of BN, all efforts should be made to carefully examine this phenomenon among wider groups of individuals with BN using alternate methods.

#### *Sensory Awareness*

The inner experience of all 13 participants in the present study inner experience was frequently sensory, and when it occurred, sensory awareness was predominantly bodily apprehended and was less often focused on external sensory characteristics.

On very rare occasions, occurring for only 2 of the 13 participants in the present study, sensory awareness occasionally occurred as a focus on sensory characteristics in

order to avoid something distressing in the immediate environment. Carla and Hannah were the two participants who had avoidant sensory awareness, were similar to the other participants in that their sensory awareness was predominantly bodily apprehended. However, these women, on one occasion each focused on sensory phenomena apparently to avoid something that was distressing to them. For example, in Hannah's sample 7.5, discussed in its entirety in Chapter 10, she was on the phone with her ex-boyfriend, who was angrily berating her. At the moment of the beep, she had entirely withdrawn from the content of what he was saying and was instead solely focused on two sensory awareness: the cramping in her hand and neck (apprehended as a stiffness and tightness deep in the muscles of her left neck and shoulder) and the angry, cracking sound of his voice as he was yelling at her. She was also separately and simultaneously actively engaged in watching a movie. Thus, at the moment of the beep, she was focused on these bodily and external sensory awarenesses to the exclusion of the content or details of what her ex-boyfriend was berating her about.

The above sample is strikingly similar to a sample that Jones-Forrester (2006) collected from her participant Stella. In her sample, 3.6 Stella was on the phone with her father, who was screaming at her over the phone. Instead of paying attention to what her father was screaming about, Stella was instead noticing the sensory aspects of this experience: the phone speaker was being overdriven by the screams, and she was noticing the distortion of the sound. She was also aware of the speaker-driven vibrating sensation in her skin and bone in a region about a ½ inch in front of her ear. Stella also had an ongoing feeling fact of bodily frustration, in that the feeling apparently existed in her body but was not in her awareness at the moment of the beep. Thus at the moment of the beep Stella was paying attention to the sensory (auditory and mechanical) aspects of the

distorted sound rather than to its content (what her father was yelling about) or her reaction (frustration).

In another example of potential avoidant sensory awareness (“potential” in the sense that it occurred on the first sampling day and should thus be treated with a higher degree of skepticism than later samples), in her sample 1.4, discussed in its entirety in Chapter 6, Carla was on the phone with her father and was feeling irritated/frustrated, which was simultaneously apprehended as a feeling in her head and a separate, simultaneous bodily sensory awareness of stiffening across her back. She had a simultaneous bodily sensory awareness of wanting to hang up, apprehended as her hands wanting to make the hang-up motion to her phone, and a simultaneous bodily sensory awareness of making a sour face, and of her mouth’s being slightly open as if she’s starting to say something but really has nothing to say. She also had a separate, slight ongoing sensory awareness of the weight and texture of her backpack on her lap. At the moment of the beep, she was entirely withdrawn from the content or details of the conversation, and was instead focused on these three bodily sensory awarenesses (of her hands, face, and mouth), and this separate ongoing external sensory awareness of her backpack.

The high frequency, overwhelmingly bodily nature, intensity, and rare but occasional avoidant function of sensory awareness among these women is quite striking in its potential implications for BN symptomatology. In their examination of the frequency of inner experience phenomenon in a non-clinical population of university students, Heavey and Hurlburt (2008) found sensory awareness to be relatively salient, occurring at a frequency of 22%. However, among the participants in the present study,

sensory awareness was significantly more frequent, occurring at an average frequency of 39% across participants.

The frequency of sensory awareness in the present study is also strongly consistent with Jones-Forrester (2006) who found a mean frequency of sensory awareness across participants of 43%. Of this 43% sensory awareness 30% was bodily and only 13% was externally focused. This is also consistent with Doucette (1992) who found a 26% frequency of “bodily awareness,” the term she used to describe the phenomenon of bodily sensory awareness. Doucette (1992) did not quantify externally focused sensory awareness but her samples contained qualitative phenomena that would have been considered to be externally focused sensory awareness, in which participants were focused on the sensory qualities of their external environment at the moment of the beep.

The relative infrequency of avoidant sensory awareness found in the present study (occurring in the collected samples of only two study participants: Carla and Hannah) is also strongly consistent with Jones-Forrester (2006) who found avoidant sensory awareness in only one of her 5 participants with BN.

To date, there have been no studies that have reported the relative frequencies of bodily vs. external sensory awareness in non-clinical sampled populations, and only one previous study (Jones-Forrester, 2006) that has reported on this relative frequency in a BN sampled population. However, Doucette’s (1992) examination of “bodily awareness” strongly suggested that women with BN may differ from others in the extent to which they focus on internal bodily sensations. While we know from the above studies (Heavey & Hurlburt, 2008; Doucette, 1992; Jones-Forrester, 2006) that women with BN have relatively more frequent sensory awareness than do sampled individuals in the non-

clinical population, it is possible to speculate that these women may also have relatively higher rates of bodily sensory awareness, and sensory awareness that is more intensely detailed than those of the non-clinical population, either due to their fragmentation of attention, due to their BN symptomatology, or due to some interaction of these or other previously unexamined characteristics. While this remains necessarily speculative, the present study would suggest that this may be a fruitful area of future inquiry.

The phenomenon of sensory awareness has not been examined within the extant non-DES BN literature, yet it has been found to be a strongly salient characteristic of inner experience among individuals with BN by all previous studies using this method (Jones-Forrester, 2006; Doucette, 1992). There is a striking discrepancy between the salience of sensory awareness among individuals with BN examined using DES and the posited disturbances in interoceptive awareness in BN discussed in the non-DES literature (Garner, 1991; Fassino, Piero, Gramaglia, and Abbate-Daga, 2004). The high frequency phenomenon of sensory awareness found in DES studies of BN suggests that women with BN have a hypersensitivity to bodily cues, while the current literature suggests the opposite, that women with BN have a relative insensitivity to affective, hunger, and satiety cues (Doucette, 1992; Jones-Forrester, 2006; Fassino, Piero, Gramaglia, and Abbate-Daga, 2004). The relative insensitivity to physical and affective cues suggested by the construct of interoceptive awareness is also echoed by studies of the existence of elevated pain thresholds in women with BN (Papezova, Yamamotova, & Uher, 2005; Stein, et al., 2003). However, an earlier study (Faris, Raymond, DeZwaan, Howard, Eckert, & Mitchell, 1992) found that this insensitivity was highly specific to pain and did not result in broader sensory insensitivity to other tactile cues.

Unfortunately, despite the profound salience of sensory awareness in the inner experience

of women with BN, this phenomenon continues to remain unknown in the extant literature to the present day.

Our understanding of sensory factors correlated with BN in the present literature has been informed largely by self-report and structured clinical interviews, both of which may be relatively insensitive to capturing the rich experiential details of sensory awareness in the inner experience of BN. However, given the marked salience of this phenomenon, future phenomenological and non-phenomenological methods should be examined to determine the extent to which this sensory hypersensitivity may impact BN etiology and maintenance.

#### *Thought/Sensory Awareness and Feeling/Sensory Awareness*

Both thought/sensory awareness and feeling/sensory awareness were relatively rare phenomena, with each occurring in the inner experience of only two of the present study participants respectively. However, despite the fact that these phenomenon together only impact 4 of the 13 sampled participants, they are worth discussing for the potential light they may shed upon sensory inner experience among women with BN.

The present results are consistent with Jones-Forrester (2006) who found thought/sensory awareness in only one of five study participants with BN and did not find any occurrences of feeling/sensory awareness in her 2006 study. However, these were subtle and rarely occurring phenomena within the present study (occurring at a mean frequency of 1% and 0.6% respectively). To our knowledge, these phenomena have not been mentioned in previous DES studies of individuals with BN (Doucette, 1992; Doucette & Hurlburt, 1993); nor have they been reported in the wider BN literature. It is not currently possible to ascertain if this was due to the subtlety and relative infrequency



of these phenomena, or if these phenomena existed but may have not been differentiated from more straightforward inner thoughts, feelings, and sensory awarenesses.

While thought/sensory awareness and feeling sensory/awareness are certainly infrequently occurring phenomena, it is possible that advancing these phenomena as low level characteristics found in the inner experience of a few individuals with BN may prove to be fruitful to the future understanding of inner experience in BN in general, and the complexity of intertwined sensory awareness, thoughts, and feelings specifically. In examining the data in the present study, and in examining the data from Jones-Forrester (2006), these were naturally emerging but quite infrequent phenomena that did not appear to emerge in previous DES studies of BN (Doucette, 1992; Doucette & Hurlburt, 1993), nor in studies of other clinical or non-clinical populations examined using this method (Heavey & Hurlburt, 2008). In addition, these specific, intertwined sensory phenomena have not been examined in the extant BN literature.

Although the consistency of these phenomena across studies is currently unknown, and while these are rare phenomena, they may shed light on the complexity of sensory awareness among women with BN, in that not only is sensory awareness predominantly bodily, and often quite complex, for some women inner experience is so profoundly sensory that their sensations can sometimes bleed into, and become intertwined with, and indistinguishable from, their thoughts and feelings. Future examinations of sensory characteristics of individuals with BN may yield more insights into the nature and frequency of these phenomena and their potential impact upon BN symptomatology.

### *Unsymbolized Thinking*

Unsymbolized thinking was found at a frequency of 34% across participants in the present study, which is substantially higher than the 22% frequency of unsymbolized thinking found in a non-clinical student population (Heavey & Hurlburt, 2008). These results differ markedly from previous DES studies of individuals with BN in that they are significantly higher than the Jones-Forrester (2006) study, in which unsymbolized thinking was quite rare, occurring at an average frequency of only 9%. However, the frequency of unsymbolized thinking in the present study is significantly lower than the 69% frequency found by Doucette (1992). Given that the same procedures were used for Jones-Forrester (2006) and the present study, it is possible that the low (9%) frequency of unsymbolized thinking in the previous study was an anomalous finding, the result of sampling fluctuations. It is possible that participants with high levels of fragmented multiplicity in the previous study may have overlooked reporting unsymbolized thinking, or that this phenomenon may have been lost in the complexity of inner experience. It is also possible that there may be qualitative differences in the inner experience of the individuals sampled in each study, but more research is needed to determine the extent to which there may be differences in the frequency of unsymbolized thinking within larger samples of individuals with BN. Perhaps the most likely explanation is that the definition of and interview techniques for identifying unsymbolized thinking were applied inconsistently across studies. Unsymbolized thinking is defined by exclusion: there is a thought, but other symbols (words, images) have to be excluded. The phenomenon of unsymbolized thinking was identified in individuals whose inner experience is *much* less complex than that of the subjects in the bulimia studies, and it can be a difficult (perhaps impossible) task to decide unequivocally whether there is a thought in one stream of a

multi-layered complexity and then confidently exclude the existence of words or images in that stream while paying attention to the other simultaneously ongoing streams.

Jones-Forrester (2006) posited that the infrequency of unsymbolized thinking or other cognitive inner experience in her participants with BN was striking given that intervention efforts often focused on cognitive factors. Although Jones-Forrester (2006) found a striking lack of cognition in awareness, this is a discrepant finding that did not occur in either the present study or in Doucette (1992). Clearly, more research is required to determine the extent to which the Jones-Forrester (2006) finding with regard to unsymbolized thinking may have been anomalous, or may be replicated in additional DES studies of individuals with BN. Given the intensely fragmented multiplicity of inner experience across participants with BN in both the current and previous DES studies of individuals with BN, there is reason to believe that "thinking" in individuals with BN may be far more complex and poorly differentiated than is assumed by the current BN literature.

Earlier studies have also suggested potential correlations between high levels of BN symptomatology and sensed ongoing unsymbolized thinking (Doucette, 1992; Jones-Forrester, 2006); however the four participants in the present study with sensed, ongoing unsymbolized thinking vary widely in the severity of their symptoms, ranging from the lowest level in the study (Kaiyla) to the relative mid-range of BN severity (Susan, Hannah, and Lily). Clearly, more research is required to determine if there is a potential relationship between BN symptomatology and unsymbolized thinking in general, and ongoing unsymbolized thinking in particular.

Unsymbolized thinking, in which thoughts are directly in awareness without words, images, or any other symbols, has not been examined at all in the extant BN

literature. In fact, this phenomenon has been long debated, and has been believed to be impossible by many (Hurlburt & Akhter, 2008), although it has been found to be a common factor of inner experience in DES studies. Within the extant literature, there has been no particular focus on the *form* of thinking, but there has been a great deal of research interest in the *content* of cognitive variables potentially correlated with BN.

The extant literature has focused on the content of cognition in BN, such as negative schemas (Kearney-Cooke & Striegel-Moore, 1997), cognitive overemphasis on eating, weight, and shape as determinants of self-worth (Fairburn, Cooper, and Shafran, 2003), negative self-focused cognitions (Cooper, Wells, & Todd, 2004), and negative cognitive focus on the discrepancies between self-perceived weight and perfectionistic ideals (Abramson, Bardone-Cone, Vohs, Joiner, & Heatherton, 2006). By contrast, DES does not focus on any particular content, other than that which naturally emerges from randomly sampled moments.

In summary, the current BN literature has simply not been designed to examine unsymbolized thinking, and presuppositionally doubts its existence. However, the extant literature has made significant strides in understanding the content of cognition in BN. Cohen (2005) posits that the time has come for a “second generation” of cognitive theories of BN, and it is possible that this new wave may be more open to challenging long standing presuppositions about both the form and content of cognition in individuals with BN.

### *Inner Speech*

Inner speech occurred at a frequency of 31% across participants in the present study, and while for most participants inner speech was clear and straightforward, Jessica, Anne, and Jane also experienced rare complex inner speech. The frequency of

inner speech found in the present study is quite consistent with the 26% frequency of inner speech Heavey and Hurlburt (2008) found among a non-clinical population of university students. However, these results are markedly inconsistent with previous DES studies of individuals with BN, which found very low rates of inner speech, occurring at a frequency of only 6% and 10% respectively (Doucette & Hurlburt, 1993; Jones-Forrester, 2006). This finding is also inconsistent with previous findings that inner speech occurred at the highest frequency for participants with the lowest levels of BN symptomatology. By contrast, the present study not only found strikingly higher rates of inner speech overall, but also found no relationship between BN severity and inner speech frequency. It is difficult to know precisely what to make of this surprising finding. Prior to the present study, twelve individuals with BN have been sampled (Doucette & Hurlburt, 1993; Hebert & Hurlburt, 1993; and Jones-Forrester, 2006). The far higher frequency of inner speech among the 13 participants in the present study vs. the 12 previous sampled participants would suggest that more research is required to determine if there is a potential relationship between BN and the characteristics of inner speech among women with this disorder or if these fluctuations may be attributable to individual differences, influenced by fragmented multiplicity, or may be affected by some previously unexamined factor.

The extant non-DES literature has not focused specifically on inner speech in BN. Clearly, more research is needed to determine the potential relationship between BN and experiential inner speech using both DES and alternate methodologies.

### *Inner Seeing*

Inner seeing occurred at a frequency of 26% across participants in the present study, and while this phenomena was primarily made up on single, clear visual

experiences, it was occasionally multiple, and was also occasionally complex. The frequency of inner seeing among participants with BN in the present study is quite consistent with the 34% frequency of inner seeing among students in the non-clinical population (Heavey & Hurlburt, 2008), and is also strongly consistent with previous DES studies of inner experience among individuals with BN, which found 23% and 34% across-participant frequencies of inner seeing respectively (Jones-Forrester, 2006; Doucette & Hurlburt, 1993).

There have been few studies within the extant BN literature that have focused specifically on experiential inner seeing, and so much of what is currently understood about visual phenomenon in BN has been gathered from laboratory-induced visualization or experimentally presented visual images. For example, Tuschen-Caffier, Vogele, Bracht, and Hilbert (2003) exposed women with BN and controls to either a video recording of their own body or a visualization exercise in which they were asked to visually imagine a realistic representation of their own body. They found that while there were no group differences for the visualization exposure task, exposure to the video condition among women with BN resulted in higher degrees of negative affect relative to controls. However, Tuschen-Caffier and her colleagues (2003) posit that it was not possible to determine the extent to which distraction during the imagery task may have impacted these results. It is possible to speculate that participants may have found this task threatening and may thus have varied in their strict compliance to the command to accurately visually imagine their body. DES studies would also suggest that there is considerable individual variance in the frequency, detail, and intensity of naturally occurring visual images. These individual differences may partially explain why Tuchen-Caffier and her colleagues (2003) did not find that exposure to induced visualization was

as powerful a determinant of negative affect as was exposure to video material among women with BN.

However, there may also be underlying neurophysiological differences in how individuals with BN process visual information, whether that information is externally or internally presented. For example, visual exposure techniques (presenting eating disorder and control subjects with food images and aversive emotional images) were also used in a large scale fMRI neuroimaging study (Uher, et al., 2004) and showed significantly different patterns of activation between women with eating disorders and healthy controls. Specifically, when presented with visual food images, healthy controls showed activation in the inferior parietal lobe and left cerebellum, but women with eating disorders showed activation in the medial orbitofrontal cortex and the anterior cingulate, areas associated with affective information processing, instead of the activation pattern of healthy controls. Uher and his colleagues (2004) found this pattern of activation with visual images to be similar to those found among individuals with obsessive compulsive disorder, affective disorders, and substance abuse disorders, and posit the existence of a potential shared compulsion-emotion related circuit in these disorders.

While there have been no studies to date that have examined purely randomly occurring visual phenomena in a naturalistic among women with BN, there have been two recent studies that have attempted to retrospectively examine relatively spontaneously occurring visual imagery associated with BN behavior. For example, in a study of negative core beliefs and visual imagery among 30 women with BN, women were asked to recall a recent episode of vomiting, and reported frequent, and affectively negative visual images prior to purging, potentially triggering an urge to vomit (Hinrichsen, Morrison, Waller, & Schmidt, 2007). When asked to recall a time when they

were concerned about their weight, shape, or appearance, women with BN and dieting women were found to have relatively more frequent visual images than non-dieting controls, and the visual images of women with BN were found to be more affectively negative than either dieters or controls (Somerville, Cooper, & Hackman, 2007).

While the present study supports the frequency of inner seeing in BN found in the above two studies, it also demonstrated significantly more variability in the content of random, naturally occurring visual phenomenon. Although one of the participants in the present study (Samantha) reported inaccurate inner seeings of herself, and these were clearly negative, neither her visual images specifically, or the visual images of our participants as a whole were particularly negative in content. However, there are clear methodological differences that may account for these different findings with regard to visual phenomena in BN. Specifically, while these two studies (Hinrichsen, Morrison, Waller, & Schmidt, 2007; Somerville, Cooper, & Hackman, 2007) asked participants to retrospectively recall BN relevant incidents, the present study aimed to avoid retrospection and symptom-based cued information in favor of collecting only naturally occurring random phenomena. Future research endeavors using methods aimed away from retrospective or specifically cued visual images toward more truly spontaneous imagery may shed light on the surprising degree of variability in inner seeing found among women with BN in the present study.

### *Feelings*

Feelings occurred at a mean frequency of 21% across participants in the present study. Twelve of the 13 participants in the present study had some level of affective inner experience, and for these women, when feelings occurred they were rarely clear and straightforward but were instead complex, and often poorly differentiated. The frequency



of feelings among participants with BN in the present study is relatively similar to the 26% frequency of feelings among university students in a non-clinical population (Heavey and Hurlburt, 2008).

While feelings were thus relatively common, one of our participants, Anne, had two samples in which she had an ongoing affective state without the emotion itself being specifically in awareness, an experience we refer to as “feeling fact of body.” This phenomenon was thus rare for her, occurring in only 5% of her collected samples, and non-existent in the inner experience of the other participants with BN in the present study. This phenomenon, while rare, illustrates the importance of bracketing presuppositions and carefully examining the complexity of affective inner experience among individuals with BN. While feeling fact of body is rare, it can be identified when it occurs and it illustrates the importance of not assuming that an emotion is necessarily in experiential awareness without careful expositional interviewing. The rarity of feeling fact of body in the present study is relatively consistent with Jones-Forrester (2006) who found a 4% frequency of this phenomenon across participants, and with Doucette and Hurlburt (1993) who did not find any instances of feeling fact of body in their study. This phenomenon is also unknown in the extant BN literature.

Hurlburt (1990) cautioned that while feelings are often difficult to describe among non-clinical individuals with whom he had sampled, they were, in fact, clearly and unambiguously experienced. This was not at all the case for the feelings of the individuals with BN in either the present study, or in previous DES studies of the inner experience of individuals with BN. Instead, among individuals with BN in the present study, and in past DES studies, feelings are frequently ambiguous and are rarely clearly and straightforwardly experienced (Jones-Forrester, 2006; Doucette & Hurlburt, 1993).

While the characteristics of affective inner experience among individuals with BN are consistent across studies, there is a significant discrepancy with regard to the frequency of feelings among DES BN studies. The present study is quite consistent with Jones-Forrester (2006) who found a mean frequency of 17% across participants with BN. However, Doucette and Hurlburt (1993) found a much higher 70% across-participant frequency of feelings. Jones-Forrester (2006) posited that this significant difference in feeling frequency may be attributable to differences in how sensory awareness and feelings were distinguished, individual differences, or differences in criterion for describing feelings. There were individual samples in Doucette (1992) in which samples were coded as feelings that would now be more likely to be considered bodily sensory awarenesses, a characteristic very common among individuals with BN in the present study. Additionally, there is striking ideographic variability in terms of how individuals use the word “feeling.” Given the affective complexity that has been found among individuals with BN, a great deal of care must be taken to determine if an actual emotion is present in awareness at the moment of the beep, and all efforts should be made to avoid assuming emotion that may not be in experiential awareness. For example, Anne had three samples in which she began by saying that she was having a “feeling” (“feeling stressed” in her sample 7.1, “feeling tension” in her sample 7.2, and “feeling hopeless” in her sample 7.3) but carefully interviewing revealed that what Anne called a “feeling” in these samples was not at all emotional, instead it was a multiply complex unsymbolized thought process with absolutely no experienced affect. As DES research continues to develop, it is likely that drawing these careful distinctions between experientially felt emotions, thoughts, sensations, and other phenomena will continue to be refined.

While the frequency at which feelings occur in the inner experience of individuals with BN varies widely, the characteristics of BN affective inner experience uncovered using DES methods are strongly concordant, suggesting that emotions among individuals with BN are strikingly complex, bodily apprehended, and poorly differentiated. Additionally, while the present study and Jones-Forrester (2006) found that feelings were more commonly negative than positive or neutral in valence, Doucette (1992) did not differentiate between negative and positive or neutral feelings and information for making a comparison with regard to emotional valence between these studies is thus unavailable. More research is required to determine the underlying reasons for the discrepant findings with regard to the frequency of feelings, but DES studies of inner experience in BN have shown that individuals with this disorder do not have clear, unambiguous, and well-defined inner emotional lives.

The extant BN literature has rarely focused specifically on complexity or ambiguity in the random, momentary affective inner experience of individuals with BN. However, the lack of clearly apprehended, non-ambiguous affect among women with BN in the present study appears to be thematically related to studies of difficulties with interoceptive awareness and alexithymia among individuals with BN, both research areas in which the understanding of the complexity of affect in BN is expanding.

For example, the EDI-3 (Garner, 2004), one of the assessment measures used in the present study, has significantly expanded upon the assessment of emotional difficulties among individuals with BN. While the previous EDI-2 (Garner, 1991) measure recognized difficulties with interoceptive awareness, including difficulties individuals with BN may have in recognizing and responding to emotional cues, the EDI-3 shows a significantly more nuanced approach to the assessment of emotion in

individuals with BN. Specifically, while the test items themselves have not changed, the addition of an emotional dysregulation subscale, and Affective Problems Composite Scale which is made up of test items from both an Interoceptive Deficit scale (included in the previous version of the test) and a new Emotional Dysregulation scale, reflects a continually evolving understanding of the complexity of affect among individuals with BN within the extant literature.

Alexithymia broadly defined as deficits in affect identification, understanding, and regulation, has been frequently identified as an eating disorder correlate and has been estimated to occur in 40 to 61% of individuals with eating disorders (Taylor, 2000; APA, 2000). Individuals with BN may also have higher levels of interoceptive deficits, including difficulties identifying hunger and satiety cues, and difficulties distinguishing between emotions and sensations than do women with AN (Fassino, et al., 2004). Thus, the extant literature would suggest that women with BN will likely have difficulty with experiencing clear and straightforward emotion. The present study randomly sampled moments in participant's natural environments and found out that this is indeed the case. Experientially, these women have quite complex and often ambiguous affect.

Results with regard to negative affect in BN are somewhat more variable. The present study and Jones-Forrester (2006) found that negative affect was indeed more common than positive affect in the inner experience of individuals with BN, but Doucette (1992) did not provide details as to the affective valence found in the emotional samples of her participants. However, regardless of emotional valence, feelings were consistently ambiguous across DES studies of individuals with BN. Within the extant literature, negative affect is exclusively studied in the context of examining eating disorder symptoms, and may thus result in higher levels of negative affect than examining

naturally occurring emotions would. The present study found that affective inner experience is indeed frequently negative (73% of all samples across participants were qualitatively negative), but does also show a wider emotional range than is traditionally captured in self-report or structured clinical interviewing.

While traditional questionnaire and research methods have been used to find the presence of interoceptive deficits, alexithymia, and difficulties with affect regulation, they were not designed to capture the nuances of ideographic affective complexity, nor to examine the range of naturally occurring emotions. The randomly collected, moment-by-moment emotion samples in the present study will hopefully shed light on the complexity of how these deficits in emotional processing are experienced by individuals with BN. Simply put, for individuals with BN with whom we have sampled, emotion is strikingly unclear, complex, frequently distressing, and often profoundly ambiguous. This finding is particularly disturbing given the current focus on cognitive-behavioral interventions. If these women are not able to clearly experience or interpret emotion, cognitive-behavioral interventions without the addition of emotional identification and interpretation skills are likely to be relatively ineffective. Given the increasing awareness of affective complexity in the extant non-DES BN literature, it is hoped that future studies will combine traditional and alternate methods to shed light on how this affective complexity is actually experienced in the inner lives of women with this profoundly disruptive disorder.

#### *Thought/Feeling*

Thought/feelings occurred at a mean frequency of 14% across participants in the present study. Ten of the 13 participants in the present study had some level of failure clearly to distinguish between thoughts and feelings. This finding is consistent with Jones-Forrester (2006), who found a 13% mean frequency of thought/feeling across

participants. However, this result is substantially lower than the 40% mean frequency of thought/feeling in the previous DES study of BN (Doucette & Hurlburt, 1993).

Thought/feelings have also been reported among individuals with anxiety disorders studied using DES (Hebert & Hurlburt, 1993), but have not been reported in DES studies of other clinical populations nor in a non-clinical population DES study (Hurlburt, 1993; Heavey & Hurlburt, 2008).

Thus, all the DES studies of BN have found a higher rate of thought/feeling than is observed in most other populations. However, this rate in both Jones-Forrester (13%; 2006) and the present study (14%) was lower than it was in the earlier study of BN using DES (40%; Doucette & Hurlburt, 1993). This may be attributable to higher rates of affective experiences overall in earlier studies, to the profoundly complex inner experience of individuals with BN making it markedly difficult to differentiate clearly between purely affective and fused affective/cognitive phenomena (Doucette & Hurlburt, 1993; Jones-Forrester, 2006), or to subtle shift in the investigator's manner of apprehending this phenomenon. As DES research continues to expand and stabilize, perhaps the continuing careful examination of the nuances of affective experience amidst the surrounding fragmented multiplicity of inner experience in individuals with BN will allow for more distinct clarification between emotional, cognitive, and fused affective/cognitive experiences.

While there is some inconsistency in the frequency of thought/feeling experiences between earlier and more recent studies, the characteristics of thought/feeling experiences in individuals with BN have remained stable. This phenomenon suggests that individuals with BN demonstrate significant difficulty differentiating between affect and cognition in their momentary experience. The present study and Jones-Forrester (2006) found

thought/feeling phenomena to be predominantly negatively valenced, but the emotional valence of either feelings or thought/feeling was not examined in the earlier study (Doucette & Hurlburt, 1993). Despite the discrepancy in the frequency of thought/feelings among DES studies of individuals with BN, there is a high level of agreement in the consideration of the thought/feeling phenomena as a clearly salient aspect of inner experience among individuals with BN. This striking inability to distinguish between affect and cognition across studies of BN using DES suggests that this phenomenon is likely to be a substantial correlate of BN pathology.

While the extant literature has rarely focused on the phenomena of thought/feelings in the momentary experience of individuals with BN, the literature has frequently documented difficulties with negative affect, interoceptive deficits, and affect dysregulation among individuals with BN (see the feeling sections above). This suggests that the current literature is increasingly focusing on the complexity of affective experience and its regulation among individuals with BN. Although the fusing of affect and cognition that DES has discovered has not been explicitly identified in the current literature, difficulties with identifying emotions and distinguishing between affective states (alexithymia) has been noted (Lumley, 2004), as has poor emotional awareness (Bydlowski et al., 2005), poor affect regulation and distress tolerance (Gilboa-Schechtman, et al., 2006; Anetis, et al., 2007), and interoceptive awareness deficits leading to difficulties distinguishing between affect and sensations and identifying hunger and satiety cues (Fassino, et al., 2004). Therefore, the extant literature suggests that women with BN will likely have difficulty accurately distinguishing between affective states, and distinguishing between emotions and sensation.

It is possible that these widely examined affective dysregulations among women with BN may have contributed to the difficulties distinguishing between emotions and cognitions among women in the present study. However, the qualitative complexity and intensity of cognitive-affective fusion in the inner experience of individuals with BN discovered by DES greatly exceeds the emotion identification and regulation difficulties described in the current BN literature. It is striking that this phenomenon has not been more widely identified and described in the extant literature given its prevalence in the inner experience of women with BN in the present study and in earlier DES BN studies (Doucette & Hurlburt, 1993; Jones-Forrester, 2006). As the research interest in separately examining affect and cognition in BN grows, it is hoped that future studies will be able to shed light on the complex fusion of affect and cognition in the inner experience of individuals with BN found in DES studies.

#### *Interfering Phenomena*

Interfering phenomena, in which participants were consciously attempting to interfere with or disconnect from an ongoing process that was related to food, weight, shape, appearance, or BN-related behaviors occurred at a mean frequency of 21% across participants in the present study. Ten of the 13 participants in the present study had some level of these interfering phenomena within their sampled experiences, and this 21% mean frequency was largely attributable to the high levels of interfering phenomena of three participants (Monica 50%; Wendy 60%; and Lily 71%), with the remaining seven participants who experienced interfering phenomena doing so at a substantially lower frequency (13% across these seven participants).

Previous DES studies of individuals with BN have not discussed the qualitatively interfering nature of these phenomena, but have identified their content based BN-related



nature. For example, Doucette and Hurlburt (1993) described “thoughts relating to bulimia” in the inner experience of their participants with BN, and Jones-Forrester (2006) described “preoccupation with weight, shape, food, or appearance” in the inner experience of her participants with BN. It is possible that, as DES research has continued to evolve in the past nearly two decades, sensitivity to nuance and complexity in examining these phenomena has increased. For example, Doucette and Hurlburt (1993) coded samples as “thoughts related to bulimia” that would currently be categorized as interfering phenomena. Additionally, Jones-Forrester (2006) coded samples as “preoccupation with weight, shape, food, or appearance” that would currently be categorized as interfering phenomena. This finding suggests that great care should be taken to avoid presuppositionally focusing on the thematic theory-relevant content of samples to the reduction or exclusion of the active, ongoing, processes of interacting with this thematic content not previously described in the extant BN theory. The interfering phenomena of the present study; the preoccupation with weight, shape, food, or appearance (Jones-Forrester (2006); and the BN-related thoughts (Doucette & Hurlburt, 1993) all appear to be closely associated phenomena that have not been found in DES or other studies of clinical or non-clinical populations (Hurlburt, 1990; 1993; Heavey & Hurlburt, 2008).

Each BN DES study to date, despite the variability in how interfering phenomena, preoccupation with weight, shape, or appearance, or BN-related thoughts were coded across studies have consistently supported the salience of food, weight, shape, and appearance in the inner experience of individuals with BN described in the extant literature. The interfering phenomena found in the present study represent the moment-by-moment idiographic experience of attempting to control or dissociate from intense and

often disturbing cognitive, affective, or sensory experiences related to weight, shape, food, or appearance that have been previously examined in the extant literature through self-report and structured clinical interview methodologies.

The current BN literature widely supports excessive emphasis on weight, shape, and appearance as key factors in the maintenance of BN-related behaviors (APA, 2000; Fairburn, Cooper, & Shafran, 2003). Among individuals with BN, preoccupation with weight, shape, and appearance is hypothesized to contribute to a vicious cycle of negative self-focused cognition, negative affect, binge eating, purging, and other compensatory behaviors (Abramson et al., 2006). Additionally, there is an increased interest in understanding the complex roles that emotional dysregulation and disturbances in interoceptive awareness may play in the maintenance of BN (Whiteside, et al., 2007) and in formulating more integrated biopsychosocial theories of BN (Southgate, Tchanturia, & Treasure, 2005). Despite this increasing appreciation of cognitive and affective complexity in BN, and advancement of integrative biopsychosocial approaches, the importance of weight, shape, and appearance in the maintenance of BN remains largely unchallenged in the extant literature.

Since self-evaluation that is excessively influenced by shape and weight is one of the core diagnostic feature of BN (APA, 2000), it is unsurprising that each DES study of BN to date have discovered at least some level of these issues in the inner experience of individuals with BN (Doucette & Hurlburt, 1993; Jones-Forrester, 2006). However, it is surprising that interfering phenomena did not occur more frequently in the inner experience of every individual with BN in the present study. In fact, the frequency of interfering phenomena ranged from 0% to 71% and did not occur in the inner experience of three participants, including the participant with the lowest (Kaiyla) and highest level

of BN severity (Jessica) as measured by the EDI-3. Thus, these phenomena are less frequent than may be expected from the extant literature, and are not more common in individuals with lower vs. higher levels of BN symptomatology. Despite the relatively low frequency of these phenomena, their experientially disturbing nature is strongly consistent with the current BN literature. Therefore, the present and previous DES studies of inner experience in BN (Doucette, 1992; Jones-Forrester, 2006) suggest, consistent with the current literature, that concerns with regard to weight, shape, appearance, and BN-related behaviors do occur in the inner experience of a majority of individuals with BN whom we have sampled. However, the present study suggests that, aside from the widely studied purging and other compensatory behaviors among individuals with BN in the current literature, the active attempts to interfere with, or disconnect from ongoing experiences related to weight, shape, food, or appearance in the randomly sampled, non-symptom cued inner experience of individuals with BN in the present study may represent a previously unexamined category of compensatory behavior in BN. Future studies will hopefully yield further clarifications of the experiential nature of these interfering phenomena as potential compensatory methods.

#### *Nothing in Awareness*

It was very rare for the individuals with BN in the present study to have nothing in their awareness at the moment of the beep. This occurred at a frequency of only 1.3% across participants in the present study. The phenomenon of individuals having no inner experience at the moment of the beep is rare in both clinical and non-clinical DES studies (Hurlburt & Heavey, 2006) and is also rare in previous DES studies of individuals with BN (Doucette & Hurlburt, 1993; Jones-Forrester, 2006). Experiences in which there is a total absence or blankness of awareness in the inner experience of individuals with BN

has not been a focus of study within the current BN literature. Given the complexly fragmented multiplicity of inner experience among participants in the present study and in earlier DES BN studies (Jones-Forrester, 2006; Doucette, 1992) it is striking that there are rare, but occasional moments, for at least two study participants in the present study, where inner experience is, in fact, silent. This phenomenon is very rare, but indicates that it is possible for individuals with BN to experience an absence of inner experience in contrast to their normal state of profoundly complex, fragmented multiplicity.

### Limitations of Traditional Assessment Measures

Now that the discussion of the DES results has been concluded, we will transition to a discussion of the limitations of the traditional symptom-focused psychometric assessment measures used in the present study. A more extensive review of the general methodological limitations of self-report and clinical interview methods as a whole is provided in Chapter 2 of the present study.

Recall that participants in the present study completed an assessment battery consisting of the Eating Attitudes Test (EAT-26; Garner, et al., 1982) brief screening tool, the Eating Disorder Inventory – 3 (EDI-3; Garner, 2004) self-report, the Eating Disorders Examination – 12<sup>th</sup> Edition (EDE; Fairburn & Cooper, 1993) semi-structured clinical interview, the Beck Depression Inventory - Second Edition (BDI-II; Beck, Steer, & Brown, 1996), and the Beck Anxiety Inventory (BAI; Beck & Steer, 1993) self-report measures. This assessment battery allowed for extensive examination of BN symptomatology and comorbid depressive and anxiety symptoms among the participants in the present study, and represents the “gold standard” of using multimodal measures in the assessment of BN.

The present study and previous DES BN studies (Doucette, 1992; Jones-Forrester, 2006) have demonstrated that inner experience in BN is most saliently characterized by an intense fragmented multiplicity. The state of the art current self-report and clinical interview psychometric measures used in BN research are not designed to directly measure random, naturally occurring, ongoing moments of inner experience. Therefore, while the non-DES psychometric assessment measures used in the present study yield critical data with regard to BN symptomatology and comorbid depressive and anxiety symptomatology, they are necessary but not sufficient for accessing and understanding the complex nature of inner experience among individuals with BN. The specific limitations of the assessment measures used in the present study will now be discussed.

These psychometric measures, while providing critical information about BN symptomatology, are unable to account for either the commonalities or differences in inner experience across participants in the present study. Thus, another significant limitation of these assessment measures is that they are unable to identify and examine idiographic data that may shed light on previously unexamined phenomena among individuals with BN. The exclusion of individual focus in favor of group symptom-based commonalities in traditional BN assessment allows general assumptions with regard to BN to remain relatively unchallenged. By focusing on the individual, DES allows for a challenge to the common assumptions about BN held within the extent literature. Exploratory research initiatives that allow for challenges to the current understanding of BN may facilitate more promising prevention and treatment success rates.

As previously discussed by Jones-Forrester (2006), a more overt but less commonly discussed ecological limitation of each of these psychometric measures, is that they may fail to account for the extent to which distress associated with BN

symptomatology may affect participant's ability to engage in and accurately complete assessment measures (Kessler, et al., 2000). By rigorously avoiding leading questions, and avoiding any explicit reference to BN symptomatology, DES may substantially reduce the threat inherent in traditional BN psychometric assessment measures and thus guards against confounds due to minimizing, denial, or other invalid response sets.

Traditional psychometric assessment allowed for greater understanding of participant commonalities and differences with regard to BN symptomatology. However, DES, by focusing exclusively on idiographic detail demonstrated that the participants in the present study, while sharing a commonly fragmented multiplicity of inner experience, also have cognitive and affective differences that could be of critical clinical importance. Consistent with Jones-Forrester (2006), the present study also collected data that demonstrated that the overwhelming focus on BN symptomatology alone in the extant literature creates the risk of entirely missing fragmented multiplicity, which is *the* most salient feature of inner experience in BN, and also risks missing opportunities to gain insight into unique idiographic strengths and deficits of each individual that could be used to design an individualized and potentially far more effective approach to treatment.

Future studies may benefit from extending beyond the current practice of using multiple and multimodal self-report, symptom-focused measures to assess BN (Guest, 2000) to include idiographic data that allows for questioning of the status quo with regard to the nature of individual BN pathology. With BN relapse after treatment estimated to be as high as 63% (Gleaves, Miller, Williams, & Summer, 2000), intervention and prevention initiatives may be improved by research methodologies that allow us to transition from the current over reliance on symptom-focused self-reports and structured

clinical interviews towards a more holistic understanding of idiographic daily inner experience among individuals with BN.

#### Present Study Limitations

The present study is constrained by the limitations of previous DES BN studies (Jones-Forrester (2006; Doucette, 1992): it was based on a small, non-random sample of individuals with BN, and may thus not generalize to the wider population. It is possible that the 13 women sampled in the present study may differ from other individuals with BN. However, DES has now been used to examine the inner experience of 25 individuals across five studies spanning 17 years, with markedly consistent results, so a systematic difference between individuals with BN who have and who have not sampled seems unlikely.

Given the extensive time commitment involved in DES research, in comparison to survey-based studies, it is possible that the present study, and previous DES BN studies may have been particularly sensitive to self-selection biases and attrition, and individuals willing to complete participation in the sampling phase may thus differ in some systematic way from individuals with BN unwilling to make this type of time commitment. The present study included full data on three individuals (Monica, Wendy, and Lily- described in Chapter 15) who dropped out of the study before completing the full DES protocol, and found no systematic differences in inner experience between these women and the remaining 10 participants who completed the full DES protocol. Furthermore, very few (3 of 13) individuals who began the study dropped out.

While DES is careful to avoid leading questions, and instructs participants to skip any material they do not wish to report on, the extensive time commitment involved and

the collaborative nature of DES interviewing, avoids retrospective bias to the greatest extent possible, but continues to have a risk of self-presentation bias. Attempts to bracket presuppositions in DES interviewing allow for self-presentation, and experimenter biases to be substantially minimized but not entirely eliminated.

As in Jones-Forrester (2006), some of the women in the present study were not only bulimic but also clinically depressed and/or anxious. A heterogeneously comorbid sample was used in the present study (and similarly in Jones-Forrester, 2006) because this reflects the population: BN is frequently comorbid with depression and anxiety. Whether it would be useful to replicate this study using “purely” bulimic individuals is an open question.

A final limitation of the present study lies in its risk of researcher selection bias. DES research requires a substantial amount of training to gain proficiency, requires a significant amount of time and labor to collect data and interpret it, and precludes brief, general summaries of data. As such, only three researchers have undertaken the study of inner experience in BN using this methodology (Jones-Forrester; Doucette; and Hurlburt). It is possible that the individuals who are drawn to seeking training and conducting research using this method all share some idiosyncrasy that leads to distorting their subject’s reports in some systematic way. Future research with a larger and more diverse team of researchers can reduce this risk.

### Suggestions for Future Research

Five key areas of exploration for future research will now be advanced. First, the past nearly two decades of DES BN research has shown that inner experience in BN is, at its core, markedly complex and fragmented. However, this core aspect of inner



experience in BN remains largely unknown in the extant non-DES BN literature, and current assessment measures are neither designed for, nor particularly sensitive to, this fragmented multiplicity. Future research targeting fragmented multiplicity may yield additional insights into the etiology and maintenance of this marked failure to maintain single focused attention on the center of awareness among individuals with BN. Given the centrality of fragmented multiplicity in the inner experience of individuals with BN examined using DES, it is highly likely that there is an interaction between this phenomenon and BN symptomatology. More research is required to determine the precise nature, and directionality of this potential interaction. Additionally, future research focused on directly targeting and treating fragmented multiplicity in BN may prove to have clinical utility. Current cognitive, affective, and behavioral treatments incorporating mindfulness may have utility, but may have to be modified to target the persistence and intensity of fragmentation in this population. Given the striking inability to maintain single focus in individuals with BN across DES studies, experimental interventions aimed at reducing fragmented multiplicity should be examined and tested for potential improvement in BN symptomatology.

Second, explorations of sensory awareness in BN are also likely to yield important discoveries. It is possible to speculate that hyperawareness of bodily sensations may be directly related to bulimic behavior. While much is understood about interoceptive deficits in BN within the current literature, future research focusing on potential interoceptive hyperawareness among individuals with BN may help to illuminate the relationship between sensory awareness and BN symptomatology.

Third, affective inner experience in BN has been found to be strikingly complex and ambiguous across DES studies, and emotion in BN is occasionally fused with, and

indistinguishable from cognition. Therefore, the results with regard to affective inner experience in BN across DES studies suggest that *both* affect and cognition in BN may be more complex than previously thought. Within the current BN literature, there has been a recent expansion from primary focus on negative affect to a consideration of more complex affective variables in BN. Future studies will hopefully continue this expansion, and may shed light on the etiology and maintenance of affective ambiguity in BN. While negative affect is undoubtedly prevalent in the inner experience of individuals with BN, targeting negative affect without also addressing overall emotional awareness is likely to have only limited utility. Future research designed to investigate negative affect and poor emotional awareness in BN simultaneously may yield more promising results than targeting either of these variables separately. Simultaneous examination of these affective variables may yield new BN treatment innovations. Future research should also examine the fusion of affect and cognition in the inner experience of individuals with BN at greater depth. Much work remains to be done as researchers endeavor to understand the precise nature of the relationship between BN, affective ambiguity, fusion of affect and cognition, and cognition in the context of fragmented multiplicity. As posited by Jones-Forrester (2006), interventions that focus solely on affect or cognition without considering experiential ambiguity and fusion issues are unlikely to be sufficient at addressing the complexity of inner experience in individuals with BN. Therefore, research initiatives aimed at addressing this complexity directly may prove to be essential in driving innovations in BN research.

Fourth, the identification of interfering phenomena in the present study suggests that individuals with BN do not merely have passive preoccupation with weight, shape, appearance, or BN-related behaviors. Instead, they experientially attempt to actively

interfere with, or disconnect from, ongoing process related to food, weight, shape, appearance, or BN-related behaviors. These phenomena provided previously unexplored insights into the phenomenological nature of the struggle that individuals with BN experience on a daily basis. They do not merely engage in ongoing experience, as would be typical for most non-bulimic individuals. Instead, they both experience and simultaneously actively attempt to interfere with ongoing experience. Future research efforts aimed at exploring the nature of the relationship between BN and this active interference may shed light on what individuals with BN themselves do to cope with their symptomatology. Any insights gleaned from this research are likely to have significant clinical utility in terms of individualizing treatment and increase treatment compliance in BN.

Fifth, additional studies should continue to examine the phenomenology of BN by asking participants to report directly on their *experience* rather than focusing exclusively on their *symptoms*. The present study and previous DES BN studies have shown that shifting research focus from the nomothetic to the idiographic has the potential to yield important and previously unexplored directions for BN research; and could prove to have utility in forging new insights into BN prevention and intervention initiatives.

### Summary

The present study and previous studies of inner experience in BN (Doucette, 1992; Jones-Forrester, 2006) revealed seven major characteristics of inner experience in BN that, with the exception of complex affect, have not been investigated in the extant literature.

First, consistent with Jones-Forrester (2006) and Doucette and Hurlburt (1993b), fragmented multiplicity was found to a salient feature of inner experience in BN; 13 of our 13 participants in the present study showed this characteristic. Stated simply, these studies have all found that individuals with BN have a striking inability to maintain a clear and single focus of attention. In fact, none of the participants with BN investigated in the present or previous DES BN studies (Jones-Forrester, 2006; Doucette, 1992; Doucette & Hurlburt, 1993) have maintained a consistent focus on a single center of awareness; a characteristic that is commonly found in the inner experience of non-bulimic individuals. This feature remains largely unexamined within the extant BN literature.

Second, consistent with previous DES BN studies (Jones-Forrester, 2006; Doucette & Hurlburt, 1993b), the present study also found sensory awareness to be a core feature of BN inner experience. Despite its clear salience in the inner experience of individuals with BN investigated DES, sensory awareness remains largely unexamined within the extant BN literature. In fact, the current BN literature, when it discusses sensory issues at all, as in the case of interoceptive awareness deficits, generally propose a *reduction* in sensitivity to bodily stimuli among individuals with BN, rather than the hypersensitivity to/intense awareness of sensations found in the inner experience of individuals with BN examined using DES.

Third, unsymbolized thinking was a salient feature of inner experience among participants in the present study, and in Doucette (1992), but was uncommon in the inner experience of individuals with BN in the Jones-Forrester (2006) study. Although it is possible that the multi-layered complexity of inner experience in BN may make unsymbolized thinking particularly difficult to detect, cognition overall is likely to be

impacted by the overwhelming fragmentation of attention that characterizes inner experience in BN across DES studies. Unsymbolized thinking is not mentioned in the extant BN literature.

Fourth, inner seeing was common in the inner experience of individuals with BN in the present study, and in previous DES BN studies (Jones-Forrester, 2006; Doucette & Hurlburt, 1993). Inner seeing has not been directly investigated in the wider BN literature.

Fifth, consistent with previous DES BN studies (Jones-Forrester, 2006; Doucette & Hurlburt, 1993b), the present study also found Thought/Feelings to be a salient feature of inner experience in BN. Thought/feelings have not been identified or investigated within the non-DES current BN literature. As noted above, studies of interoceptive awareness and alexithymia indicate the presence of difficulty with affect identification in BN, but have not identified the qualitative fusing of affective and cognitive inner experience found in DES BN studies

Sixth, consistent with previous DES BN studies (Jones-Forrester, 2006; Doucette & Hurlburt, 1993b), the present study found that emotional inner experience in individuals with BN was generally complex, bodily apprehended, and ambiguous or poorly differentiated. While this qualitative nature of feelings was strongly concordant across DES BN studies (Doucette & Hurlburt, 1993; Jones-Forrester, 2006), there are inconsistencies with regard to the frequency of emotion in the inner experience of participants with BN across studies. Specifically, the present study and Jones-Forrester (2006) were strongly consistent in finding that emotional experience was moderately infrequent, but Doucette (1992) found feelings to be substantially more frequent in the inner experience of her participants. Affective inner experience was substantially

negative in valence in both the present study and in Jones-Forrester (2006). However, Doucette (1992) did not report on the valence of emotional inner experience among her participants. The prevalence of negative affect across participants in present study is strongly consistent with the extant BN literature. However, the relative infrequency and strikingly poorly differentiated nature of emotional inner experience in BN, as well as the fusion of thought and feelings found in the present study and previous DES BN studies, have not been a specific target of investigation in the current BN literature. While it is possible to speculate that the ambiguity of emotional inner experience found in the present study may be simply experiential manifestations of the disturbances in interoceptive awareness and/or alexithymia found in the extant non-DES BN literature, the complexity of affective experience, the poignancy of the distress experienced from negative affect, and the samples in which there are more clearly apprehended emotional experiences suggest that simple generalizations about emotion in the inner experience of BN are ill advised.

Seventh, interfering phenomena, in which participants were consciously attempting to interfere with, or disconnect from, an ongoing process that was related to food, weight, shape, appearance, or BN-related behaviors were a common feature of inner experience in the present study and in previous DES BN studies (Doucette, 1992; Jones-Forrester, 2006). While earlier studies labeled these phenomena slightly differently, investigations of samples from previous DES BN studies (Jones-Forrester, 2006; Doucette & Hurlburt, 1993) suggest that these phenomena have been qualitatively similar across studies, and may have been presently coded as interfering phenomena. Therefore, as our sensitivity to the complexity of inner experience in BN has increased across DES studies, a clearer picture of this phenomenon continues to emerge. Despite

differences in terminology with regard to interfering phenomena, each DES BN study to date has been highly concordant with the extant literature in finding that BN-related phenomena, whether experienced cognitively, affectively, or sensorily, were indeed evident in the inner experience of individuals with BN.

Summarily, the present study and previous DES BN studies (Jones-Forrester, 2006; Doucette, 1992; Doucette & Hurlburt, 1993) have used an exploratory research paradigm to examine the inner experience of individuals with BN while attempting to rigorously bracket presuppositional biases from extant BN theory. Use of exploratory research in the present and previous DES BN studies has allowed for the discovery of previously unexamined phenomena and for challenges to commonly held beliefs with regard to the experiential nature of this profoundly disruptive disorder.

DES BN exploratory research over nearly two decades has demonstrated that the use of traditional “gold standard” multiple and multimodal psychometric assessment is insufficient for obtaining a full understanding of the phenomenological nature of this profoundly disruptive disorder. It is hoped that inclusion of idiographic research paradigms could have substantial clinical utility in individualizing BN intervention and relapse prevention initiatives. Given the commonality of BN relapse post treatment, innovations in the successful prevention and treatment of BN are urgently needed.

## APPENDIX A

### PARTICIPANT SAMPLES

#### Kaiyla Samples (See Chapter 5)

**1.1** At the MOB Kaiyla was looking to see if they had any classes up at CCSN online, and had found what dates the classes were offered, not focused on anything in particular, just in the process of finding the information, and was looking at the dates on the screen, no other thoughts, inner seeings, etc, just looking at this information. Also had a separate, simultaneous sensory awareness of noting that the cup was warm to hot, and could smell and taste the licorice in the tea. *Coding: Multiple, PA, SA x 2*

**1.2** Flipping through a magazine but not particularly paying attention to the magazine, just flipping through it on “auto-pilot.” She also had a separate, simultaneous unsymbolized thought process of reminding herself to study. She had a separate, simultaneous unsymbolized thought/feeling that she had to go to the gym, which was clear to her but difficult to describe. She also had a separate, simultaneous awareness that her mom was trying to talk to her but she was actively zoning her out and not looking at her, not listening to her, just feeling annoyed, apprehended in her head, as a repetitive, pokey sensation deep in her temples. *Coding: Multiple, Active Suppression, Interfering Phenomena, PA, U, T/F, F*

**1.3** Cleaning her room and sitting on the floor in her closet with an old box of letters next to her, and opening up a letter, aware of seeing the name on the back of the letter, apprehended as an inner seeing of her friend Sadie, in her old study hall, in 8<sup>th</sup> grade, seeing her friend from the front, seeing her from the head to the waist, standing up. Clear inner seeing, in color, as she appeared when she knew her, wearing a plain white t-shirt with a pair of jeans, with her hair down, accurate seeing of her, how she remembered her looking. She had a separate, simultaneous cluster of thoughts re: wondering what happened to her friend, she was pregnant and going to get married, and move to the east side of town, apprehended as a cluster of unsymbolized thoughts with all these parts, one thought with all of these parts in it. She also had a separate, simultaneous sensory awareness of the ridged texture her friend’s handwriting on the envelope on her fingers, and a separate sensory awareness of the glittery, circular sun sticker on the envelope. *Coding: Multiple, Inner Seeing, U, SA x 2*

**1.4** Trying to put the beeper on her spandex gym shorts, not aware of anything particular about this, just in the process of trying to fasten the beeper on to her shorts. *Coding: Just Doing*



**1.5** Driving, seeing the tail lights of the cars in front of her, approaching a red light and slowing down, not aware of anything particular, just noticing the cars in front of her are stopping. She had a separate, simultaneous ongoing thought process of picturing where she left her phone charger and communication book, apprehended as an inner seeing of her boyfriend's kitchen and dining room with her charger plugged into the wall and her book on a chair, just where she remembered leaving them, seen from the perspective of standing in the room, in color, an accurate inner seeing as if she was actually standing there. She had a separate, simultaneous wondering if she was going to have time to make it to the gym that was apprehended as a thought process of talking to herself, in her own voice, in her head, as if she said it aloud, saying to herself "I wonder if I have enough time, it's already nearly 7:30, that'll only give me an hour and a half", and a separate, simultaneous inner seeing of herself on a machine exercising, from head down but can't see her shoes, seen from approximately 50 feet away, from the left side, still and in color, with her focus tunneled in on her with the other surroundings being a blur, like tunnel vision. *Coding: Multiple, PA, Inner Seeing x 2, Interfering Phenomena, IS*

**1.6** Turning the keys to turn her car off, apprehended as the action of what she's doing, not noticing anything particular about it, and had a separate, simultaneous awareness of noticing that her boyfriend's friend's car was parked in her spot, apprehended as seeing the nose of his car, with nothing particular about it in awareness. Also had a separate, simultaneous unsymbolized wondering if her boyfriend was at home or at band practice. *Coding: Just Doing, PA, U*

**2.1** Watching the movie Jurassic Park, not paying attention to anything in particular, just watching. She had a separate, simultaneous sensory awareness of the crunchy texture of the drumstick she was eating, not focused on the taste, just the texture. She was also separately, and simultaneously hearing voices from the other room, can't hear what's being said, not paying attention to anything in particular, just hearing the sound of the voices in the other room. *Coding: Multiple, SA x 2, PA*

**2.2** At the MOB Kaiyla was watching the scene in Jurassic Park where they are getting saved, paying attention to watching the movie and simultaneously feeling happy relief, apprehended as a sensation deep in her chest, in the middle of her chest, as if pressure had been lifted, and she had been holding her breath but was able to breathe again. *Coding: Doing, F*

**2.3** Holding the remote control in her hand, switching the channels without paying attention to doing so, also had a separate, simultaneous awareness of looking over at the side of the chair, not noting anything in particular, just looking at the side of the chair, and a separate, simultaneous perceptual awareness of hearing her boyfriend's dog snoring and feeling annoyed, with the annoyed feeling apprehended as saying to herself, in her own voice, in an annoyed tone "that's so annoying." *Coding: Multiple, Doing, PA, IS*

**2.4** Actively paying attention to what she was seeing on the TV program she was watching, watching a patio being fixed on a program called *Over Your Head*, and also had a simultaneous perceptual awareness of seeing her boyfriend on her right hand side, in her peripheral vision, blurred. *Coding: Multiple, Doing, PA*

**2.5** Had a sensory awareness of the taste and smell of her Wintergreen toothpaste, and was also separately and simultaneously actively engaged in putting her cell phone, wallet, and other things she needed in a pile to get them ready for school. She was also innerly sighing and saying “ugh”, and feeling slight stress, apprehended as a sensation of tightness/constriction in her upper chest, as if she couldn’t get a deep breath, and also feeling this in her head, apprehended as an affective understanding of not wanting to go back to school. *Coding: Multiple, SA x 2, Doing, IS, F*

**2.6** In her psychology class, waiting to watch a video and had a sensory awareness of the bright blue color of the screen as the video was loading up, paying attention to the color, and also had a sensory awareness of her body being slouched and relaxed as she was sitting in her chair, nothing particular about this, just aware of being bodily relaxed. She also had a separate, simultaneous perceptual awareness of seeing other students in her peripheral vision, not noticing anything particular about them, just seeing them. *Coding: Multiple, S x 2, PA*

**3.1** Was looking at a student in her class, apprehended as being focused in on his mouth, had blocked out what he was saying but was watching his mouth move, not aware of anything in particular, just zeroed in and watching his mouth move, seeing him from the left side of his face, aimed specifically at his mouth rather than at the other details of his face. She was completely actively zoning out his voice and just watching the movement of his mouth, and had a separate, simultaneous feeling of being aggravated, apprehended as a feeling of being angry, constricting bodily sensation of pressure pushing in on the center of her chest, as though there was weight on her chest and also in her head. She was also simultaneously innerly sighing to herself with an irritated tone, like grumbling to herself, not in words, but was like a vocalized “ggrrr” to herself, in her own voice, as if she said it aloud. *Coding: Multiple, Active Suppression, F, IS (irritated sigh)*

**3.2** Her boyfriend had brought her binder to her and it was windy so she was trying to keep the hair out of her eyes, apprehended as being aware of trying to keep her hair from her face, but also looking at and touching her hair, seeing each follicle, looking for split ends. She was about to pull it out of her eyes but is focused in on her follicles, looking for split ends. She was also hearing her math book pages turning in the wind and can see them turning in her peripheral vision, not focused on anything in particular about this, and not doing anything about it, just hearing them turning and seeing them turning in her peripheral vision. She also had a separate, simultaneous awareness of her boyfriend walking away, that was both apprehended as a bodily understanding that he is walking away and a cognitive understanding that he’s walking away. Also had a slight separate, simultaneous awareness of noting the crowds of people around her, but she is not particularly paying attention to them, just knowing they are there in a similar way to how she knows her boyfriend is walking away. *Coding: Multiple, SA, U/SA (boyfriend and crowds), PA*

**3.3** Doing her math homework, aware of trying to working out a math problem and being distracted by the wind blowing things around, apprehended as writing the problem down but unable to concentrate. She was also separately and simultaneously hearing the sound of a truck beeping as it backed up, had been counting the beeps but at the moment of the beep had withdrawn from counting the number of beeps and was aware of being annoyed

by the sound itself, sound itself is an annoying sound and she's aware of hearing it as an annoying sound, and is aware of herself being annoyed in her head, but no separate bodily awareness of the annoyance beyond it being an annoying noise, recognizing it as an annoying noise, and feeling annoyed in her head. She also was smelling smoke, and was separately, simultaneously but less central feeling the sensation of her hair being blown into her face by the wind, and simultaneously brushing her hair aside as it was being blown into her face. She also had a separate sensory awareness of her papers being blown about by the wind. The math, sound, and smell were all equally in her awareness at the moment of the beep, with the hair and wind being present in awareness, but less central. *Coding: Multiple, Feeling/SA (annoyed/sound), SA x 3*

**3.4** Tasting the Gatorade she was drinking, apprehended as a sensory awareness of the sweetness and taste of the Gatorade in her mouth, and had a separate, simultaneous sensory awareness of hearing the soothing noise of the air conditioning moving through the vents. She had been doing her homework but had entirely withdrawn from this and was focused on these sensory awareness, with the majority of her awareness 60-70% focused on the taste, and the remainder focused on the sound of the air conditioning. *Coding: Multiple, SA x 2*

**3.5** Talking to her friend on the phone, apprehended as listening to the sound of her friend's voice as a cue to when it would be her turn to talk, getting the gist of what she's saying but suppressing the details. Also had a separate, simultaneous slight perceptual awareness of her book being open in front of her, and a slight active ongoing awareness of waiting for class to start. *Coding: Multiple, Active Suppression, PA, U, Doing*

**3.6** In the bathroom and the girl in the stall next to her was talking on her cell phone, she could hear her talking but not paying particular attention to what she's saying, and was simultaneously thinking to herself how weird it was to be on the cell phone in the bathroom, apprehended as innerly saying to herself, "it's kind of weird", in her own voice, just as if she said it out loud, and was also bodily aware of smiling at the humor of the situation. *Coding: PA, IS, SA*

**4.1** Actively looking at computer screen, watching a simulation for her psychology class and diagnosing people, just doing this. She also had a simultaneous, separate awareness of going through a list of what she still has to do, in bullet form, apprehended as innerly talking to herself, in her own voice, and saying "speech outline" as part of this list. She also had a separate, simultaneous feeling of being overwhelmed in her head, all over her head, but this was very difficult for her to describe. She had been repeating in her head the things she has to do so she doesn't forget and at the moment of the beep was on the speech outline part of that list. *Coding: Multiple, Just Doing, IS, F*

**4.2** Trying to prepare a speech and was aware of reading the same thing over and over again on the computer screen, apprehended as a process of trying to comprehend what she's reading, not just reading it but also simultaneously aware of trying to understand, trying to summarize it in her own words so she could put it in the speech, apprehended as trying to actively focus on it. Was also separately, simultaneously hearing people talk around her, but not picking up any specific words, just know where the talking is coming from, not aware of any words at all, hearing loud noise of the voices but not hearing any

details. She had a separate, simultaneous feeling/sensory awareness of being stressed that was apprehended as moving quicker, but also being all over the place, like she had an energy drink or coffee, in her head and body, faster thoughts, making her read quicker, work quicker, but also feel all over the place. Had a separate, simultaneous awareness of sequentially going through the list, apprehended as going through the list of things she has to do, including finishing up her homework, doing her speech, doing the references for her speech, studying, and this list remained active in awareness, mentally going through the list and also saying to herself “I’m almost done”, in her own voice, just as if she said it out loud. *Coding: Multiple, Doing, SA, F/SA, Doing*

**4.3** Finishing her communication speech, apprehended as typing the same words she was saying to herself, in her own voice, as if she said it aloud. She couldn’t remember the exact words she was saying to herself at the moment of the beep, but was typing exact thing she was saying to herself, and synchronizing her vocalization to what she was typing. She also had a separate, simultaneous “big picture” unsymbolized thought process about what she was typing, typing and speaking words to herself that she is typing and also holding a couple sentence “big picture” of what she’s writing, apprehended as a thought process of keeping the gist of what she’s writing in her mind, while she’s slowly saying to herself what she’s typing. Feeling sore, apprehended as a sensation of soreness in her bicep, tricep, and some of her shoulder muscles, deep in the muscles, like a good sore, and simultaneously starting to feel hungry, apprehended as a sensation deep in her stomach, that was difficult for her to describe, not full but not extremely hungry, like stomach doesn’t have anything in it, not empty because she had just eaten breakfast but still felt hungry. She also had a separate, simultaneous sensation of feeling speeded up, apprehended in her body as a sensation of being able to do things quicker, all over her body, in the muscles of her limbs, somewhat difficult for her to describe, like she has more arms to do more things. She also had a separate, simultaneous awareness of her thoughts being jumbled, so that thoughts that were items on list are just popping up, apprehended as a cluster of ideas of what she had to do such as plug in cell phone, print this off, not separately articulated just a cluster of ideas, saying these things to herself in her head. *Coding: Multiple, IS x 2, SA x 3*

**4.4** Sending her speech to her e-mail, apprehended as a process of doing this without anything particular about this in awareness, also had a separate, simultaneous awareness of hearing the people around her speaking loudly, not picking up on their words, but also not blocking them out, just hearing the voices around her. She also had a separate, simultaneous ongoing awareness of the things she still needed to get done, apprehended as an ongoing divided thought process of needing to go downstairs, make sure she had her rebel card, and print off her homework, all of these things were a chain of thoughts, with the portion focused on printing off her homework being more central in awareness, and the rebel card and going downstairs portions being less central in awareness, apprehended as saying to herself, in her own voice, as if she had said it out loud, “print off your homework”, and the thoughts about her rebel card and going downstairs in her awareness, but not worded. She also had a separate, simultaneous awareness of being on a high, apprehended as a sensation that she could do things faster and walk quicker, apprehended as a bodily sensation of feeling speeded up in her body that was somewhat difficult for her to describe. *Coding: Multiple, Just Doing, SA x 2, U, IS*

**4.5** Sitting alone in the back of her classroom, and was aware of seeing students around her in her peripheral vision, not looking at or noticing anything in particular, could see them out of her peripheral vision, not picking up details, just actively suppressing the details so that she was seeing everything but not paying attention to any details. She also had a separate, simultaneous awareness of recognizing the voices of the students and teacher talking, but not noticing anything particular about that. She had a separate, simultaneous inner seeing of her teacher's face, and the faces of the 3 other students in the room, with her teacher and one student seated next to her being clearer than the faces of the other students in the inner seeing, this one student in the inner seeing was seated next to the teacher, in  $\frac{3}{4}$  view, student from the right and teacher to the left, moving inner seeing, in color, 2 other students seen in the inner seeing, sitting down and talking, but not as detailed as the other student and teacher in the inner seeing. Talking was part of the actual scene, but inner seeing had same sound/same speaking as the actual voices she could hear in the room. This inner seeing was of the scene that was actually happening in front of her, but she had purposefully withdrawn from that scene and was completely focused on the imaged scene in her awareness. *Coding: Active Suppression, Inner Seeing (with sound)*

**4.6** Speed walking to class, apprehended as a bodily sensation of soreness and tightness in her upper, outer thighs, deep in the muscles, and a perceptual awareness of seeing the girl in front of her. She also had a separate, simultaneous ongoing sensation of emptiness in her stomach, and a separate, simultaneous sensory awareness of it being a nice day, apprehended as a bodily sensation of feeling the temperature. *Coding: Multiple, SA x 3, PA*

**5.1** In drafting class while someone was presenting but she was not listening to the person presenting, apprehended as hearing the sound of his voice, not paying attention to anything particular, just hearing the noise of his voice. She had a separate, simultaneous awareness of looking at a previous project she had completed on the drafting table in front of her, apprehended as looking at the project, not paying attention to any particular about it, just seeing it. She also had a separate, simultaneous sensation of tiredness/exhaustion, apprehended as a bodily sensation in her eyes and whole body, all over body, deep in her muscles, that was somewhat difficult for her to describe. *Coding: Multiple, PA, SA*

**5.2** Her class had just finished and she was aware of hearing people getting up and talking around her, but she was slightly suppressing the details of what was being said, just hearing the voices and chairs moving, nothing particular in her awareness about these, just hearing them happen around her while she was trying to zone out. *Coding: Partial Active Suppression*

**5.3** Walking up stairs, and looking at the stairs in front of her, not noticing anything about the stairs, just looking at them so that she knew where to step. She also had a sensation of sweating, apprehended as a bodily sensation of the moisture of the sweat on her nose and cooling sensation of the sweat down her spine. She was also seeing the legs of the girl walking in front of her, apprehended as seeing her legs from the thighs down, but not noticing anything particular about her, just seeing what's in front of her eyes. *Coding: Multiple, PA, SA x 2*

**5.4** Had a sequential, ongoing awareness of going through each of her classes thinking about/adding up her grades, and at the moment of the beep was on the psychology class, apprehended as an unsymbolized thought process of hoping she would get an A, and just mentally adding up the test scores.

*Coding: U x 2*

**5.5** Writing a paragraph about questionnaires in her notebook and following the words by innerly saying the words, at the pace she was writing, in her head, in her own voice, just as if she said it out loud, as she's writing them down, but she was unable to recall the exact words. She was also had a separate, simultaneous sensory awareness of hearing the noise of the projector. *Coding: Multiple, IS, SA*

**5.6** Waiting for her test to be passed back to her in class, just heard her instructor say her name, and was waiting to see her grade, apprehended as a thought process, in words, of saying to herself, in words, in her own voice, "I hope I did good", just as if she said it out loud. *Coding: PA, IS*

**6.1** On the computer in the library, was feeling irritated, apprehended as a mild bodily sensation of constriction in her chest, and may have had a simultaneous thought, that was apprehended as a recognition of herself being irritated, not in words, just knows that's what she's thinking but it was somewhat difficult for her to determine if this thought was in her awareness at the moment of the beep. She was sitting at the computer looking something up, apprehended as an awareness of skimming through the material on the screen with the intent of finding the search terms "bibliographies", "plan views", and "illustrations", not articulating these words in awareness, just actively skimming for these terms. *Coding: Multiple, Doing, F, maybe separate thought (not coded as she was unsure if this was in her awareness at the moment of the beep)*

**6.2** At the MOB Kaiyla had just finished typing an author's name and was waiting for the computer to load this information, apprehended as just waiting in suspended animation for the information to load, just doing the waiting, also visually aware of her coworker sitting on her right hand side, not noticing anything in particular, just seeing her in her peripheral vision. *Coding: Multiple, Doing (waiting), PA (co-worker)*

**6.3** Looking at a book, apprehended as skimming through the bibliography of the book looking for key words, not articulating these words in awareness, just actively skimming for these words waiting for them to pop out at her, also had a separate, simultaneous awareness of rushing that was apprehended as an awareness that her skimming process was speeded up, knew that she was rushing, but nothing particular about the rushing in her awareness. *Coding: Doing*

**6.4** On the computer and skimming for the search term "journal", aware of seeing her coworker sitting to her left hand side in her peripheral vision, with nothing else in awareness. *Coding: Multiple, Doing, PA*

**6.5** In class and looking at the screen, apprehended as looking at it but not reading it, not noticing anything particular about it, seeing format of screen but not actual words or content, just looking at it. She also had a separate, simultaneous awareness that her

instructor was talking, but was not paying attention to or hearing what was being said, not paying any attention to the particulars but know it's him speaking because she can recognize his voice. She also had a separate, simultaneous awareness of seeing other students out of her peripheral vision, not paying attention to anything particular about them, know they're there, but not paying attention to them. These three awarenesses are similar in that she is aware of the format of the screen but not particulars, aware of the sound of her instructor's voice, but not the particulars, and aware of the people around her, but not their particulars, and apprehends there experiences as actively suppressing the details of her surroundings. *Coding: Zoning Out x 3*

**6.6** Getting up and bending over to grab her stuff, and had a sensory awareness of noticing the grey-blue color of the table, and was separately, simultaneously hearing students talking in the room, apprehended as hearing what is being said (one student saying that his girlfriend lives in CA and he was going out to see her, and the other saying next time you should bring me with you), noticing the flamboyant characteristic of the voice of the student talking. *Coding: Multiple, SA, SA/PA*

#### Kaiyla Coding Summary

Fragmented Multiplicity 26/36 = 72% (1.1, 1.2, 1.3, 1.5, 2.1, 2.3, 2.4, 2.5, 2.6, 3.1, 3.2, 3.3, 3.4, 3.5, 4.1, 4.2, 4.3, 4.4, 4.6, 5.1, 5.3, 5.5, 6.1, 6.2, 6.4, 6.6)

Sensory Awareness 17/36 = 47% (1.1, 1.3, 2.1, 2.5, 2.6, 3.2, 3.3, 3.4, 3.6, 4.2, 4.3, 4.4, 4.6, 5.1, 5.3, 5.5, 6.6)

Inner Speech 11/36 = 30% (1.5, 2.3, 2.5, 3.1, 3.6, 4.1, 4.2, 4.3, 4.4, 5.5, 5.6)

Just Doing 6/36 = 17% (1.4, 1.6, 2.4, 2.3, 4.1, 4.4)

Feeling 6/36 = 17% (1.2, 2.2, 2.5, 3.1, 4.1, 6.1)

Feeling/Sensory Awareness 2/36 = 5% (3.3, 4.2)

Thought/Feeling 1/36 = 3% (1.2)

Unsymbolized Thinking 6/36 = 17% (1.2, 1.3, 1.6, 3.5, 4.4, 5.4)

Unsymbolized Thinking/Sensory Awareness 1/36 = 3% (3.2)

Active Suppression 6/36 = 17% (1.2, 3.1, 3.5, 4.5, 5.2, 6.5)

Inner Seeing 3/36 = 8% (1.3, 1.5, 4.5)

Interfering Phenomena 2/36 = 5% (1.2, 1.5)

#### Carla Samples (See Chapter 6)

**1.1** Looking at a guy she recognized from her Political Science class, and innerly saying to herself "I know him", in her own voice, just as if she said them aloud. There were people around her, and she had a simplified perception of those people was part of Carla's experience at the moment of the beep. Instead of seeing the people in motion and hearing the conversations and other sounds, as she would have if she aimed all her attention at them, she saw these people as soundless, unmoving "statues." Whereas most of her attention was focused on the recognition of this guy, which was apprehended as innerly saying "I know him", some of her attention was sensorily on the statues. *Coding: Multiple, IS, SA*

**1.2** In her English class, prior to the moment of the beep she had made a sarcastic comment that her teacher had reacted to, and at the moment of the beep she was innerly

saying to herself (referring to her teacher) “She probably hates me right now”, in inner speech, as if she had said it aloud. She also had a complex simultaneous, somewhat undifferentiated feeling of disappointment/not caring, apprehended as a single feeling in her head with two separate parts, a disappointed part and a not caring part, that were intertwined. She also had a separate simultaneous ongoing simplified version of the chalkboard at which her eyes were aimed. There were classroom notes written in yellow chalk on the board, but instead of seeing those notes, she was seeing yellow smudges, as if her visual processor was not processing all the visual information and thus was presenting an indistinct visual view of the board. *Coding: Multiple, IS, F, SA*

**1.3** Sitting on a bench in the lobby of her classroom building, and was in the process of looking up at her friend, and at the moment of the beep she was focused in on the area from his torso to shoulders. He was standing in a relaxed posture with his hands tucked into his backpack straps, and she was paying attention to the casualness of his posture. He was in the process of saying something, but what he is saying isn’t particularly in his awareness (he had not reached the point she was interested in yet). Instead her focus is almost entirely (90%) on the noticing of his casual posture, with approximately 10% of her awareness on an ongoing sensory awareness of the weight and texture of her backpack on her hands as it is sitting in her lap. *Coding: Multiple, SA, Ongoing SA*

**1.4** On the phone with her father and was feeling irritated/frustrated, which was simultaneously apprehended as a feeling in her head and separate, simultaneous stiffening across her whole back but somewhat more focused in the spine area. She was also aware of wanting to hang up—of her hands wanting to make the hang-up motion to her phone—and of making a sour face, and of her mouth being slightly open as if she’s starting to say something but really has nothing to say. She also had a separate, slight ongoing sensory awareness of the weight and texture of her backpack on her lap. At the moment of the beep she had entirely withdrawn from the conversation and was entirely focused on this feeling and ongoing SA. *Coding: Multiple, F, SA x 3*

**2.1** Saying “I need to buy hangers” to herself, in her own voice, just as if she had said this aloud. Although this was the main focus of her awareness (60%), she also had a perceptual awareness of what was in front of her that included the black shirt that brought on this statement, the bed with shirts spread out on it, etc. that occupied 40% of her awareness. Her bedroom door was open and her family was there, but she had entirely withdrawn from that, and instead was solely focused on this inner speech and perceptual awareness. *Coding: IS, PA*

**2.2** Innerly saying “Thank God” to herself, in her own voice, just as if she had said this aloud, in a relieved/exasperated tone, with the emphasis on the word “God”. She also had a simultaneous sensation of relief in her upper back that was apprehended as a noticing of the less tension sensation in her upper back. She also had a separate, simultaneous visual inner seeing of her front door closing, seen from the perspective of looking at the front door from the inside, but also seeing someone’s hand closing the door from the outside, as if having an X-ray view through the door. She could see just a small portion of the door and its frame—perhaps about a foot square—and the handle with the hand on it. This was a clear inner seeing, just as clear as actually seeing the door; it was a still inner seeing of the door in motion, and was in color. She also had a very slight perceptual



awareness of the white computer screen in front of her and a simultaneous slight sensory awareness of her fingers moving on the keyboard. Whereas this PA/SA was very slight—occupying only about 2% of her awareness—it was nonetheless present in her experience at the moment of the beep: she confidently distinguished between something being present as a fact of the universe but not at all in her experience (e.g., her family behind her in 2.1) and this slight existence in her experience of her computer screen and fingertips. *Coding: Multiple, IS, SA, Inner Seeing, slight PA/SA*

**2.3** Looking at the phrase “social and cultural issues” in her textbook, which was simultaneously apprehended as a perceptual awareness of the words and a simultaneous sensory awareness of the blackness of the letters, as well as a separate, simultaneous sensory awareness of her fingertips against the keys on her keyboard. In this complex sensory awareness she could both feel the sensation of the raised dots of the *F* and *J* keys against her index finger tips and the cool feel of the rest of the keys against the rest of her fingertips. She was also sensing the actual letters underneath each of her fingertips—the *A* under her left pinkie, the *S* under her ring finger, and so on. She also had a separate, simultaneous (and visual/ perceptual?) sensory awareness of her laptop on her lap and her legs up on the coffee table, apprehended as an implied comfortable position. She is not directly feeling this comfortableness at the moment of the beep, but understands that the visual sensory awareness which is in her awareness implies that she is comfortable. This is a complicated sensory/perceptual experience, so let’s restate: Carla is sitting on the couch. There are other family members on the couch and in the room, the TV is on playing the Indians/Red Sox game, and so on, but all of that is not at all in her experience. Her body, by contrast, with its legs on the coffee table and her back leaning back, is directly in her experience, (metaphorically) like a cocoon of light against a dark background. Her fingertips are especially focused upon. *Coding: Multiple, PA, SA x 3, visual SA/PA*

**3.1** Packaging French rolls into a bag, apprehended as a kinesthetic sensory awareness of her body packaging the rolls. She knew that her mind would kick in when she reached the point where the weight of the rolls in the bag reached the right amount, but at the MOB was just sensorily aware of packaging the rolls as though her body is packing the rolls and her mind will kick in when it needs to. This kinesthetic sensory awareness of packaging the rolls was somewhat less than the other sensory awarenesses to be discussed next. She was also simultaneously saying to herself “I’ll finish this” (referring to the packaging of the rolls as part of what she had to complete of her bakery tasks) in her own voice, just as if she had said this aloud, but the remainder of the tasks to be finished were not in her awareness at the MOB. She also had a separate, simultaneous complex perceptual/ sensory awareness of seeing her section (the bakery area) of the grocery store she works in, apprehended as seeing the bakery in front of her, but completely unaware of the surroundings of the grocery store outside of her bakery area. Metaphorically like there is a mist around the outside of her area such that if a customer crosses into her area they will come out of the mist and she will see them, but there are not currently any customers in her area so she is just seeing the bakery and is completely unaware of the surrounding areas of the store. *Coding: Multiple, SA, IS, SA/PA*

**3.2** In the back of the bakery and was hearing and simultaneously singing along to the Justin Timberlake song “Cry Me A River”, apprehended as hearing the song playing

externally and innerly hearing just the vocal track of the song as though the vocal track of the song was playing along in Justin’s voice, but as she is remembering the words so that at the MOB the external and internal words are in sync but if she makes a mistake (which is not occurring at MOB) then the external and internal hearing would be out of sync. She also had a simultaneous still clear inner seeing of Justin Timberlake from the waist up, looking slightly to the right, apprehended as seeing him as he appears in the video, in color, just as he appeared in the video. Approximately 70% of her awareness is on the IS/PA/I of Justin Timberlake, and the remaining 30% of her awareness was occupied with a complex sensory awareness of the bagels she was arranging on a tray. *Coding: Multiple, PA, Doing of IH, Inner Seeing, Complex SA*

**3.3** On her way out of the freezer, and had a perceptual awareness of seeing a pack of ice, simultaneously apprehended as a sensory awareness of making a quizzical “what the heck?” face in response to wondering why the ice was there and knowing what that face would look like. She was also saying “why?” to herself, in inner speech, just as if she had said this aloud. She also had a slight separate, simultaneous kinesthetic sensory awareness of knowing that she was almost out of the freezer, apprehended as being sensorily aware that her right foot was in front of her left as she was moving out of the freezer, aware of the positioning of her right foot in front of her, how her body was positioned. *Coding: PA, SA x 2, IS*

**4.1** At work surrounded by the mess in her bakery department, and had a multiple, complex detailed inner seeing of the mess that was apprehended in a very detailed way (i.e. pink and yellow crushed sprinkles of the cookies on the floor, piece of chocolate desert that had been stepped on that was lying on the tile by the silver table, loaf of bread halfway sliced in the slicing machine with bread crumbs lying around it). Despite a great deal of effort, it was not possible for her (or us) to distinguish if these were multiple separate visual inner seeings or differentiated aspects of the same visual image, but seemed somewhere in between these two options. This multiple complex visual image(s) was also sensory in that she was particularly aware of the contrast (the dark brown of the smashed cake against the light gray floor) and color (the pinkness and the yellowness of the sprinkles) of the different components of the mess. The power of the level of detail seemed very strong—it was not merely that the seeing was detailed, but rather that the detailedness impacted her, impinged on her somehow. Simultaneously she also had a feeling of being angry/pissed off/irritated, that was apprehended as multiply simultaneous complex inner speech that included “are you serious?”, “how could she leave this mess?”, “who does this?”, and “Aaaaahhh”, with the “Aaaaahhh” part being slightly more pronounced, and with all of these inner speakings occurring “in a ball,” in her own voice, in an irritated tone, as if were saying them aloud, or at least fragments thereof, but simultaneously. These multiple complex inner speakings seemed to entirely capture her feeling of anger/irritation/pissed-offness; her body was tensed as a result, but that was not in her awareness at the MOB. She was also standing in the bakery with the mess in front of her (a fact of the universe), but the visual seeing (i.e. rather than imagined seeing) was not in her awareness at the MOB, instead she is focused on this multiple complex visual image(s) and multiple complex inner speech. *Coding: Multiple, multiple complex Inner Seeing, multiple complex IS, SA, Tone of IS (emotion expressed but not directly experienced)*

**4.2** Had a slight feeling of being currently lightheaded and was also simultaneously reliving a past experience in which she was lightheaded. The recalled past experience of being lightheaded was apprehended as complex visual inner seeing in which images were moving very rapidly in sequence, so that she could see her mother taping her fingers that were bleeding, could see the blueness of the bandage tape, could see herself being lightheaded, and could then see herself slumped over the fire extinguisher at work (seen from the back, from waist up with her arms dangling over the fire extinguisher), these were seen from the perspective of looking through her eyes, but the portion in which she was slumped over the fire extinguisher also seemed to be apprehended from her mother's perspective, from the perspective of how she thinks she must have looked to her mother. This visual image sequence was apprehended as moving rapidly, as though she were flashing back to this event and reliving it, but it was difficult for her to distinguish if she was reliving the physical sensations of being lightheaded from when that happened, or if this was entirely just visual without the physical sensation. She also had a separate, simultaneous slight bodily sensation of being lightheaded, apprehended as a lightheaded feeling in the front of her head. This present lightheadedness occupied approximately 10% of her awareness with the remaining 90% of her awareness of the recalled lightheaded incident. She was also packing bread soup bowls, but this was not in her awareness at the moment of the beep. *Coding: Multiple, multiple Inner Seeing (lightheaded sequence visual/SA), SA*

**4.3** Innerly saying to herself "How nice a run would be" in her own voice, just as if she had said this aloud. She also had a simultaneous clear, moving visual inner seeing of herself running, seen from the perspective of looking out her own eyes, so that she could see the palms of her hands alternately swinging into view. In this inner seeing she could also hear herself breathing hard in her chest and throat, and could also maybe feel the sensation of her hard breathing in her chest and throat, but it was difficult for her (and us) to distinguish if this bodily sensory awareness of breathing hard was slightly in her awareness or not in her awareness at the moment of the beep although the hearing of it was definitely in awareness at the moment of the beep. At the moment of the beep she was also hurriedly walking to the front of the store to assist in cashiering, apprehended as a doing of comparing where she is to her destination so that she knew she was getting close to her destination. She was not merely walking quickly, but in addition also had a sense of hurry, of monitoring where she was by comparison to where she wanted to be (at the cash register), and perhaps (but this may be context or background) of not wanting to get in trouble for taking too long to respond to the PA call for more cashiers. This comparing/sensing seemed to be apprehended as a cognitive action, but that wasn't really clear. *Coding: Multiple, IS, Inner Seeing with IH & maybe SA, Cognitive Doing*

**5.1** Reading a sentence with the phrase "maternal illness" in her psychology book, reading without paying attention, apprehended as reading the phrase "maternal illness", without paying particular attention to what she's reading. When she finishes the sentence it will make sense to her, but at the moment of the beep, the words "maternal illness" are in focus, but the rest of what she's reading has flowed along not particularly in her awareness. She believes that when she's done reading this passage she'll review and make sure she comprehends the passage, but at the moment of the beep words are flowing in without awareness. She also had a separate, simultaneous perceptual awareness of her computer in front of her with her book off to the side, and a

simultaneous ongoing trail of sensory awareness of sitting on the floor with her back to the couch in a comfortable position. She also had a separate, simultaneous awareness of listening to the show Hannah Montana, apprehended as listening to an episode that she had seen many times, so that the action of the plot is vaguely in her awareness, and she also had a separate sensory awareness of the sound of the action on the show, which was familiar to her like the words to a well known song. *Coding: Multiple, Doing, PA, SA x 2*

**5.2** Reading her text book and simultaneously typing out the words she was reading, apprehended as typing without processing or being aware of the actual words she was typing at the moment of the beep, as though the words were going from the book to her fingers without the words passing through her awareness. She also had a simultaneous thematic awareness of observing herself doing the typing quickly, apprehended as a kinesthetic awareness of brain and hands moving faster. She also had a sensory awareness of the sound of the Hannah Montana show in the background that was apprehended as flowing along in a simplified extraction of the pitch of the characters talking without what was being said being in awareness so that she is not processing what is being said at the moment of the beep, but could later stop and process it. *Coding: Multiple, Just Doing, SA x 2*

**5.3** Actively watching Hannah Montana, and was on a funny scene in which the main character had fake arm pit hair. Had a bodily sensation of smiling, which was simultaneously apprehended as a bodily sensory awareness of her mouth smiling, and a clear, still visual inner seeing of her head and was focused in on her cheeks and mouth smiling. She also had a simultaneous sensory awareness of laughing to herself. She also had a separate, slight ongoing perceptual awareness of her computer and books in front of her. *Coding: Multiple, Doing, SA x 2, Inner Seeing, Tail PA/SA*

**5.4** On the phone with her friend Fern, and had a bodily, kinesthetic sensory awareness of lying down on her back on the couch in a relaxed position. She also had a separate, simultaneous sensory awareness of her father watching football in the other room, apprehended as being somewhere in between passively taking in the sensory qualities of the sound and actively listening to and monitoring what was going on in the game, without actively paying attention to it. Her friend was talking and the words were coming in to Carla, but she was not really processing them, when there was a pause in the conversation, she would process what her friend said but at the moment of the beep, she was not paying active attention to what is being said. *Coding: Multiple, SA x 2*

**6.1** Doing English exercises on the computer, in the process of figuring out that there was a typographical error in the text; at the moment of the beep she was saying “Dive? Oh *drive!*” to herself, with the “dive” part in a questioning/confused tone, and the “Oh *drive!*” part to herself in a realizing tone with more emphasis, saying this to herself, in her own voice, just as if she had said this aloud. She also had a simultaneous feeling of confusion followed by realization in her head. She also had a separate, simultaneous sensory awareness of the noise of the TV commercial that was playing, without paying attention to the content. She also had a separate, slight perceptual awareness of her laptop. *Coding: Multiple, IS, F, SA, PA*

**6.2** Flipping through TV channels and was on the movie Educating Rita. At the moment of the beep she had an unsymbolized thought process of judging the movie, apprehended as a complex, simultaneous series of thoughts that if in words would be: I don't know that, it's an old movie, don't want to watch that, doesn't look interesting, apprehended as unsymbolized thought processes, not in words. She also had a separate, simultaneous bodily sensory awareness of her thumb pushing down on the TV remote buttons. She also had a separate, simultaneous hearing her phone make a text message alert noise, and was saying "Who's that?" to herself in her own voice, in an excited tone but she was not feeling excited at the MOB. She also had a separate, slight ongoing awareness of where she is sitting, apprehended as a kinesthetic awareness that she is sitting differently than she was before. *Coding: Multiple, complex U, SA, IS, SA (tail/ongoing)*

**6.3** In her room and had a bodily sensory awareness of pushing her books under her table, apprehended as a stretching sensation in the surface of her back, lower neck, arms, and shoulders. She also had a simultaneous perceptual awareness of the physical act of the books being pushed under the table. She also had a separate, simultaneous slight awareness of the books that were stacked off to her side, apprehended as a clear inner seeing of the stack with the books organized from largest to smallest, with the organization itself also in her awareness in this inner seeing. She also had a very slight ongoing awareness of being in her room/monitoring where she was at the moment of the beep. *Coding: Multiple, SA, PA, Inner Seeing, Tail*

**6.4** Before the beep, Carla had read a text message that said "what should we talk about?" and at MOB she had hit reply and had a perceptual awareness of her blank, white text screen in her peripheral vision, and a simultaneous unsymbolized thought process of trying to think of how to reply. She also had a simultaneous thought process that she was not trying very hard to think of how to reply because she was watching the show Beauty and the Geek on the TV. *Coding: Multiple, Doing, PA, U x 2*

**7.1** Unloading the silverware from the dishwasher basket, and was innerly saying to herself, "It'll be easy to tell these knives apart" in her own voice, just as if she said this aloud (referring to the new knives they had just purchased). She was also simultaneously thinking to herself that she would ask her mother when she got home if they could put the old knives away, not in words or symbolized in any other way, just knew this was what she was thinking. She also had a simultaneous inner seeing of a single knife pointing straight down, and she could see the side of the handle with three silver dots. This was a clear visual inner seeing and she was particularly focused on the three dots. She also had a separate, simultaneous hearing (a sensory awareness) of the plastic bag that her sister was scrunching up. She also had a separate, very slight mental awareness that she was in the process of cleaning to get rid of the mess in the kitchen. . She also had a separate, slight ongoing mental awareness of where she was, in which she knew where she was in her house, but also on another level knew where she was in Las Vegas. This awareness of where she was present to her immediately at the moment of the beep; that is, it was not merely a general understanding of where she was but rather was an in-awareness, specific, thematic (but small) thinking/monitoring of her physical location. *Coding: Multiple, IS, U, Inner Seeing, SA, Doing, Mental Awareness of Location*

**7.2** On the computer editing her My Space account, and at the MOB she was typing in the authentication characters relatively automatically, not paying particular attention to this, just doing it. She was simultaneously thinking of what she would change next on her account, not in words or images, just thinking this in unsymbolized thinking. She also had a separate, simultaneous perceptual awareness of hearing the TV football announcer say "...Buffalo is actually...", without the context of this phrase being in her awareness. That is, she heard those three words and didn't know what they meant. Her sense was that she was, outside of her awareness, monitoring the announcer's tone of voice; if he were to become excited, then she would shift her attention in the direction of the TV. She also had a separate, slight ongoing mental awareness of her location, in which she knew where she was in her house. *Coding: Multiple, Just Doing, U, PA, Mental Awareness of Location*

**7.3** Talking to her friend Sam on the phone, explaining the story of what had happened to her early in the day (seeing their friend Walter's Dad in Vons). The actual talking appeared to be happening automatically and was not particularly in her awareness—it seemed to be an automatic accompaniment of her simultaneous reliving of the incident. At the moment of the beep she was reexperiencing herself being in the aisle at Von's, seeing the dairy products and Walter's dad ahead of her as if seen from the perspective of her eyes. In this inner seeing she could see her hands text messaging Walter, could see Walter's Dad checking his phone, could see him looking towards her, all in a compressed, speeded-up form. She was also simultaneously actively engaged in hanging up her tank tops, just doing this without anything particular about the activity in her awareness. She also had a separate, simultaneous unsymbolized thought that she needed more hangers. She also had a separate, very slight, simultaneous ongoing mental awareness of her location, in which she knew she was in her room and where she was in her house. *Coding: Multiple, Happening of Talking, Inner Seeing, Doing, U, Mental Awareness of Location*

**7.4** Still talking to her friend Sam on the phone, just paying attention to what is being said. At the moment of the beep Sam had turned his attention from Carla to, apparently, his brother and had said "what the hell?" in a sarcastic tone to his brother. Carla is just listening to that. She also had a separate, bodily sensory awareness of comfort in her whole body as she was lying in a comfortable position on pillows on her floor. She was also simultaneously saying "I don't want to move" to herself, in her own voice, just as if she had said this aloud. She was also idly seeing the middle shelf in her bedroom. She also had a separate, very slight, simultaneous ongoing mental awareness of knowing where she was in her room. *Coding: Multiple, Doing, SA, IS, PA, Mental awareness of Location*

#### Carla Coding Summary

Fragmented Multiplicity 23/25 = 92% (1.1, 1.2, 1.3, 1.4, 2.2, 2.3, 3.1, 3.2, 4.1, 4.2, 4.3, 5.1, 5.2, 5.3, 5.4, 6.1, 6.2, 6.3, 6.4, 7.1, 7.2, 7.3, 7.4)

Sensory Awareness 20/25 = 80% (1.1, 1.2, 1.3, 1.4, 2.2, 2.3, 3.1, 3.2, 3.3, 4.1, 4.2, 5.1, 5.2, 5.3, 5.4, 6.1, 6.2, 6.3, 7.1, 7.4)

IS 12/25 = 48% (1.1, 1.2, 2.1, 2.2, 3.1, 3.3, 4.1, 4.3, 6.1, 6.2, 7.1, 7.4)

PA 9/25 = 36% (2.1, 2.3, 3.2, 3.3, 5.1, 6.1, 6.4, 7.2, 7.4)  
Doing 8/25 = 32% (3.2, 4.3, 5.1, 5.3, 6.4, 7.1, 7.3, 7.4)  
Just Doing 2/25 = 8% (5.2, 7.2)  
Inner Seeing 8/25 = 32% (2.2, 3.2, 4.1, 4.2, 4.3, 5.3, 6.3, 7.3)  
Unsymbolized Thinking 5/25 = 20% (6.2, 6.4, 7.1, 7.2, 7.3)  
Mental Awareness of Location 5/25 = 20% (6.3, 7.1, 7.2, 7.3, 7.4)  
Feeling 2/25 = 8% (1.2, 1.4, 4.1)  
Happening Of 1/25 = 4% (7.3)

### Vicky Samples (See Chapter 7)

**1.1** Had been talking to a friend about her first panic attack, but had entirely withdrawn from the conversation at the MOB so that the conversation was no longer in awareness, instead, at the MOB she was recalling her first panic attack. This recalling of her first panic attack was apprehended as a bodily sensation of nervousness in her stomach that started in her stomach and radiated up and out into her trunk, but not down into her lower body, and also as a separate, simultaneous feeling of nervousness, apprehended as a mental and physical sensation of twisty-ness in the front right side of her head. She also had a separate, simultaneous feeling of nervousness about having another panic attack, apprehended as a bodily sensation of excitability on the surface of her body, all over her body, front and back, head to toe. *Coding: Multiple, SA x 2, T/F*

**1.2** Was scared about gaining weight, and was separately feeling gross. The scared feeling was simultaneously apprehended as a bodily sensation of her stomach hurting, of being elevated as though all of the scared feelings were piled up at the top of her head, an inch or two inside her head. The scared feeling was partly in stomach and partly in her head but not in between. She also had simultaneous random, negative, overlapping, irrational thoughts rapidly running through her head and sitting jumbled inside the top of her head behind where her eyebrows end. These thoughts were apprehended as being scrolled out in visually seen words, like a ticker tape in her head, but she was unsure exactly what words were in her awareness at moment of the beep. She also had a separate, simultaneous gross sensation, which was separately apprehended as a bodily sensation of nausea deep and high in her stomach, underneath her rib cage, and a dull itching in the back of her throat that did not feel connected, but she associated both with the gross feeling. *Coding: Multiple, Interfering Phenomena, Multiple fragmented T/F, SA*

**1.3** Strategically looking for a restroom, looking at the path she would take so she didn't run into anything or anybody, not noticing anything in particular about that, just strategizing her path, and also had a separate, simultaneous thought of hoping that her friend would not want to go with her to the restroom that was apprehended as an inner seeing of herself telling her friend that she was going to the bathroom, seen through her eyes, but her friend was not wearing the same thing, as though she pictured it from before. In this inner seeing she was sitting at a table across from her friend, seen from the perspective of looking out through her eyes, exact same setting as they were currently in. In this inner seeing, there were people around them, and things on the table, but these were not central in her awareness in the inner seeing, instead in the inner seeing she saw her friend starting to get up, half-standing, not in motion, friend wearing a deep, turquoise blue tank top, focused in on the blue of the tank top as if the tank top, and also was

separately, simultaneously saying to herself in inner speech “please don’t ask” (meaning please don’t ask to come to the bathroom with her) in an annoyed tone, just as if she had said this aloud. The “Please don’t ask” portion was about her having to go throw up in the bathroom, but she wasn’t sure if this was in her awareness at the moment of the beep.

*Coding: Multiple, Doing, Inner Seeing, SA, Inner Speech, Interfering Phenomena*

**2.1** Pushing open the door of the library, and was simultaneously noticing that the door she was pushing was heavy, apprehended as noticing that the automatic door beside her was open, and knowing that she could have gone out that door, and simultaneously noticing the bodily sensation of pushing against the heavy door, and that she had to give more force to it. Also at the MOB she was looking out the bottom of the door, apprehended as noticing the bright blueness of the sky reflected in the bottom of the doorway, she also had a separate, simultaneous unsymbolized thought that was not in words, but if it was would be “wow it’s nice outside”. She also had a separate, simultaneous thought that she could have gone out the other door or could have avoided the heavy door, saved herself the hassle, which was apprehended as multiple thought/feelings, not in words, but all smashed together, which if in words would have been “why did I do it”, “could have avoided it”, “why bother with the hassle”, simultaneously apprehended as multiple thoughts all smashed together, and combined with a feeling of disappointment, apprehended as a subtle feeling of reprimanding herself and a bodily feeling of her shoulders dropping. Also at the MOB she had an inner seeing of the word “UGH” in neutral grey on a grey background, with spiky edges, appeared in big, 3-dimensional, like in “Batman”, takes up most of her head space, like the size of her forehead. *Coding: Multiple, SA x 2, U, T/F, Inner Seeing*

**2.2** Watching a video on research for autistic kids, and could maybe still hear the video in the background, but at the MOB had withdrawn her attention from the video and had an inner seeing of looking into a classroom, looked like a combination of her 2<sup>nd</sup> grade classroom and the one she had just seen on the video. Could innerly see people, but she was not focused on them, instead was “zoomed in” on the teacher figure on the left side of the image, like she was watching a movie and was zooming in on the teacher. Her attention was apprehended as moving toward the left part of the image and zooming in on the teacher figure, who was wearing brown suit, nothing specific about the teacher, she was apprehended more as a combination of teachers from her past, teacher in the image plain, older, had big, brown, poofy hair, looked like her teachers would have looked when she was young, like she took what she knew of her own teachers and mashed them all together into this one person. This inner seeing was apprehended as having a sepia yellow tint, like a wash of sepia yellow all over the image, as if it was an old image. The image was apprehended as being rectangular, with clearly defined edges, and with darkness around the image, but she was only focused in on the image which was apprehended as staying in one spot but her focus moves toward it. *Coding: Moving Complex Inner Seeing, SA*

**2.3** Had just walked into the bookstore. As she entered, her eyes fell on the snack stands that were at the end of the cash register aisles. However, she didn’t recognize them as snack stands: she saw only patches of bright colors (reds, blues) and shapes (triangles, and rectangles). Later she could say that the colors came from the chip and snack packages, but she was not aware of that at the moment of the beep. And later she could



say that the triangles and rectangles came from the patterns that the wire racks made from her perspective: the triangles were not part of any individual rack but were the result of seeing one rack in front of the next. However, that recognition of the source of the triangles/rectangles was not present at the moment of the beep; at the moment of the beep she saw only triangles and rectangles. Her mind was also racing as though she were having a million thoughts, all simultaneous, overlapping thoughts, although she is actually aware of only 30 or 40 thoughts. Each thought is apprehended as an inner seeing of a sentence (e.g. "Finish my homework," "Get to work on time") printed on banners the size of fortune cookie banners, with the banners bent and curving, much as actual cookie fortunes would be. These banners were weaving in and out among each other, each with one task that she has to do printed on it. Vicky can't see all of the words of all the sentences, because details of them, because sometimes she sees the back of a banner, sometimes just part of it because it is bent. All the banners are seen to be white with black printing, some are quite bent and some are straighter. Vicky can read only a few of the banners (5 or 6), and those only partially, but she sees perhaps 30 or so more of them in the background. All of these are seen to be in motion, as if swimming around in some kind of fluid like water or thin gel. The fluid has a light purple color, as if it is illuminated by black (ultraviolet) light. The banners themselves are not illuminated by the black light, only the fluid in which they are swimming. The whole banner-swimming experienced was apprehended being her mind racing, as not being able to hold on to any thought long enough to read it/think it. Vicky also had a separate, simultaneous feeling of nervousness, apprehended as a bodily sensation of tension along her whole back, and the back of her shoulders and neck, and a mental feeling of needing to move faster. *Coding: Multiple, Multiple Inner Seeing Tails, SA, F*

**2.4** Walking out of bookstore, and trying to determine if she was thirsty, apprehended as a thought process of going through a checklist to determine if she was thirsty. This process involved a series of inner speakings and an inner seeing experience. The speakings were a series of self-monitorings: "Is my throat dry?" "Is my mouth was dry?" "Is my stomach empty?" as though she is asking herself these questions in her own voice. She was also simultaneously innerly seeing this checklist; the seen checklist is unquestionably seen but is not particularly clear--she just knows what's on the checklist. Also, simultaneously, Vicky was seeing a kid with a red beard and the big, red wall that was behind him and off to the left. Vicky was noting that he looked familiar, thinking that if expressed in words would be "yeah, he's in my class," but the thought is not in words or any other symbols. The main part of her visual attention is the noticing the red of his beard and the red of the wall; she's drawn to the redness of each. Also simultaneously, Vicky had a separate, simultaneous bodily sensation of pain, apprehended as a constant aching deep in her back, near her kidneys. *Coding: Multiple, IS, Inner Seeing, U, SA x 3, Interfering Phenomena*

**3.1** Had three fingers on her friend's wrist as she had learned to do in massage school to reduce nausea. She was saying to her friend, "If you have a hangover you can press here," but this saying was on auto-pilot, not entering her awareness at all. Her awareness was primarily occupied with an inner seeing of her Chinese medicine teacher at that massage school. She was seeing her teacher standing in front of a whiteboard. This image had a white border around it and was seen against a black background. The image was seen to be receding away from her to the left side so that more of the black

background was getting uncovered as the picture receded. Vicky also had a separate, simultaneous inner seeing of the word “hangover” in block letters, soft lavender color, no background, and had a separate, simultaneous image of the number “**3**” in text, lighter lavender, with the top side of the “**3**” being flat, rather than curved (“3”) or bubbled. These three images were apprehended as separate and overlapping, so that the teacher image was seen first, then the hangover, then the 3 in a somewhat simultaneous, overlapping, circular motion. Also at the MOB she had a separate, simultaneous thinking about massage school, and a separate, simultaneous thought about her hands being far bigger than her friend’s. These thoughts were not in words, were apprehended as being in the back of her head, (literally not metaphorically), and only slightly in awareness. At the MOB she was separately, but simultaneously looking at her fingers on his wrist, but this was only slightly in awareness. *Coding: Multiple, Inner Seeing x 3, U, PA, Happening of Speaking*

**3.2** Was innerly seeing photographs of her parents, apprehended as first seeing a photograph of her mother off to the left facing to the right and then seeing a photograph of her father a bit to the right but overlapping with the picture of her mother, with her father facing to the left, so that they seemed to be facing each other. These inner seeings were of actual photographs that Vicky had taken. Neither imaged photos had borders around them; they were seen as glossy prints that one might get from the photo store, and seen as one laid on top of the other so that they overlapped. These images faded away quickly off to the left. She also had a separate, simultaneous image of herself and her mother arguing in front of the window in her living room when she was 18. In this image, Vicky and her mother were having a physical argument: her mother was on the left with her hands raised up, and could be seen clearly, as though most of the light was falling on her, and Vicky was on the right, doing something with her hands, but she was not as clear in the picture, was in darker space. This image also appeared as a photograph, although no such photo actually existed in fact Vicky and her mother had never had a physical argument such as the one depicted in this image. In the image, her mother was wearing a loud, dark red outfit that she does not own/would not wear in actual life; furthermore, the window, with the blinds drawn, seemed to stand out in the image. Vicky was also separately but simultaneously having two thought processes, apprehended as wondering why her sister getting so upset about these things when they’re insignificant, and wondering if that’s what Vicky herself was like when she was 18. These thoughts apprehended as being contained in two visually seen spherical shapes. These spheres were apprehended as containing these thoughts, and appeared to have something fluid within them. These spheres were seen to be side by side in a space below the space that the images occupied. *Coding: Multiple, Multiple Inner Seeing, U*

**3.3** Watching the movie *Meet the Fockers* or *Meet the Parents* (couldn’t remember which one), but not paying any attention to it. She had an inner seeing of the cats she had growing up, a Siamese cat and a Persian cat, seen as floating image of the 2 cats together in her peripheral vision. In the image the cats are together with the short haired cat sitting and the long-haired cat standing on all fours as if it was going to walk, static image of the cats, not lifelike, as if she’s seeing a magazine picture of the cats where they’ve cropped off everything except the cats, just sees the image of the cats with nothing else in the image, on a pale beige, cream-of-wheat colored background. She also had a separate,

simultaneous inner seeing of the word “Cat” on the right side bottom of her field of vision, in plain typed text, fuchsia color, capital C on the cat. *Coding: Multiple, Inner Seeing x 2*

**3.4** She was watching her friend Sarah peel a pink label off of a green bottle, and had a sensory awareness of the pinkness of the label and several separate, simultaneous related thoughts: when is Sarah going to hit the spot where the glue would leave a white spot on the bottle? I know it’s not going to all come off. I wonder if Sarah’s going to make it all the way. I know she’s not. There’s no way you can make it all the way. There’s always that part that sticks. Is she going to take it all off? Is she going to start scratching at the white part or is she just going to leave it there? Is she even worried about it? Does she even care or is she just messing with the bottle? These thoughts are apprehended as thoughts going on in the back of her head (literally). She knows those thoughts are there but isn’t paying particular attention to them. These thoughts are apprehended as being printed, but she doesn’t see them at the moment of the beep. *Coding: Multiple, SA, U*

**3.5** Had just turned up the speaker on her stereo and was in the process of sitting down. She had a thought telling her to fall back, but with no words associated with it, just her mind giving her permission to fall back, and a separate, simultaneous bodily sensation of preparation for falling back on the surface of the back of her thighs and her back, a physically apprehended readiness for the impact of the fall. Also had three separate, simultaneous inner seeings of the music video (she said she was not sure if these were images or what she thought should be in the music video), apprehended as 3 clear still frame photographs, each about 8 ½ x 11, each with a white border, with each of the photographs overlapping. Images apprehended as moving up and to the right out of her awareness. In the image the band members were wearing shiny black and silver jackets, but she could see the light being reflected off the black, jackets like shiny black with shiny silver buttons. *Coding: Multiple, Inner Seeing x 3, U, SA x 2*

**4.1** Laying in bed and had an inner seeing of her old roommate, apprehended as clear, with a bright canary yellow border outline around her body, taking up the entirety of her seeing, in this still image, she sees her old roommate seated, sees her from the waist up, looking off to her right, from the front, from the waist up, wearing an outfit she wore often, deep turquoise over shirt with a darker brown shirt underneath, but is not paying particular attention to what she was wearing. Just seeing her old roommate in this image with the yellow around her. She also had a separate, small image of the Macintosh computer Mac logo, apprehended as seeing the letters Mac, in small white lettering, just as they appear in the logo, Mac image was on a small black strip, apprehended in the bottom back of her head, and seemed farther back than the roommate image. The Mac image referred to wondering if her roommate sold her computer, but that wondering itself was not in her awareness at the moment of the beep. Those two images (roommate and Mac) were apprehended as still images that were seen simultaneously. Both images were seen to be moving closer to her, simultaneously getting bigger as they closer to her, and stretching in both directions but more from side to side. The images get huge, rather overwhelming, and Vicky’s body reacts to that as if her body is saying Ugh! (but no words or commenting is actually involved). She also had a separate, simultaneous creeping bodily sensation in the back of her neck, in the background of her awareness. *Coding: Multiple, Inner Seeing x 2, SA*

**4.2** In process of turning down the volume on the beeper and had an inner seeing of the word “Down”, apprehended as a large Capital D with the rest of the letters in lower case, in white on a black background. She also had multiple, separate, simultaneous thoughts about what she should do about the long time between beeps: should I turn it [the beeper] off? Should I take a shower before the next beep? and other similar thoughts. These thoughts were apprehended as a separate, simultaneous inner seeing of 6 to 10 small, thin streamers. These streamers had the words of these sentences as if typed on them, but the streamers were so thin they could only hold the text (unlike the fortune-cookie banners in Sample 2.3, where the banners were wider than the text). Words on the streamers were typed so that you’d have to turn your head to read them; that is, these thoughts were seen to exist but were not all actually entirely understood at the moment of the beep. These streamers seemed to be hanging down on the same black background, and wiggling, moving as if slightly blown by a fan, with a foggy haze over them so that they were difficult to see clearly, although the writing on each streamer itself was clear. Also had a separate, simultaneous feeling of anxiousness, apprehended as a bodily sensation of a squeezing knot in the top of her stomach, something like a cramp, and tightness in her shoulders. She was also separately, simultaneously saying to herself “ugh” in her own annoyed inner voice, just as if she had said it aloud. She also had a bodily sensory awareness of her finger on the knurled volume control as she’s turning the beeper down. *Coding: Multiple, Inner Seeing x 2, F, IS, SA*

**4.3** Going over the notes of her childhood behavior class and was reading about learning disorders. At the MOB she had two separate, simultaneous images and two separate regions where a kind of thinking took place. In the innerly seen image on her left she saw Barbara, her mother, in her old house explaining to Vicky that Barbara needed help spelling things because Barbara has dyslexia. In the image on her right and slightly overlapping was an image of Barbara telling Vicky about having had trichotillomania. Barbara in both of those images is seen as a young woman; both of the images are seen to be still scenes of Barbara talking to Vicky; both of the images are seen as if through Vicky’s eyes (that is, Vicky herself does not appear in the images). Embedded within the trichotillomania image, Vicky had a separate, simultaneous information box area in the upper right hand side of this image, in which Vicky understood her thought process to be actively going back through her notes and past psychology classes trying to determine if she is thinking of the right thing, of the right disorder in the pictures (is it really trichotillomania?), and also simultaneously wondering if she had any of these learning disorders. All of those information box images are understood to be like flipping through a card file, seeing glimpses of images that might or might not apply to the main images Vicky is seeing. Underneath these images, and simultaneous, Vicky had a separate, thought region in which she was simultaneously thinking a series of thoughts that rationalized why Vicky herself did not have a learning disorder. These were apprehended as multiple seen thoughts, partially worded; at the moment of the beep she was seeing the words “what” “a” “SAT’s”, as if in typed white text on a black space, that she knew to be related to rationalizing what she does, thinking that she is alright. For example, the word “SAT’s” is part of a thought whose more complete version would be, “I have good SAT’s.” She doesn’t know the origin of the seen words “what” and “a”. *Coding: Multiple, Inner Seeing x 4*

**4.4** Turning on the TV and had a bodily sensory awareness of feeling blank, empty, and cold in her whole being, body and head, and also had a separate, simultaneous thought of wondering what was going to be on TV as she was waiting for the screen to come on. This thought or thoughts was apprehended as being a little light spot, patch of light in the blankness, in the middle, back of her head, but did not seem particularly differentiated. It included the ideas: wonder what channel is it on? Will I have to change the channel? What's going to be on? But Vicky was not sure whether those were simultaneous separate thoughts or merely three different ways of expressing one thought. *Coding: Multiple, SA, Undifferentiated U*

**5.1** Watching a TV commercial about back injuries. Vicky used to work at Marie Callender's restaurant, where they had had a meeting about how to lift heavy boxes to prevent back injuries. At the moment of the beep she had a still inner seeing of her old boss from Marie Callender looking off to her left; this inner seeing was apprehended as being in the center of her field of vision, fading to the back, away from her. She also had a separate, simultaneous inner seeing of the manual they had gone over in this meeting. The manual was white with a red border and had "Marie Callender's" written on the front of it in red lettering; this image was apprehended as being on her lower right. She also had a separate, simultaneous still image of this meeting, apprehended as being on her lower left, and in this image she could see the whole group of people sitting at the table seen from the perspective of the upper right looking down. The first two of these images were apprehended as overlapping, and all were hazy on a black background, could still be seen but each still image had a slight, uniform haze over it. Boss image was slightly bigger, then manual, and then meeting image off to the lower left and slightly smaller. She also had a separate, simultaneous slight awareness of the commercial still going on in the background. *Coding: Multiple, Hazy Inner Seeing x 3, PA*

**5.2** Talking on the telephone with her boyfriend, making fun of him about losing so many bracelets, saying aloud, "Oh, you've lost so many bracelets!" with the beep coming during the word "bracelets." This talking seemed to be just coming out, not particularly salient in her awareness, kind of on autopilot, as if another part of her was doing the talking. Simultaneously Vicky had an inner seeing of how he lost it. In this three dimensional seeing she saw a basketball court that she had played on when she was little (a court in a city that he had never been to). This court was a slab of concrete with dirt and rocks around it, and his bracelet was sitting on a big rock on the side of the court. The bracelet was the main focus of her attention; it was seen to be bigger, thicker, and shinier than the real bracelet actually was. She could see other gold jewelry on the rock, but his bracelet was much bigger and brighter. She could also see the posts and backboard of the basketball goal, and people in the background, but they were too far away to make out any details. The imaged scene took place at dusk, and she had a sensory awareness of the blue-black and hazy dusk color of the background of the image. In real life she was making fun of her boyfriend, laughing, but at the same time there is part of her that is aware that he might make fun of her too because she had lost jewelry, too. This was apprehended as a simultaneous thought process and bodily sensation of being tensed up, as if bodily twisting away in the expectation that he would say something bad about her. That bodily/thinking/expecting process was happening in a thin space above and around the three dimensional image of the basketball court, but was not itself a visual image. *Coding: Inner Seeing, SA, Happening of Talking, Thought/SA*

**5.3** Laying in bed and had her stomach was hurting, apprehended as a bodily sensation of cramping pain and churning, and was simultaneously saying to herself, in her own voice “Ugh! I don’t feel good!” Simultaneously Vicky was innerly seeing red everywhere, covering her whole field of vision, but her field of vision is strikingly narrower than it has been in most other beeps, like looking down a tunnel both in width and length and with nothing outside the tunnel. This seen red is not flat or uniform red, but like little red paint ball-like spiky globules, like blood cell animation, shiny and soft looking, and floating around in some kind of fluid. She doesn’t see the fluid itself, but has the impression that the red globules are somehow floating. *Coding: SA, Inner Seeing, IS*

**5.4** Laying on her back with her eyes closed and her stomach was still hurting but not quite as strongly as in beep 5.3. At the moment of the beep she was trying to move her stomach out away from her body, as if this will somehow ease the pain, trying to distance her stomach from herself so it didn’t hurt. She innerly sees herself lying there with her stomach separate from her, above her and to the left. In this image she saw her stomach as a grey-colored right-triangular box that she knew to be her stomach. This inner seeing was above and to the left corner of her, stomach disembodied and not attached to her. She also had a separate, simultaneous awareness that with this image she was actively trying to move her stomach in the image farther away up and to the left on a straight line away from her, trying to move it farther down this line so it would hurt less. Vicky also had a separate, simultaneous visual image of a separate box on the bottom of this image where she had images going through that depicted the options of why her stomach hurt (Did I eat something? Not eat something? What did I eat? Too much? Too long ago? Etc.), but these pictures were moving so quickly they couldn’t be clearly apprehended. She also had a separate visual image of the word “hurt” next to this box. *Coding: Multiple, Inner Seeing x 3, Doing, Interfering Phenomena*

**5.5** Sitting in a casino waiting for her friend to pick her up, and had a bodily sensation of her eyes burning and was smelling smoke and trying to fan smoke away from her with a piece of paper. *Coding: SA x 2*

**6.1** Had just got off work and was walking through a casino looking for a taxi. Had a sensory awareness of the bright white lettering of the word monorail on a purple background on an overhead sign, and was also aware of the meaning of monorail, and this was the most salient thing in her awareness. However, also at the MOB she was thinking “find taxi” to herself, which was apprehended as a still inner seeing of a taxi stand (like the taxi stand at the Hard Rock), without any words or inner speech, that was in rotation with the rest of the multiple images, but was also apprehended separately and simultaneously (like a copy) still and not in rotation in the back of her head. She had been talking to her boyfriend about Australopithecus from her anthropology notes as being related to lemurs, but at the MOB had withdrawn from the conversation, and instead had two visual images of animated lemurs from the movie Madagascar. These were two separate, simultaneous lemur images, with no background, just cut-out images of the two individual lemurs. She also had a separate, simultaneous inner seeing of the Australopithecus picture she had seen in her anthropology class, that was apprehended as being exactly like the picture she had seen in class of Australopithecus with a prehistoric-looking background, and had a separate, simultaneous inner seeing of the term 4.5 mya, apprehended as 4.5 mya (with mya referring to million years ago), with the “mya” in

lower case and the 4.5 part in white block letter text. This 4.5 mya image was in the center of her visual field and was not rotating with the other images, but the rest of the multiple images were apprehended as simultaneously occurring in 3 dimensional space on a rusty-orangey background, and were coming rapidly toward her and then rotating out again to start over and come toward her again. Also had a separate thought of walk fast, find taxi, aware of these words, but unable to say if this was symbolized, not in images, not in inner speech, just a worded thought that didn't appear to be spoken or said, words were just there. She had been talking with her boyfriend on the phone, and he was talking at the moment of the beep but she had withdrawn from the conversation entirely, and this was not in her awareness, instead she was entirely occupied with her multiple inner experience. *Coding: Multiple, SA, U, Inner Seeing x 6, Worded Thought*

**6.2** Looking for her foot pedal light to turn on the light in her dark room, and was noticing that everything was black (her foot, pants, the room, the light pedal), apprehended as both noticing that everything was black and simultaneously saying to herself "Oh that's cool" (that everything's black) in her own voice, just as if she had said this aloud. She also had a separate, simultaneous inner seeing of her foot, apprehended as appearing exactly like her actual foot feeling around for the light pedal. She was also simultaneously thinking "where's the light?", apprehended as an inner seeing of these words written out and with quotation marks, overlapped over her imaged foot, in a single image so that she could see these individual words were large and white, and her imaged toes were sticking out over the words, and this imaged foot appeared exactly as her real foot that was feeling around with for the light pedal. *Coding: Multiple, SA, Inner Seeing x 2, IS*

**6.3** Was innerly seeing a moving visual image of an orangutan jumping up on a plywood box in front of a caregiver with lush green around it, and a dark blurry spot in the image where the caregiver would go. She was simultaneously noticing the green in the image. She was simultaneously wondering what the orangutan feels when he's jealous (referring back to something she had read in her anthropology notes), like a thought that she was in the process of putting together, apprehended as being in the back of her head, in words, like she is saying to herself "I wonder what that feels like?", spoken in her own voice, but this is in the background, only slightly in awareness. She also separately, simultaneously had a thought of what the caregiver would look like, apprehended as in the back of her head, a mush of several inner seeings of caretakers, not clearly differentiated, mush of images had Jane Goodall, Crocodile Hunter, other caregivers she'd seen on Animal Planet, that she understood to be a process of figuring out what the caregiver would look like so she could insert it into the orangutan image. *Coding: Multiple, In-process Inner Seeing, SA, IS and in-process thought, Inner Seeing*

**6.4** Reading about language and had an inner seeing of the word cow, apprehended as written out in lower case italics, just as it had been in the book, and also had a visual image of the words "framed substitution", apprehended as appearing just as it had in the book, and had a simultaneous inner seeing of the words of the four sentences she had been reading, with each of the sentences using the same 4 words arranged in different order. These sentences were simultaneously apprehended as an inner seeing of the words churning on a black background, and a simultaneously thinking "what are they talking about, what does this mean?", apprehended as an inner seeing of the word "what" and a

question mark, and a simultaneously saying these words to herself, in her own voice, just as if she had said this aloud, in a questioning/annoyed tone. This visual image of the words churning, and saying this to herself was apprehended to be a process of trying to break them apart to make sense of what she was reading. Each of these images were of words in text on a black background. *Coding: Multiple, multiple Inner Seeing of Words, IS*

**7.1** Had a not vivid inner seeing of peanut butter in a large, metal, cartoon-like in it's size spoon, with a deep, round bowl and a bent, curved handle, about the size of an ice cream scoop, she could see a hand holding the spoon that she presumed to be her hand and could see the fridge and kitchen counter in the background of this image. She also had a separate, simultaneous thinking that she needed to get measuring spoons, which was apprehended as saying to herself "I need to get measuring spoons" in the back of her head (literally), in her own voice, but this inner speech was not particularly pronounced/seemed muted. She had a separate, simultaneous awareness of the discrepancy between the spoon in her image and the measuring spoons she needed to get, apprehended as paying attention to the size of the spoon in the image and knowing that's not the right picture (doesn't fit the needing to get measuring spoons). She also had been watching TV but at the moment of the beep had withdrawn from paying attention to the program and was instead just noticing the orange color of a prisoner jumpsuit that the person on the TV screen was wearing. *Coding: Multiple, Inner Seeing, IS, U, SA*

**7.2** Noticing that her back was itchy, apprehended as being bodily aware of the itchiness and was innerly seeing her back in the mirror from the top of her shoulder blades to the middle of her back, could not see the mirror or her head, but knew this an image of her back in the mirror. In this image the tattoo on her back was in the center of her awareness. She was especially focused in on the water in her tattoo and it was the water area in the tattoo that was itching, apprehended as knowing that the tattoo itself was itching, not just that the itch was in the water area of the tattoo. She also had a simultaneous bodily sensation of the awkward twistedness of her body as she twisted/reached for the itch. She had also had a separate, simultaneous perceptual awareness of the number of the channel on the TV screen, and was wondering what else was on TV, apprehended as a worded thinking "wonder what else is on", had the rhythm of being spoken but there was not a sound to it, was not inner speech or inner hearing, and was only faintly in awareness. *Coding: Multiple, Inner Seeing, SA x 2, PA, Worded Thinking*

**7.3** Was tired, simultaneously apprehended as knowing that she was tired, in her body and her head, and having an echo of having said the word "tired." She had said "tired" several times before the moment of the beep, and each one was followed by a kind of "echo" or continuation of the word, as if she said "tired" and that word was then extended, fading over time. The beep came during the echo of perhaps the third repetition of this "tired"—echo phenomenon. She also had a separate, simultaneous bodily sensory awareness of being restless, and a mental knowing that she was not comfortable. She also had a separate, simultaneous inner seeing of herself lying on her bed on her stomach, face down, in her dark room, seen from the perspective of standing beside her bed looking down at herself. This image was of herself from Beep 4.2 in which she had been thinking that it had been a long time between beeps, wondering if she should turn it [the beeper] off, if she should take a shower before the next beep, and other



similar thoughts. This inner seeing was apprehended as a remembering what these thoughts were rather than thinking them again at the moment of the beep. She also had a separate, simultaneous sensory awareness of having her finger on the knurled knob of the beeper. *Coding: Multiple, U, Echoed IS, Thought/SA, Inner Seeing, SA*

**7.4** Looking at strawberries in the fridge and had a thought/sensory awareness of the light red color of them and also indistinctly thinking about the light red, and also noticing the seeds, and thinking that seeds get stuck in your teeth. She was also simultaneously but indistinctly saying to herself, in her own voice, “those will get in your teeth”, just as if she had said this aloud. She had a separate, simultaneous inner seeing of herself and her sister sitting in a booth at Red Robin, seen from the perspective of standing far back so that she could see the whole restaurant. She also had a separate, simultaneous image of a finished glass of strawberry lemonade, could see the glass full of ice and strawberries on the bottom of the glass, with the table in the background, seen from the perspective of sitting at the table looking through her eyes. This entire experience was apprehended as a cascade down and to the left of images, thoughts, inner speech, and thought/sensory awareness. It seemed that the first image came; then the second was slightly below that (and the first remained, but was not being focused on); then the third was slightly below that (and the first and second remained, but were not being focused on) and so on. *Coding: Multiple, T/SA x 2, IS, Inner Seeing x 2*

#### Vicky Coding Summary

Fragmented Multiplicity 25/29 = 86% (1.1, 1.2, 1.3, 2.1, 2.3, 2.4, 3.1, 3.2, 3.3, 3.4, 3.5, 4.1, 4.2, 4.3, 4.4, 5.1, 5.4, 6.1, 6.2, 6.3, 6.4, 7.1, 7.2, 7.3, 7.4)  
 Inner Seeing 24/29 = 83% (1.3, 2.1, 2.2, 2.3, 2.4, 3.1, 3.2, 3.3, 3.5, 4.1, 4.2, 4.3, 5.1, 5.2, 5.3, 5.4, 6.1, 6.2, 6.3, 6.4, 7.1, 7.2, 7.3, 7.4)  
 Sensory Awareness 21/29 = 72% (1.1, 1.2, 1.3, 2.1, 2.2, 2.3, 2.4, 3.4, 3.5, 4.1, 4.2, 4.4, 5.2, 5.3, 5.5, 6.1, 6.2, 6.3, 7.1, 7.2, 7.3)  
 Thought/Sensory Awareness 3/29 = 10.34% (5.2, 7.3, 7.4)  
 Unsymbolized Thinking 10/29 = 34% (2.1, 2.4, 3.1, 3.2, 3.4, 3.5, 4.4, 6.1, 7.1, 7.3)  
 Inner Speech 10/29 = 34% (1.3, 2.4, 4.2, 5.3, 6.2, 6.3, 6.4, 7.1, 7.3, 7.4)  
 Interfering Phenomena 4/29 = 14% (1.2, 1.3, 2.4, 5.4)  
 Perceptual Awareness 3/29 = 10% (3.1, 5.1, 7.2)  
 Thought/Feeling 3/29 = 10% (1.1, 1.2, 2.1)  
 Feeling 2/29 = 7% (2.3, 4.2)  
 Worded Thought 3/29 = 10% (6.1, 6.3, 7.2)  
 Happening Of 2/29 = 7% (3.1, 5.2)  
 Doing 2/29 samples = 7% (1.3, 5.4)

#### Susan Samples (See Chapter 8)

**1.1** Had a bodily sensation of pain in her back, and was simultaneously paying attention to her math homework. She was also simultaneously watching an i-phone commercial on TV that her boyfriend asked her to watch, but this commercial was only slightly in her awareness. She was also simultaneously aware of not liking the TV show that was on, but was unable to say exactly how this was in her awareness. She also had an ongoing feeling of stress and anger about the guy on e-bay who had threatened to sue her, which was

apprehended as an ongoing, all day feeling of stress and anger that was still ongoing in her awareness at the moment of the beep. *Coding: Multiple, SA, Doing x 2, Ongoing F, U*

**1.2** Was smelling her boyfriend's French fries, apprehended as a powerful sensory awareness of the smell, and a simultaneous thought/feeling of annoyance about her boyfriend trying to force her eat them, apprehended as a conflicting thought process and feeling about how good they smelled and how irritating it was that he was trying to force her to eat them, not in words or in images. *Coding: Multiple, Interfering Phenomena, SA, T/F*

**1.3** Had a bodily sensation of her nose running, was simultaneously innerly saying "are we drinking at Fred's tonight?" to herself, just as if she had said it aloud, and was saying rehearsing this to herself in preparation to say it out loud to her boyfriend. She also had a separate, simultaneous thought/feeling of annoyance related to her boyfriend trying to ask her about her Adderol, apprehended as a simultaneous feeling of annoyance in her head and thought process of recognizing that this is what he is trying to ask her about. She also had a separate, simultaneous ongoing awareness that she is becoming annoyed, that was apprehended as knowing that she is getting annoyed/ needing to be selective about what she allows herself to get annoyed about. *Coding: Multiple, SA, IS, T/F x 2*

**1.4** Had a bodily sensation of not being able to see out of her right eye, and a simultaneous unsymbolized thought process of needing to do something to adjust in order to see out of her right eye. She also had a separate bodily sensory awareness of pain in her neck and back, and a separate, simultaneous bodily sensory awareness of having a headache. She was also drawing parallelograms for her math homework, but this was not in her awareness. *Coding: Multiple, SA x 3, U*

**1.5** Had a bodily sensation of being thirsty, apprehended as a sensation of dry pastiness in her mouth, and also was actively reaching for her water bottle. She was also feeling ongoing hatred for the guy on e-bay who had threatened to sue her, and has a separate, simultaneous sensory awareness of the song she was listening to on the radio, and an unsymbolized thought process of wondering why her class grades weren't posted online yet. *Coding: Multiple, SA x 2, Doing, Ongoing Tail Feeling, U*

**1.6** She was blanking out and had nothing in her awareness. *Coding: Nothing/Blank*

**2.1** Tapping her foot along to the rhythm of a song she was listening to online, apprehended as a bodily sensory awareness of actively improvising by tapping out the rhythm on the corner of a box under her desk. She was also reading an article online, apprehended as skimming along on auto-pilot to cross-reference facts for a speech project she was working on. *Coding: Multiple, SA, Doing*

**2.2** Had a sensation of intense blunt pain deep in her chest, with nothing else in her awareness. *Coding: SA*

**2.3** Tapping her toe, apprehended as a sensory awareness of simultaneously tapping in time to the rhythm of the song she was listening to, and trying to inhibit her foot from tapping at unnecessary times outside of the rhythm. She also had a bodily sensory

awareness of clicking her right thumbnail against her teeth, and had a slight feeling of satisfaction related to the sensation of her thumbnail against her teeth. *Coding: Multiple, SA x 2, F*

**2.4** Skipped.

**2.5** In speech class and was reading a sentence in a magazine, apprehended as reading along somewhat slowly to herself, but it was difficult for her to say if this reading along was in inner speech or inner hearing or exactly how she was apprehending this, but these words were in her awareness. Also at the moment of the beep a guy in her class was giving a speech and he said a word just as she had read the same word. She couldn't remember the exact word but this word was in her awareness at the beep. She was not particularly paying attention to the entire speech he was giving but her attention had caught on this word. She also had a simultaneous feeling of excitement in reaction to this having heard and read the same word at exactly the same time, apprehended as a downward flop in her stomach *Coding: Doing, PA, F*

**3.1** Had a bodily sensation of coldness, simultaneously apprehended as a bodily shivering and a stinging sensation all over the surface of her body, a sensory awareness of her teeth chattering, and of goose bumps halfway up the skin on both of her arms, and of tightness in her jaw and shoulders. She was also in the process of standing up to get a sweater, apprehended as just actively engaged in doing this, without anything particular in her awareness about this. She also had a slight perceptual awareness of her computer screen on which she was looking up a number on the screen to call her professor, and had a separate, simultaneous ongoing thought process that she had to remember to go back to looking for this number when she returned from getting the sweater. *Coding: Multiple, SA, Doing, PA, U (tail)*

**3.2** Staring at the piles of her psychology notes in front of her and was trying to determine the most efficient way to organize her psychology notes, apprehended as a complex, tumbling unsymbolized list of options including trying to figure out how to file them, thought process of tumbling options such as how to do this, what to do, if they should be organized academically, by dates, chronologically, by subject, if she should not bother doing it. *Coding: Multiple U*

**3.3** Was going out her door to go do her laundry, and had a bodily sensory awareness of tapping her pockets to check if she had her cash and her card with her. *Coding: SA*

**3.4** She had lost track of her friend who was visiting her and had a complex flood of six to eight different feelings including concern, shock, confusion, humor but she was unable to exactly differentiate between all of these emotions. She also had a separate, simultaneous unsymbolized thought process about him being missing, but that was only slightly in her awareness. *Coding: Multiple, multiple undifferentiated flood of F, U*

**3.5** She had been feeling parched before the moment of the beep but had withdrawn from that and was feeling excited that she had tea to drink, simultaneously apprehended as a perceptual awareness of looking at her bottle of tea, noticing it was pretty, and feeling

excitement about being able to drink it. This feeling was clearly in her awareness but did not appear particularly differentiated at the moment of the beep. *Coding: F, PA*

**4.1** Brainstorming what to buy her brother for his birthday, apprehended as an ongoing unsymbolized thought process of thinking about what to get him. She was not thinking about getting him anything specific, but was passively thinking about what to get him, apprehended as a cognitive process of waiting for an idea about what to get him to come. *Coding: Ongoing U*

**4.2** At the perfume counter, and said out loud “I feel really bad asking her for help” to her friend (referring to asking the perfume counter clerk for help again after she had asked her before). She also had an ongoing feeling of dissonance about an unexperienced feeling of guilt and mild aggression/frustration toward the clerk. She apprehended this as being aware that these feelings were ongoing and in conflict without the feelings themselves being directly in her experience, other than as a mild bodily discomfort experienced separately as a tightness in her chest and a slight churning in her stomach, but she was unable to differentiate if this sensation was guilt or aggression/ frustration. She also had a separate, simultaneous ongoing unsymbolized thought process that the clerk should be helping her; that the clerk was just folding boxes; that she shouldn’t have to ask for help; and that she felt bad about pulling her away from what she’s doing. *Coding: Multiple, Doing, Ongoing tail of F (dissonance), unexperienced or indirectly experienced F, multiple U*

**4.3** Sitting outside in the grass, but had nothing in her awareness. *Coding: Nothing/Blank*

**4.4** Standing in front of her suitcase and had an unsymbolized thought that she did not want to pack, with nothing else in her awareness. *Coding: U*

**4.5** Had a sensation of pain in her toe, and had a perceptual awareness of seeing that her toe was bleeding. *Coding: SA, PA*

**4.6** Looking at a beer in her fridge, realizing she can’t have it and simultaneously realizing she really wanted it, apprehended as a thought/feeling of mild disappointment in her body and in her head, but it was difficult for her to describe exactly how this thought/feeling was in her awareness at the MOB. She also had a separate, simultaneous unsymbolized thought of the irony of the situation, that her neighbor has been away for weeks but she now can’t have a beer with her because of Passover. She also had a separate, simultaneous feeling of excitement about hanging out with her neighbor that was somewhat bodily, but it was difficult for her to describe how this was in her awareness at the moment of the beep. *Coding: Multiple, T/F, U, F*

#### Susan Coding Summary

Fragmented Multiplicity 12/21 = 57% (1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.3, 3.1, 3.2, 3.4, 4.2, 4.6)

Sensory Awareness 11/21 = 52% (1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 2.3, 3.1, 3.3, 4.5)

Unsymbolized Thinking 10/21 = 48% (1.1, 1.4, 1.5, 3.1, 3.2, 3.4, 4.1, 4.2, 4.4, 4.6)

Feeling 8/21 = 38% (1.1, 1.5, 2.3, 2.5, 3.4, 3.5, 4.2, 4.6)

Thought/Feeling 3/21 = 14% (1.2, 1.3, 4.6)

Doing 6/21 = 29% (1.1, 1.5, 2.1, 2.5, 3.1, 4.2)  
Perceptual Awareness 4/21 = 19% (2.5, 3.1, 3.5, 4.5)  
Interfering Phenomena 1/21 = 5% (1.2)  
Nothing in Awareness/Blank 2/21 = 9% (1.6, 4.3)  
Inner Speech 1/21 = 5% (1.3)

### Samantha Samples (See Chapter 9)

**1.1** Received a text message from her boyfriend earlier that he had a family emergency and she was wondering how he was doing, had been going through a series of overlapping possibilities of how he was doing and what happened. At MOB she was aware of a thought process of being worried about him (thinking multiple worrisome thoughts), about him crying, but was not feeling worried, only had this thought process w/ nothing else in awareness. *Coding: Multiple U*

**1.2** Was at work and was trying to find assistant director. At MOB, was in the process of looking for the assistant director of her work, en route from one place to the next looking for her, and also thinking in her head, in words, “where is she?”, thinking in these words, as if she were saying these words out loud, also maybe feeling slightly rushed but that did not appear to be central in her awareness. *Coding: IS, U*

**1.3** Reading a description for a class out of a catalogue, and understood what she was reading. Simultaneously aware of thinking about how hard the class was going to be, which was experienced as a thought process of how much reading was going to be involved in the class. *Coding: Doing, U*

**1.4** Had a thought process of thinking that she’d tell her Mom that she was going to meet up with her boyfriend in LA, and also had a simultaneous not totally clear inner seeing of arriving in LA (image is more salient than thought process). Image of the skyline of the city of LA, seen from the freeway, inner seeing was mostly of buildings, image is still and in color, like looking at a picture of LA. At MOB, had an image of the skyline of LA, experienced like seeing a picture of LA, and had three separate, simultaneous thought process that were experienced as thinking about what she’s going to tell Mom, thinking about telling her she went to LA, and at the same time thinking about what she might ask her about the trip. *Coding: Multiple, Inner Seeing, U x 3*

**1.5** Thinking about going to Monterey and getting excited to see her boyfriend. At MOB, had an inner seeing of the front of her boyfriend’s apartment house walkway and saw herself walking up to her b/f, sees him from the front and her from the back walking towards him, in motion. At MOB, she is giving him a hug, clear image and in motion, and also feels rush of being excited and happy, experienced as a feeling of excitement in her body and in her head, all over the front and back of her chest, very excited, happy, and anxious, but somewhat difficult for her to describe this feeling, but it is in her body & head, hard to say anything else than that. *Coding: Inner Seeing, F*

**1.6** She had to take her housing release of contract to housing and worried if she’ll be able to get out of the lease, thinking “if I don’t get out what am I going to do?” At MOB, she had a thought process about her obligation to her b/f and friend to live with them and

if she will be able to get out of her dorm contract, feeling of worry and a bit of anxiety, experienced as a clearly present, worried feeling in the center of her chest that was somewhat difficult to describe, and also had an inner seeing of her friend and boyfriend standing in the living room of where they might be moving, b/f on left & friend on right, both looking towards her, in color, clear image, seen from the perspective as if they were looking at her in the living room. *Coding: Multiple, U, Inner Seeing, F x 2*

Note: On Day 2 only two beeps collected due to technical problems with the beeper.

**2.1** Thinking about what she was going to pack for Thanksgiving dinner, and had an image of herself in a black and white polka dot dress. This was a clear, still inner seeing of herself sitting at the Thanksgiving dinner table with other people around, and she was simultaneously saying to herself something like “Oh I could bring that dress”, in her own voice but wasn’t sure of the exact words at the MOB. *Coding: Inner Seeing, IS*

**2.2** Remembered she forgot to call a friend back and at the MOB was aware of saying to herself out loud “Oh shit I forgot to call him back”, and had a simultaneous feeling of guilt, which was apprehended as a sensation of guilt in her head and to a somewhat lesser degree in her body, but it was very difficult for her to describe exactly how these feelings were apprehended other than that it was a guilty feeling in her body and head that was clearly apprehended but difficult to describe in detail. *Coding: IS, F*

**3.1** Was painting her nails, and at the MOB had an unsymbolized thought that, if it was in words, would have been “don’t get it on your fingers.” *Coding: U*

**3.2** Looking at Simpson’s DVDs online and thinking of what to get her boyfriend for Christmas, trying to figure out which of these DVDs he already has. At the MOB she was saying to herself “Oh...does he have season 5 or is it season 4?” to herself, in inner speech, in her own voice, as if she had said it aloud and was simultaneously aware of looking at the DVDs online on E-Bay and looking at the prices. *Coding: PA, IS*

**3.3** Was feeling guilty because she had eaten a piece of cheese and thinking (not in words) that she could have done without that. At MOB had a guilty feeling in her body, apprehended as a heavy sensation in her upper body and arms inside her body, that was somewhat difficult for her to describe, and was simultaneously innerly seeing herself, saw her whole body in this image, from the front, still image, in color, as if she were standing in front of herself, looking at herself, this image captures the thought that she could have done without that. Image of herself from an external perspective, wearing a black and white stripped shirt and a black jacket, not an accurate picture of herself, in the image she saw herself as fatter than she actually is, saw her body as fatter, and had a separate, simultaneous but less central to awareness thought process that she could have done without it, but this thought process was mostly captured by the image. Also had a separate, simultaneous sad/uncomfortable feeling, guilt is much stronger than uncomfortable feeling. *Coding: Multiple, Interfering Phenomena, F x 2, Inner Seeing (inaccurate), U (thought process mostly but not entirely captured by image)*

**3.4** Thinking that she needed to go to the gym, apprehended as an accurate inner seeing of herself running on a treadmill in the gym, wearing athletic pants and a t-shirt, seen

from the left side (sees left side of her body), center of the image was more clear and around it was not as clear, duller colors, image in motion as if she were standing in the gym watching herself, can see rest of the gym around the center of the image of herself, also had a simultaneous inner speech experience of herself saying “I need to work out” in her own voice, and a separate, simultaneous feeling of guilt that was mostly in her head and a bit in her body, guilt in her body was apprehended as being deep down, in her chest, arms, and torso and this guilt was very difficult for her to describe. *Coding: Multiple, Interfering Phenomena, Inner Seeing, IS, F*

**3.5** At work and was scheduling an appointment, looking at a computer program schedule, and at the MOB was looking for any open spots on a certain person’s computer program schedule, trying to focus on looking for an appointment on the schedule program but was somewhat distracted by other things that were going on at work, know that people are coming in and out, phone ringing, people coming in, lots of stuff going on at the same moment and she is trying to focus on the schedule but was also distractedly focused on the other stuff going on. *Coding: Multiple, PA (looking, distracted)*

**3.6** Had a song in her head, hearing the song in her head and was along to it out loud, both the singing along out loud and the hearing the song in her head, apprehended as a simultaneous experience of hearing the CD in her head and singing along to it out loud. *Coding: IH, Doing (singing)*

**4.1** Studying for a psychology test and was looking over the phobias, at the MOB was aware of reading a list of phobias and simultaneously saying each thing to herself “Brantophobia, the fear of storms”, saying this to herself, in a low tone just as if she had said it aloud, nothing else going on at the MOB. *Coding: IS*

**4.2** Wanted to go make herself throw up, was still studying but felt like she ate too much and thought that she’d be happier if she threw up, at the MOB was aware of a thought process that she would feel happier if she threw up, and had a separate simultaneous, small feeling of unhappiness, that was apprehended in her head, understood as being generally unhappy with her body, and this was difficult to describe, also had a separate, simultaneous head and bodily sensory awareness of nausea as though she were going to vomit, and this feeling had no valence to it at all, neither negative nor positive, but the sensation of nausea was a minor part of her experience at the MOB, and had a separate, simultaneous inner seeing of herself standing sideways with a different, thinner body, seen from the head to the knees, but appearing thinner than she is, wearing a black dress. *Coding: Multiple, Interfering Phenomena, T/F (would be happier/unhappiness), Inaccurate Inner Seeing, SA (nausea)*

**4.3** Thinking about what to do on the weekend after Thanksgiving, and at the MOB had an inner seeing of her boyfriend’s room, apprehended as seeing a picture of the room seen from the doorway of his room, just an illustration of the room seen from the doorway, realistic image of the doorway, had a separate but simultaneous general thought process about Monterey and seeing her friends. *Coding: Multiple, Inner Seeing, U*

**4.4** Thinking that she needed to go to the gym, and at the moment of the beep had an inner seeing of herself doing crunches, seen from her eyes, in motion, as if she is seeing

an accurate image of herself doing crunches from her eyes, as she is doing them, also in the image sees the background of her old gym, in motion behind her, and also had a separate, simultaneous thought process of thinking that she needed to go to the gym.

*Coding: Interfering Phenomena, Inner Seeing, U*

#### 4.5 Skip

4.6 Singing along out loud to music and packing, and looking for a sweater to pack, at the moment of the beep was aware of singing along out loud to the music, packing, and had a separate, simultaneous feeling of excitement, apprehended as a bodily and head sensation of happiness that was difficult for her to describe other than as a light feeling on the surface of her body and head.

*Coding: Multiple, Doing, F*

5.1 Looking for a phone number in the phone book of her cell phone, at the MOB knowing in her head whose phone number she was looking for, just a general thought process that was involved in the process of looking got that person's phone number, looking through the phone book with a purpose.

*Coding: U, Doing*

5.2 Singing along out loud to music, at the MOB was singing the chorus, not really paying attention to anything, and not sure exactly what part of the song she was at at the MOB, just singing and aware of the doing of the singing.

*Coding: Doing*

5.3 Making a list in her head of everything she had to do and was thinking about finals, before the beep she had been making a sequential mental list of everything she had to do, and at the MOB was making this sequential list and was at the part of the list where she was aware of realizing "Oh and finals too on top of everything", in words, but not sure if these are exactly all of the words but they seem to be pretty close to "Oh and finals too on top of everything" quite accurate, in her own voice, in her head, in an exasperated tone.

The process of making a list in her head was apprehended as a thought process of thinking about everything she had to do, and inner speech of "Oh and finals too on top of everything". She also had a separate, simultaneous head and bodily feeling of stress that was apprehended as a heavy, weighty bodily sensation of having a slight weight on her shoulders, chest, back, and upper body, in the front and back, heaviness both on the surface and deeper down, and also a feeling of stress in her head, but it was somewhat difficult for her to express how this feeling in her head other than that it was a feeling of being stressfully overwhelmed.

*Coding: Multiple, worded thinking, IS, F (stress in head and body)*

5.4 Singing happy birthday to her co-worker, at the MOB was aware of singing, and laughing at her co-worker who she was watching as he was waving his hands, singing, and acting goofy, at the MOB she was simultaneously aware of singing, laughing, and watching him.

*Coding: Doing (singing and laughing), PA*

5.5 Looking at apartments on line, and had a perceptual awareness of looking at the list of apartments on the computer and being focused in on looking at the prices. She also had a simultaneous unsymbolized thought process of wondering where she would be able to find an affordable place that was not in a bad location. She also had two separate, simultaneous feelings, one of being stressed and one of being overwhelmed/worried. The



stressed feeling was apprehended as a sensation of bodily heaviness in her chest, arms, torso and back, on the surface of her body, both in the front and back. The overwhelmed and worried feeling was apprehended as a feeling in her head that was clearly apprehended but undifferentiated, and very difficult for her to describe. *Coding: Multiple, U, PA, F x 2*

**5.6** Inputting information into the computer, at MOB was typing and was saying a last name slowly to herself as she was typing it, saying it in a slow, drawn out manner to herself, in her own voice, and typing. *Coding: Doing, IS*

**6.1** Doing a CD-ROM rat shaping exercise for her psychology class, and at the moment of the beep was saying “go to the center” to herself, in her own voice, with a frustrated tone, just as if she had said it aloud, and had a simultaneous feeling of frustration in her head that she apprehended clearly but had difficulty describing in words. *Coding: IS, F*

**6.2** Had been writing an e-mail about apartments she had been looking at, and at the moment of the beep she was saying to herself “what else?” in her own voice, as if she had said it aloud, and had a separate, simultaneous inner seeing of an apartment seen as if she was standing in the doorway looking into the apartment, could see the living room and kitchen, that appeared accurate, just as if she were actually standing in the doorway of that apartment. *Coding: IS, Inner Seeing*

**6.3** Looking at sheets online, and at the moment of the beep was scrolling through a web page of sheets online, looking at all of the sheets on the page, not aware of anything in particular, just looking at the page, not focused on anything in particular, just seeing what’s in front of her, nothing else going on  
*Coding: PA*

**6.4** Thinking in her head that she could lose some weight, at the moment of the beep had an image of herself, appearing larger than she actually is, in the image sees her body as bigger, heavier all over, seen from head to toe, from the front, wearing jeans and a black sweatshirt, standing up with her hands at her sides, sees herself straight on, and had a separate, simultaneous thought/feeling of sadness in her body and head, that was apprehended as a gut feeling, more in the front, and also a sadness in her head that was difficult for her to describe, and had a separate, simultaneous unsymbolized thought process of thinking that she could lose weight that if she put in words would be “I could lose weight.” *Coding: Multiple, Interfering Phenomena, Inaccurate Inner Seeing, Thought/Feeling, U*

**6.5** Had a song stuck in her head and at the moment of the beep was hearing the chorus of the song “Welcome to the Black Parade” in her head, just as if she was listening to the CD externally. *Coding: IH*

**6.6** Was thinking that she was excited to be living with her boyfriend and at the moment of the beep had an inner seeing of their bed, canopy bed, with 2 wood bedside tables, light green bedspread, seen as if she’s standing in the doorway of the bedroom, not seeing the rest of the room just focused in on the bed, and had a separate, simultaneous feeling of excitement in her body and head that was apprehended as an electric, tingly, jittery

sensation all over the upper part of the surface of her body, in the front and back, and this electric, tingly, jittery sensation was similar feeling in body and head. *Coding: Inner Seeing, Feeling*

**7.1** Was at work and thinking to herself that she hopes she's not getting sick, at the moment of the beep was saying to herself, in her own voice "I hope I'm not getting sick" just as if she said it aloud, also had a separate, simultaneous very faint thought/feeling of stress in her head associated with hoping that she wasn't getting sick. *Coding: IS, Thought/Feeling*

**7.2** Was thinking about how she'll find out about her release of contract from the dorms and at the MOB, was thinking to herself, a general unsymbolized thought process of maybe getting a letter, not in words, and had a separate, simultaneous inner seeing of the back entrance of the Warner Building, seen from the door, with the desk and the mailboxes on the right side, just as if she were standing there. *Coding: U, Inner Seeing*

**7.3** Looking online and thinking about what she'll need for the apartment, at moment of the beep had a general thought of the items that they'll need for the apartment, nothing specific, just the stuff that will go into the cupboards (pots, pans, cooking things but not specific) and had a separate, simultaneous inner seeing of the model of the apartment seen as if she was standing in the back of the kitchen, same as if she were actually standing there. *Coding: Multiple, U, Inner Seeing*

**7.4** Making a list of things to do and at the moment of the beep she was thinking about what homework assignments she needs to complete, (kind of in words), this thinking included thinking of the paper she needs to write and of the extra credit that's due tomorrow that she'd have to complete tonight. Some of these thoughts are in words, concepts, or and images. Paper part apprehended as an inner seeing of her computer screen, and the extra credit part was apprehended as understanding the concept of extra credit, and also apprehending the actual words extra credit and tomorrow, but it was difficult for her to describe how these words were apprehended, and a separate, simultaneous feeling of stress apprehended as a heavy sensation more on the surface but also deep down on her shoulders and chest, front, and also a heavy sensation in her head that was somewhat difficult for her to describe but made her feel cluttered in her mind. Lots of things going on (ongoing) in her mind at the same time, but at the moment of the beep the paper and extra credit and stress were the entirety of the clutter. *Coding: Multiple (tail), Partially worded thought, Inner Seeing, F*

**7.5** Skipped

**7.6** Samantha was worried and thinking about how she was going to move, at the moment of the beep was worried, apprehended as a stressed and worried feeling in her head, (similar to the cluttered feeling), and also had a thought process, in words, of "How am I going to do this?" in her voice, just as if she had said it aloud, also had a separate, simultaneous inner seeing of herself driving back from California, seen from her eyes, sees the desert out in front of her, same as if she were actually driving on that part of the road, still image. *Coding: Multiple, Feeling x 2, Inner Seeing, IS*

## Samantha Coding Summary

Inner Seeing 16/36 = 44% (1.4, 1.5, 1.6, 2.1, 3.3, 3.4, 4.2, 4.3, 4.4, 6.2, 6.4, 6.6, 7.2, 7.3, 7.4, 7.6)

Fragmented Multiplicity 15/36 = 42% (1.1, 1.4, 1.6, 3.3, 3.4, 3.5, 4.2, 4.3, 4.6, 5.3, 5.5, 6.4, 7.3, 7.4, 7.6)

Unsymbolized Thinking 14/36 = 39% (1.1, 1.2, 1.3, 1.4, 1.6, 3.1, 3.3, 4.3, 4.4, 5.1, 5.5, 6.4, 7.2, 7.3)

Inner Speech 12/36 = 33% (1.2, 2.1, 2.2, 3.2, 3.4, 4.1, 5.3, 5.6, 6.1, 6.2, 7.1, 7.6)

Feeling 12/36 = 33% (1.5, 1.6, 2.2, 3.3, 3.4, 4.6, 5.3, 5.5, 6.1, 6.6, 7.4, 7.6)

Thought/Feeling 3/36 = 8% (4.2, 6.4, 7.1)

Doing 7/36 = 19% (1.3, 3.6, 4.6, 5.1, 5.2, 5.4, 5.6)

Perceptual Awareness 5/36 = 14% (3.2, 3.5, 5.4, 5.5, 6.3)

Interfering Phenomena 5/36 = 14% (3.3, 3.4, 4.2, 4.4, 6.4)

Worded Thinking 2/36 = 5% (5.3, 7.4)

Inner Hearing 2/36 = 5% (3.6, 6.5)

Sensory Awareness 1/36 = 3% (4.2)

## Hannah Samples (See Chapter 10)

**1.1** Standing against the doorway at work, and at the MOB had a bodily sensory awareness of the cool strip of the edge of the door against her spine, she was also talking to her coworker Bob and people were coming in and out of the room, but these didn't seem to be in her awareness at the MOB. *Coding: SA*

**1.2** On the phone with her mother, holding the phone upside down so that Hannah could hear but her mother couldn't hear the potato chips Hannah was eating. At the MOB had withdrawn from the conversation and had a simultaneous sensory awareness of the taste of the potato chips and of the saltiness and greasiness of the potato chips of her hands, and also had a separate, simultaneous feeling of anxiety, apprehended as bodily sensation of tension in her shoulders and the back of her neck. This anxiety was related to Hannah's having told her mother a private detail of sister Vanessa's boyfriend; now Hannah is worried that maybe Vanessa has also told Mom private things about Hannah. However, this is Hannah's first sampling day and none of this is apprehended/related/understood with confidence. Hannah's notion of the "moment of the beep" is much too long for our purposes; we labored repeatedly to narrow that focus for subsequent samplings. *Coding: Multiple, SA x 2, Feeling*

**1.3** Pulling her FedEx truck into a warehouse area, and at the MOB was strategically scanning to see the route she would take to back her truck in, saw a dropped UPS trailer in her way, apprehended as strategically scanning and noticing the trailer, and simultaneously feeling mildly, briefly irritated, in her head, but it was not clear how/if this was in her awareness at the MOB. This irritation seemed to be less at the awkward position of the dropped trailer and more at UPS (the main competitor of Hannah's employer FedEx), but, apparently due to her inexperience with sampling, we were never able to tease these details apart. *Coding: Multiple, PA/SA, maybe Feeling*

**2.1** Had pulled her truck into her parking spot at home and was folding up her sun visor, at the MOB was feeling mildly irritated in her body and in her head, body part was apprehended as a sensation of tension in her shoulders and in her neck, and head part may have been multiple thoughts but wasn't particularly defined, also may have been aware of the texture of the sunscreen, but she wasn't sure if this was in her awareness. She was singing along to the George Strait song "Full Hearted memory" that was playing on the radio, but this singing was on autopilot, not in her awareness at the MOB. *Coding: Multiple, Feeling, maybe SA*

**2.2** Was trying to give her boyfriend a check for her college tuition, which, in her absence the day before, he had paid. He wouldn't take the check, which launched a sudden, very strong, experience of simultaneous, overlapping emotions, disgust, irritation rage, fury, apprehended as a "bowl of emotions", several, simultaneous, overlapping feelings in her whole being, that were clearly apprehended but very difficult for her to describe. This set of feelings was understood to be an old, well-practiced reaction to the undesirability of "being owned" by a man—No man is going to pay for me! *Coding: Multiple, Multiple feelings*

**2.3** Was sitting on the couch and was listening to a Net Zero commercial, at the MOB had was wondering how much cheaper Net Zero is than Cox cable, apprehended as a clear thought, not in words, or in symbols, just knows that's what she's thinking. Boyfriend was sitting next to her on the couch talking to his mom, but that was not in her awareness, and TV was no longer in her awareness, she had withdrawn from all of that and was just focused on this thought. *Coding: U*

**2.4** Was watching a commercial for an album called Buzz Ballads, and at the MOB was wondering if the album was on itunes, apprehended as just wondering this, not in words, not in images, just knows that's what she's wondering. *Coding: U*

**2.5** Lying on her stomach and her boyfriend was rubbing her shoulders and back, at MOB was noticing how his hands feel—callused and strong, also sensing the scratchy rough sensation of his hands on her left shoulder; and simultaneously noticing the soothing feeling of this rubbing in her shoulders. *Coding: SA x 3*

**2.6** Blow drying her hair upside down and at the MOB was feeling the sensation of heat on her surface of the skin of her face and her contact lenses. Before the MOB she had had multiple thoughts about her hair, about needing to get her hair layered, needing to call the person who cuts her hair, that she had changed salons, but it was hard for her to tell if this remained in her awareness at the MOB, believed that she had withdrawn from this and was just focused on the sensation of heat. *Coding: SA*

**3.1** Had just put on mascara in the car and it was still wet, and at the MOB had a bodily sensory awareness of coldness on her face and neck, the result of a cold burst from the truck's air conditioning. This burst of air was simultaneously blowing her hair so that it was hitting her face; she was feeling it sticking to the wet mascara on her eyelashes. Her boyfriend is talking to her at the moment of the beep, but she is not at all listening or hearing what he is saying. *Coding: SA x 2*

**3.2** In the truck with her boyfriend and at the MOB had a bodily sensory awareness of the cold air conditioning on her face and neck, and a separate, simultaneous sensory awareness of the sound of her boyfriend's voice. She was not listening to what he was saying at all, but instead was only aware of the sound of his voice droning, which she likened to the "wa wa wa wa" of Charlie Brown's teacher. *Coding: Multiple, SA x 2*

**3.3** Was sitting on the couch and was talking about FedEx stock purchasing options and was saying that she would like to put 1-5% of her gross weekly check into the stock option, not separately thinking about this, no images. She was quite closely focused on what she was saying. She also had a separate, simultaneous awareness of the flickering on the TV screen in front of her, as her boyfriend changed the channel, but that was only slightly in her awareness. *Coding: Multiple, Doing (talking), PA (screen)*

**3.4** She and her boyfriend were telling the boyfriend's mother about their recent trip to Disneyland. While they were talking, the boyfriend's hand rested on the inside of Hannah's knee; most (~90%) of Hannah's attention was focused on the strength and girth of his hand as she felt it through her jeans. Also at the MOB she was somewhat aware (~10%) of laughing with his mother about the irony of having had to wait for the shuttle to Disneyland in front of a liquor store of all places, apprehended as ironically laughing with her boyfriend's mother. *Coding: Multiple, SA (hand), Doing/PA (laughing/irony)*

**3.5** Skipped

**3.6** At her boyfriend's mother's house and they had been talking about a Dallas Cowboy's Cheerleader show that Hannah had watched on CMT, at the MOB his mother was recapping what Hannah had just told her about seeing the two women who are the judges in the show "tearing apart" a young skinny girl for having thick arms, apprehended as laughing with his mother who was recapping what she had said. Hannah also had a separate, simultaneous bodily sensory awareness of the coolness of the bottle of sparkling water she was holding. The two experiences were of about equal salience at the moment of the beep. *Coding: Multiple, Doing (laughing/conversation), SA (coolness of water)*

**4.1** Sitting on the floor of her living room looking at a Google Earth type satellite picture of Asia on her company's newsletter, and at the MOB had a sensory awareness of the greenness of the satellite picture and how close each the labeled places (Beijing, Bangkok, Thailand) were to each other, and also had a separate, simultaneous bodily sensory awareness of the itchiness of the rug on the back of her thighs. *Coding: Multiple, SA x 3 (green, close, itchy)*

**4.2** Her boyfriend was cleaning his Glock pistol on a dirty T-shirt spread out on her white carpet, and at the MOB she was smelling the distinctive odor of the Break-Free lubricant spray that he was using. Simultaneously she was feeling irritated, a strong feeling that was difficult if not impossible to describe, but which included a tension in her shoulders and some/all/none of the following: looking for the stain that's sure to be there under the T-shirt; giving him a disgusted look; knowing that he's not seeing her look because he's concentrated on the Glock; mad because he's been doing it this way for 6 months; mad that she hasn't said anything about it before; mad that now it's harder to say something

because she hasn't said anything before; a feeling of suspended animation—sitting and stewing rather than doing something; thinking that there's a million other places that he could clean his Glock; it's been going on for *so* long. She couldn't be certain what if any of those were actually in her awareness, or what were merely implied by the situation; which were thoughts, which were characteristics of her perception; which were merely explanations of her emotion. The emotion was strong, that was certain; how it was experienced was difficult to say. *Coding: SA (smell), Undifferentiated/ Mixed Up Thought/Feeling (irritated/worry)*

**4.3** Was copying a list of cognitive errors from her psychology class onto index cards for later study, and was simultaneously noticing the powder blue color of the index cards and the loudness of the movie playing in the background. She was not watching the movie, or paying attention to the meaning of the loudness, but was merely noticing the loudness of it. There were a lot of colorful books spread out on the floor around her, but she doubted that that was in her awareness at the moment of the beep (if it was, it was the colorfulness, not the topics, of the books). *Coding: Multiple, Doing, SA x 2 (blue & loud)*

**4.4** She had emptied her work bag out on the table and was picking through the contents to throw away the gum wrappers and other trash. At the moment of the beep she was angrily looking at a perfume bottle among the contents. It was questionable whether she was actually experiencing the anger, although it was an angry reaction to the perfume bottle that occupied her experience during this moment. Part of this experience was a very quick, apparently well-practiced, innerly spoken dialogue with herself about what she should do with the perfume, something like: "I don't like this perfume"; "I should throw it away"; "But I can't throw it away"; "it was a gift"; "it was from Violet"; "but I don't even like Violet"; "So why have you kept this?". These spoken bits occurred were experience to be occurring at normally spoken rate of speed, but they happened so fast that Hannah couldn't identify where in that long series the beep came. She did not actively experience any emotion at the beep, but the contents of the dialog and the tone of her inner speech reflected anger at herself for carrying this stuff around. *Coding: Multiple, Multiple/sequential IS; Feeling (expressed-but-not-experienced)*

**4.5** Her boyfriend was watching a movie, but at the MOB she was not paying attention to the movie, but was saying to herself, in her own voice, "I wonder what I'm missing on Lifetime right now" just as if she had said this aloud. *Coding: IS*

**4.6** Was watching a lifetime movie, but at the MOB she had withdrawn her attention from that and instead had a sensory awareness of Jennifer Lopez's curls in the movie and an unsymbolized thought of wondering to herself if she, Hannah herself, could have ringlets like that in her own hair. *Coding: SA (looking at ringlets), U (wondering)*

**5.1** Was feeling hungry/low blood sugar/shaky/vertigo which was apprehended as a singular bodily sensation, and had a separate, simultaneous thought process that she needed to get more coffee to avoid eating, not in images or words, just knows that's what she's thinking. She also had a separate, simultaneous sensory awareness of the sound of the Tour De France that was on TV, hearing the noise of it and the French accents of the reporters, but was not particularly paying attention to that. *Coding: Multiple, Interfering Phenomena, SA x 2 (hunger and Tour De France), U (need more coffee)*

**5.2** Lying in bed and feeling the coolness and softness of the sheets, of her nightgown, and of the breeze from the ceiling fan, apprehended as a bodily sensation of coolness with nothing else in her awareness. The Tour De France was still on TV, but this was not in her awareness. *Coding: SA (coolness and softness)*

**5.3** Was lying on the bed and wishing that she had more coffee because she was hungry, apprehended as an unsymbolized thought of wanting more coffee, and a simultaneous bodily sensation of being hungry/tired. *Coding: Multiple, Interfering Phenomena, U (coffee), SA (hungry/tired)*

**5.4** Was wrestling to decide what she wanted to eat, either the cool and fruity sugar-free jello or the chocolaty mini protein bar, apprehended as a thought process of deciding which one to eat, not in images, not sensory, not in words, just an unsymbolized thought process of actively going back and forth several times between these two options. *Coding: Multiple, Interfering Phenomena, U (deciding what to eat)*

**5.5** Was feeling too bloated/too fat to wear the jeans she was wearing, apprehended as a bodily sensation of snugness and a simultaneous thought/sensory awareness of being too bloated to wear those jeans, and an ongoing awareness of knowing which jeans would be appropriate for what she weighs at any given time, apprehended as a known/implied series of tailed unsymbolized thoughts. *Coding: Multiple, Interfering Phenomena, Thought/ SA (snug, bloated), Ongoing U (knowing which jeans)*

**5.6** Was eating a cup of sugar-free jello, apprehended as a knowing that she should have eaten it quickly since it was then melted from being held in her hand and was hard to keep on the spoon, not in images or in words. This knowing had a multiplicity of aspects: what foods would be acceptable to eat, how many calories each had, and the nutritional value of the jello. These aspects all were somehow part of the same knowing thought. They were not differentiated, but they were not merely implied, either. *Coding: Multiple, Interfering Phenomena, U (jello), Ongoing multiple thought process*

**6.1** Sitting in her hot pick up truck, wishing her boyfriend would hurry up and come back with the keys to turn on the air conditioner, apprehended as a bodily sensory awareness/thought/feeling of hotness, of wanting the key to the ignition so that she could turn on the air conditioner, and of exasperation. These aspects all seemed to be part of one complex sensory awareness/thought/feeling, and were not in any way separated. This exasperation was no more clearly differentiated than the other features of this experience; she described this exasperation as feeling irritated at the lack of the key, and “rolling her eyes inside of her head”, but it was difficult to say if this eye rolling and feeling were in her awareness at the MOB or if this feeling was present but an unexperienced exasperated process fueled by her hotness and wanting the key to be in the ignition. *Coding: SA (hot), T/F (hotness), U (lack of key), Feeling (irritated)*

**6.2** Waiting for the air conditioner in the truck to come on, apprehended as a worded thought, one word after the other “when is the A/C going to kick in”, not in inner speech, or inner hearing, or images not in a voice, just a worded thought, and she had a separate, simultaneous bodily sensory awareness of being hot, and was hearing her boyfriend talking about some guy in the gym with a marine corps division t-shirt, apprehended as a

sensory awareness of the sound of his voice without paying particular attention to the content of the conversation. *Coding: Multiple, Worded thought, SA x 2 (voice, hot)*

**6.3** Was peering down into her purse, seeing its contents, and thinking a multiple-aspect thought that if broken apart into its aspects would include: there's a lot of crap in here; it's a new purse; there shouldn't be that much crap in here; I've only had it for a week. Those aspects are not separable; they are all aspects on one thought. That is, they are not merely implied by the thought, but are somehow present in the complexly aspected thinking. She is also ironically laughing in her head at the irony of having that much crap in her purse after only a week. *Coding: PA (looking in purse), multi-layered U, Doing (ironic laughing)*

**6.4** She had an unsymbolized thought of needing to brush her hair out, and she had a separate, simultaneous inner seeing of the ends of her hair looking frizzy, could just see the red hue of her bleached hair, just saw the chunk of hair with nothing else in this image, going straight down, like the chunk that hangs out from her work ball cap, but she only sees the clear chunk of hair square image with clear border, and the frizzy hair fills in the border, clearly defined edge of the image. *Coding: U, Inner Seeing*

**6.5** Was looking at a piece of hair that had fallen out of her clip, and had a simultaneous unsymbolized thought of wishing that she hadn't got her hair layered. *Coding: PA, U*

**6.6** Just before the beep her boyfriend had asked her if she was going to go with him to his high school reunion. She had told him she would go with him if she lost 20 pounds and he was saying that she couldn't do it. At MOB she was saying to herself "If you knew how crazy I could get I could drop 20 pounds by next month", in her own voice, just as if she said it aloud, in a cocky, rude, pissed-off tone of voice. Although Hannah was expressing a cocky pissed-off-ness with her inner tone of voice, she was not directly feeling cocky pissed-off-ness. *Coding: Interfering Phenomena, IS, Ongoing feeling that is undifferentiated/possibly not directly experienced*

**7.1** Had multiple thought/feelings about how she would be able to get her boyfriend to agree to go to the movie No Reservations with her that he already said he did not want to go to, thinking about what she could do to get him to do what she wanted to do: go downtown, go to the Golden Gate to get shrimp cocktail, go to Neonopolis to see this with her. These were apprehended as a group of multiple thought feelings, an ongoing awareness/group of ideas of what she wanted to do that were present in her awareness at the MOB. *Coding: Multiple, multiple T/F tails*

**7.2** Had ongoing multiple thought/feelings about how she is going to be able to get him to go to the movie No Reservations with her, apprehended as the same group of ideas that she had in 7.1 but now being repeated more often, and thought/felt desperately. *Coding: Multiple, multiple, T/F*

**7.3** Had a bodily sensory awareness of coolness on her face and top of her head from the ceiling fan, and a separate, simultaneous thinking of what jeans to wear which was apprehended as an inner seeing of the back pocket of the jeans she decided to wear, and an ongoing thought of what jeans to wear, that was apprehended as an ongoing list of



details about the jeans, she has, what fabrics, etc but this did not appear to be clearly differentiated and was only 10% of her awareness. This image was approximately 10% of her awareness with 90% of her awareness on the coolness. *Coding: Multiple, SA (cool), Inner Seeing, Ongoing multiple U (jeans details)*

**7.4** Watching a Faith Hill/Tim McGraw video and at the MOB she had a sensory awareness of the puffiness of the naso-labial lines on Faith Hill's face. *Coding: SA*

**7.5** On the phone with her ex-boyfriend who was angrily berating her. She had a bodily sensory awareness of her hand and neck cramping, apprehended as a stiffness and tightness deep in the muscles of her left neck and shoulder. She also had a separate, simultaneous sensory awareness of the angry, cracking sound of his voice as he was yelling at her. At the MOB she had entirely withdrawn from the content of what he was saying, and was instead solely focused on the cramping in her hand and neck and the sound of his voice. She was also watching the movie *Father of the Bride* at the MOB, apprehended as actively watching the movie, paying attention to what was happening. *Coding: Multiple, SA (cramping), Avoidant SA (sound of voice), Doing (watching movie)*

**7.6** Talking on the phone with her boyfriend, actively paying attention to what he was saying. She also had a separate, simultaneous bodily sensory awareness of strain deep in the muscles of her left neck and shoulder. She was also separately and simultaneously watching the movie *The Father of the Bride*, apprehended as actively paying attention to the movie. *Coding: Multiple, Doing (listening to conversation and watching movie), SA*

**8.1** Eating a protein bar and had a sensory awareness of the chalky taste and dry texture of the protein bar. She was also actively reading about vaginismus in her psychology notes, apprehended as paying attention to what she is reading. She also had a separate, simultaneous sensory awareness of the sound of the truck passing her switching from low to high gears. She was also actively listening to the radio at the MOB. *Coding: Multiple, SA x 2 (protein bar and sound of truck gears), Doing x 2 (reading and radio)*

**8.2** Had a sensation of the salty taste of the sunflower seeds in her mouth, and a separate, simultaneous sensory awareness of the vibrating of her leg pad that was sitting on her steering wheel. Prior to the MOB she had been copying her psychology notes onto this pad, but that was not in her awareness at the MOB. She was also noticing the bad state of repair of the trailer that was dropped in front of her, apprehended as a noticing that the trailer gate was broken, the lift gate was broken, there were holes in the floor, that it was old, that it was crapped out. She also had a separate, implied trace of unsymbolized thinking about the parental investment theory she had read about in her notes, that she didn't like this theory; that it's going to be on the test; that it sounded made up; that it wasn't in her book. *Coding: Multiple, SA x 2 (saltiness, vibrating), Thought/SA (trailer in bad state of repair), U (parental investment theory) Tail*

**8.3** Backing her truck into a loading dock, but this was "on autopilot" and not in her awareness at the MOB. At the MOB she had a perceptual awareness of the Synergy truck ahead of her, and a separate, simultaneous sensory awareness of the loudness of the air horn she just honked in greeting to Bob, a fellow trucker whom she saw standing in the parking lot. She also had a separate, simultaneous sensory awareness of the chirping of

the Vortab unit in her truck telling her the Synergy trailer was close to her. She also had a perceptual awareness of seeing Bob. The radio and the CB are on, but Hannah is not paying any attention to them. *Coding: Multiple, PA x 2 (synergy truck and coworker), SA x 2 (air horn and Vortab sound)*

**8.4** Was making a U-turn in her semi and was aware of actively watching 4 lanes of traffic, seeing a SAIA truck getting ready to cut in front of her, and seeing her trailer as she was making the turn. She also had an implied thought/feeling of worry re: the SAIA truck, needing to avoid an accident so that she gets a raise, can't afford to hit or scratch anything, animosity toward the SAIA truck driver, but it was difficult for her to say if any of this implied thought/feeling was directly in her awareness at the MOB. *Coding: PA x 2 (traffic, SAIA truck, her trailer), Ongoing implied T/F tail (implied but unsure if directly experienced)*

**8.5** Was noticing the dollar amount of her electrical bill, apprehended as simultaneously seeing the amount and being shocked/disbelieving at how high the amount was, and she was unable to differentiate exactly how this shock/disbelief presents itself to her other than to say that it did not seem to be a thought and did not seem to be a feeling. *Coding: PA (bill), T/F (undifferentiated shock/disbelief)*

**8.6** Watching Carlos Mencia doing stand up on TV and at the MOB she was actively paying attention to him and had a bodily sensory awareness of laughing along. *Coding: Doing (watching TV), SA (laughing)*

#### Hannah Coding Summary

Fragmented Multiplicity 26/44 samples = 59% (1.2, 1.3, 2.1, 2.2, 3.2, 3.3, 3.4, 3.6, 4.1, 4.2, 4.3, 4.4, 5.1, 5.3, 5.4, 5.5, 5.6, 6.2, 7.1, 7.2, 7.3, 7.5, 7.6, 8.1, 8.2, 8.3)

Sensory Awareness 26/44 samples = 59% (1.1, 1.2, 2.1, 2.5, 2.6, 3.1, 3.2, 3.4, 3.6, 4.1, 4.2, 4.3, 4.6, 5.1, 5.2, 5.3, 6.1, 6.2, 7.3, 7.4, 7.5, 7.6, 8.1, 8.2, 8.3, 8.6)

Unsymbolized Thinking 14/44 = 32% (2.3, 2.4, 4.6, 5.1, 5.3, 5.4, 5.5, 5.6, 6.1, 6.3, 6.4, 6.5, 7.3, 8.2)

Doing 8/44 = 18% (3.3, 3.6, 4.3, 6.2, 7.5, 7.6, 8.1, 8.6)

Doing/Perceptual Awareness 1/44 = 2% (3.4)

Feeling 7/44 = 16% (1.2, 1.3, 2.1, 2.2, 4.4, 6.1, 6.6)

Thought/Feeling 6/44 = 14% (4.2, 6.1, 7.1, 7.2, 8.4, 8.5)

Thought/Sensory Awareness 2/44 = 4% (5.5, 8.2)

Interfering Phenomena 6/44 = 14% (5.1, 5.3, 5.4, 5.5, 5.6, 6.6)

Perceptual Awareness 6/44 = 14% (3.3, 6.3, 6.5, 8.3, 8.4, 8.5)

Perceptual Awareness/Sensory Awareness 1/44 = 2% (1.3)

Inner Speech 3/44 = 7% (4.4, 4.5, 6.6)

Worded Thought 1/44 = 2% (6.2)

Inner Seeing 2/44 = 4% (6.4, 7.3)

Anne Samples (See Chapter 11)

**1.1** Was overwhelmed, apprehended as a thought/feeling of being overwhelmed and stressed, biology thoughts were central in awareness, but also had a thought/feeling about calculus, apprehended as a cluster of thoughts about what biology work she has to do, that she has to get an A in bio, that she needs to get into med school, needing to study, need to do well, needing to get the chapters done, that it seems too much, 16 chapters individual biology chapters are also in awareness, apprehended as a cluster of thoughts/feeling. Many thoughts about bio and one thought about calculus, that she needed to get it done. Emotional aspect of this apprehended as a fear of failure, apprehended as feeling afraid, but that was somewhat difficult for her to describe.

*Coding: Multiple, T/F (cluster re: bio and calculus), Tail*

**1.2** Was feeling annoyed and embarrassed by her brother, apprehended as rolling her eyes, saying out loud to her brother “could you stop please”, and also simultaneously aware of wanting to scream at her brother, apprehended as yelling at her brother in inner speech, in the front of her head, in her own voice, just as if she said it aloud “you need to stop fucking around and sit down and start studying” with a direct tone, this was central in her awareness. Also had a separate, simultaneous cluster of thought/feeling of embarrassment, in her head, apprehended as thought process and feeling that she can’t believe he’s her brother, that he’s so different from her, not worded, just thinking/feeling that. *Coding: Multiple, SA (eye rolling), IS (yelling at her brother), Thought/Feeling*

**1.3** Was studying and had been reading about plants and trying to understand what she was reading, apprehended as having withdrawn from the reading, and saying to herself a shortened, simplified version of the words she had just read, putting it into her own words and repeating them to herself, in her own voice, in a soft, calm voice, just as if she were reading the same words aloud, while simultaneously trying to understand what she is reading, apprehended as trying to put the words she is repeating together step by step to explain what was going on in the pictures she was looking at in her textbook, can’t remember the exact words that were in her awareness at the MOB. *Coding: IS (repeating and trying to understand)*

Note: Only 3 samples collected on first day.

**2.1** Going through a list of things she had to do, and one of the things on this list was that she had to call someone to ensure they would be home to pick up her sister, apprehended as an inner seeing of herself, just her face, seen from the front, with the phone on her left ear, talking to her brother. This image was in color and clear; in this image Anne is saying, “Are you going to be home around 3:30 to make sure you get our sister?” in her own voice, just as if she had said this aloud. The image was central in her awareness, but she also had simultaneous awarenesses of the various things she had to do: studying, picking up her cousin and dropping him off at the airport, and so on. These things were apprehended as simultaneous thought processes, in the back of her mind, not in words, but present to awareness in parallel. *Coding: Multiple, Inner Seeing (with IS), Multiple U*

**2.2** Just prior to the beep, her friend Jack had been telling her about a photo of a very obese woman. At the moment of the beep Anne was innerly saying, “I’d rather die than

be that fat.” This inner speaking had an emphasis on die and fat, and was experienced as being in her own voice, just as if she had said it aloud. Anne also had a separate, simultaneous inner hearing of Jack saying, “there was this one fat lady she must have weighed 400 pounds.” This inner hearing was a replaying of an earlier part of their conversation; it was heard to be just the same as she had heard it a few minutes earlier. She was innerly hearing both Jack’s and her own words, although the replaying seemed to be in some way telegraphic, as if only the important words were actually being said. *Coding: Multiple, Interfering Phenomena, IS, IH*

**2.3** Was trying to help her friends with their homework, and they were laughing and not paying attention. At MOB Anne was irritated, and the irritation was central to her experience, but she could not clearly say whether the irritation was apprehended as a thought or a feeling. *Coding: T/F (irritated)*

**2.4** Was annoyed that her phone kept ringing while she was trying to study. She apprehended this annoyance as an inner seeing of her phone flying across the floor, the result of herself having thrown it with her right hand. She sees the phone as viewed through her own eyes; she also has some kinesthetic sense of throwing it. There is apparently no other apprehension of the annoyance. *Coding: Inner Seeing (with sensation), T/F*

**2.5** Trying to figure out a calculus problem and was confused, trying to think about the problem, going back and doing the steps of the graphing again, apprehended as simultaneously looking at the points of the lines of the graph and trying to figure out what was wrong, seeing the right answer 5 on the computer and the wrong answer 4 on her paper. *Coding: Doing (trying to figure out problem)*

**2.6** Was sleepy and was innerly seeing her bed, seen from the perspective of standing at the foot of her bed. This inner seeing was clear and accurate except that she doesn’t see the rest of the room, just the bed. Also had a separate, simultaneous sensation of being tired, apprehended as a sensation of her eyes closing; she also had a separate, simultaneous sensation of blackness as her eyes were closing. Anne also had a separate, simultaneous awareness of having a headache, apprehended as a sensation of pressure between her eyes, pressure moving inward. *Coding: Multiple, Inner Seeing, SA x 3 (tired, blackness, and headache)*

**3.1** Was innerly seeing rings in a tray in a glass showcase, seen from the perspective of looking straight at it, apprehended as a visual image in the back of her mind, as if she is looking forward at the ring tray from the back of her head. *Coding: Inner Seeing*

**3.2** Saying to herself “Should I call Cindy and Amir?” in her own inner voice, just as if she had said it aloud. This question carried the implication that she would call them to go to the movies, but the specifics of that implication was not present in her experience. *Coding: IS*

**3.3** Talking to her friend, and was saying aloud “You can come to my place rather than [beep]”. Had she finished this sentence, she would have told her friend that she could

come to her place rather than going home to change clothes before they went out.

*Coding: Doing (talking)*

**3.4** Talking to her mother about selling property owned in the family, and was innerly saying to herself, “They [some of the family members who would profit from the sale] don’t deserve the money,” as if rehearsing this before she says it aloud to her mother. Her inner speaking is experienced as being in her own voice, just as if she would have said it aloud, in a cold tone of voice. Anne also had a simultaneous mild disgust at the selfish family members. This disgust was undifferentiated and was difficult for her to describe except to say it was in her head. *Coding: IS, F (disgust)*

**3.5** Text messaging her friend and a few seconds before the beep had innerly said “Thank you for helping me today with the tax return.” These words had been said as if in her own voice, just as if she had said it aloud. Now, at the moment of the beep, she was in the process of texting those words into her cell phone. Those words were still in her awareness as if they were still being said, even though she had actually said them a few seconds ago. This was not an echo, but was apprehended as if she were still saying these words, even though that would be impossible in the exterior world. She was in the process of text messaging, but she was not aware of that; she was just doing that on auto-pilot. *Coding: IS*

**3.6** She had nothing in awareness, just blank. The TV was on but she was not paying attention to it. She had just finished text messaging but that was not in her awareness, either. She was simply blank. *Coding: Nothing*

**4.1** Had a thought process of the word schizophrenia, apprehended as the concept of the word schizophrenia coming quickly to her, and simultaneously saying this word to herself, in her own voice, just as if she had said it out loud, and also had a simultaneous thought process of a scene from the television show *Dirt* where the character with schizophrenia is talking to his cat and the cat is talking back, not in words or images, just thinking of the scene. *Coding: IS, U, Worded thought*

**4.2** Had two feelings of guilty disappointment, guilt (like failing to reach her parents’ goals for her) and separately feeling guilty (like her parents have done much for her and she can’t do enough for them), apprehended as strong sensations of heaviness in her chest, like her heart being squeezed inwards, with nothing else in her awareness. Before the beep she had been thinking about being unable to meet her parents expectations, but at the MOB she had withdrawn from this thought entirely and was just feeling these two guilty disappointments. *Coding: Multiple, Feeling (guilty disappointment)*

**4.3** Thinking about getting her research project done quickly, apprehended as seeming that the words “I need to get this done quickly”, words are somehow in her awareness but she is not saying, hearing, or seeing them, the words just seem to be in her awareness in the front of her head, and was also staring at the computer screen wanting it to hurry up. Also, her legs were shaking and her feet jiggling in impatience, but that was not part of her awareness at the moment of the beep. *Coding: Worded Thought (in undifferentiated words), PA (computer screen), FFOB (impatience)*

**4.4** Talking to a coworker about Shakespeare and was saying “The Tempest was the only play I could actually understand”, apprehended as being engaged in the saying of that sentence, and had a separate, simultaneous ache in her neck as she was looking up at her coworker, apprehended as a bodily sensation of aching deep in the vertebrae of her neck. *Coding: Multiple, Doing (talking), SA (pain in neck)*

**4.5** Listening to her friends, and was frustrated, which was apprehended as tracking their conversation while saying to herself, in her own voice, in a frustrated tone “Geez, come on, hurry up”, that she understood as wanting them to hurry so that she could get to class. Thus frustration was not experienced, but was expressed in her inner voice, and had a separate, simultaneous feeling of tiredness, apprehended as a bodily sensation of sleepy heaviness, all over her body, mostly in the front of her body. *Coding: Multiple, IS, SA (tired), Feelings (Expressed but not experienced)*

**4.6** Listening to her friend talk about working out on an elliptical machine being better than working out on a treadmill because women’s breasts get smaller on the treadmill, apprehended as simultaneously listening to what her friend is saying, tracking what she is saying, but more focused on a visual image of the gym they go to, seeing a clear image of the room with the elliptical exercise machines in it, no people, just the empty room in the gym with the machines, just as it would appear if she were standing in the room looking at these machines. *Coding: Doing (listening), Image*

Note: Only two beeps collected on Day 5 due to technical difficulty with beeper.

**5.1** She had her arms full of books and folders, and in her experience were a bodily sensation of pain in her right forearm and multiple simultaneous unsymbolized thoughts including wanting to set down her books, not wanting the folders she was looking at for her presentation, knowing which type of file she wanted for her presentation, needing to go over to the library to punch holes in her presentation, and needing to walk back and hand her presentation in. The multiple simultaneous thought processes were not in words or in images. *Coding: Multiple, Multiple U, SA (pain)*

**5.2** Was with her friend Joe, and was hungry but did not want to eat, had a snack earlier, and should not be hungry. In her experience was a bodily sensation of hunger, apprehended as an empty and growling sensation deep in her stomach, a separate, simultaneous thought process that she did not want to eat, apprehended as knowing that she did not want to eat and that she should not be hungry. The two parts of this thinking were apprehended as being features of a single thought process. The part that she should not be hungry was understood to be recognizing that she had had a snack a few hours ago, but that recognition was not in her awareness; rather it is the context or background of her thought. This thought process was not in words or in images. Also at the MOB, Anne had a separate, simultaneous sensory awareness of hearing Joe chewing, she was not looking at Joe at the MOB but the sound of his chewing was in her experience. *Coding: Multiple, Interfering Phenomena, U, SA x 2 (hunger and hearing the chewing)*

**6.1** Was feeling relaxed, apprehended as a bodily sensation of relaxation, all over her body, and had a separate, simultaneous feeling of excitement, apprehended as an excited, giddy thought of school being over, not in words, or in images, just a thought process and a

bodily sensory awareness that she is smiling, with this smiling attached to the excitement. *Coding: Multiple, SA x 2 (relaxed and smiling), T/F (excited/giddy re: school over)*

**6.2** Was overwhelmed by the amount of studying that she had to do, and was feeling nervous, apprehended as multiple simultaneous thought process: which biology chapters she had to get done, that she had to do some calculus problems from chapter four, the concept of Spanish, the need to plan out which days she would do which work, and a vague inner seeing of the biology assignment page. Anne apprehended herself as holding all of these ideas separate, simultaneous thoughts that were not in words or images except the vague biology assignment page image. Also simultaneously she experienced a bodily sensation of nervousness, apprehended as a bodily awareness of her heart pounding fast, deep in her chest. *Coding: Multiple, SA (heart pounding), Multiple U, Inner Seeing (vague image of biology paper with assigned chapters on it)*

**6.3** Was in the act of text-messaging a friend at the moment of the beep, but this was occurring on auto-pilot and was not at all in her awareness. At the moment of the beep, Anne experienced “two me’s”. One of those me’s primarily bodily, feeling like she was a horrible/selfish/disgusted-with-myself person, apprehended primarily as a bodily sensation at the core of her chest of her heart being squeezed inwards, deep in her chest. Anne was in actuality standing in front of a mirror, and this horrible/selfish/ disgusted-with-myself person somehow knew at the moment of the beep that she was unable to look at herself in the mirror. There was also a complex thought process or series of thoughts: I could be better, why am I being this way, primarily directed toward her relationship with her boyfriend, that he deserves better, that she unfairly complains at him, that she “pushes” him to spend more time with her, that he tries his best, that I don’t appreciate it but I should, and that he deserves better, someone who doesn’t push and complain. The other “me” was whispering in inner speech, “You’re being selfish” to the first me, which was understood to be hearing those words. The me that was doing this whispering was apprehended as being better, and the me that was hearing was apprehended as being selfish/horrible/disgusted. At the same time, Anne was saying to herself, in her own words, “he deserves better.” This saying was apparently being said by the entire Anne, not just one of the two me’s. *Coding: Multiple, Multiple T/F (horrible and selfish), IS x 2 (“you’re being selfish” and “he deserves better”).*

**6.4** Had the same feeling again as in 6.3 but much worse. She was speaking to God, asking Him to take the pain way so she doesn’t disappoint her family. She is saying something like: “My family has been through a lot; I don’t want to be another one [someone else her family] that my parents have to worry about; the best I could do is if I weren’t here. Anne understood God to be there listening to her. Anne was speaking the same things to god perhaps two or three times. Those words were experienced as being at her normal rate of speed, but Anne thought that they actually occurred at a substantially faster rate. Anne also had a simultaneous bodily sensation of pain, apprehended primarily as a painful squeezing in her heart. *Coding: Multiple, Doing (talking to God), SA (painful squeezing in heart)*

**6.5** Had a bodily sensation of coldness (temperature) inside and outside of her body, and temperature coldness in her mind, apprehended as being physically cold all over her body, on the surface and deep down, and also feeling tired and mentally shivering in her

mind, no thought processes, just feeling cold both in her body and in her mind, mentally cold part apprehended as a feeling of numbing cold in her head that was clear but difficult for her to describe. *Coding: SA (cold)*

**7.1** Was “feeling stressed” about an upcoming test; this stress was a characterization of multiple, separate, simultaneous unsymbolized thought processes, including hoping that she can get everything done, hoping she won’t blank out on the test, hope that she’ll pass it, and hoping that she would remember most of the reading that she did. That is, Anne was *not* feeling stressed and in addition also had multiple thoughts; the multiple thoughts *were* the stress. Anne also had a separate, simultaneous feeling of tiredness, apprehended as a bodily sensation of heaviness on the surface of both eyelids. Anne was also reading at the MOB, but this was not in her awareness. *Coding: Multiple, Multiple U, SA (tired)*

**7.2** Was “feeling tension” about her homework; this tension was a characterization of multiple, separate, simultaneous unsymbolized thought processes that were triggered by the looking at an assignment sheet that listed pages that she had to read and wondering if she would be able to get this work done in a short amount of time. She understood this as approximately 18 separate, simultaneous thought processes about her reading assignments; none of these thought processes were in words. She apprehended this multiplicity as being the result of reading the first assignment on the list; then she continued actively to think about that assignment while she read the second assignment. Then she kept actively in mind the first and second assignments while she read the third assignment. With each newly read assignment, she kept active separate thoughts about all the previous assignments until finally there were all 18 (one for each of the 18 items on the reading assignment list) multiple, separate, simultaneous active thought processes in her awareness at the MOB. At the MOB Anne also had a headache, apprehended as a bodily sensation of pain pressing down between her eyes. *Coding: Multiple, Multiple U, SA (headache)*

**7.3** Was feeling hopeless, depressed, and tired of being stressed, thinking about why should she even care, apprehended as multiple thoughts in her mind, such as going out this weekend, going to be her birthday, mom is being strict, finals coming up, job, bill she needs to pay, needing to go talk to someone about her paycheck, some in words and the others just in her mind. The thoughts re: job and needing to pay a bill and her job were in words, not saying this to herself, just worded thinking in the front of her mind of “I have to go to the SSC building to talk to someone about her paychecks” and “I need to find their number and call them”, sentences are somehow in her head, but she is not saying them or seeing them, and in the back of her mind had these multiple, separate simultaneous unworded thoughts about finals, and her mother being strict, and going out on the weekend, and that it’s going to be her birthday. Anne also had a feeling of hopelessness at the MOB that was apprehended as a sense of so many things going on, without emotion, all of these things were going on in her mind but at the MOB she was aware of herself not caring about these things. At the MOB, knows she needs to get them done but she doesn’t care about them. *Coding: Multiple, Multiple worded U*

**8.1** Was feeling/wishing she could be away from everything, somewhere calm and peaceful, at MOB had an imagined experience of being on a beach. She could innerly see the sunset over the beach, and could hear the waves and could feel the water up to her



ankles, apprehended as feeling both warm and cool at the same time. She was seeing this from the perspective of standing in the water looking over the beach; it was a clear experience. Anne also had multiple, separate, simultaneous thoughts. A thought about school was central, and then four or five or more simultaneous thoughts “webbed out” from that: turning in her assignments, what’s going on in school, getting done classes, what she still has to do. These thoughts were unsymbolized. *Coding: Multiple, Inner Seeing (beach), Multiple unsymbolized thoughts*

**8.2** Had a bodily sensation of hunger on the surface of her stomach, and was saying softly to herself, in inner speech, in her own voice “Hmm, what should I eat?” Simultaneously, she was also deciding where to eat, apprehended as thinking a simultaneous list of food items/places: burger, burrito, Panda Express. These thoughts were not in words, not in images. She was also simultaneously listening to her friends talk about where to go to eat, and was just listening to them, tracking along with what they were saying. *Coding: SA (hunger), multiple U, Doing (listening)*

**8.3** Her friends were talking about finals and she was “feeling scared” that she would not do well, apprehended as thinking multiple unsymbolized thoughts: about losing her scholarship, about not doing well, about passing all of her classes. These were separate, simultaneous thoughts that Anne understood to *be* the feeling of being scared. She also had a separate, simultaneous experience of “feeling dumb,” apprehended as multiple unsymbolized thoughts: that her friends are smarter than she is, that they’re passing all of their classes, that they’re not losing their scholarships. She also had a separate, simultaneous thought process that she could do better, apprehended as thinking multiple unsymbolized thoughts: you can do better, could do as well as they do, can be as smart as they are. These are three multiple, separate, simultaneous clusters of thought process (feeling scared, feeling dumb, feeling she could do better) that were experienced as multiple thoughts that were emotional without the emotion being directly experienced, these emotions existed as thoughts in her head. *Coding: Multiple, Multiple T/F x 3 (scared, feeling dumb, could do better)*

**8.4** Was feeling full from eating, apprehended as a bodily sensation of the top of her stomach getting bigger (just a little bit) in an upwards direction away from her body. *Coding: Interfering Phenomena, SA (full)*

**8.5** Walking with her friends and at the MOB was blank, knew her friends were still talking, but she had withdrawn from the meaning of their conversation, she could hear the sound of them talking but that was also not in her awareness, she was just spacing out. *Coding: Nothing In Awareness*

**8.6** Had a complex thought process of thinking that she used to love to go to school, used to be up and ready to go, but now she dreads it every day, apprehended as a single, complex thought process. She also had a separate, simultaneous bodily sensation of tiredness/drained of energy, apprehended as a feeling of heaviness all over her body, but especially concentrated on her shoulders, in which felt heavy, downward pressure. *Coding: Multiple, U (multiple), SA (tired)*

## Anne Coding Summary

Fragmented Multiplicity 20/37 = 54% (1.1, 1.2, 2.1, 2.2, 2.6, 4.2, 4.4, 4.5, 5.1, 5.2, 6.1, 6.2, 6.3, 6.4, 7.1, 7.2, 7.3, 8.1, 8.3, 8.6)

Sensory Awareness 15/37 = 40% (1.2, 2.6, 4.4, 4.5, 5.1, 5.2, 6.1, 6.2, 6.4, 6.5, 7.1, 7.2, 8.2, 8.4, 8.6)

Thought/Feeling 7/37 = 19% (1.1, 1.2, 2.3, 2.4, 6.1, 6.3, 8.3)

Inner Speech 9/37 = 24% (1.2, 1.3, 2.2, 3.2, 3.4, 3.5, 4.1, 4.5, 6.3)

Unsymbolized Thinking 11/37 = 30% (2.1, 4.1, 5.1, 5.2, 6.2, 7.1, 7.2, 7.3, 8.1, 8.2, 8.6)

Inner Seeing 6/37 = 16% (2.4, 2.6, 3.1, 4.6, 6.2, 8.1)

Doing 6/37 = 16% (2.5, 3.3, 4.4, 4.6, 6.4, 8.2)

Interfering Phenomena 3/37 = 8% (2.2, 5.2, 8.4)

Feeling 2/37 = 5% (3.4, 4.2)

Nothing in Awareness 2/37 = 5% (3.6, 8.5)

Perceptual Awareness 1/37 = 3% (4.3)

Worded Thought 3/37 = 8% (4.1, 4.3, 7.3)

Feeling Fact of Body 2/37 = 5% (4.3, 4.5)

Inner Hearing 1/37 = 3% (2.2)

## Jane Samples (See Chapter 12)

**1.1** Had a bodily sensation of shortness of breath, apprehended as a sensation of not having enough space in her throat, and a simultaneous feeling of painful pressure in the center of her chest about the size of a fist pushing outwards. She also had a separate, simultaneous unsymbolized thought in her head that she should probably eat in order to stop this shortness of breath and pain but that she wouldn't eat so that she could be 120 tomorrow. *Coding: Multiple, Interfering Phenomena, SA x 2 (breath and pain), U (eat)*

**1.2** Was sitting at a red light, and had a sensory awareness of the bright red color of the stop light. She also was saying to herself, in inner speech "now that I have this beeper I'm over thinking everything", in her own voice, just as if she had said this aloud. She also wanted to go talk to her boyfriend, apprehended as a separate, simultaneous clear inner seeing of her phone in the foreground, with her room in the background in the image. This inner seeing entirely captured the wanting to talk to him. She also hoped that her mother was not home so that she did not ask her to eat lunch, apprehended as a separate, simultaneous clear image of her mother standing in the kitchen washing the dishes and asking her if she wanted to eat, and this image entirely captured the hoping that she was not home so that she did not ask her to eat. *Coding: Multiple, Interfering Phenomena, SA (red), IS, Inner Seeing x 2 (phone and Mom)*

**1.3** Had a clear inner seeing of herself from the hip down, seen from the left side, wearing the tight, blue pants she wanted to get at Wal-Mart. This was a clear visual image with nothing else in her awareness at the MOB. *Coding: Inner Seeing*

**1.4** Had a clear inner seeing of a picture of Nicole Ritchie sitting in a chair with her left leg crossed over her right, drinking a frappuccino with a straw, seen from the front, apprehended as seeing a picture of her from a magazine, cannot see the edges of the picture, as though this picture fills her entire visual space. *Coding: Inner Seeing*

**1.5** Just before the MOB she had called her mother by saying “Mom” out loud, but at the MOB she was unable to remember what she wanted to say to her mother. She believed that she apprehended this as saying to herself “what was I going to say” in inner speech, but was unsure if this was in fact, in inner speech right at the MOB, and nothing else was in her awareness. *Coding: Possible IS*

**1.6** Was thinking something about how much she admired her Mother, and that it was cool that she takes care of herself, but was unsure of exactly how this thinking was in her awareness right at the MOB. *Coding: U (not clearly differentiated thinking)*

**2.1** At the MOB she had an inner seeing of Elvis’s face standing in shadows so that she couldn’t see the details of his face but with his hair and chin clear but she knew it was him and could hear him singing the song “Only You” just as if she were listening to the song in reality. *Coding: Not fully detailed Inner Seeing with Sound*

**2.2** Was looking for her keys and simultaneously really wanting to find her keys, apprehended as a clear inner seeing of her green Care Bear keychain, in her head, just as if she was looking at the Care Bear in her head. She was seeing only the green Care Bear on her keychain without seeing the keys themselves and with no background to the image. However, the image of the Care Bear had space around it, and she had a sense of the remaining visual space around the Care Bear without actually seeing the background. *Coding: Inner Seeing with undifferentiated background*

**2.3** Thinking that she had to go put gas in the car, apprehended as a visual image of the gas station, from the perspective of the road just as she is about to enter the station, appeared as an accurate image of the gas station as it actually appears, just the same as if she was about to enter the station, and this image filled her whole visual field. *Coding: Inner Seeing*

**2.4** Had an inner hearing of a song in her head, on the line of the song “She’s Deadly”, just as if she were listening to it aloud, and she had a simultaneous inner seeing of the album cover of the song she was innerly hearing, apprehended as a realistic image of the whole album cover, with the band in black and white, and with black around it, as it appears on the actual image, but without all of the details filled in. *Coding: IH, Not fully detailed Inner Seeing*

**2.5** Remembering the last show she played with her band, apprehended as clear moving image of herself putting the microphone to the drummer’s mouth so that she could sing the upcoming part in the song, could see the small bar with the drum set with the drummer, seen from the perspective of her own eyes standing to the drummer’s left, and could see her gloved hand holding the microphone to her drummer. She also had a separate, simultaneous clear moving image of herself standing behind the cymbals of the drum set as though she were looking at herself through the cymbals. These images were apprehended as seeing and hearing what had happened that had a quality of reliving this experience, but with no other feelings, thoughts, etc. *Coding: Multiple (Relived) Inner Seeing*

**3.1** Thinking of the class she was on the way to, apprehended as a moving visual inner seeing of the class with the professor standing in the middle of the front of the class giving a lecture, seen from the perspective of where she normally sits in the class, but with no sound in the image. She also had a separate, simultaneous bodily sensory awareness of the base of the song pounding in the right side of her head, and a simultaneous visual image of the pounding of the base creating a black shadow in her visual image. She also had a separate, simultaneous undifferentiated feeling of stress. *Coding: Multiple, Inner Seeing, SA (base), F (stress)*

**3.2** In her car and had a perceptual awareness of seeing the white panel truck that had just passed her in her rear view mirror, and had a separate, simultaneous unsymbolized thought that she needed to put oil in her car. She also had a separate, simultaneous feeling of slight relief that her car had turned properly, in her head and body, but was unsure if this feeling was in her awareness at the MOB. *Coding: Multiple, PA (truck), U, Feeling*

**3.3** At the gas station looking at the woman in front of her while she was waiting to put gas in her car, and was saying to herself, in inner speech “Are you passing or not?” in a slightly impatient tone, just as if she had said it aloud. However, this impatience was not itself in her awareness. *Coding: IS, F (implied but not experienced impatience)*

**3.4** Looking at a plate of tortas on her kitchen counter, and had a simultaneous inner seeing of the lady that comes to assist standing in the kitchen at a 45 degree angle smiling at her, seen from the front, from the waist up. She also had a separate, simultaneous undifferentiated negative feeling that she was clearly in her awareness, but was very difficult for her to describe or put into words. She also had a separate, simultaneous bodily sensory awareness of mild anxiety all over her body. *Coding: Multiple, PA (tortas), Inner Seeing, Feeling (undifferentiated negative feeling), F (anxiety)*

**3.5** Looking at the whiteness of the license plate of the car in front of her, and was separately and simultaneously saying the word “Utah” from the license plate of the car in front of her, in inner speech, accenting the second syllable, just as if she had said it aloud. She also had a separate, simultaneous feeling of sarcasm, apprehended both in the tone of her voice and in her body. *Coding: Multiple, SA (whiteness), IS, Feeling*

**3.6** Had an inner seeing of a guy in a record store where she is planning to go to a concert. In the image she sees him picking up an amplifier, with his head turned to look towards her, seen from the perspective of herself standing in the record store looking directly at the stage. *Coding: Inner Seeing*

**4.1** Looking for her lighter, apprehended as an inner seeing of her Betty Paige lighter, seen from the front, but was unsure if there was a background to this image, and had a separate, simultaneous feeling of wanting to find the lighter and of being unhappy with herself for losing it, in her head and somewhat in her body, that was clearly apprehended but difficult for her to describe. *Coding: Multiple, Inner Seeing with Undifferentiated Background, Undifferentiated Feeling*

**4.2** Had a clear moving inner seeing of a group of the Oompa Loompas from the Charlie and the Chocolate Factory movie doing a dance, similar to how they appeared in the

scene of the movie, and this image occupied her whole visual field. She also had a separate, simultaneously bodily sensory awareness of tiredness all over her body. *Coding: Multiple, Inner Seeing, SA (tired)*

**4.3** Had a bodily sensory awareness of pressure in her head moving from inside out in her head, and a simultaneous feeling of nervousness and anxiety, in her head and slightly all over her body, apprehended as a sensation of pressure both moving from the outside of her body in and from the inside of her body out. She also had a separate, simultaneous mild sensory awareness of the redness of the picture she was looking at. *Coding: Multiple, SA x 2 (pressure and redness), Feeling (nervousness/anxiety)*

**4.4** Thinking of where she was going to go after her class, apprehended as a still blurry inner seeing of a section of bright green grass on campus. *Coding: U, Inner Seeing*

**4.5** Had three separate, simultaneous inner seeings, an ongoing visual image of the universe, a separate, simultaneous visual image of a picture of a very sad, thin, angry girl model standing, with a square white frame around her, with the ongoing black background of the universe image; and as this image of the girl was beginning to fade she had a separate, simultaneous visual image of her own face, seen from the front, in color, overlapping this image of the girl, and apprehended this overlap as being in the process of changing thoughts. *Coding: Multiple, Interfering Phenomena, Ongoing Tail Inner Seeing, Inner Seeing x 3 (ongoing universe, model, her face)*

**4.6** Was entering the lab and saw the outer door of our lab and the lab next door open and had an unsymbolized thought of wondering why the doors were open with nothing else in her awareness. *Coding: U*

Note: On Day 5 Jane was unable to find her notes about her first two beeps so sampling interview began at 5.3.

**5.3** Was feeling nervous about the exam she was about to take, apprehended as a bodily sensation of pressure in her head and a bodily sensation being hyper and needing to keep moving, all over her body. She also had an anxious feeling in her head, apprehended as a bodily sensation of pressure pushing outwards all over her body, and a separate, simultaneous bodily sensation of pressure forming a knot in her stomach, with this pressure pushing outwards. She also had a separate, simultaneous ongoing feeling of being out of control with everything that was apprehended as a complex, cyclone of a bodily sensation of a hyper feeling in her body and of a wishing that she didn't feel like she did, not a thought process, just a feeling. This out of control feeling encompassed that she had eaten, that she was unprepared for the exam, that she had a fight with her boyfriend. None of these things were directly in her awareness at the MOB but were all contributing to this ongoing feeling of being out of control. *Coding: Multiple, F x 2 (nervous and anxious), Ongoing Tail of Feeling (out of control)*

**5.4** Had a clear inner seeing of her boyfriend's face, looking over his own left shoulder. She was also separately, simultaneously looking at herself in the mirror, apprehended as a sensory awareness of focusing in on her stomach and feeling fat. She also was saying to herself, in the right back side of her head, in inner speech, in her own voice "you should

take some diet pills”. This experience of inner speech was in her own voice, but this voice was apprehended as being her “eating disorder voice” that is both herself and somehow separate from herself. She also was separately, simultaneously singing a song by The Meteors out loud, and was on the line “Little Red Riding Hood”. *Coding: Multiple, Interfering Phenomena, Inner Seeing, SA (stomach), IS (Eating Disorder Voice), Doing (singing)*

**5.5** Before the MOB she had been studying the New Jersey Plan, and at the MOB she had entirely withdrawn from that, and had an inner seeing of a woman standing in front of a carriage, wearing a white dress, from the 1800’s, with nothing else in her awareness. *Coding: Inner Seeing*

**5.6** Writing “House of Representatives” on a piece of paper with no other thought processes, images, etc, nothing else in her awareness. *Coding: Doing (writing)*

**6.1** Had a sensory awareness of the coldness of the Diet Pepsi in her mouth, and had a still inner seeing of a guy that had just passed by her. Just before the beep she had been thinking that he was probably a Boy Scout as a kid, but this thought was no longer in her awareness at the MOB, instead she just had an image of the guy who had just passed her seen from the left side. In the image he was dressed as a Boy Scout, with khakis and a neckerchief, clear from the chin down with the face black and somewhat blurry so that she could not make out the features of his face. *Coding: Multiple, SA (cold), Inner Seeing*

**6.2** Was laughing to herself, apprehended as saying “ha ha ha” to herself, in a sarcastic tone, in inner speech, and had a separate, simultaneous clear inner seeing of herself reading a book, seen from the back so that she could see her straight hair and the book. *Coding: Multiple, IS (laughing), Inner Seeing*

**6.3** Just before the beep, her teacher had joked “You have to remember this word AARP in rhymes with harp”, and at the MOB Jane had a bodily sensory awareness of smiling, and an undifferentiated feeling of funniness in reaction to this statement being funny, and had a separate, simultaneous ongoing jumble of negative feelings in her body, apprehended as feeling very bad, feeling anxious, feeling like she had to keep moving, not wanting to be there, but this jumble of feelings was not directly in her experience at the MOB. It was present and ongoing but not being directly experienced at the MOB. *Coding: Multiple, SA (smiling), F (funny), Ongoing Tail (negative feelings)*

**6.4** Was on her way to class to take an exam, and had an inner seeing of herself sitting in class, seen from the right side, dressed as she was in reality, preparing to write the exam she was about to take and smiling nervously. She also had a separate, simultaneous feeling of nervousness, apprehended as smiling nervously. She also had a slight bodily sensation of hyperness associated with this nervousness, but was unsure if this hyper feeling was in her awareness at the MOB. *Coding: Inner Seeing, Feeling (nervous)*

**6.5** Had a bodily sensory awareness of dryness in her eyes, and had a separate, simultaneous sensory awareness of her left leg stinging from a cut on her leg. *Coding: Multiple, SA x 2 (dryness and stinging)*

**7.1** Imagining a conversation with her Mother, apprehended as an experience of her Mother saying “Is there anything wrong?” and her saying “No everything’s fine”, but both of these seemed to be in her own voice but she was unsure if this was in inner hearing or inner speech at the MOB. She also had a simultaneous undifferentiated still inner seeing of her Mother’s face, not clearly detailed other than that she was looking sad while she asked her this, but there was no sound in this image. *Coding: IS/IH, Inner Seeing*

**7.2** Had an imagined conversation with her boyfriend in which he was asking her if she was going to a show tomorrow, and she was saying to him “I’m probably going with Ella” apprehended in inner speech, in her own voice, with a reassuring tone that she understood to mean that he did not have to worry, but she was unsure if she had said this or heard all of this. She also had a simultaneous feeling of jealousy that she understood to be an experience of feeling his jealousy as he would be asking her about her plans, experienced in her head and body, that was clearly experienced but difficult for her to describe other than that this was somehow his jealousy and not her feeling of jealousy. *Coding: Multiple IS/IH, Feeling (THAT IS NOT HERS)*

**7.3** Was saying to herself “don’t fuck this up” in inner speech, in her own voice, just as if she had said this aloud. The “this” that this referred to was the awareness that she looked skinny. She also had a simultaneous sensory awareness of looking at herself in the mirror and was focused in on her stomach. She was also simultaneously hungry, apprehended as a bodily sensation of hunger in her stomach that was experienced as both positive in that it meant for her that her body would eat its own fat, and negative in that it meant that she was hungry and would rather not have eaten and not be hungry. *Coding: Multiple, Interfering Phenomena, IS, SA (mirror), SA (hunger)*

**7.4** Looking at hotmail page screen where she was about to write a message to her boyfriend, apprehended as saying the message to herself, in her own voice “Baby I’m home” just as if she had said this aloud and simultaneously hearing herself say this. She also had a simultaneous undifferentiated feeling of missing her boyfriend, apprehended as both in her head and body, but was very difficult for her to describe the details of this feeling. *Coding: PA (screen), IS and IH, Undifferentiated Feeling (missing)*

**7.5** Was hearing a song by The Distillers in her head, just as if she were listening to this song aloud on a CD, and was repeating the line “I’m a girl, I’m only 13, but my body rots because I won’t fucking eat” with nothing else in her awareness. *Coding: IH*

**7.6** Had a bodily sensory awareness of lightheadedness as though her head wanted to fall over, and had a separate, simultaneous sensory awareness of adrenaline rush, apprehended as an inner seeing of a brown-orange-yellow flame inside her stomach and a simultaneous bodily sensation of this flame moving from her stomach to the top of her head, in response to being surprised by her brother right at the MOB. *Coding: Multiple, SA (lightheaded), SA (yellow-orange-brown flame adrenaline rush), Inner Seeing*

**8.1** Feeling nervous, apprehended as a bodily sensation of a ball of energy deep inside the center of her stomach that was clearly apprehended but difficult for her to describe. She

also had a separate, simultaneous awareness that her i-pod battery was low, apprehended as looking at the red low battery light on her i-pod. *Coding: Multiple, Feeling, PA*

**8.2** Was innerly hearing a song by The Addicts called Number, just as if she were listening to it aloud, and had a simultaneous clear inner seeing of their logo, that is black and white, a white face with long hair and a black hat, black lips, and a wicked smile, apprehended as a visual image of a sticker of their logo on a black background that occupied her whole visual field. *Coding: IH, Inner Seeing*

**8.3** Was still innerly hearing the same song as in Beep 8.2, just as if she were hearing it aloud, and she also had a separate, simultaneous awareness of reaching into her back seat for her bag. *Coding: Multiple, IH, Doing (reaching for bag)*

**8.4** Was walking up to a classmate and was saying his name “John” out loud, in a happy tone, with nothing else in her awareness. *Coding: Doing (speaking)*

**8.5** Looking at her Betty Paige lighter, and had a simultaneous moving inner seeing of herself showing the lighter to her classmate, seen from the back, from the perspective of standing over her right shoulder, can see from her head to her hip, so that she can see her back and him standing in front of her, and her imaged self is saying to him “Look, it’s Betty Paige” in her voice, just as if she were saying it aloud, and this image fills her whole visual picture. *Coding: PA, Inner Seeing (with sound)*

**8.6** Had heard the interviewer’s (Sharon’s) stomach growl right before the MOB and at the MOB was saying out loud “someone’s hungry”, with nothing else in her awareness. *Coding: Doing (Talking)*

**9.1** Had a blurry inner seeing of the inside of Caesar’s Palace Forum Shops, and this image was filling her whole visual space, and was saying to herself “I have to be there at 4:00”, in her own voice, just as if she had said this aloud. *Coding: Blurry Inner Seeing, IS*

**9.2** Looking at her bottle of Pepsi and it appeared blurry to her, and had a separate, simultaneous blurry inner seeing of her kitchen with the digital scale in it, could see the whole kitchen, from the perspective of standing in the doorway about to enter the kitchen. *Coding: Multiple, Blurry PA (Pepsi), Blurry Inner Seeing*

**9.3** Looking at her psychologist, and he was saying “You know what I mean?” and he did not appear blurry to her but also did not appear very crisp in her perception, and she also had a separate, simultaneous bodily sensory awareness of congestion in her nose. *Coding: Multiple, Not clear PA (seeing and hearing psychologist), SA (congestion)*

**9.4** At MOB Jane was asking her psychologist “Does it look like I cried?” out loud, with nothing else in her awareness. She also had a separate, simultaneous feeling of nervousness, apprehended as a bodily sensation of shakiness in her head and in her stomach. *Coding: Multiple, Doing (speaking), Feeling (nervous)*



## Jane Coding Summary

Fragmented Multiplicity 25/48 = 52% (1.1, 1.2, 2.5, 3.1, 3.2, 3.4, 3.5, 4.1, 4.2, 4.3, 4.5, 5.3, 5.4, 6.1, 6.2, 6.3, 6.5, 7.2, 7.3, 7.6, 8.1, 8.3, 9.2, 9.3, 9.4)  
Inner Seeing 26/48 = 54% (1.2, 1.3, 1.4, 2.1, 2.2, 2.3, 2.4, 2.5, 3.1, 3.4, 3.6, 4.1, 4.2, 4.4, 4.5, 5.4, 5.5, 6.1, 6.2, 6.4, 7.1, 7.6, 8.2, 8.5, 9.1, 9.2)  
Sensory Awareness 13/48 = 27% (1.1, 1.2, 3.1, 3.5, 4.2, 4.3, 5.4, 6.1, 6.3, 6.5, 7.3, 7.6, 9.3)  
Feeling 14/48 = 29% (3.1, 3.2, 3.3, 3.4, 3.5, 4.1, 4.3, 5.3, 6.3, 6.4, 7.2, 7.4, 8.1, 9.4)  
Inner Speech 11/48 = 23% (1.2, 1.5, 3.3, 3.5, 5.4, 6.2, 7.3, 9.1, 7.1, 7.2, 7.4)  
Perceptual Awareness 7/48 = 15% (3.2, 3.4, 7.4, 8.1, 8.5, 9.2, 9.3)  
Doing 6/48 = 12% (5.4, 5.6, 8.3, 8.4, 8.6, 9.4)  
Unsymbolized Thinking 5/48 = 10% (1.1, 1.6, 3.2, 4.4, 4.6)  
Interfering Phenomena 5/48 = 10% (1.1, 1.2, 4.5, 5.4, 7.3)  
Inner Hearing 4/48 = 8% (2.4, 7.5, 8.2, 8.3)

## Paula Samples (See Chapter 13)

**1.1** Listening to her friend talking about her boyfriend, and had a thought process that she didn't like the way her friend was acting, what she was saying made her sound kind of egotistical, and conceited, apprehended as a thought process/ general impression. Not in words or images, just a general thought process. She also had a separate, simultaneous feeling of sadness, apprehended in her head. *Coding: Multiple, U, PA (listening), F (sadness)*

**1.2** Had a thought process that she needed to get a good grade on her communications midterm because her scholarship depends on that, apprehended as saying to herself, in her own voice, "I need to do good", and also had a separate, simultaneous feeling of being nervous and scared and anxious and sad, slashes of mixed emotions one after another, apprehended as feeling in her body and chest, and a sensation of her heart pounding and her body feeling anxious and paralyzed from her waist up. *Coding: Multiple, IS, F (series of mixed feelings)*

**1.3** Was in the break room at work watching dancing with the stars, and was aware of feeling sad and depressed, apprehended as a feeling in her head, and was simultaneously aware of seeing the couple dancing on the screen and wishing she could be like the girl. Also had a separate, simultaneous sense of having several different, overlapping thoughts/feelings about her mom not caring about her, not calling her since her graduation, text messaging her for her birthday, two days after her birthday, kicking her out when she was 15 because her stepdad didn't want her in the house, thinking that she (herself) is not good enough, aware of how her mother makes her feel that she will never be good enough, apprehended as a chain reaction. Had a separate, simultaneous thought/feeling that her mother told her she couldn't be a dancer, she wouldn't be able to go to college, wouldn't graduate high school, that she'll never amount to anything. These overlapping thought/feelings experienced as a cascade of thoughts and a separate, simultaneous inner seeing of her mother asking her why she was going to dance class since she wouldn't be able to do it, hearing her mother saying these things, apprehended as a clear inner seeing of her mother from the front, in their living room, with her mother

being angry and saying these things to her, both seeing and hearing her mother saying these things. *Coding: Multiple, T/F, F, Inner Seeing w/ sound*

**1.4** Standing in the entrance at work watching two girls walk by who looked like models, and was aware of being sad and curious at the same time, apprehended as feeling sad because she wished she looked like them, not in words, just a feeling, and had a separate, simultaneous thought/feeling of being curious/envious, apprehended as a talking to herself, in words, “how do they exercise”, “what do they eat”, “how to they maintain” all spoken simultaneously to herself in her own voice, as if she said it aloud, and feeling a sense of envy in her head. Sad and curious apprehended as two separate feelings. *Coding: Multiple, Interfering Phenomena, Feeling (sadness), thought/feeling (curiosity), IS*

**1.5** Thinking about wanting to exercise after work, apprehended as a thought process of what exercises she was going to do, thinking about the routine, and had a separate, simultaneous inner seeing of herself on the ground, from the right side, doing sit ups, image is still and in color, accurate image. *Coding: Inner Seeing*

**1.6** Her friend was driving her home from work and she had an inner seeing of a car accident, sees the glass of the windshield coming into the car, viewed from the perspective of her eyes, and was simultaneously feeling scared, apprehended as a sense of nervousness, and scared of dying and death, fear of being behind trucks, all apprehended as separate, simultaneous thought/feelings in her body and head. *Coding: Multiple, Inner Seeing, F, T/F (scared)*

**2.1** Watching a movie on TV and was remembering watching this same movie with her dad when she was younger, which was apprehended as an inner seeing of herself and her dad, and had a feeling of missing her dad, apprehended as a feeling in her head and body, and a separate comfortable feeling, and was simultaneously aware of crying, and had an image of herself and her dad watching the movie, seen from behind, sees herself sitting on her dad’s left, herself at age 8 sitting close on the couch with her dad watching the same movie, sitting next to her dad and leaning up against his left shoulder, apprehended as a visual flash. *Coding: Multiple, Inner Seeing, F x 2*

**2.2** Walking out to her car when she saw her friends talking without her being involved, and was aware of feeling anger/jealous/hate, apprehended as a separate feeling of jealousy, and hate, in her body and head, jealousy was the primary emotion in her awareness and was apprehended as a sense of herself as not good enough but also wanting to be better than others, feeling in her head. She also had a separate, simultaneous thought/feeling of hatred, apprehended as feeling alone, not wanting to be friends with them anymore. This hatred feeling was separate from the jealousy. She was also simultaneously aware of seeing her friends talking together. This thought process not in words, but hard for her to differentiate between thought and feeling. *Coding: Multiple, F (jealous), T/F (hatred)*

**2.3** At the MOB she was in English class writing a sentence on her essay about being an outsider and was aware of an experience of being an outsider when she was younger, when she got picked on when she was 10 or 11 because she was overweight, girls decided to beat her up because they didn’t like how she looked, apprehended as an

experience of this incident was unfolding as though she could see it but she did not have an actual visual image, apprehended in the back of her head. Like an image without seeing, a seeing without seeing, something that's visual about it even though she's not seeing it. She also had a separate, simultaneous sense of remembering this scene and was experiencing the emotions associated with this scene, feelings in her head, like re-living the actual scene. Aware of feeling hurt, sad, confused, scared, and a swirl of thoughts of being confused, not understanding why this is being done to her. Has withdrawn from writing the paper and is totally focused on this scene unfolding.

*Coding: Multiple, Interfering Phenomena, T/F (complex multiple hurt/sad/confused/scared), undifferentiated Inner Seeing (visually recreating scene-like seeing without seeing)*

**2.4** Had been thinking about her friend who is getting married and was aware of a thought/feeling that her friend was stupid, apprehended as a thought process that she's too young and hasn't known the person she's with long enough, and an intertwined feeling of being annoyed/aggravated, apprehended as a thought/feeling of anger in her head, disappointment, swirl of thoughts and feelings. *Coding: Multiple, T/F*

**2.5** Taking notes in her psychology class and was aware of feeling anxious and wanting to get up and leave, apprehended as a fidgety feeling in her body, and had a separate, simultaneous awareness of thinking about the notes and that she needs to study, apprehended as a thought process in words saying to herself "go study" apprehended as speaking to herself, saying these words in an angry tone, just as if she said it aloud, and had a thought/feeling of worry and that she needs to calm down/chill out, all occurring at the same time, somewhere between thoughts and feelings about this. Thought about the test and that she needs to study apprehended as being clearer than the other thought/feelings. *Coding: Multiple, F, multiple T/F*

**2.6** Was feeling hungry, and had a simultaneous thought process about salad, thinking about salad, wanting it, don't know if she needs it or wants it, it would taste good, all apprehended as a cluster of thoughts about whether or not to have a salad. *Coding: Interfering Phenomena, U*

**3.1** Was at Mt. Charleston looking at trees, and noticing how quiet, serene, pretty it was, felt free. Was looking at/admiring the trees, noticing how big it is, noticing the quiet, was aware of the impact the trees were having on her. This was apprehended as a process of noticing these things as a whole, and simultaneously experiencing this inside her whole body and head as a sensation of being energized which was experienced as a sensation of being smaller, lighter, and happy. *Coding: PA, F/SA (energized)*

**3.2** Was worried about a sick friend, which was apprehended as a thought/feeling of worry in her head and a thought process of hoping he was ok. *Coding: T/F*

**3.3** Was fighting with her boyfriend, and was aware of being angry and annoyed, and simultaneously aware of yelling at him. Awareness of feeling annoyed was apprehended as a bodily sensation of pressure in her head, and a separate, simultaneous feeling of being angry in her body and head, on surface and deep down, in front and back which was apprehended as a sensation of shaking, all over body and head, feeling like she was

going to explode, and she also had two separate, simultaneous analytical thought processes that she loves/cares about him and wondering why she's angry at him and yelling at him, not in words, just knows that's what she's thinking about. *Coding: Multiple, F x 2, U x 2*

**3.4** Had taken her last test and was aware of a sense of being clear, relaxed, like pressure was lifted off, apprehended as a sensation of her body feeling lighter, and had a separate simultaneous thought process of being glad that her test was over, no words, just a relieved thought that her test was over. *Coding: SA, U*

**3.5** Had been listening to a girl's conversation about her boyfriend dying and was simultaneously aware of hearing the conversation and having a shocked reaction about it, which was apprehended as a sensation of being shocked in both her body and head, apprehended as a bodily sensory awareness of being shocked and a separate, simultaneous feeling of being shocked by the content of the conversation. *Coding: SA, F*

**3.6** Had just heard her manager was fired and had a thought/feeling that was a simultaneous thought process of thinking its weird, wondering why he was fired, and simultaneously feeling angry which was apprehended as a cloudy feeling in her head that she understood as an angry mad thought, apprehended in the front of her head, but not bodily mad, hard for her to describe the anger other than as an angry, clouded feeling, undifferentiated thought/feeling. *Coding: T/F*

**4.1** In math class and had just reviewed a section and she understood it, was excited that she accomplished something, apprehended as a feeling of excited happiness in her head and body, all over her body, head to toe, front and back. *Coding: F*

**4.2** Had chosen to write about organ harvesting for her class, and was aware of wanting to know more, apprehended as an experience of having a void in her that this knowledge would fill up, that was somewhat undifferentiated and difficult for her to describe, and also had a separate, simultaneous experience of being disturbed, that was apprehended as a "not right feeling" of being grossed out, feeling bad for the people it was happening to, and wanting to know how it could happen, apprehended as several different aspects that were mixed together and combined to create one feeling of disturbance that was undifferentiated and somewhat difficult for her to explain, and was also aware of being intrigued, but it was difficult for her to determine if this was separable from the feeling of being disturbed. *Coding: Multiple, U (void), T/F (undifferentiatedly disturbed w/ multiple aspects)*

**4.3** Her friends were talking about shopping at an organic food store and she was aware that she wanted to go with them, apprehended as telling herself, in her head, in her own voice, "You should go check it out", just as if she had said it aloud, in a declarative tone, and had a separate, simultaneous feeling of being interested in seeing what was in the store, and an undifferentiated irritated feeling, apprehended as a pang in her head, with two parts of the same feeling (irritated and interest), was able to identify that irritation was more central, but other than that she was unsure of the reason for this and it was difficult for her to describe. *Coding: Multiple, IS, F x 2 (contradictory)*

**4.4** Had been talking to friends about the past, and was innerly seeing herself with her group of 6 friends together in the quad taken in her sophomore year of high school, with herself in the middle, apprehended as an exact copy of a photo she had taken, not seeing edges of photo, but was a still seeing as if she were actually looking at this photograph except that it appeared foggier than the actual photograph, had withdrawn from the conversation at the MOB and was only aware of the image. *Coding: Inner Seeing*

**4.5** Was staring off into nothing, eyes open but not seeing or paying attention to anything, with nothing in awareness. *Coding: Nothing In Awareness*

**4.6** Had a feeling of depression and failure in her head, apprehended as a gloomy thought/feeling of being not good enough to meet the standards of others, that was experienced in her head, seemed like both a thought and feeling together, but that was undifferentiated, and somewhat difficult for her to describe. *Coding: T/F*

**5.1** Tired and didn't feel well. The tiredness was apprehended as a sensation of heaviness and limpness all over her body, deep down in her body, head to toe, front and back, and she also had a separate, simultaneous sensation of feeling unwell, apprehended as her throat hurting, sensation of stinging. *Coding: Multiple, SA x 2 (tired and ill)*

**5.2** Was mad at her friend, apprehended as yelling in her head "Why am I still her friend?" and "Why do I pretend to be her friend?", in her own voice, just as if she yelled this aloud, and also a simultaneous bodily and mental feeling of anger, apprehended as a sensation of chest being tense, but more aware of yelling in her head at the MOB. *Coding: IS, F (anger)*

**5.3** Was depressed and eating, depressed portion apprehended as a sunken/sad/lost (all one feeling), both in her body and in her head, with no specific location, that was somewhat difficult for her to explain. Also had a separate, simultaneous awareness of comfort from eating, apprehended as a sensation of sudden, brief splurts of happiness and warmth (temperature), in her body and head that fades the depressed feeling but does not make it go entirely away. *Coding: Multiple, Interfering Phenomena, F (depressed), SA (splurts of happiness and warmth)*

**5.4** Was feeling depressed, apprehended as feeling sad, alone, and worthless, in her head, and also had a separate, simultaneous saying to herself in an angry tone "You need self-control" and "You're fat", in words, in her own voice, just as if she said these things aloud, and had a separate, simultaneous sensation of her body being swollen, deep in her body, whole body, head to toe felt swollen. *Coding: Multiple, Interfering Phenomena, F (depressed), IS, SA (swollen)*

**5.5** At the bookstore thinking about the title of a book, apprehended as a memory of her friend telling her a part of the Sleeping Beauty story from Grimm's Fairy Tales, innerly hearing her friend's voice telling her part of the story, just as if she were telling her the story aloud, and had a separate, simultaneous awareness of scanning the bookshelves looking for this book, not saying the title, or symbolizing the title, just scanning the shelves looking for this title. *Coding: IH, Doing (scanning)*

**5.6** In the student union and saw a guy who looked like and was dressed like her boyfriend, apprehended as seeing the guy in the union from the side, and noting that he look a lot like her boyfriend in appearance, and in the clothes that he's wearing, and was also innerly seeing her boyfriend in her head, that she is comparing against the guy she saw in the union, in the image her boyfriend was sitting on a couch wearing blue jeans and a blue shirt, seen from the front, equally paying attention to both the image and the guy sitting there. Also had a separate, simultaneous awareness thought process of it being funny that they looked alike, apprehended as giggling to herself. *Coding: PA (guy), Inner Seeing, U (giggle)*

**6.1** Feeling happily excited about going to see her dad for X-Mas, apprehended as a feelings in her head, not in any specific location, had a thought process about seeing her dad before the beep, but this was not in awareness at the MOB. *Coding: F*

**6.2** Was feeling sick, apprehended as a thought process that she was not feeling well, not in words, just knew that's what she was thinking, and a separate, simultaneous feeling of being sick, apprehended as a bodily sensation of shakiness in her body, all over her body, head to toe, front and back, and a simultaneous bodily sensation that she was going to throw up, apprehended as a sensation in the inside of her stomach and back of her throat, and a bodily sensation of a wave of feeling dizzy, light headed, and cold and clammy. *Coding: U, SA (shakiness, nausea, dizzy, light headed, cold and clammy)*

**6.3** Thinking about going to the gym, excited, anxious, and sad, apprehended as a feeling of being happy/excited/anxious to go, in her head, all one feeling with different words to describe it, and glad she's doing something that's going to help her, not in words, just the concept, knows that's what she's feeling, also had a separate, simultaneous feeling of sadness in her head, that was clearly experienced but difficult for her to describe. *Coding: Multiple, Interfering Phenomena, F x 2 (conflicting emotions-excited and sad)*

**6.4** Had a thought/feeling about her boyfriend, apprehended as being angry at him, in the front of her head, and wishing she could get him motivated. She also had simultaneous feelings of anger, sadness, and love, all in her head, mixed emotions in her head, anger was most prominent in awareness, but these other feelings were also in awareness, also had a separate, simultaneous awareness that she loves him, mixed emotions. *Coding: Multiple, T/F (anger and motivation), F x 3 (conflicting emotions-anger, sadness, love)*

**6.5** Was worried about her grades in her classes and was feeling stressed and frustrated, apprehended as a thought process about being afraid of failing, feeling like she's going nowhere, afraid of failing, a mix of thoughts, in her head, aware of concepts but not in words, and a separate, simultaneous thought process, in words, of saying to herself "I put all of my effort into something and yet I'm going nowhere", in her own voice, just as if she had said this aloud, also had a separate, simultaneous thought process of knowing that she's working herself up for no reason. Also had a separate, simultaneous feeling of being stressed/frustrated, in her head, but that was somewhat difficult for her to describe. *Coding: Multiple, U x 2 (conflicting thought processes), IS, F (stressed/frustrated)*

**6.6** Was missing her little brother, apprehended as saying to herself "Gosh I miss him", in words, in her own voice, just as if she had said this aloud, and was also separately,

simultaneously innerly seeing herself and her little brother standing up, seen from the back, as if she were looking down on the scene from above, with both of them standing up with the paddles, next to the TV playing Nintendo, with her on the left, clear image of her and her brother but Nintendo screen is not clear. Also had a separate, simultaneous feeling of being sad, depressed, and lonely, apprehended as a feeling in her head, and a separate thought process of being told when she was younger that she would feel bad if something happened to her brother, apprehended as a thought process about this, not in words, just knew that's what she was thinking. *Coding: Multiple, IS, Inner Seeing, F, U*

#### Paula Coding Summary

Fragmented Multiplicity 21/36 = 58% (1.1, 1.2, 1.3, 1.4, 1.6, 2.1, 2.2, 2.3, 2.4, 2.5, 3.3, 4.2, 4.3, 5.1, 5.3, 5.4, 5.6, 6.3, 6.4, 6.5, 6.6)  
Feeling 19/36 = 53% (1.1, 1.2, 1.3, 1.4, 1.6, 2.1, 2.2, 3.3, 3.5, 4.1, 4.3, 5.2, 5.3, 5.4, 6.1, 6.3, 6.4, 6.5, 6.6)  
Thought/Feeling 12/36 = 33% (1.3, 1.4, 1.6, 2.2, 2.3, 2.4, 2.5, 3.2, 3.6, 4.2, 4.6, 6.4)  
Feeling/Sensory Awareness 1/36 = 3% (3.1)  
Unsymbolized Thinking 9/36 = 25% (1.1, 2.6, 3.3, 3.4, 4.2, 5.6, 6.2, 6.5, 6.6)  
Inner Seeing 8/36 = 22% (1.3, 1.5, 1.6, 2.1, 2.3, 4.4, 5.6, 6.6)  
Inner Speech 7/36 = 19% (1.2, 1.4, 4.3, 5.2, 5.4, 6.5, 6.6)  
Sensory Awareness 6/36 = 17% (3.4, 3.5, 5.1, 5.3, 5.4, 6.2)  
Interfering Phenomena 5/36 = 14% (1.4, 2.3, 5.3, 5.4, 6.3)  
Perceptual Awareness 3/36 = 8% (1.1, 3.1, 5.6)  
Doing 1/36 = 3% (5.5)  
Inner Hearing 1/36 = 3% (5.5)  
Nothing In Awareness 1/36 = 3% (4.5)

#### Jessica Samples (See Chapter 14)

**1.1** Was in class and had a multiple thought process in which she was wondering about hypnosis that was apprehended as having about 4 separate, simultaneous innerly spoken questions: "Could I be hypnotized?", "Does it work?", "How do they do it?", "Would I remember what I said?". She was saying these questions to herself, in her own voice, just as if she said it aloud and these thoughts were apprehended as being much faster than she would say them aloud, and as though her own voice were speeded up. These inner speakings were experienced as coming at her from four separate directions; there was no motion implied, and she could not say which thought came from which direction. These inner speakings were also apprehended as being in English rather than in her native tongue, and in her voice, but without the accent that characterizes her aloud speech. She also had a separate, simultaneous unsymbolized thought process of suspicion that was apprehended as an unworded thought process of wondering how her professor could be so sure that hypnosis does not work. She also had a slight perceptual awareness of the girls in front of her in class talking, of the overhead projector, of her professor, and of the board in the front of the class. She had an image prior to the beep of herself on the couch being hypnotized by a doctor who looked like Freud, but this had passed out of her awareness prior to the MOB. *Coding: Multiple, IS, U, PA*

**1.2** Was still in the same class and at the MOB she expressed that she could not be sure of exactly what was in her awareness. She thought that she may have had several thought processes about whether you can erase bad memories, how you can distinguish between true and false memories, how you can be sure of what you remember, past memories of her boyfriend, how you can be sure you remember 100% correctly. She also thought that she had an inner seeing in her head of her ex-boyfriend, seen from the waist up and wearing a red shirt, but this was not a clear image. She seemed to be looking at this image forwards but the image was in the back right hand side, behind her head. However, she was unsure if these thoughts were worded or not, if this image was in her awareness or not, and was not entirely sure exactly what was in her awareness at the MOB. *Coding: Multiple, U, Inner Seeing*

Note: Beeps 1.3 to 1.8 skipped.

**1.9** Was on her knees angrily stuffing clothes into a bag, apprehended as a bodily sensation of stuffing the clothes into the bag in an angry manner. She was also simultaneously saying to herself “Why do I have all of these clothes, I don’t wear them, they take all this space, there are so many of them” that was apprehended as one long thought, in inner speech, in an angry tone. She was not feeling angry at the MOB, instead, her inner speaking and stuffing clothes into the bag were the anger, without the anger itself being directly experienced. *Coding: SA (angrily stuffing clothes), IS*

**2.1** Had a sensory awareness of her hair, apprehended as feeling the hair pulling against her fingers and looking at the details of the split ends in her hair. She also had a separate, simultaneous inner seeing of two mountain climbers, seen from the side, climbing left to right, with one climber in the front leading the other and they were joined together by ropes, with mountains and snow all around them. She knew one to have a red jacket and one to have a blue jacket, and that both had their hoods up, but was unsure which climber was wearing which jacket at the MOB. This was a clear, still image. She also had a separate, simultaneous slight perceptual awareness of her sweater, and of her teacher talking. *Coding: Multiple, SA (hair and fingers), Inner Seeing, PA (sweater), PA (teacher)*

**2.2** Walking across campus and had several, overlapping, one on top of the other indistinct, fuzzy inner seeing of a girl from her class. These innerly seen images were apprehended as being of the same girl but on different days, in different positions, wearing different things, and were apprehended as still, snapshot images. She was also seeing this girl at the MOB and simultaneously wondering if this girl would recognize her, apprehended as an unsymbolized thought process. She was also separately and simultaneously trying to fix her coffee cup lid so she could balance it, and was holding her cigarette which interfered with her attempt to fix the coffee lid, and had a slight perceptual awareness of the people and sky and buildings around her. *Coding: Multiple, multiple Inner Seeing, U, Doing (coffee lid), PA (people) PA (sky) PA (buildings)*

**2.3** Had a perceptual/sensory awareness of her teacher making backward circular rowing motions with his arms, and a simultaneous perceptual awareness of hearing her teacher that was apprehended as knowing what he was talking about but not paying attention to exactly what he was saying, (but knew it was something about when people are in a



group rowing, some make less effort). She also had a simultaneous clear, moving visual inner seeing of several people in a long canoe rowing backwards, but was zoomed in on one guy in the boat who was not making an effort in his rowing. This zooming in made him appear larger, so that she could see the others in the boat and could see that they were rowing hard, but was paying particular attention to this guy who was not making an effort. She also had a slight separate, simultaneous perceptual awareness of her classroom, the projector, and the other students around her. *Coding: Multiple, PA/SA (teacher's motions), Inner Seeing, PA (classroom), PA (projector), PA (students)*

**2.4** In class and had several thought/feelings (it was not possible for her to say how many but somewhere around 10), that she perceived as several chaotic unworded thought/feelings in her head, all jumbled together so that none were clearly differentiated or separable, but she knew them to be related to what she had to do, the papers that were due, the final exam, wanting her teacher to shut up, wanting the class to be over, and that she was going to be late to her sampling appointment. She also had a simultaneous thought/feeling of wanting to leave in her head that was apprehended as a not particularly differentiated urge to get up and leave the class. She also had a separate, simultaneous complex feeling of nervousness/worry/anxiety that was also undifferentiated but contained all of these emotional elements (nervousness, worry, and anxiety), and this feeling was apprehended as a bodily sensation of her stomach turning upside down. She also had a separate, simultaneous perceptual awareness of her teacher in the front of the room. *Coding: Multiple, Multiple jumbled T/F, T/F (wanting to leave), F (nervous/worry/anxiety), PA (teacher)*

**3.1** Was actively watching the TV show Reba and was thinking that the event depicted in the scene she was watching was funny but would be depressing if it happened in real life. This was apprehended as a partially worded thought in which the word “funny” was clearly differentiated, not in inner speech or imaged, but known to be present in awareness at the MOB, and the other words were known to be on their way but were not fully there yet in a differentiated way at the MOB. *Coding: Doing watching TV, Partially worded thought*

**3.2** Was actively watching a scene from the TV show Scrubs in which a skinny blonde female doctor walked in to a room and all of the male doctors froze and stared at her. Jessica had a partially worded thought process that if it were fully worded would be “Why is it that movies and TV shows always have blonde skinny girls for guys stare at?”. At the MOB, in this partially worded thought, the words “blonde”, “skinny”, “guys”, and “stare” were apprehended in inner speech, in her own voice, as if she had said these words aloud, and were apprehended as being in the front of her head. The remainder of the words from this thought were apprehended as being also in inner speech, in her own voice, but quieter and in the back of her head. These two voice streams were not in a temporally organized stream; that is, it seemed that the front voices were not synchronized to the back voices. She also had separate, simultaneous multiple unsymbolized multiple thought/recollections of movies and TV shows in which blonde skinny girls were featured. There were perhaps 8 or 10 of these simultaneous thought/recollections, apprehended as a jumble of not fully articulated thoughts that somehow existed in a pile or heap outside and behind her head. *Coding: Multiple, Interfering Phenomena, Doing (watching TV), Complex IS/Partially worded thought x 2, U*

**3.3** Had just bitten into an orange, the spray from which had gotten into her nose. At the moment of the beep she was feeling a stinging sensation of the orange in her nose and smelling and tasting the orange in her mouth. She also had an undifferentiated nice feeling of something like happiness that was related to her sister making fun of her and laughing at her in a nice way as she was making faces in reaction to having orange in her nose. This nice feeling was clearly apprehended but undifferentiated at the MOB other than as an “inner smile”. She also had a slight perceptual awareness of the table in front of her and her sister sitting across from her at the MOB. *Coding: SA x 3 (taste, smell, stinging), Feeling (nice)*

**4.1** Watching a Campbell’s Select Soup commercial on TV, apprehended as a being actively absorbed in watching the onion and lime on the screen, staring intently at these and also seeing the TV itself, with no awareness of the rest of the room. She was also simultaneously saying to herself “why lime?” in inner speech, in a confused/perplexed tone, in her own voice, just as if she had said this aloud. *Coding: PA (watching commercial and also seeing TV), IS*

**4.2** Listening to her friend Joan who was off to her left side talking and also looking at her friend Lisa who was in front of her. At the MOB she was simultaneously hearing what her friend Joan was saying, and had a sensory awareness of the bright blue of Joan’s vest and a separate sensory awareness of the cigarette lighter Joan was holding up. She also had a simultaneous awareness that what Joan was saying (that she is neat and in her tendency to tidy up had accidentally taken Lisa’s lighter) was funny (in a nice way). This awareness of nice/funniness was aimed more at what Joan did than at what she is saying, and was clearly present to her at the MOB, but it was difficult for her to determine exactly how this was apprehended at the moment. She also had a separate, simultaneous slight perceptual awareness Lisa who was standing in front of her. *Coding: Multiple, Doing (listening), SA x 2 (vest and lighter), Thought/Feeling (funny in a nice way), PA*

**4.3** Was feeling full and heavy. The heaviness was apprehended as a bodily sensory awareness of her stomach being simultaneously bloated and a separate bodily sensory awareness of a ball of heaviness pulling downwards on the front surface of her stomach. She also had a separate, simultaneous feeling of fullness, which was separately apprehended as a bodily sensation of bloating in her stomach. She also had a separately and simultaneously apprehended as complex, intertwined, undifferentiated thought/feelings of self-criticalness that included being guilty and not very happy, that were clearly present to her at the MOB but very difficult for her to differentiate. *Coding: Multiple Complex, Interfering Phenomena, Bodily SA x 2 (heavy and full), complex and undifferentiated T/F*

**4.4** Was sitting outside with her friend Lisa and was listening to her saying that if she had a business she would never work on Christmas or New Year’s. This was apprehended as looking at Lisa and actively tracking what she was saying. She also had a simultaneous unsymbolized thought process of wondering if she had her own business if she would have holidays. This thought process was apprehended as occurring on her right hand side, outside of her head. She was also calm, but this was not directly in her awareness at the MOB. *Coding: Doing (listening), PA (looking at Lisa), U*

**5.1** Staring at the blanket on her bed and had a sensory awareness of the array of multiple bright colors and texture of the blanket. She also had a separate, simultaneous awareness of actively trying to hear what her mother and sister were saying in the next room, apprehended as actively focusing on listening to them. *Coding: Multiple, SA (color & texture of blanket), Doing (actively listening)*

**5.2** Looking at a picture of her and her boyfriend with her with her coat hood up smiling from a recent trip to Chicago on her digital camera that was apprehended as just taking in this picture. She also and had multiple separate, simultaneous, overlapping innerly seen images in her head, that were not clear or distinct, apprehended as several snapshots with edges. She was not able to say exactly how many but there were more than 5. Each of these images represented a mental picture (as opposed to an actual picture she had taken) of different places she had been on the trip but they were fuzzy and indistinct. She also had a separate, simultaneous, slightly clearer visual image of herself and her boyfriend standing closely next to each other, next to the sink, seen from the back, from the perspective of standing behind her, with Jessica on the left in the image, and this clearer image was of an event that actually took place (as opposed to the mental images above). She also had a separate, simultaneous happy feeling that was apprehended as a bodily sensation deep in her stomach, all over her stomach, that was approximately volley ball sized, and this feeling was clearly apprehended but very difficult for her to describe. *Coding: Multiple, PA (actual picture), multiple Inner Seeing (overlapping images), Inner Seeing (clearer image), F (semi-differentiated bodily sensation of happiness)*

**5.3** On the phone with a friend and was lying on her stomach on the bed, leaning well off the bed with her head hanging down nearly touching the floor. At the MOB she had a sensory awareness of her hair surrounding her face that was apprehended as seeing the curliness and color of her hair that surrounded her upside-down face. She was also separately, simultaneously tracking what her friend was saying. *Coding: Multiple, SA x 2 (color and curliness), Doing (listening to her friend)*

#### Jessica Coding Summary

Fragmented Multiplicity 12/17 = 71% (1.1, 1.2, 2.1, 2.2, 2.3, 2.4, 3.2, 4.2, 4.3, 5.1, 5.2, 5.3)

Perceptual Awareness 9/17 = 53% (1.1, 2.1, 2.2, 2.3, 2.4, 4.1, 4.2, 4.4, 5.2)

Sensory Awareness SA TOTAL (occurs 8/17 = 47%): 1.9, 2.1, 2.3, 3.3, 4.2, 4.3, 5.1, 5.3)

Doing 7/17 = 41% (2.2, 3.1, 3.2, 4.2, 4.4, 5.1, 5.3)

Unsymbolized Thinking 5/17 = 29% (1.1, 1.2, 2.2, 3.2, 4.4)

Worded Thought 2/17 = 12% (3.1, 3.2)

Inner Seeing 5/17 = 29% (1.2, 2.1, 2.2, 2.3, 5.2)

Inner Speech 4/17 = 23% (1.1, 1.9, 3.2, 4.1)

Feeling 3/17 = 18% (2.4, 3.3, 5.2)

Thought/Feeling 3/17 = 18% (2.4, 4.2, 4.3)

Interfering Phenomena 2/17 = 12% (3.2, 4.3)

(Beeps 1.3 to 1.8 Skipped)

## Monica Samples (See Chapter 15)

**1.1** At the movie *Diehard*, but at the MOB had withdrawn from the movie and was saying multiple, separate but simultaneous things to herself, apprehended as having multiple separate, simultaneous inner speakings that are experienced as to some degree simultaneous, to some degree sequential. The experience is something like polyphonic music: the several voices start at different times but overlap, and then, asynchronously, die out and are replaced by another or several more voices. Thus there may be a dozen or so speaking in play, but not all of those are being spoken at the same time. These sayings included “what am I am the movies?” “she’s thin, I wish I was like that” (referring to actress in the movie), “I should be studying” “can’t wait until I finish school so I can relax” “I don’t have time for the movies” “I need to lose weight” “can’t wait to go home to have the pound cake “ “what are you thinking you just finished popcorn, you shouldn’t be eating for like a year.” Each of these was experienced as if being spoken in her own voice, much as if she had spoken them aloud. Thus, at any given moment, there were three or four separate inner speakings, all in her own voice, being spoken simultaneously. Also simultaneously, as a fact of the universe, she was shaking her legs and biting her nails, but these actions were not in her awareness at the MOB. *Coding: Multiple, multiple inner speech (several statements that are apprehended as separate/separable but are woven together), Interfering Phenomena*

**1.2** Was still innerly speaking the interwoven polyphonic inner speakings from 1.1; apparently those thoughts had been racing through her mind continuously since before the previous beep 15 minutes earlier. [the exact same thoughts, in inner speech, of saying to herself “what am I am the movies?” “she’s thin, I wish I was like that”, “I should be studying” “can’t wait until I finish school so I can relax” “I don’t have time for the movies” “I need to lose weight” “can’t wait to go home to have the pound cake “ “what are you thinking you just finished popcorn, you shouldn’t be eating for like a year”] At the same time a new set of inner speakings had been added to the mix. These new inner speakings, which were also apprehended as simultaneously being said to herself in her own voice, included “I have to stop these thoughts” “I have to concentrate on the movie” “I’ve got to get this under control” “Am I ADHD?” “I have to go to a therapist” “This is irrational” “I have to get this under control” “I’m exhausted just from thinking” and “I can’t stay focused.”, These new competing inner speakings are apprehended as being somehow stronger than the set of thoughts that had continued from the previous beep, but all are still ongoing in awareness at the MOB. She was still at the movie at the MOB, but that was not in her attention. *Coding: Multiple, multiple competing inner speech (negative inner speech TAIL & trying to stop the negative inner speech w/ other inner speech), Interfering Phenomena*

**1.3** Her ears were hurting, apprehended as a throbbing movement sensation in both of her ears, but somewhat stronger in her right ear. There was also a separate, simultaneous thought that she had forgotten her antibiotics. This was not in words, just a thought. There also was a feeling happy-relieved-elated to be out of the movies so she could get on with her life, simultaneously apprehended as a thought that, if in words, would have been “great I can get back to studying” but it was not in words at the MOB, and feeling a lightness and moving quickly, happy, relieved, and elated were apprehended as separable aspects of the same thing, experienced as being happy it’s over so that she can get back to

her studies, sense of airiness and moving quickly down the stairs which was part of the happy, relieved and elated, and saw her friend coming over to her. *Coding: Multiple, SA (pain), Feeling (happy-relieved-elated), U x 2*

**1.4** Having a conversation with her friend about her friend's diverticulitis, apprehended as explaining to her friend what she could not eat, just talking about what she couldn't eat because of her diverticulitis, just talking without anything else going on. *Coding: Just talking*

#### Monica Coding Summary

Fragmented Multiplicity 3/4 = 75% (1.1, 1.2, 1.3)

Inner Speech 2/4 = 50% (1.1, 1.2)

Sensory Awareness 1/4 = 25% (1.3)

Feeling 1/4 = 25% (1.3)

Unsymbolized Thinking 1/4 = 25% (1.3)

Doing 1/4 = 25% (1.4)

Interfering Phenomena (2/4 = 50%): 1.1, 1.2

#### Wendy Samples (See Chapter 15)

**1.1** Prior to the beep, she had been talking to her roommate about where they would eat, and they had decided on Panda Express, which she thought was unhealthy, bad for you, etc. but this was not in her awareness at the MOB. Instead, the entirety of her awareness at the MOB was saying to herself "There goes 5 more pounds", in her own voice, in a disgusted tone. She was not experiencing a feeling of disgust at the MOB, but knew her tone to convey disgust. *Coding: IS, Interfering Phenomena*

**1.2** Prior to the beep she had been looking up ways to control her anxiety, and at the MOB she had an unsymbolized thought that diazepam is the best option for her and a simultaneous thought/feeling of relief and happiness that was apprehended as a bodily sensation of relaxation in her legs and a simultaneous undifferentiated mental thought/feeling of relief and relaxation. *Coding: Multiple, U, T/F*

**1.3** Prior to the beep she had been staring at a classmate's Pepsi can, and at the MOB she had a clear inner seeing of a Pepsi can, seen from the perspective of her own eyes, and a simultaneous unsymbolized thought of wanting to go outside to have a cigarette and how good the cigarette would taste with the Pepsi. *Coding: Inner Seeing, U*

**1.4** Was feeling gross, as though she had eaten way too much and needed to throw up, which was apprehended as a bodily sensory awareness of her stomach expanding and pushing against her abdomen from the inside, and a separate, simultaneous bodily sensory awareness of the taste of vomit in her throat (she was not actually tasting it at the MOB but knew how it would taste). *Coding: Multiple, Interfering Phenomena, SA x 2*

**1.5** Was "scattered" which she apprehended as having multiple (15-20) separate, simultaneous unsymbolized thoughts at the same time. Some of these thoughts were about what she had to do, what she had already done, and what it would be like to come

to the sampling appointment, that she had to pick someone up at the airport that she didn't know and that would be awkward, that she had to go to Financial Aid and what she would need to ask them at the Financial Aid office. However, none of these unsymbolized thoughts were clearly differentiated. Instead, they were all jumbled together at the MOB with nothing else in her awareness. *Coding: Multiple, multiple U*

### Wendy Coding Summary

Fragmented Multiplicity 3/5 = 60% (1.2, 1.4, 1.5)

Unsymbolized Thinking 3/5 = 60% (1.2, 1.3, 1.5)

Interfering Phenomena 2/5 = 40% (1.1, 1.4)

Sensory Awareness 1/5 = 20% (1.4)

Thought/Feeling 1/5 = 20% (1.2)

Inner Seeing 1/5 = 20% (1.3)

Inner Speech 1/5 = 20% (1.1)

### Lily Samples (See Chapter 15)

**1.1** Had multiple, overlapping thoughts in inner speech in which she was saying about 5 different things to herself: “My hair looks terrible”, “I look terrible”, “I don't know what to do with my hair”, “Maybe I should put it up”, “I can't wait to get it done on Friday” in inner speech, in her own voice, and these inner speakings were overlapping, fast, and simultaneous. She also had an inner seeing of herself from the chest up, with smooth, shiny, and blonder hair that was curled under. This was a clear, still image that represented how she would look once she gets her hair done on Friday, which from her perspective is better than she looks to herself now. She also had a perception of looking at her hair in the mirror and being just about to pin it up. She also had an ongoing tail of unhappiness that was apprehended as an unsymbolized thought process of being unhappy with her appearance. *Coding: Multiple, Interfering Phenomena, IS, Inner Seeing, PA, U*

**1.2** Had an unsymbolized thought that her hair looked terrible and a simultaneous thought/feeling in her head of being uncomfortable with her whole appearance. She was simultaneously innerly saying to herself “My hair looks terrible, hopefully I can find a cute shirt and put on nice makeup so no one notices”, in her own voice, just as if she had said this aloud, with this worded thought being more strongly aimed at the make up. *Coding: Multiple, Interfering Phenomena, U, T/F, IS*

**1.3** Had multiple overlapping thoughts of what she wanted to eat at the dining commons. This experience started as a detailed, visual inner seeing of the salad bar, then added a visualization of the ice cream station across the aisle from the salad bar, added a saying to herself “I hope they have ice cream in her own voice, in an excited tone, and then became a multiplicity of separate, rapid, overlapping unsymbolized thoughts about each individual item of food that might be at the food court that she wanted to eat: French fries, cheeseburger, apple pie, meat loaf, lasagna, etc., etc. She also had a bodily sensation of hunger, apprehended as a bodily sensation of feeling weak and hungry all over her body, deep down, in the front and back, head to toe, hungry all over. She also had a separate, slight ongoing tail of awareness that was apprehended as a thought/feeling

of unhappiness about the appearance of her hair. *Coding: Multiple, Interfering Phenomena, Multiple U, SA, I, IS, T/F (Tail)*

**1.4** Innerly saying “That cheeseburger was really greasy, should I make myself throw up to save myself a stomach ache?” to herself, in her own voice, just as if she said this aloud. She also had a separate, slight ongoing tail of awareness that was apprehended as a thought/feeling of unhappiness about the appearance of her hair. After the beep, she did have a bodily sensation in her stomach, but this had not yet started at the moment of the beep. *Coding: Multiple, Interfering Phenomena, IS, T/F (tail)*

**1.5** Innerly saying to herself “My paper looks good but does the conclusion need to be longer”, apprehended as saying this to herself, in inner speech, in her own voice, just as if she had said this aloud. She had a separate, slight ongoing tail of awareness, apprehended as a thought of distress about the appearance of her hair. Lily estimated that the paper part occupied perhaps 90% of her awareness; the ongoing appearance thought occupied perhaps 10% of her awareness. *Coding: Multiple, Interfering Phenomena, IS, U (tail)*

**2.1** Had an unsymbolized thought process of missing her boyfriend and wishing he would come back soon, and a simultaneous feeling of missing him and wanting him to come back that was apprehended as a bodily sensation of excited tingling all over her body, on the surface, and deep down. She also had a separate, simultaneous feeling of boredom, apprehended as a bodily sensation on the surface of her entire body of her body being slouched downwards. She was also simultaneously saying “I’m really bored, I hope I can find a good song” and was saying this out loud, but also separately and simultaneously innerly saying this to herself, in her own voice, just as if she had said this aloud. *Coding: Multiple, U, F x 2, IS, Doing*

**2.2** Innerly hearing herself say “My communication class is cancelled tomorrow-yes” and had a simultaneous feeling of happiness that was apprehended as a bodily sensation of tingling and of her muscles tightening all over her body, and deep within her body. *Coding: IH, F*

### Lily Coding Summary

Fragmented Multiplicity 6/7 = 86% (1.1, 1.2, 1.3, 1.4, 1.5, 2.1)

Inner Speech 6/7 = 86% (1.1, 1.2, 1.3, 1.4, 1.5, 2.1)

Unsymbolized Thinking 5/7 = 71% (1.1, 1.2, 1.3, 1.5, 2.1)

Interfering Phenomena 5/7 = 71% (1.1, 1.2, 1.3, 1.4, 1.5)

Thought/Feeling 3/7 = 43% (1.2, 1.3, 1.4)

Feeling 2/7 = 29% (2.1, 2.2)

Inner Seeing 2/7 = 29% (1.1, 1.3)

Sensory Awareness 1/7 = 14% (1.3)

Perceptual Awareness 1/7 = 14% (1.1)

Doing 1/7 = 14% (2.1)

Inner Hearing 1/7 = 14% (2.2)

## APPENDIX B

### TABLES OF ASSESSMENT RESULTS

Table B.1

Eating Attitudes Test (EAT-26) Results

Participant	Raw	Cut-Off	Percentile	Symptoms
Kaiyla	31	20	98	B/P/L
Monica	43	20	99	B/L
Carla	43	20	99	B/P
Vicky	28	20	97	B/P/L
Wendy	47	20	99	B/P
Susan	50	20	99	B/P/L
Samantha	25	20	94	B/P/L
Hannah	54	20	99	B/P/L/T
Anne	46	20	99	B/P
Lily	40	20	99	B/P/L
Jane	54	20	99	B/P/L
Paula	30	20	98	B/P/L
Jessica	54	20	99	B/P/L

Table B.1. Note. Raw = Raw Score; Cut-Off = Clinical Cut-Off; Symptoms = Bulimic

Symptoms Endorsed, B = Binge; P = Purge; L = Laxatives, diet pills or diuretics

consumed to control weight or shape; T = Treatment (past or current) for eating disorder



Table B.2

## Eating Disorder Examination (EDE) Subscale Results

Participant	EDE-R		EDE-EC		EDE-WC		EDE-SC	
	Raw	%ile	Raw	%ile	Raw	%ile	Raw	%ile
Kaiyla	3.0	35	2.0	33	4.8	99	4.5	67
Monica	2.4	18	2.8	54	5.8	99	5.6	90
Carla	4.8	87	3.6	75	5.4	99	5.7	91
Vicky	5.6	96	5.6	98	5.8	99	5.7	91
Wendy	5.0	90	5.0	95	5.8	99	5.6	90
Susan	5.6	96	4.2	86	5.8	99	4.8	75
Samantha	5.2	93	3.8	79	4.6	98	4.5	67
Hannah	4.8	87	4.6	91	5.4	99	5.7	91
Anne	4.8	87	4.2	86	5.2	99	5.3	86
Lily	4.0	67	4.6	91	5.2	99	4.2	59
Jane	6.0	98	5.8	98	6.0	99	5.5	89
Paula	4.8	87	5.4	97	4.6	98	5.8	93
Jessica	5.2	93	4.8	93	6.0	99	5.8	93

Note. EDE-R = Restraint; EDE-EC = Eating Concern; EDE SC = Shape Concern; EDE-

WC = Weight Concern; Raw = Raw Score; %ile = Percentile

Table B.3

Eating Disorder Inventory –3 (EDI-3) Percentile Results for Subscales 1 to 10

Participant	B	DT	BD	ED	LSE	PA	II	IA	ID	ED
Kaiyla	14	67	12	18	9	5	5	4	38	7
Monica	21	50	9	18	1	2	3	13	10	2
Carla	25	59	51	41	41	74	47	68	88	76
Vicky	39	86	39	52	32	41	59	68	64	76
Wendy	39	86	54	58	59	64	53	80	68	67
Susan	39	32	71	45	82	87	3	84	86	97
Samantha	39	86	54	58	35	41	21	44	26	67
Hannah	49	96	94	84	35	6	31	80	1	43
Anne	49	76	61	67	77	59	75	50	34	84
Lily	49	50	21	35	27	47	53	44	55	63
Jane	58	96	51	71	59	99	97	91	95	93
Paula	86	76	86	93	82	99	92	99	90	96
Jessica	89	86	61	93	86	69	75	68	79	67

Note. DT = Drive for Thinness; B = Bulimia; BD = Body Dissatisfaction; EDR = Eating

Disorder Risk Composite; LSE = Low Self-Esteem; PA = Personal Alienation; II =

Interpersonal Insecurity; IA = Interpersonal Alienation

Table B.4

Eating Disorder Inventory –3 (EDI-3) Percentile Results for Subscales 11 to 18

Participant	P	A	MF	IC	IPC	APC	OC	GPM
Kaiyla	56	17	78	5	2	15	30	9
Monica	87	60	41	1	3	4	77	8
Carla	95	85	22	56	55	83	94	74
Vicky	68	72	22	32	62	73	71	56
Wendy	87	85	67	59	68	69	91	75
Susan	39	52	35	85	37	96	41	71
Samantha	68	66	67	35	28	42	66	42
Hannah	62	33	35	18	53	7	45	23
Anne	82	81	96	65	60	62	87	81
Lily	77	22	90	32	47	56	49	54
Jane	95	81	93	87	96	96	92	98
Paula	33	60	67	97	98	96	41	94
Jessica	50	77	99	76	72	74	62	85

Note. ID = Interoceptive Deficits; ED = Emotional Dysregulation; P = Perfectionism;

A = Asceticism; MF = Maturity Fears; IC = Ineffectiveness; IPC = Interpersonal

Problems; APC = Affective Problems

Table B.5

Beck Depression Inventory –II (BDI-II) Results

Participant	Raw	Rating	Percentile
Kaiyla	9	Minimal	36
Monica	1	Minimal	12
Carla	32	Severe	97
Vicky	14	Mild	55
Wendy	22	Moderate	82
Susan	49	Severe	99
Samantha	21	Moderate	79
Hannah	1	Minimal	12
Anne	29	Severe	95
Lily	21	Moderate	79
Jane	43	Severe	99
Paula	43	Severe	99
Jessica	28	Moderate	93

Note. Raw = Raw Score; Rating = Severity Rating

Table B.6

Beck Anxiety Inventory (BAI) Results

Participant	Raw	Rating	Percentile
Kaiyla	12	Mild	53
Monica	7	Minimal	33
Carla	34	Severe	99
Vicky	11	Mild	49
Wendy	27	Severe	95
Susan	42	Severe	99
Samantha	15	Mild	66
Hannah	6	Minimal	29
Anne	13	Mild	58
Lily	15	Mild	66
Jane	29	Severe	97
Paula	21	Moderate	86
Jessica	12	Mild	53

Note. Raw = Raw Score; Rating = Severity Rating

## REFERENCES

- Abraham, S. F., Pettigrew, B., Boyd, C., Russell, J., & Taylor, A. (2005). Usefulness of amenorrhea in the diagnoses of eating disorder patients. *Journal of Psychosomatic Obstetrics & Gynecology*, 26, (3): 211-215.
- Abramson, L. Y., Bardone-Cone, A. M., Vohs, K. D., Joiner, T. E., & Heatherton, T. F. (2006). Cognitive vulnerability to bulimia. In L. B. Alloy, & J. H. Riskind (Eds.). *Cognitive vulnerability to emotional disorders*. Mahwah, NJ: Lawrence Erlbaum Associates, Publishers: 329-364.
- Adkins, E. C., & Keel, P. K. (2005). Does “excessive” or “compulsive” best describe exercise as a symptom of bulimia nervosa? *International Journal of Eating Disorders*, 38, (1): 24-29.
- Agras, W. S., Brandt, H. A., Bulik, C. M., Dolam-Sewell, R., Fairburn, C. G., Halmi, K. A., et al. (2004). Report on the national institutes of health workshop on overcoming barriers to treatment research in anorexia nervosa. *International Journal of Eating Disorders*, 35, (4): 509-521.
- American Psychiatric Association (2000). *Diagnostic and statistical manual of mental disorders* (4<sup>th</sup> ed, revised). Washington, DC: American Psychiatric Association.
- American Psychiatric Association Work Group on Eating Disorders (2002). In *American Psychiatric Association practice guidelines for the treatment of psychiatric disorders compendium 2002*. Washington, DC: American Psychiatric Association: 697-766.

- Anderson, D. A., & Williamson, D. A. (2002). Outcome measurement in eating disorders. In W. W. IsHak, T. Burt, & L. I. Sederer (Eds.) *Outcome measurement in psychiatry: A critical review*. Washington, DC: American Psychiatric Publishing, Inc.: 289-301.
- Anetis, 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 and Research, 32*: 370-385.
- Anetis, M. D., Selby, E. A., Fink, E. L., & Joiner, T. E. (2007). The multifaceted role of distress tolerance in dysregulated eating behaviors. *International Journal of Eating Disorders, 40*: 718-726.
- Banasiak, S. J., Wertheim, E. H., Koerner, J., & Voudouris, N. J. (2001). Test-retest reliability and internal consistency of a variety of measures of dietary restraint and body concerns in a sample of adolescent girls. *International Journal of Eating Disorders, 29*, (1): 85-89.
- Bardone, A. M., Perez, M., Abramson, L. Y., & Joiner, T. E. (2003). Self-competence and self-liking in the prediction of change in bulimic symptoms. *International Journal of Eating Disorders, 34*, (3): 361-369.
- Bardone-Cone, A. M., Abramson, L. Y., Vohs, K. D., Heatherton, T. F., & Joiner, T. E. (2006). Predicting bulimic symptoms: An interactive model of self-efficacy, perfectionism, and perceived weight status. *Behavior Research and Therapy, 44*: 27-42.
- Barnhofer, T., de Jong-Meyer, R., Kleinpab, A., & Nikesch, S. (2002). Specificity of autobiographical memories in depression: An analysis of retrieval processes in a think-aloud task. *British Journal of Clinical Psychology, 41*: 411-416.

- Barrett, L. F., & Barrett, D. J. (2001). An introduction to computerized experience sampling in psychology. *Social Science Computer Review*, 19, (2): 175-185.
- Beck, A. T., & Steer, R. A. (1993). *Beck Anxiety Inventory Manual*. San Antonio, TX: The Psychological Corporation, Harcourt Brace & Company.
- Beck, A. T., Steer, R. A., & Brown, G. K. (1996). *Beck Depression Inventory – Second Edition Manual*. San Antonio, TX: The Psychological Corporation, Harcourt Brace & Company.
- Becker, A. E., Franko, D. L., Speck, A., & Herzog, D. B. (2003). Ethnicity and differential access to care for eating disorder symptoms. *International Journal of Eating Disorders* 33, (2): 205-212.
- Becker, A. E., Thomas, J. J., Franko, D. L., & Herzog, D. B. (2005). Disclosure patterns of eating and weight concerns to clinicians, educational professionals, family, and peers. *International Journal of Eating Disorders*, 38, (1): 18-23.
- Beumont, P. J. V. (2002). Clinical presentation of anorexia nervosa and bulimia nervosa. In C. G. Fairburn, & K. D. Brownell (Eds.). *Eating disorders and obesity: A comprehensive handbook*. (2<sup>nd</sup> ed.). New York, NY: The Guilford Press: 162-170.
- Binford, R. B., Le Grange, D., & Jellar, C. C. (2005). Eating Disorders Examination versus Eating Disorders Examination-Questionnaire in adolescents with full and partial-syndrome bulimia nervosa and anorexia nervosa. *International Journal of Eating Disorders*, 37, (1): 44-49.
- Birmingham, C. L., Su, J., Hlynsky, J. A., Goldner, E. M., & Gao, M. (2005). The mortality rate from anorexia nervosa. *International Journal of Eating Disorders*, 38, (2): 143-146.



- Blackburn, S., Johnston, L., Blampied, N., Popp, D., & Kallen, R. (2006). An application of escape theory to binge eating. *European Eating Disorders Review, 14*: 23-31.
- Blinder, B. J., Cumella, E. J., & Sanathara, V. A. (2006). Psychiatric comorbidities of female inpatients with eating disorders. *Psychosomatic Medicine, 68*: 454-462.
- Bolger, N., Davis, A., & Rafaeli, E. (2003). Diary methods: Capturing life as it is lived. *Annual Review of Psychology, 54*: 579-616.
- Breakwell, G. M., & Wood, P. (2000). Diary techniques. In G. M. Breakwell, S. Hammond, & C. Fife-Schaw (Eds.) *Research methods in Psychology*. (2<sup>nd</sup> ed.). London, UK: Sage Publications: 294-202.
- Broussard, B. B. (2005). Women's experiences of bulimia nervosa. *Journal of Advanced Nursing, 49, (1)*: 43-50.
- Bryant-Waugh, R., Turner, H., East, P., Gamble, C., & Mehta, R. (2006). Misuse of laxatives among adult outpatients with eating disorders: Prevalence and profiles. *International Journal of Eating Disorders, 3, (5)*: 404-409.
- Bulik, C. (2002). Anxiety, depression, and eating disorders. In C. G. Fairburn, & K. D. Brownell (Eds.). *Eating disorders and obesity: A comprehensive handbook*. (2<sup>nd</sup> ed.). New York, NY: The Guilford Press: 193-198.
- Burney, J., & Irwin, H. J. (2000). Shame and guilt in women with eating disorder symptomology. *Journal of Clinical Psychology, 56, (1)*: 51-61.
- Butryn, M. L., Lowe, M. R., Safer, D. L., & Agras, W. S. (2006). Weight suppression is a robust predictor of outcome in the cognitive-behavioral treatment of bulimia nervosa. *Journal of Abnormal Psychology, 115, (1)*: 62-67.

- Butryn, M. L., & Wadden, T. A. (2005). Treatment of overweight in children and adolescents: Does dieting increase the risk of eating disorders? *International Journal of Eating Disorders, 37*, (4): 285-293.
- Button, E., Aldridge, S., & Palmer, R. (2008). Males assessed by a specialized adult eating disorders service: Patterns over time and comparisons with females. *International Journal of Eating Disorders, 41*: 758-761.
- Bydlowski, S., Corcos, M., Jeammet, P., Paterniti, S., Berthoz, S., Laurier, C., et al. (2005). Emotion-processing deficits in eating disorders. *International Journal of Eating Disorders, 37*, (4): 321-329.
- Cachelin, F. M., Schug, R. A., Juarez, L. C., & Monreal, T. K. (2005). Sexual abuse and eating disorders in a community sample of Mexican American women. *Hispanic Journal of Behavioral Sciences, 27*, (4): 533-546.
- Cachelin, F. M., & Striegel-Moore, R. H. (2006). Help seeking and barriers to treatment in a community sample of Mexican American women with eating disorders. *International Journal of Eating Disorders, 39*, (2): 154-161.
- Cacioppo, J. T., & Petty, R. E. (1981). Social psychological procedures for cognitive response assessment: The thought listing technique. In T. V. Merluzzi, C. R. Glass, & M. Genest (Eds.). *Cognitive Assessment*. New York, NY: The Guilford Press: 309-342.
- Cafri, G., Yamamiya, Y., Brannick, M., & Thompson, J. K. (2005). The influence of sociocultural factors in body image: A meta-analysis. *Clinical Psychology Science & Practice, 12*, (4): 421-433.

- Carels, R. A., Cacciapaglia, H. M., Rydin, S., Douglass, O. M., & Harper, J. (2006). Can social desirability interfere with success in a behavioral weight loss program? *Psychology and Health, 21, (1): 65-78.*
- Cashel, M. L., Cunningham, D., Landeros, C., Cokley, K. O., & Muhammad, G. (2003). Sociocultural attitudes and symptoms of bulimia: Evaluating the SATAQ with diverse college groups. *Journal of Counseling Psychology, 50, (3): 287-296.*
- Cassin, S. E., & von Ranson, K. M. (2005). Personality and eating disorders: A decade in review. *Clinical Psychology Review, 25: 895-916.*
- Celio, C. I., Luce, K. H., Bryson, S. W., Winzelberg, A. J., Cunning, D., Rockwell, R., et al. (2006). Use of diet pills and other dieting aids in a college population with high weight and shape concerns. *International Journal of Eating Disorders, 39, (6): 492-497.*
- Chen, H. (2006). Digitization of the Experience Sampling Method. *Social Science Computer Review, 24, (1): 106-118.*
- Claes, L., & Vandereycken, W. (2007). Is there a link between traumatic experiences and self-injurious behaviors in eating-disordered patients? *Eating Disorders, 15: 305-315.*
- Cogley, C. B., & Keel, P. K. (2003). Requiring remission of undue influence of weight and shape in self-evaluation in the definition of recovery for bulimia nervosa. *International Journal of Eating Disorders 34, (2): 200-210.*
- Cohen, B. J. (2003). *Theory and practice of psychiatry.* New York, NY: Oxford University Press.
- Cohen, D. L., & Petrie, T. A. (2005). An examination of psychosocial correlates of disordered eating among undergraduate women. *Sex Roles, 52, (1/2): 29-42.*

- Cook-Darzens, S., Doyen, C., Falissard, B., & Mouren, M. (2005). Self-perceived family functioning in 40 French families of anorexic adolescents: Implications for therapy. *European Eating Disorders Review, 13*: 223-236.
- Cooper, M. J. (2005). Cognitive theory in anorexia nervosa and bulimia nervosa: Progress, development and future directions. *Clinical Psychology Review, 25*: 511-531.
- Cooper, M. J., & Fairburn, C. G. (1992). Thoughts about eating, weight, and shape in anorexia nervosa and bulimia nervosa. *Behavior Research Therapy, 30*. (5): 501-511.
- Cooper, M. J., Rose, K. S., & Turner, H. (2006). The specific content of core beliefs and schema in adolescent girls high and low in eating disorder symptoms. *Eating Behaviors, 7*: 27-35.
- Cooper, M. J., Todd, G., Turner, H., & Wells, A. (2007). Cognitive therapy for bulimia nervosa: An A-B replication series. *Clinical Psychology and Psychotherapy, 14*: 402-411.
- Cooper, M. J., Wells, A., & Todd, G. (2004). A cognitive model of bulimia nervosa. *British Journal of Clinical Psychology, 43*: 1-16.
- Cooper, Z., & Fairburn, C. G. (2003). Refining the definition of binge eating disorder and nonpurging bulimia nervosa. *International Journal of Eating Disorders, 34*, Supplemental: S89-S95.
- Corte, C., & Stein, K. F. (2005). Body-weight self-schema: Determinant of mood and behavior in women with an eating disorder. *Journal of Applied Social Psychology, 35*, (8): 1698-1718.

- Crisp, A. (2005). Stigmatization of and discrimination against people with eating disorders including a report of two nationwide surveys. *European Eating Disorders Review, 13*: 147-152.
- Crow, S. J., Agras, W. S., Halmi, K., Mitchell, J. E., & Kraemer, H. C. (2002). Full syndromal versus subthreshold anorexia nervosa, bulimia nervosa, and binge eating disorder: A multicenter study. *International Journal of Eating Disorders, 32*, (3): 309-318.
- Crowther, J. H., & Sherwood, N. E. (1997). Assessment. In D. M. Garner, & P. E. Garfinkel (Eds.). *Handbook of treatment for eating disorders*. (2<sup>nd</sup> ed.). New York, NY: The Guilford Press: 34-49.
- Cummins, L. H., Simmons, A. M., & Zane, N. W. S. (2005). Eating disorders in Asian populations: A critique of current approaches to the study of culture, ethnicity, and eating disorders. *American Journal of Orthopsychiatry, 75*, (4): 553-574.
- Davidson, L. (2004). Phenomenology and contemporary clinical practice: Introduction to special issue. *Journal of Phenomenological Psychology, 35*, (2): 149-162.
- Davis, R., & Jamieson, J. (2005). Assessing the functional nature of binge eating in the eating disorders. *Eating Behaviors, 6*, (4): 345-354.
- Davison, G. C., Vogel, R. S., & Coffman, S. G. (1997). Think-aloud approaches to cognitive assessment and the articulated thoughts in simulated situations paradigm. *Journal of Consulting and Clinical Psychology, 65*, (6): 950-958.
- De Groot, J. M., Rodin, G., & Olmsted, M. P. (1995). Alexithymia, depression, and treatment outcome in bulimia nervosa. *Comprehensive Psychiatry, 36*, (1): 53-60.
- De la Rie, S. M., Noordenbos, G., & van Furth, E. F. (2005). Quality of life and eating disorders. *Quality of Life Research, 14*: 1511-1522.

- Delinsky, S. S., & Wilson, G. T. (2006). Mirror exposure for the treatment of body image disturbance. *International Journal of Eating Disorders, 39*, (2): 108-116.
- Doninger, G. L., Enders, C. K., & Burnett, K. F. (2005). Validity evidence for eating attitudes test scores in a sample of female college athletes. *Measurement in Physical Education and Science, 9*, (1): 35-49.
- Doucette, S. (1992). Sampling the Inner Experience of Bulimic and Other Individuals. Unpublished master's thesis, University of Nevada, Las Vegas.
- Doucette, S. & Hurlburt, R. T. (1993). Inner experience in bulimia. In R. T. Hurlburt *Sampling Inner Experience in Disturbed Affect*. New York, NY: Plenum Press: 153-163.
- Duncan, A. E., Neuman, R. J., Kramer, J., Kuperman, S., Hesselbrock, V., Reich, T., et al. (2005). Are there subgroups of bulimia nervosa based on comorbid psychiatric disorders? *International Journal of Eating Disorders, 37*, (1): 19-25.
- Engel, S. G., Corneliussen, S. J., Wonderlich, S. A., Crosby, R. D., leGrange, D., Crow, S. J., et al. (2005). Impulsivity and compulsivity in bulimia nervosa. *International Journal of Eating Disorders, 38*, (3): 244-251.
- Engel, S. G., Wonderlich, S. A., Crosby, R. D., Wright, T. L., Mitchell, J. E., Crow, S. J., et al. (2005). A study of patients with anorexia nervosa using ecologic momentary assessment. *International Journal of Eating Disorders, 38*, (4): 335-339.
- Engel, S. G., Boseck, J. J., Crosby, R. D., Wonderlich, S. A., Mitchell, J. E., Smyth, J., et al. (2007). The relationship of momentary anger and impulsivity to bulimic behavior. *Behavior Research and Therapy, 45*: 437-447.

- Engelberg, M. J., Gauvin, L., & Steiger, H. (2005). A naturalistic evaluation on the relation between dietary restraint, the urge to binge, and actual binge eating: A clarification. *International Journal of Eating Disorders, 38, (4)*: 355-360.
- Engelberg, M. J., Steiger, H., Gauvin, L., & Wonderlich, S. A. (2007). Binge antecedents in bulimic syndromes: An examination of dissociation and negative affect. *International Journal of Eating Disorders, 40*: 531-536.
- Engeln-Maddox, R. (2005). Cognitive responses to idealized media images of women: The relationship of social comparison and critical processing to body image disturbance in college women. *Journal of Social and Clinical Psychology, 24, (8)*: 1114-1138.
- Espina Eizaguirre, A., Saenz de Cabezón, A. O., Ochoa de Alda, I., Olariaga, L. J., & Juaniz, M. (2004). Alexithymia and its relationships with anxiety and depression in eating disorders. *Personality and Individual Differences, 36*: 321-331.
- Fairburn, C. G., & Bohn, K. (2005). Eating disorder NOS (EDNOS): An example of the troublesome “not otherwise specified” (NOS) category in DSM-IV. *Behavior Research and Therapy, 43*: 691-701.
- Fairburn, C. G., & Cooper, Z. (1993). The eating disorder examination (12<sup>th</sup> edition). In C. G. Fairburn & G. T. Wilson (Eds.) *Binge eating: Nature, assessment and treatment*. New York, NY: The Guilford Press: 333-356.
- Fairburn, C. G., & Cooper, Z. (2007). Thinking afresh about the classification of eating disorders. *International Journal of Eating Disorders, 40*: S107-S110.
- Fairburn, C. G., Cooper, Z., Doll, H. A., Norman, P., & O’Connor, M. (2000). The natural course of bulimia nervosa and binge eating disorder in young women. *Archives of General Psychiatry, 57*: 659-665.

- Fairburn, C. G., Cooper, Z., & Shafran, R. (2003). Cognitive behaviour therapy for eating disorders: A “transdiagnostic” theory and treatment. *Behaviour Research and Therapy, 41*: 509-528.
- Fairburn, C. G., & Harrison, P. J. (2003). Eating disorders. *The Lancet, February 1, 2003, 361*: 407-416.
- Fairburn, C. G., Stice, E., Cooper, Z., Doll, H. A., Norman, P. A., & O’Connor, M. E. (2003). Understanding persistence in bulimia nervosa: A 5-year naturalistic study. *Journal of Consulting and Clinical Psychology, 71, (1)*: 103-109.
- Fallon, P., & Wonderlich, S. A. (1997). Sexual abuse and other forms of trauma. In D. M. Garner, & P. E. Garfinkel (Eds.) *Handbook of treatment for eating disorders*. (2<sup>nd</sup> ed.). New York, NY: The Guilford Press: 394-414.
- Fassinger, R. E. (2005). Paradigms, praxis, problems, and promise: Grounded theory in counseling psychology research. *Journal of Counseling Psychology, 52, (2)*: 156-166.
- Fassino, S., Piero, A., Gramaglia, C., & Abbate-Daga, G. (2004). Clinical, psychopathological and personality correlates of interoceptive awareness in anorexia nervosa, bulimia nervosa and obesity. *Psychopathology, 37, (4)*: 168-174.
- Feldman, M. B., & Myer, I. H. (2007). Childhood abuse and eating disorders in gay and bisexual men. *International Journal of Eating Disorders 40*: 418-423.
- Fichter, M. M., Quadflieg, N., & Hedlund, S. (2006). Twelve-year course and outcome predictors of Anorexia Nervosa. *International Journal of Eating Disorders 39, (2)*: 87-100.



- Field, A. E., Taylor, C. B., Celio, A., & Colditz, G. A. (2004). Comparison of self-report to interview assessment of bulimic behaviors among preadolescent girls and boys. *International Journal of Eating Disorders* 35, (1): 86-92.
- Francis, L. A., & Birch, L. L. (2005). Maternal influences on daughters' restrained eating behavior. *Health Psychology*, 24, (6): 548-554.
- Franko, D. L. (2007). Race, ethnicity, and eating disorders: Considerations for DSM-V. *International Journal of Eating Disorders*, 40: S31-S34.
- Franko, D. L., Dorer, D. J., Keel, P. K., Jackson, S., Manzo, M. P., & Herzog, D. B. (2005). How do eating disorders and alcohol use disorder influence each other? *International Journal of Eating Disorders*, 38, (3): 200-207.
- Freeman, L. M. Y., & Gil, K. M. (2004). Daily stress, coping, and dietary restraint in binge eating. *International Journal of Eating Disorders*, 36, (2): 204-212.
- Garfinkel, P. E. (2002). Classification and diagnosis of eating disorders. In C. G. Fairburn, & K. D. Brownell (Eds.). *Eating disorders and obesity: A comprehensive handbook*. (2<sup>nd</sup> ed.). New York, NY: The Guilford Press: 155-161.
- Garner, D. M., Olmstead, M. P., Bohr, Y. & Garfinkel, P. E. (1982). The eating attitudes test: Psychometric features and clinical correlates. *Psychological Medicine*, 12: 871-878.
- Garner, D. M. (1991). *Eating Disorder Inventory-2 Professional Manual*. Lutz, FL: Psychological Assessment Resources, Inc.
- Garner, D. M. (2004). *Eating Disorder Inventory-3 Professional Manual*. Lutz, FL: Psychological Assessment Resources, Inc.

- Genest, M., & Turk, D. C. (1981). Think-aloud approaches to cognitive assessment. In T. V. Merluzzi, C. R. Glass, & M. Genest (Eds.). *Cognitive Assessment*. New York, NY: The Guilford Press: 233-269.
- Gerke, C. K., Mazzeo, S. E., & Kliewer, W. (2006). The role of depression and dissociation in the relationship between childhood trauma and bulimic symptoms among ethnically diverse female undergraduates. *Child Abuse & Neglect*, 30: 1161-1172.
- Gilbert, N., & Meyer, C. (2005). Fear of negative evaluation and the development of eating pathology: A longitudinal study among nonclinical women. *International Journal of Eating Disorders*, 37, (4): 307-312.
- Gilbert, S. (2000). *Counselling for eating disorders*. London, UK: Sage Publications, Ltd.
- Gilboa-Schechtman, E., Avnon, L., Zubery, E., & Jeczmierny, P. (2006). Emotional processing in eating disorders: Specific impairment or general distress related deficiency? *Depression and Anxiety*, 23: 331-339.
- Gleaves, D. H., Brown, J. D., & Warren, C. S. (2004). The continuity/discontinuity models of eating disorders. *Behavior Modification*, 28, (6): 739-762.
- Gleaves, D. H., Miller, K. J., Williams, T. L., & Summers, S. A. (2000). Eating disorders: An overview. In K. J. Miller, & J. S. Mizes (Eds.). *Comparative treatments for eating disorders*. New York, NY: Springer Publishing Company, Inc.: 1-49.
- Godart, N. T., Flament, M. F., Lecrubier, Y., & Jeammet, P. (2000). Anxiety disorders in anorexia nervosa and bulimia nervosa: Co-morbidity and chronology of appearance. *European Psychiatry*, 15: 38-45.

- Godart, N. T., Flament, M. F., Curt, F., Perderaeu, F., Lang, F., Venisse, J. L., et al. (2003). Anxiety disorders in subjects seeking treatment for eating disorders: A DSM-IV controlled study. *Psychiatry Research, 117*: 245-258.
- Green, A. S., Rafaeli, E., Bolger, N., Shrouf, P. E., & Reis, H. T. (2006) Paper or plastic? Data equivalence in paper and electronic diaries. *Psychological Methods, 11*, (1): 87-105.
- Grieve, F. G., Newton, C. C., Kelley, L., Miller, R. C., & Kerr, N. A. (2005). The preferred male body shapes of college men and women. *Individual Differences Research, 3*, (3): 188-192.
- Guest, T. (2000). Using the eating disorder examination in the assessment of bulimia and anorexia: Issues of reliability and validity. *Social Work in Health Care, 31*, (4): 71-83.
- Haas, H. L., & Clopton, J. R. (2003). Comparing clinical and research treatments for eating disorders. *International Journal of Eating Disorders 33*, (4): 412-420.
- Habermas, T. (2005). On the uses of history in psychiatry: Diagnostic implications for anorexia nervosa. *International Journal of Eating Disorders, 38*, (2): 167-182.
- Hallings-Pott, C., Waller, G., Watson, D., & Scragg, P. (2005). State dissociation in bulimic eating disorders: An experimental study. *International Journal of Eating Disorders, 38*, (1): 37-41.
- Harvey, J. A., & Robinson, J. D. (2003). Eating disorders in men: Current considerations. *Journal of Clinical Psychology in Medical Settings, 10*, (4): 297-306.
- Hay, P. (2003). Quality of life and bulimic eating disorder behaviors: Findings from a community-based sample. *International Journal of Eating Disorders 33*, (4): 434-442.

- Heavey, C. L., & Hurlburt, R. T. (2008). The phenomena of inner experience. *Consciousness and Cognition, 17, (3):* 798-810.
- Hebert, J. (1991). Sampling the inner experience of anxious and other individuals. Volume 2. Unpublished master's thesis. University of Nevada, Las Vegas.
- Hebert, J., & Hurlburt, R. T. (1993). Inner experience in anxiety. In R. T. Hurlburt (Ed.). *Sampling Inner Experience in Disturbed Affect*. New York, NY: Plenum Press: 189-195.
- Hektner, J. M., & Csikszentmihalyi, M. (2002). The experience sampling method: Measuring the context and content of lives. In R. B. Bechtel, & A. Churchman (Eds.). *Handbook of environmental psychology*. New York, NY: John Wiley & Sons, Inc.: 233-243.
- Hepp, U., Spindler, A., & Milos, G. (2005). Eating disorder symptomatology and gender role orientation. *International Journal of Eating Disorders, 37, (3):* 227-233.
- Herzog, D. B., & Delinsky, S. S. (2001). Classification of eating disorders. In R. H. Striegel-Moore & L. Smolak (Eds.). *Eating disorders: Innovative directions in research and practice*. Washington, DC: American Psychological Association: 31-50.
- Herzog, D. B., Franko, D. L., Dorer, D. J., Keel, P. K., Jackson, S., & Manzo, M. P. (2006). Drug abuse in women with eating disorders. *International Journal of Eating Disorders 39, (5):* 364-368.
- Hilbert, A., & Tuschen-Caffier, B. (2004). Body image interventions in cognitive-behavioural therapy of binge-eating disorder: A component analysis. *Behaviour Research and Therapy, 42, (11):* 1325-1339.

- Hilbert, A., & Tuschen-Caffier, B. (2005). Body-related cognitions in binge-eating disorder and bulimia nervosa. *Journal of Social and Clinical Psychology, 24*, (4): 561-579.
- Hilbert, A., & Tuschen-Caffier, B. (2007). Maintenance of binge eating through negative mood: A naturalistic comparison of binge eating disorder and bulimia nervosa. *International Journal of Eating Disorders 40*: 521-530.
- Hildebrandt, T., & Latner, J. (2006). Effect of self-monitoring on binge eating: Treatment response or 'binge drift'? *European Eating Disorders Review, 14*: 17-22.
- Hill, A. J. (2002). Prevalence and demographics of dieting. In C. G. Fairburn, & K. D. Brownell (Eds.). *Eating disorders and obesity: A comprehensive handbook*. (2<sup>nd</sup> ed.). New York, NY: The Guilford Press: 80-83.
- Hinrichsen, H. Morrison, T., Waller, G., & Schmidt, U. (2007). Triggers of self-induced vomiting in bulimic disorders: The role of core beliefs and imagery. *Journal of Cognitive Psychotherapy: An International Quarterly, 21*, (3): 261-272.
- Hoek, H. W. (2002). Distribution of eating disorders. In C. G. Fairburn, & K. D. Brownell (Eds.). *Eating disorders and obesity: A comprehensive handbook*. (2<sup>nd</sup> ed.). New York, NY: The Guilford Press: 233-237.
- Hoek, H. W. (2006). Incidence, prevalence and mortality of anorexia nervosa and other eating disorders. *Current Opinions in Psychiatry, 19*: 389-394.
- Hoek, H. W., & van Hoeken, D. (2003). Review of the prevalence and incidence of eating disorders. *International Journal of Eating Disorders 34*, (4): 383-396.
- Hospers, H. J., & Jansen, A. (2005). Why homosexuality is a risk factor for eating disorders in males. *Journal of Social and Clinical Psychology, 24*, (8): 1188-1201.

- Hurlburt, R. T. (1990). *Sampling normal and schizophrenic inner experience*. New York, NY: Plenum Press.
- Hurlburt, R. T. (1993). Introduction and method. In R. T. Hurlburt *Sampling Inner Experience in Disturbed Affect*. New York, NY: Plenum Press: 1-13.
- Hurlburt, R. T. (1993a). A bulimic operating-room nurse. In R. T. Hurlburt *Sampling Inner Experience in Disturbed Affect*. New York, NY: Plenum Press: 123-138.
- Hurlburt, R. T. (1993b). A bank teller with no figure/ground phenomena in perception. In R. T. Hurlburt *Sampling Inner Experience in Disturbed Affect*. New York, NY: Plenum Press: 199-218.
- Hurlburt, R. T. (1997). Randomly sampling thinking in the natural environment. *Journal of Consulting and Clinical Psychology, 65, (6)*: 941-949.
- Hurlburt, R. T., & Akhter, S. A. (2008). Unsymbolized thinking. *Consciousness and Cognition, 14, (4)*: 1364-1374.
- Hurlburt, R. T., & Heavey, C. L. (2000). *Descriptive experience sampling manual of terminology*. [On-line]. Available: <http://www.nevada.edu/~russ/codebook.html>.
- Hurlburt, R. T., & Heavey, C. L. (2001). Telling what we know: Describing inner experience. *TRENDS in Cognitive Sciences, 5, (9)*: 400-403.
- Hurlburt, R. T., & Heavey, C. L. (2002). Interobserver reliability of descriptive experience sampling. *Cognitive Therapy and Research, 26, (1)*: 135-142.
- Hurlburt, R. T., & Heavey, C. L. (2004). To beep or not to beep: Obtaining accurate reports about awareness. *Journal of Consciousness Studies, 11, (7-8)*: 113-128.
- Hurlburt, R. T., & Heavey, C. L. (2006). *Exploring inner experience: The descriptive experience sampling method*. Philadelphia, PA: John Benjamins Publishing Company.

- Hurlburt, Heavey, & Seibert (2006). Psychological science's prescription for accurate reports about inner experience. In R. T. Hurlburt, & C. L. Heavey *Exploring inner experience: The descriptive experience sampling method*. Philadelphia, PA: John Benjamins Publishing Company: 41-60.
- Hurlburt, R. T., Koch, M., & Heavey, C. L. (2002). Descriptive experience sampling demonstrates the connection of thinking to externally observable behavior. *Cognitive Therapy and Research, 26, (1)*: 117-134.
- Hurlburt, R. T., & Schwitzgebel, E. (2007). *Describing inner experience? Proponent meets skeptic*. Cambridge, MA: MIT Press.
- Jacobi, C., Hayward, C., de Zwaan, M., Kraemer, H. C., & Agras, W. S. (2004). Coming to terms with risk factors for eating disorders: Application of risk terminology and suggestions for a general taxonomy. *Psychological Bulletin, 130, (1)*: 19-65.
- Johnson, C., & Larson, R. (1982). Bulimia: An analysis of mood and behavior. *Psychosomatic Medicine, 44, (4)*: 341-351.
- Jones, C., Harris, G., & Leung, N. (2005). Core beliefs and eating disorder recovery. *European Eating Disorders Review, 13*: 237-244.
- Jones-Forrester, S. (2006). Inner experience in bulimia. Unpublished master's thesis, University of Nevada, Las Vegas.
- Kalodner, C. R. (2003). *Too fat or too thin? A reference guide to eating disorders*. Westport, CT: Greenwood Press.
- Katzman, D. K. (2005). Medical complications in adolescents with anorexia nervosa: A review of the literature. *International Journal of Eating Disorders, 37, Supplemental*: S52-S59.

- Kaye, W. H., Bailer, U. F., Frank, G. K., Wagner, A., & Henry, S. E. (2005). Brain imaging of serotonin after recovery from anorexia and bulimia nervosa. *Physiology & Behavior, 86*: 15-17.
- Kaye, W. H., Bulik, C. M., Thornton, L., Barbarich, N., Masters, K., & Price Foundation Collaborative Group (2004). Comorbidity of anxiety disorders with anorexia and bulimia nervosa. *American Journal of Psychiatry, 161*, (12): 2215-2221.
- Kaye, W. H., Devlin, B., Barbarich, N., Bulik, C. M., Thornton, L., Bacanu, S. A., et al. (2004). Genetic analysis of bulimia nervosa: Methods and sample description. *International Journal of Eating Disorders, 34*, (4): 556-570.
- Kaye, W. H., Frank, G. K., Bailer, U. F., Henry, S. E., Meltzer, C. C., Price, J. C., et al. (2005). Serotonin alterations in anorexia and bulimia nervosa: New insights from imaging studies. *Physiology & Behavior, 85*: 73-81.
- Kaye, W. H., Klump, K. L., Frank, G. K. W., & Strober, M. (2000). Anorexia and bulimia nervosa. *Annual Review of Medicine, 51*: 299-313.
- Kearney-Cooke, A., & Striegel-Moore, R. (1997). The etiology and treatment of body image disturbance. In D. M. Garner, & P. E. Garfinkel (Eds.). *Handbook of treatment for eating disorders*. (2<sup>nd</sup> ed.). New York, NY: The Guilford Press: 295-306.
- Keel, P. K., Heatherton, T. F., Dorer, D. J., Joiner, T. E., & Zalta, A. K. (2006). Point prevalence of bulimia nervosa in 1982, 1992, and 2002. *Psychological Medicine, 36*: 119-127.
- Keel, P. K., & Klump, K. L. (2003). Are eating disorders culture-bound syndromes? Implications for conceptualizing their etiology. *Psychological Bulletin, 129*, (5): 747-769.



- Keel, P. K., Klump, K. L., Miller, K. B., McGue, M., & Iacono, W. G. (2005). Shared transmission of eating disorders and anxiety disorders. *International Journal of Eating Disorders, 38*, (2): 99-105.
- Kemps, E., Tiggemann, M., & Marshall, K. (2005). Relationship between dieting to lose weight and the functioning of the central executive. *Appetite, 45*: 287-294.
- Kessler, H., Schwarze, M., Filipic, S., Traue, H. C., & von Wietersheim, J. (2006). Alexithymia and facial emotion recognition in patients with eating disorders. *International Journal of Eating Disorders, 39*: 245-251.
- Kessler, R. C., Wittchen, H. U., Abelson, J., & Zhao, S. (2000). Methodological issues in assessing psychiatric disorders with self-reports. In A. A. Stone, J. S. Turkkan, C. A. Bachrach, J. B. Jobe, H. S. Kurtzman, & V. S. Cain (Eds.) *The science of self-report: Implications for research and practice*. Mahwah, NJ: Lawrence Erlbaum Associates, Publishers: 229-255.
- Kihlstrom, J. F., Eich, E., Sandbrand, D., & Tobias, B. A. (2000). Emotion and memory: Implications for self-report. In A. A. Stone, J. S. Turkkan, C. A. Bachrach, J. B. Jobe, H. S. Kurtzman, & V. S. Cain (Eds.) *The science of self-report: Implications for research and practice*. Mahwah, NJ: Lawrence Erlbaum Associates, Publishers: 81-99.
- Kilgore, W. D. S., & Yurgelun-Todd, D. A. (2006). Affect modulates appetite-related brain activity to images of food. *International Journal of Eating Disorders, 39*, (5): 357-363.
- Klein, D. A., & Walsh, B. T. (2003). Eating disorders. *International review of psychiatry, 15*, (3): 205-216.

- Klinger, E., & Kroll-Mensing, D. (1995). Idiographic assessment experience sampling and motivational analysis. In J. N. Butcher (Ed.). *Clinical personality assessment: Practical approaches*: New York, NY: Oxford University Press: 267-277.
- Krones, P. G., Stice, E., Batres, C., & Orjada, K. (2005). In vivo social comparison to a thin-ideal peer promotes body dissatisfaction: A randomized experiment. *International Journal of Eating Disorders*, 38, (2): 134-142.
- Larson, R., & Asmussen, L. (1992). Bulimia in daily life: A context-bound syndrome. In M. W. de Vries (Ed.). *The experience of psychopathology: Investigating mental disorders in their natural settings*. New York, NY: Cambridge University Press: 167-179.
- Larson, R., & Csikszentmihalyi, M. (1983). The experience sampling method. *New Directions for Methodology of Social and Behavioral Science*, 15: 41-56.
- Lizzer, S., Boirie, Y., Poissonnier, C., Petit, I., Duche, P., Taillardat, M., et al. (2005). Longitudinal changes in activity patterns, physical capacities, energy expenditure, and body composition in severely obese adolescents during a multidisciplinary weight-reduction program. *International Journal of Obesity*, 29: 37-46.
- Le Grange, D., Binford, R. B., Peterson, C. B., Crow, S. J., Crosby, R. D., Klein, M. H., et al. (2006). DSM-IV threshold versus subthreshold bulimia nervosa. *International Journal of Eating Disorders*, 39, (6): 462-467.
- Le Grange, D., Gorin, A., Catley, D., & Stone, A. (2001). Does momentary assessment detect binge eating in overweight women that is denied at interview? *European Eating Disorders Review*, 9: 309-324.

- Le Grange, D., Gorin, A., Dymek, M., & Stone, A. (2002). Does ecological momentary assessment improve cognitive behavioural therapy for binge eating disorder? A pilot study. *European Eating Disorders Review, 10*: 316-328.
- Legenbauer, T., Vocks, S., & Ruddle, H. (2008). Emotion recognition, emotional awareness, and cognitive bias in individuals with bulimia nervosa. *Journal of Clinical Psychology, 64*: 687-702.
- Leonard, S., Steiger, H., & Kao, A. (2003). Childhood and adulthood abuse in bulimic and nonbulimic women: Prevalences and psychological correlates. *International Journal of Eating Disorders, 33*, (4): 397-405.
- Lopez, C. A., Tchanturia, K., Stahl, D., & Treasure, J. (2008). Central coherence in women with bulimia nervosa. *International Journal of Eating Disorders, 41*: 340-347.
- Lumley, M. A. (2004). Alexithymia, emotional disclosure, and health: A program of research. *Journal of Personality, 72*, (6): 1271-1300.
- Mangweth, B., Hausmann, A., Danzl, C., Walch, T., Rupp, C. I., Biebl, W., et al. (2005). Childhood body focused behaviors and social behaviors as risk factors of eating disorders. *Psychotherapy and Psychosomatics, 74*: 247-253.
- Maner, J. K., Holm-Denoma, J. M., Van Orden, K. A., Gailliot, M. T., Gordon, K. H., & Joiner, T. E. (2006). Evidence for attentional bias in women exhibiting bulimotypic symptoms. *International Journal of Eating Disorders, 39*, (1): 55-61.
- McElroy, S. L., Kotwal, R., Keck, P. E., & Akiskal, H. S. (2005). Comorbidity of bipolar and eating disorders: Distinct or related disorders with shared dysregulations? *Journal of Affective Disorders, 86*: 107-127.

- Meyer, C., Serpell, L., Waller, G., Murphy, F., Treasure, J., & Leung, N. (2005). Cognitive avoidance in the strategic processing of ego threats among eating-disordered patients. *International Journal of Eating Disorders, 38, (1)*: 30-36.
- Mitchell, J. E., Cook-Myers, T., & Wonderlich, S. A. (2005). Diagnostic criteria for anorexia nervosa: Looking ahead to DSM-V. *International Journal of Eating Disorders, 37, Supplemental*: S95-S97.
- Mitchell, J. E., & Crow, S. (2006). Medical complications of anorexia nervosa and bulimia nervosa. *Current Opinion in Psychiatry, 19*: 438-443.
- Mitchell, J. E., Specker, S., & Edmonson, K. (1997). Management of substance abuse and dependence. In D. M. Garner, & P. E. Garfinkel (Eds.). *Handbook of treatment for eating disorders*. (2<sup>nd</sup> ed.). New York, NY: The Guilford Press: 415-423.
- Mitchell, K. S., & Mazzeo, S. E. (2004). Binge eating and psychological distress in ethnically diverse undergraduate men and women. *Eating Behaviors, 5*: 157-169.
- Mond, J. M., Hay, P. J., Rodgers, B., & Owen, C. (2006). An update in the definition of “excessive exercise” in eating disorders research. *International Journal of Eating Disorders, 39, (2)*: 147-153.
- Mond, J. M., Hay, P. J., Rodgers, B., Owen, C., & Beumont, P. J. V. (2004). Beliefs of the public concerning the helpfulness of interventions for bulimia nervosa. *International Journal of Eating Disorders, 36, (1)*: 62-68.
- Monson, C. K., & Hurlburt, R. T. (1993). A comment to suspend the introspection controversy: Introspecting subjects did agree about “imageless thought”. In R. T. Hurlburt *Sampling Inner Experience in Disturbed Affect*. New York, NY: Plenum Press: 15-26.

- Montebarocci, O., Codispoti, M., Surcinelli, P., Franzoni, E., Baldaro, B., & Rossi, N. (2006). Alexithymia in female patients with eating disorders. *Eating and Weight Disorders, 11*: 14-21.
- Moorhead, D. J., Stashwick, C. K., Reinherz, H. Z., Giaconia, R. M., Streigel-Moore, R. M., & Paradis, A. D. (2003). Child and adolescent predictors for eating disorders in a community population of young adult women. *International Journal of Eating Disorders 33, (1)*: 1-9.
- Moradi, B., Dirks, D., & Matteson, A. V. (2005). Roles of sexual objectification experiences and internalization of standards of beauty in eating disorder symptomatology: A test and extension of objectification theory. *Journal of Counseling Psychology, 52, (3)*: 420-428.
- Murray, T. (2003). Wait not, want not: Factors contributing to the development of anorexia nervosa and bulimia nervosa. *The Family Journal: Counseling and Therapy for Couples and Families, 11, (3)*: 276-280.
- Newton, M., Boblin, S., Brown, B., & Ciliska, D. (2006). Understanding intimacy for women with anorexia nervosa: A phenomenological approach. *European Eating Disorders Review, 14*: 43-53.
- Nordbo, R. H. S., Espeset, E. M. S., Gulliksen, K. S., Skarderud, F., & Holte, A. (2006). The meaning of self-starvation: Qualitative study of patients' perception of anorexia nervosa. *International Journal of Eating Disorders, 39, (Early View)*: Retrieved July 25, 2006 from <http://www3.interscience.wiley.com.ezproxy.library.unlv.edu/cgi-bin/fulltext/112704103/PDFSTART>

- Norton, M., Wonderlich, S. A., Myers, T., Mitchell, J. E., & Crosby, R. D. (2003). The use of palmtop computers in the treatment of bulimia nervosa. *European Eating Disorders Review, 11, (3)*: 231-242.
- Nussbaum, K. M. (2005). The influence of body mass index on the relationship between emotions and eating in young African American adolescents. (Doctoral dissertation, Loyola University Chicago, 2004). *Dissertation Abstracts International, Section B: The Sciences and Engineering, 65 (8-B)*: 4298.
- Oates-Johnson, T., & DeCourville, N. (1999). Weight preoccupation, personality, and depression in university students: An interactionist perspective. *Journal of Clinical Psychology, 55, (9)*: 1157-1166.
- O'Brien, K. M., & Vincent, N. K. (2003). Psychiatric comorbidity in anorexia and bulimia nervosa: Nature, prevalence, and causal relationships. *Clinical Psychology Review, 23*: 57-74.
- Ogden, J. (2003). *The psychology of eating: From healthy to disordered behavior*. Malden, MA: Blackwell Publishers, Ltd.
- Okon, D. M., Greene, A. L., & Smith, J. E. (2003). Family interactions predict intraindividual symptom variation for adolescents with bulimia. *International Journal of Eating Disorders 34, (4)*: 450-457.
- Olmstead, M. P., Kaplan, A. S., & Rockert, W. (2005). Defining remission and relapse in bulimia nervosa. *International Journal of Eating Disorders, 38, (1)*: 1-6.
- 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, (1)*: 39-56.

- Papezova, H., Yamamotova, A., & Uher, R. (2005). Elevated pain threshold in eating disorders: Physiological and psychological factors. *Journal of Psychiatric Research, 39*: 431-438.
- Passi, V. A., Bryson, S. W., & Lock, J. (2003). Assessment of eating disorders in adolescents with anorexia nervosa: Self-report questionnaire versus interview. *International Journal of Eating Disorders 33, (1)*: 45-54.
- Petterson, R. (2004). Nameless desire: Alexithymia and the anorexic patient. *The American Journal of Psychoanalysis, 64, (1)*: 77-90.
- Pearson, J., Goldklang, D., & Striegel-Moore, R. H. (2002). Prevention of eating disorders: Challenges and opportunities. *International Journal of Eating Disorders, 31, (3)*: 233-239.
- Piran, N., & Cormier, H. C. (2005). The social construction of women and disordered eating patterns. *Journal of Counseling Psychology, 52, (4)*: 549-558.
- Polivy, J., & Herman, C. P. (2002). Causes of eating disorders. *Annual Review of Psychology, 53*: 187-213.
- Polivy, J., Herman, C. P., & Boivin, M. (2004). Eating disorders. In J. E. Maddux, & B. A. Winstead (Eds.) *Psychopathology: Foundations for a Contemporary Understanding*. Mahwah, NJ: Lawrence Erlbaum Associates, Inc.: 229-254.
- Powers, P. S. (2002). Eating disorders. In S. G. Kornstein, & A. H. Clayton (Eds.) *Women's Mental Health: A Comprehensive Textbook*. New York, NY: The Guilford Press: 244-262.
- Punzo, V. A., & Miller, E. (2002). Investigating conscious experience through the beeper project. *Teaching of Psychology, 29, (4)*: 295-297.

- Quinton, S., & Wagner, H. L. (2005). Alexithymia, ambivalence over emotional expression, and eating attitudes. *Personality and Individual Differences, 38*: 1163-1173.
- Reba, L., Thornton, L., Tozzi, F., Klump, K. L., Brandt, H., Crawford, S., et al. (2005). Relationships between features associated with vomiting in purging-type eating disorders. *International Journal of Eating Disorders, 38*, (4): 287-294.
- Regan, P. C., & Cachelin, F. M. (2006). Binge eating and purging in a multi-ethnic community sample. *International Journal of Eating Disorders, 39*, (6): 523-526.
- Richard, M., Bauer, S., Kordy, H., & COST Action B6 (2005). Relapse in anorexia and bulimia nervosa: A 2.5-year follow-up study. *European Eating Disorders Review, 13*: 180-190.
- Robert-McComb, J. J. (2001). Eating disorders. In J. J. Robert-McComb (Ed.). *Eating disorders in women and children: Prevention, stress management, and treatment*. Boca Raton, FL: CRC Press: 1-37.
- Rojo-Moreno, L., Livianos-Aldana, L., Conesa-Burguet, L., & Cava, G. (2006). Dysfunctional rearing in community and clinic based populations with eating problems: Prevalence and mediating role of psychiatric morbidity. *European Eating Disorders Review, 14*: 32-42.
- Ruffolo, J. S., Phillios, K. A., Menard, W., Fay, C., & Weisberg, R. B. (2006). Comorbidity of body dysmorphic disorder and eating disorders: Severity of psychopathology and body image disturbance. *International Journal of Eating Disorders, 39*, (1): 11-19.



- Ruggiero, G. M., Levi, D., Ciuna, A., & Sassaroli, S. (2003). Stress situation reveals an association between perfectionism and drive for thinness. *International Journal of Eating Disorders* 34, (2): 220-226.
- Russell, G. F. M. (1997). The history of bulimia nervosa. In D. M. Garner, & P. E. Garfinkel (Eds.). *Handbook of treatment for eating disorders*. (2<sup>nd</sup> ed.). New York, NY: The Guilford Press: 11-24.
- Russell, G. F. M. (2004). Thoughts on the 25<sup>th</sup> anniversary of bulimia nervosa. *European Eating Disorders Review*, 12: 139-152.
- Ruuska, J., Kaltiala-Heino, R., Rantanen P., & Koivisto, A. (2005). Psychopathological distress predicts suicidal ideation and self-harm in adolescent eating disorder patients. *European Child & Adolescent Psychiatry*, 14, (5): 276-281.
- Sassaroli, S., Bertelli, S., Decoppi, M., Crosina, M., Milos, G. & Ruggiero, G. M. (2005). Worry and eating disorders: A psychopathological association. *Eating Behaviors*, 6: 301-307.
- Sassaroli, S., & Ruggiero, G. M. (2005). The role of stress in the association between low self-esteem, perfectionism, and worry, and eating disorders. *International Journal of Eating Disorders*, 37, (2): 135-141.
- Schaeffer, N. C. (2000). Asking questions about threatening topics: A selective overview. In A. A. Stone, J. S. Turkkan, C. A. Bachrach, J. B. Jobe, H. S. Kurtzman, & V. S. Cain (Eds.) *The Science of Self-Report: Implications for research and practice*. Mahwah, NJ: Lawrence Erlbaum Associates, Publishers: 105-121.
- Schaffer, N. A. (2003). Binge-eating and other eating disorders. In R. L. Leahy (Ed.) *Roadblocks in cognitive-behavioral therapy: Transforming challenges into opportunities for change*. New York, NY: The Guilford Press: 195-214.

- Scollon, C. N., Kim-Prieto, C., & Diener, E. (2003). Experience sampling: Promises and pitfalls, strengths and weaknesses. *Journal of Happiness Studies, 4*, 5-34.
- Shafran, R., Fairburn, C. G., Robinson, P., & Lask, B. (2004). Body checking and its avoidance in eating disorders. *International Journal of Eating Disorders 35, (1)*: 93-101.
- Shafran, R., & Robinson, P. (2004). Thought-shape fusion in eating disorders. *British Journal of Clinical Psychology, 43*: 399-407.
- Shiffman, S. (2000). Real-time self-report of momentary states in the natural environment: Computerized ecological momentary assessment. In A. A. Stone, J. S. Turkkan, C. A. Bachrach, J. B. Jobe, H. S. Kurtzman, & V. S. Cain (Eds.) *The Science of Self-Report: Implications for research and practice*. Mahwah, NJ: Lawrence Erlbaum Associates, Publishers: 277-298.
- Sim, L., & Zeman, J. (2004). Emotion awareness and identification skills in adolescent girls with bulimia nervosa. *Journal of Clinical Child and Adolescent Psychology, 33, (4)*: 760-771.
- Sim, L., & Zeman, J. (2005). Emotion regulation factors as mediators between body dissatisfaction and bulimic symptoms in early adolescent girls. *Journal of Early Adolescence, 25, (4)*: 478-496.
- Smolak, L., & Murnen, S. K. (2001). Gender and eating problems. In R. H. Striegel-Moore & L. Smolak (Eds.). *Eating Disorders: Innovative Directions in Research and Practice*. Washington, DC: American Psychological Association: 91-110.
- Smyth, J., Wonderlich, S., Crosby, R., Millenberger, R., Mitchell, J., & Rorty, M. (2001). The use of ecological momentary assessment approaches in eating disorder research. *International Journal of Eating Disorders, 30, (1)*: 83-95.

- Smyth, J., Wonderlich, S., Heron, K. E., Sliwinski, M. J., Crosby, R., Mitchell, J. E., et al. (2007). Daily and momentary mood and stress are associated with binge eating and bulimia nervosa in patients in the natural environment. *Journal of Consulting and Clinical Psychology, 74*, (4): 629-683.
- Soh, N. L., Touyz, S. W., & Surgenor, L. J. (2006). Eating and body image disturbances across cultures: A review. *European Eating Disorders Review, 14*: 54-65.
- Somerville, K., Cooper, M., & Hackmann, A. (2007). Spontaneous imagery in women with bulimia nervosa: An investigation into content, characteristics and links to childhood memories. *Journal of Behavior Therapy, 38*: 435-446.
- Southgate, L., Tchanturia, K., & Treasure, J. (2005). Building a model of the aetiology of eating disorders by translating experimental neuroscience into clinical practice. *Journal of Mental Health, 14*, (6): 553-566.
- Speranza, M., Loas, G., Wallier, J., & Corcos, M. (2007). Predictive value of alexithymia in patients with eating disorders: A 3-year prospective study. *Journal of Psychosomatic Research, 63*: 365-371.
- Steiger, H., Lehoux, P. M., & Gauvin, L. (1999). Impulsivity, dietary control, and the urge to binge in bulimic syndromes. *International Journal of Eating Disorders, 26*, (3): 261-274.
- Stein, D., Kaye, W. H., Matsunaga, H., Myers, D., Orbach, I., Har-Even, D., et al. (2003). Pain perception in recovered bulimia nervosa patients. *International Journal of Eating Disorders, 34*: 331-336.
- Stein, K. F., & Corte, C. M. (2003). Ecologic momentary assessment of eating disordered behaviors. *International Journal of Eating Disorders 34*, (3): 349-360.

- Stein, R. I., Kenardy, J., Wiseman, C. V., Douchis, J. Z., Arnow, B. A., & Wilfley, D. E. (2007). What's driving the binge in binge eating disorder?: A prospective examination of precursors and consequences. *International Journal of Eating Disorders* 40: 195-203.
- Stice, E. (2001a). Risk factors for eating pathology: Recent advances and future directions. In R. H. Striegel-Moore & L. Smolak (Eds.). *Eating disorders: Innovative directions in research and practice*. Washington, DC: American Psychological Association: 51-73.
- Stice, E. (2001b). A prospective test of the dual-pathway model of bulimic pathology: Mediating effects of dieting and negative affect. *Journal of Abnormal Psychology*, 110, (1): 124-135.
- Stice, E. (2002). Sociocultural influences on body image and eating disorders. In C. G. Fairburn, & K. D. Brownell (Eds.). *Eating disorders and obesity: A comprehensive handbook*. (2<sup>nd</sup> ed.). New York, NY: The Guilford Press: 103-107.
- Stice, E., Bohon, C., Marti, C. N., & Fischer, K. (2008). Subtyping women with bulimia nervosa along dietary and negative affect dimensions: Further evidence of reliability and validity. *Journal of Consulting and Clinical Psychology*, 76, (6): 1022-1033.
- Stice, E., Peart, J., & Thompson-Brenner, H. (2006). Eating disorders. In M. Hersen, & J. C. Thomas (Eds.). *Comprehensive handbook of personality and psychopathology*. (Vol. 2), Hoboken, NJ: John Wiley & Sons: 389-408.
- Stice, E., Presnell, K., Groesz, L., & Shaw, H. (2005). Effects of weight maintenance diet on bulimic symptoms in adolescent girls: An experimental test of dietary restraint theory. *Health Psychology*, 24, (4): 402-412.

- Stone, A. A., Kessler, R. C., & Haythornthwaite, J. A. (1991). Measuring daily events and experiences: Decisions for the researcher. *Journal of Personality, 59*, (3): 575-607.
- Stone, A. A., & Shiffman, S. S. (1994). Ecological momentary assessment (EMA) in behavioral medicine. *Annals of Behavioral Medicine, 16*, (3): 199-202.
- Stone, A. A., Shiffman, S. S., & DeVries, M. W. (1999). Ecological momentary assessment. In D. Kahneman, E. Diener, & N. Schwartz (Eds.). *Well-being: The foundations of hedonic psychology*. New York, NY: Russell Sage Foundation: 26-39.
- Striegel-Moore, R. H. (2005). Health services research in anorexia nervosa. *International Journal of Eating Disorders, 37*, Supplemental: S31-S34.
- Striegel-Moore, R. H., & Cachelin, F. M. (2001). Etiology of eating disorders in women. *The Counseling Psychologist, 29*, (5): 635-661.
- Striegel-Moore, R. H., Franko, D. L., Thompson, D., Barton, B., Schreiber, G. B., & Daniels, S. R. (2005). An empirical study of the typology of bulimia nervosa and its spectrum variants. *Psychological Medicine, 35*: 1563-1572.
- Striegel-Moore, R. H., & Smolak, L. (2001). Introduction. In R. H. Striegel-Moore & L. Smolak (Eds.). *Eating disorders: Innovative directions in research and practice*. Washington, DC: American Psychological Association: 3-7.
- Striegel-Moore, R. H., & Smolak, L. (2002). Gender, ethnicity, and eating disorders. In C. G. Fairburn, & K. D. Brownell (Eds.) *Eating disorders and obesity: A comprehensive handbook*. (2<sup>nd</sup> ed.). New York, NY: The Guilford Press: 251-255.

- Strober, M., & Bulik, C. (2002). Genetic Epidemiology of eating disorders. In C. G. Fairburn, & K. D. Brownell (Eds.) *Eating disorders and obesity: A comprehensive handbook*. (2<sup>nd</sup> ed.). New York, NY: The Guilford Press: 238-242.
- Swift, S. E. (2005). The effects of thin-ideal images and feminine gender role stress on body satisfaction, mood, and cognitions in women. (Doctoral dissertation, Alliant International University San Diego, 2004). *Dissertation Abstracts International, Section B: The Sciences and Engineering*, 65 (8-B): 4307.
- Sysko, R., Walsh, T. B., & Fairburn, C. G. (2005). Eating disorder examination-questionnaire as a measure of change in patients with bulimia nervosa. *International Journal of Eating Disorders*, 37, (2): 100-106.
- Tamim, H., Tamim, R., Almawi, W., Rahi, A., Shamseddeen, W., Ghazi, A., et al. (2006). Risky weight control among university students. *International Journal of Eating Disorders*, 39, (1): 80-83.
- Taylor, G. J. (2000). Recent developments in alexithymia theory and research. *Canadian Journal of Psychiatry*, 45, (2): 134-142.
- Tester, M. L., & Gleaves, D. H. (2005). Self-deceptive enhancement and family environment: Possible protective factors against internalization of the thin ideal. *Eating Disorders*, 13:187-199.
- Thiele, C., Laireiter, A. R., & Baumann, U. (2002). Diaries in clinical psychology and psychotherapy: A selective review. *Clinical Psychology and Psychotherapy*, 9: 1-37.

- Tourangeau, R. (2000). Remembering what happened: Memory errors and survey reports. In A. A. Stone, J. S. Turkkan, C. A. Bachrach, J. B. Jobe, H. S. Kurtzman, & V. S. Cain (Eds.) *The Science of Self-Report: Implications for research and practice*. Mahwah, NJ: Lawrence Erlbaum Associates, Publishers: 29-47.
- Tozzi, F., Thornton, L. M., Klump, K. L., Fichter, M. M., Halmi, K. A., Kaplan, A. S., et al. (2005). Symptom fluctuation in eating disorders: Correlates of diagnostic crossover. *American Journal of Psychiatry*, *162*, (4): 732-740.
- Treuer, T., Koperdak, M., Rozsa, S., & Furedi, J. (2005). The impact of physical and sexual abuse on body image in eating disorders. *European Eating Disorders Review*, *13*: 106-111.
- Tuschen-Caffier, B., Vogeles, C., Bracht, S., & Hilbert, A. (2003). Psychological response to body shape exposure in patients with bulimia nervosa. *Behavior Research and Therapy*, *41*: 573-586.
- Tylka, T. L. (2004). The relation between body dissatisfaction and eating disorder symptomatology: An analysis of moderating variables. *Journal of Counseling Psychology*, *51*, (2): 178-191.
- Uher, R., Murphy, T., Brammer, M. J., Dalgleish, T., Phillips, M. L., Ng, V. W., et al. (2004). Medial prefrontal cortex activity associated with symptom provocation in eating disorders. *American Journal of Psychiatry*, *161*: 1238-1246.
- Van Gerko, K., Hughes, M. L., Hamill, M., & Waller, G. (2005). Reported childhood sexual abuse and eating-disordered cognitions and behaviors. *Child Abuse & Neglect*, *29*: 375-382.

- Van Strein, T., Engels, R. C. M. E., Van Leeuwe, J., & Snoek, H. M. (2005). The Stice model of overeating: Tests in clinical and non-clinical samples. *Appetite, 45*: 205-213.
- Vandereycken, W. (2002). History of anorexia nervosa and bulimia nervosa. In C. G. Fairburn, & K. D. Brownell (Eds.). *Eating disorders and obesity: A comprehensive handbook*. New York, NY: The Guilford Press: 151-154.
- Vansteelandt, K., Pieters, G., Vandereycken, W., Claes, L., Probst, M., & Van Mechelen, I. (2004). Hyperactivity in anorexia nervosa: A case study using experience sampling methodology. *Eating Behaviors, 5*: 67-74.
- Vansteelandt, K., Rijmen, F., Pieters, G., Probst, M., & Vanderlinden, J. (2007). Drive for thinness, affect regulation and physical activity in eating disorders: A daily life study. *Behavior Research and Therapy, 45*: 1717- 1734.
- Vermersch, P. (1999). Introspection as practice. *Journal of Consciousness Studies, 6*, (2-3): 17-42.
- Waller, G. (2002). The psychology of binge eating. In C. G. Fairburn, & K. D. Brownell (Eds.). *Eating disorders and obesity: A comprehensive handbook*. (2<sup>nd</sup> ed.). New York, NY: The Guilford Press: 98-102.
- Waters, A., Hill, A., & Waller, G. (2001). Internal and external antecedents of binge eating episodes in a group of women with bulimia nervosa. *International Journal of Eating Disorders, 29*, (1): 17-22.
- Warren, C. S. (2008). The influence of awareness and internalization of Western appearance ideals on body dissatisfaction in Euro-American and Hispanic males. *Psychology of Men and Masculinity, 9*, (4): 257-266.



- Warren, C. S., Gleaves, D. H., Cepeda-Benito, A., Fernandez, M. D. C., & Rodriguez-Ruiz, S. (2005). Ethnicity as a protective factor against internalization of a thin ideal and body dissatisfaction. *International Journal of Eating Disorders, 37, (3)*: 241-249.
- Waugh, E., & Bulik, C. M. (1999). Offspring of women with eating disorders. *International Journal of Eating Disorders, 25, (2)*: 123-133.
- Wegner, K. E., Smyth, J. M., Crosby, R. D., Wittrock, D., Wonderlich, S. A., & Mitchell, J. E. (2002). An evaluation of the relationship between mood and binge eating in the natural environment using ecological momentary assessment. *International Journal of Eating Disorders, 32 (3)*: 354-361.
- Wells, T. T., & Cruess, D. G. (2006). Effects of partial sleep deprivation on food consumption and food choice. *Psychology and Health, 21, (1)*: 79-86.
- Weltzin, T. E., Weisensel, N., Franczyk, D., Burnett, K., Klitz, C., & Bean, P. (2005). Eating disorders in men: Update. *Journal of Men's Health & Gender, 2, (2)*: 186-193.
- Wertz, F. J. (2005). Phenomenological Research Methods for Counseling Psychology. *Journal of Counseling Psychology, 52, (2)*: 167-177.
- Wheeler, K., Greiner, P., & Boulton, M. (2005). Exploring alexithymia, depression, and binge eating in self-reported eating disorders in women. *Perspectives in Psychiatric Care, 41, (3)*: 114-123.
- White, M. A., & Grilo, C. M. (2005). Ethnic differences in the prediction of eating and body image disturbances among female adolescent psychiatric inpatients. *International Journal of Eating Disorders, 38, (1)*: 78-84.

- Whiteside, U., Chen, E., Neighbors, C., Hunter, D., Lo, T., & Larimer, M. (2007). Difficulties regulating emotions: Do binge eaters have fewer strategies to modulate and tolerate negative affect? *Eating Behaviors, 8*: 162-169.
- Wichstrom, L. (2006). Sexual orientation as a risk factor for bulimic symptoms. *International Journal of Eating Disorders, 39*, (6): 448-453.
- Williamson, D. A., Gleaves, D. H., & Stewart, T. M. (2005). Categorical versus dimensional models of eating disorders: An examination of the evidence. *International Journal of Eating Disorders, 37*, (1): 1-10.
- Williamson, D. A., Zucker, N. L., Martin, C. K., & Smeets, M. A. M. (2001). Etiology and management of eating disorders. In P. B. Sutker, & H. E. Adams (Eds.) *Comprehensive handbook of psychopathology*. (3<sup>rd</sup> ed.) New York, NY: Kluwer Academic/Plenum Publishers: 641-670.
- Wilson, G. T. (2002a). The controversy over dieting. In C. G. Fairburn, & K. D. Brownell (Eds.). *Eating disorders and obesity: A comprehensive handbook*. (2<sup>nd</sup> ed.). New York, NY: The Guilford Press: 93-97.
- Wilson, G. T. (2002b). Eating disorders and addictive disorders. In C. G. Fairburn, & K. D. Brownell (Eds.). *Eating disorders and obesity: A comprehensive handbook*. (2<sup>nd</sup> ed.). New York, NY: The Guilford Press: 199-203.
- Wilson, G. T., & Fairburn, C. G. (2002). Treatments for eating disorders. In P. E. Nathan, & J. M. Gorman (Eds.) *A guide to treatments that work*. (2<sup>nd</sup> ed.) New York, NY: Oxford University Press: 559-592.
- Woolsey, M. M. (2002). *Eating disorders: A clinical guide to counseling and treatment*. Chicago, IL: American Dietetic Association.

- Wonderlich, S. A. (2002). Personality and eating disorders. In C. G. Fairburn, & K. D. Brownell (Eds.). *Eating disorders and obesity: A comprehensive handbook*. (2<sup>nd</sup> ed.). New York, NY: The Guilford Press: 204-209.
- Wonderlich, S. A., Crosby, R. D., Engel, S. G., Mitchell, J. E., Smyth, J., & Miltenberger, R. (2007). Personality-based clusters in bulimia nervosa: Differences in clinical variables and ecological momentary assessment. *Journal of Personality Disorders, 21*, (3): 340-357.
- Wonderlich, S. A., Rosenfeldt, S., Crosby, R. D., Mitchell, J. E., Engel, S. G., Smyth, J., et al. (2007). The effects of childhood trauma on daily mood lability and comorbid psychopathology in bulimia nervosa. *Journal of Traumatic Stress, 20*, (1): 77-87.
- Yang, S. C. (2003). Reconceptualizing think-aloud methodology: Refining the encoding and categorizing techniques via contextualized perspectives. *Computers in Human Behavior, 19*: 95-115.
- Young, E. A., Clopton, J. R., & Bleckley, M. K. (2004). Perfectionism, low self-esteem, and family factors as predictors of bulimic behavior. *Eating Behaviors, 5*: 273-283.
- Zalta, A. K., & Keel, P. K. (2006). Peer influence of bulimic symptoms in college students. *Journal of Abnormal Psychology, 115*, (1): 185-189.
- Zotter, D. L., & Crowther, J. H. (1991). The role of cognitions in bulimia nervosa. *Cognitive Therapy and Research, 15*, (5): 413-426.
- Zotter-Bonifazi, D., Crowther, J. H., & Mizes, J. S. (2000). Validity of questionnaires for assessing dysfunctional cognitions in bulimia nervosa. *International Journal of Eating Disorders, 27*, (4): 464-470.

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